Gammon Construction Limited

Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System from North Point to Stonecutters Island: *Seventy-forth Monthly EM&A Report*

January 2016

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Gammon Construction Limited

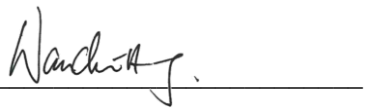
Contract No. DC/2007/23 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System from North Point to Stonecutters Island: *Seventy-forth Monthly EM&A Report*

January 2016

Reference 0104887

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed: 

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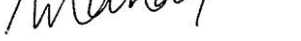
Certified by: 
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CE/Harbour Area Treatment Scheme
Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme Division
5/F, Western Magistracy
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17 February 2016
By Post

Attn: Mr. Danny Tang

Dear Sir,

Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation

Contract No. DC/2007/23
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Condition 4.4 – Submission of Monthly EM&A Report for January 2016 (no. 74)

I refer to the captioned revised Monthly EM&A Report received on 17 February 2016 via email. Pursuant to Condition 4.4 of Environmental Permit No. EP-322/2008/G, I hereby verify the captioned report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c.	AECOM	Mr. K Y Chan	By email
	Gammon	Mr. Max Ko	By email
	ERM	Ms. Mandy To	By email

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EXECUTIVE SUMMARY

The construction works of **DC/2007/23 of Harbour Area Treatment Scheme Stage 2A (HATS2A) – Construction of Sewage Conveyance System from North Point to Stonecutters Island (the Project)** commenced on 1 December 2009. This is the 74th monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A activities carried out during the period from 1 to 31 January 2016 in accordance with the EM&A Manual.

North Point Production and Drop Shafts

Summary of Construction Works undertaken during the Reporting Month

The major construction works undertaken during the reporting month include:

- Backfilling at Production Shaft was completed.

Environmental Monitoring and Audit Progress

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

• 24-hour averaged TSP Monitoring at each monitoring station (AM1)	5 sets
• 24-hour averaged TSP Monitoring at each monitoring station (AM2)	5 sets
• 1-hour averaged TSP Monitoring at each monitoring station (AM1 and AM2)	15 sets
• Construction Noise Monitoring during Normal Weekdays at NM1	4 times
• Construction Noise Monitoring during Restricted Hours at NM1	4 times
• Joint Environmental Site Inspection	4 times
• Landscape & Visual Monitoring	1 time

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

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

No exceedance of Action and Limit Levels of construction noise was recorded.

No non-compliance event, environmental complaint and summon/prosecution was recorded during the reporting period.

Future Key Issues

Works to be undertaken in the next two months include:
- De-mobilize clear area at Production Shaft; and
- Construction of new intake chamber and pipe trench excavation and lateral supports at Sewage By-Pass Structure from Sea Front.

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

Wan Chai East Production and Drop Shafts

Summary of Construction Works undertaken during the Reporting Month

The major construction works undertaken during the reporting month include:

- Removal of noise shield at Production Shaft; and
- Replacement of safety grilles in connection channels is completed at Drop Shaft.

Environmental Monitoring and Audit Progress

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

• 24-hour averaged TSP Monitoring at AM3	5 sets
• 1-hour averaged TSP Monitoring at AM3	15 sets
• Construction Noise Monitoring during Normal Weekdays at NM2	4 times
• Construction Noise Monitoring during Restricted hours at NM2	4 times
• Joint Environmental Site Inspection	4 times
• Landscape & Visual Monitoring	1 time

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

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

No exceedance of Action and Limit Levels for construction noise during normal weekdays was recorded at the monitoring station during the reporting period.

Two exceedances of Limit Level during restricted hours were reported at NM2. Since no outdoor construction activities had taken place during the period with exceedance, it is considered that the exceedances were not due to the DC/2007/23 construction works. Details of the exceedances are presented in *Annex D7*.

No non-compliance event, environmental complaint and summon/prosecution was recorded during the reporting period.

Future Key Issues

Works to be undertaken in the next two months include:

- Backfilling at Production Shaft; and
- Breaking D wall & noise enclosure footings at Production Shaft.

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

Central Drop Shaft

Summary of Construction Works undertaken during the Reporting Month

The major construction works undertaken during the reporting month include:

- Boundary wall structure construction at Drop Shaft is completed; and
- Wall stone facing is 30% completed

Environmental Monitoring and Audit Progress

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

• 24-hour averaged TSP Monitoring at AM4_2	5 sets
• 1-hour averaged TSP Monitoring at AM4_2	15 sets
• Construction Noise Monitoring during Normal Weekdays at NM3	4 times
• Joint Environmental Site Inspection	2 time
• Landscape & Visual Monitoring	1 time

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

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

Three exceedances of Limit Level during normal weekdays were reported at NM3. Since no outdoor construction activities had taken place during the period with exceedance, it is considered that the exceedances were not due to the DC/2007/23 construction works. Details of the exceedances are presented in *Annex E7*.

No non-compliance event, environmental complaint and summon/prosecution was recorded during the reporting period.

Future Key Issues

Works to be undertaken in the next two months include:

- No major works.

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

Sai Ying Pun Junction Shaft

Summary of Construction Works undertaken during the Reporting Month

The major construction works undertaken during the reporting month include:

- Surface landscaping work at Production Shaft is 90% completed; and
- E&M installation at DO Chamber is 100% completed.

Environmental Monitoring and Audit Progress

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

• 24-hour averaged TSP Monitoring at AM5	5 sets
• 1-hour averaged TSP Monitoring at AM5	15 sets
• Construction Noise Monitoring during Normal Weekdays at NM4	4 times
• Construction Noise Monitoring during Restricted hours at NM4	4 times
• Joint Environmental Site Inspection	3 times
• Landscape & Visual Monitoring	1 time

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

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

No exceedance of Action and Limit Levels of construction noise was recorded during the normal weekdays and restricted hours of the reporting period. No exceedance of maximum limit of vibration level was recorded at the vibration monitoring station during the reporting period.

No non-compliance event, environmental complaint and summon/prosecution was recorded during the reporting period.

Future Key Issues

Works to be undertaken in the next two months include:

- Landscaping works at Junction Shaft; and
- Connection of water pipe by WSD.

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

1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) has been appointed by Gammon Construction Limited (the Contractor) as the Environmental Team (ET) to undertake an Environmental Monitoring and Audit (EM&A) programme for the Contract - *No. DC/2007/23 of Harbour Area Treatment Scheme Stage 2A (HATS2A) - Construction of Sewage Conveyance System from North Point to Stonecutters Island* (the Project).

1.1 PURPOSE OF THE REPORT

This is the seventy-forth EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from **1 to 31 January 2016**.

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 organisation and contact details.

Section 3: North Point Production and Drop Shafts

- **Construction Activities**
  It summarises the construction activities conducted during the reporting month.
- **Status of Environmental Approval Documents**
  It summarises the environmental documents submitted under the EP condition during the reporting month.
- **Environmental Monitoring Requirement**
  It summarises the environmental monitoring including monitoring parameters, programmes, methodologies, frequency, and locations, Action and Limit Levels, Event and Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.
- **Implementation Status on Environmental Mitigation Measures**
  It summarises the implementation of environmental protection measures during the reporting period.
- **Monitoring Results**
  It summarises the monitoring results obtained in the reporting period.
- **Environmental Site Inspection**
  It summarises the audit schedule of the weekly site inspections undertaken within the reporting period.

- **Environmental Non-conformance**
  It summarises any monitoring exceedances, environmental complaints and summons within the reporting period.
- **Future Key Issues**
  It summarises the impact forecast and monitoring schedule for the next three months.

Section 4: Wan Chai East Production and Drop Shafts

- **Construction Activities**
  It summarises the construction activities conducted during the reporting month.
- **Status of Environmental Approval Documents**
  It summarises the environmental documents submitted under the EP condition during the reporting month.
- **Environmental Monitoring Requirement**
  It summarises the environmental monitoring including monitoring parameters, programmes, methodologies, frequency, and locations, Action and Limit Levels, Event and Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.
- **Implementation Status on Environmental Mitigation Measures**
  It summarises the implementation of environmental protection measures during the reporting period.
- **Monitoring Results**
  It summarises the monitoring results obtained in the reporting period.
- **Environmental Site Inspection**
  It summarises the audit schedule of the weekly site inspections undertaken within the reporting period.
- **Environmental Non-conformance**
  It summarises any monitoring exceedances, environmental complaints and summons within the reporting period.
- **Future Key Issues**
  It summarises the impact forecast and monitoring schedule for the next three months.

Section 5: Central Drop Shaft

- **Construction Activities**
  It summarises the construction activities conducted during the reporting month.
- **Status of Environmental Approval Documents**
  It summarises the environmental documents submitted under the EP condition during the reporting month.
- **Environmental Monitoring Requirement**
  It summarises the environmental monitoring including monitoring parameters, programmes, methodologies, frequency, and locations, Action and Limit Levels, Event and Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

- **Implementation Status on Environmental Mitigation Measures**
  It summarises the implementation of environmental protection measures during the reporting period.
- **Monitoring Results**
  It summarises the monitoring results obtained in the reporting period.
- **Environmental Site Inspection**
  It summarises the audit schedule of the weekly site inspections undertaken within the reporting period.
- **Environmental Non-conformance**
  It summarises any monitoring exceedances, environmental complaints and summons within the reporting period.
- **Future Key Issues**
  It summarises the impact forecast and monitoring schedule for the next three months.

Section 6: Sai Ying Pun Junction Shaft

- **Construction Activities**
  It summarises the construction activities conducted during the reporting month.
- **Status of Environmental Approval Documents**
  It summarises the environmental documents submissions under the EP condition during the reporting month.
- **Environmental Monitoring Requirement**
  It summarises the environmental monitoring including monitoring parameters, programmes, methodologies, frequency, and locations, Action and Limit Levels, Event and Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.
- **Implementation Status on Environmental Mitigation Measures**
  It summarises the implementation of environmental protection measures during the reporting period.
- **Monitoring Results**
  It summarises the monitoring results obtained in the reporting period.
- **Environmental Site Inspection**
  It summarises the audit schedule of the weekly site inspections undertaken within the reporting period.
- **Environmental Non-conformance**
  It summarises any monitoring exceedances, environmental complaints and summons within the reporting period.
- **Future Key Issues**
  It summarises the impact forecast and monitoring schedule for the next three months.

Section 7: Stonecutters Island Production and Riser Shafts

- **Construction Activities**
  It summarises the construction activities conducted during the reporting month.

- **Status of Environmental Approval Documents**
  It summarises the environmental documents submitted under the EP condition during the reporting month.
- **Environmental Monitoring Requirement**
  It summarises the environmental monitoring including monitoring parameters, programmes, methodologies, frequency, and locations, Action and Limit Levels, Event and Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.
- **Implementation Status on Environmental Mitigation Measures**
  It summarises the implementation of environmental protection measures during the reporting period.
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  It summarises the monitoring results obtained in the reporting period.
- **Environmental Site Inspection**
  It summarises the audit schedule of the weekly site inspections undertaken within the reporting period.
- **Environmental Non-conformance**
  It summarises any monitoring exceedances, environmental complaints and summons within the reporting period.
- **Future Key Issues**
  It summarises the impact forecast and monitoring schedule for the next three months.

Section 8: Conclusions

2 PROJECT INFORMATION

2.1 BACKGROUND AND GENERAL SITE DESCRIPTION

The Project comprises the construction of production shafts, drop shafts and a riser shaft and approximately 12 km of tunnel excavation from North Point via Sai Ying Pun to Stonecutters Island. Shafts with 10 – 12 m diameter vary in depth from 140 m and 170 m below ground. Tunnel face area ranges from 16 m^2 to 23 m^2. Embedded drainage pipelines will be installed upon the completion of tunnel excavation.

Construction works to be carried out under this Contract include the following major items:

- construction of sewage conveyance system (SCS) from North Point Preliminary Treatment Works (NP PTW) to Stonecutters Island Sewage Treatment Works (SCI STW) via Wan Chai East Preliminary Treatment Works (WCE PTW), Central Preliminary Treatment Works (CEN PTW) and Fung Mat Street Sai Ying Pun (SYP) Junction Shaft;
- construction of drop shafts at NP PTW, WCE PTW and CEN PTW;
- construction of riser shafts at SCI STW;
- construction of a junction shaft at SYP;
- construction of temporary production shafts at NP PTW, WCE PTW and SCI STW to provide access for the construction of SCS;
- construction of connection channels, pipes, chambers and tunnel connecting the proposed drop shafts / riser shafts to the facilities of the preliminary treatment works / sewage treatment works;
- carrying out surveys of existing buildings, taking over of existing buildings and installation of new piezometers and ground settlement markers and subsequent vibration monitoring along the alignment of the SCS;
- miscellaneous building, civil, electrical and mechanical works; and
- landscape works.

The potential environmental impacts of the Project have been studied in the "*Harbour Area Treatment Scheme (HATS) Stage 2A*" (EIAO Register No: AEIAR-121/2008). The EIA was approved on 2 June 2008 under the *Environmental Impact Assessment Ordinance* (EIAO) and an updated Environmental Permit (EP-322/2008/G) for the works was granted on 9 May 2014. Under the requirements of Condition 4.1 of Environmental Permit EP-322/2008/G, an EM&A programme as set out in the EM&A Manual is required to be implemented.

The construction works of this Project commenced on 1 December 2009 and are scheduled to be completed by 2016.

The general layout plan of the Project is shown in *Annex A*.

2.2 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS AND REQUIRED SUBMISSIONS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since December 2009 are presented in *Table 2.1.*

Table 2.1 Summary of Environmental Licensing, Notification and Permit Status for the Contract [(a)]

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-322/2008/G	Throughout the Contract	Variation of the Permit granted on 9 May 2014
Notification of Construction Works under Air Pollution Control APC (Construction Dust) Regulation	--	04 August 2009 – 13 December 2016	Reference number for Notification Pursuant to APC (Construction Dust) Regulation: 371432
Waste Disposal (Charges for Disposal of Construction Waste) Regulation Approval of Application of Billing Account	7009167	Throughout the Contract	

Notes:

(a) The status on environmental licensing and permit for each worksite is discussed in the following sections.

(b) Marine deposits from all sites have been disposed of in accordance with their respective disposal methods (ie Type 1, 2, or 3 disposal methods), and no further marine deposit is anticipated to generate. When marine deposits are encountered, relevant dumping permits will be obtained and they will be disposed of properly.

Status of required submissions under the EP-322/2008/G during the reporting period is presented in *Table 2.2.*

Table 2.2 Status of Required EP Submission for all Sites

EP Condition	Submission	Submission Date
Condition 4.4	Submission of the seventy-third Monthly EM&A Report	13 January 2016

2.3 PROJECT ORGANISATION

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

3 NORTH POINT PRODUCTION AND DROP SHAFTS

3.1 CONSTRUCTION ACTIVITIES DURING THE REPORTING MONTH

A summary of the major construction activities undertaken in this reporting period is shown in *Table 3.1*. The locations of the construction activities are shown in *Annex C1*.

Table 3.1 Summary of Construction Activities Undertaken from 1 to 31 January 2016 at the North Point Production and Drop Shafts

Worksite	Construction Activities Undertaken
Production Shaft (Tunnel J)	• Backfilling was completed.
Drop Shaft	• No major works.

3.2 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project which are valid during the reporting month is presented in *Table 3.2*.

Table 3.2 Summary of Environmental Licensing, Notification and Permit Status at North Point Production and Drop Shafts

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Wastewater Discharge License	North Point PTW Drop Shaft WT00019809-2014	22 August 2014 - 31 October 2019	--
	Discharge License (Public Car Parking Area, North of North Point Preliminary Treatment Plant) WT00012705-2012	12 April 2012 – 30 April 2017	--
	North Point Production Shaft WT00020821-2015	9 February 2015 – 31 March 2020	--
Chemical Waste Producer Registration	North Point Production Shaft 5213-153-G2484-01	Throughout the Contract	--
	North Point PTW Drop Shaft 5213-153-G2483-01	Throughout the Contract	--
Construction Noise Permit CNP	North Point Production Shaft GW-RS0934-15	10 September 2015 – 9 March 2016	--
	Ka Wah Centre GW-RS0969-15	10 September 2015 – 9 March 2016	--

3.3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.3.1 Air Quality Monitoring

Monitoring Location

In accordance with the EM&A Manual, 24-hour and 1-hour averaged Total Suspended Particulates (TSP) levels should be conducted at designated monitoring stations during construction phase. Since access to some of the proposed monitoring locations stated in the EM&A Manual were denied or not available, alternative locations were proposed and agreed by the Engineer Representative (ER) and the Independent Environmental Checker (IEC). Owing to the security issue with the High Volume Sampler (HVS) at the existing monitoring location (rooftop of Water Supplies Department office) especially under adverse weather conditions, an alternative location, which is one floor below the existing rooftop, was identified and agreed with the ER and IEC in July 2010.

The construction air quality monitoring stations for this Contract are listed in *Table 3.3* and shown in *Annex C2*.

Table 3.3 Construction Phase Air Monitoring Location at North Point Production and Drop Shafts

Worksite	Construction Air Quality Monitoring Stations			
	ID in EM&A Manual	**ID**	**Location**	**Remark**
North Point	-	AM1	Chan's Creative School (formerly known as Madam Chan Wai Chow Memorial School)	• Access for station setup to K.Wah Centre (CM_NP1) and Tin Chiu Street Children's Playground (CM_NP3) was rejected.
	CM_NP2	AM2	Hong Kong & Islands Regional Office, Water Supplies Department	

Monitoring Parameters, Frequency and Programme

Air quality monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual (*Table 3.4*). The monitoring programme for this reporting period is shown in *Annex C3*.

Table 3.4 TSP Monitoring Parameter and Frequency

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

Monitoring Equipment

Continuous 24-hour averaged and three 1-hour averaged TSP monitoring were performed using HVS with appropriate sampling inlets installed and 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)*. The equipment that was deployed for the 24-hour and 1-hour averaged TSP monitoring is listed in *Annex C5*.

Monitoring Methodology

Installation

The setup locations of the HVSs at monitoring stations were listed in *Table 3.3*. 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 2 m 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 did not vary by more than ± 3 °C; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS (the Hong Kong Laboratory Accreditation Scheme) accredited laboratory, implements 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 the 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;
- the 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 the aluminium strip;
- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flow rate record sheet was set into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 - 1.37 m^3min^{-1} which were within the range specified in the EM&A Manual (ie 0.6 – 1.7 m^3min^{-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 so that only surfaces with collected particulate matter were in contact;
- the filter paper 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, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply; and
- the flow rate of each HVS with a 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 H*.

Wind Data

The nearest weather station to North Point Production and Drop Shafts is Kai Tak Station. The average wind data (wind speed and wind direction) during

the monitoring period were obtained from the meteorological station at Kai Tak of the Hong Kong Observatory (HKO) and are presented in *Annex C5*.

Action and Limit Levels

The Action and Limit levels have been established and are presented in *Table 3.5*.

Table 3.5 Action and Limit Levels for Air Quality at North Point Production and Drop Shafts

Parameter	Air Monitoring Station	Action Level, μgm^{-3}	Limit Level, μgm^{-3}
24-hour averaged TSP	AM1	185	260
	AM2	182	260
1-hour averaged TSP	AM1	340	500
	AM2	352	500

Event and Action Plan

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the Event and Action Plan (EAP) presented in *Annex I*.

3.3.2 Noise Monitoring

Monitoring Location

In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was denied or not available; alternative locations were proposed and agreed by the ER and the IEC. Construction activities were conducted at restricted hours (1900 – 2300 on all days and 0700 – 2300 on general holidays and Sundays) during the reporting month. Chan's Creative School (the noise monitoring station NM1) is not accessible during its closing hours (from 1900 to 0700 on normal week days and from 0000 to 2400 on public holidays as well as Sundays). During these hours, noise monitoring would be conducted on the pedestrian walkway adjacent to the school boundary along Tin Chiu Street, which was agreed by the ER and the IEC. The construction noise monitoring location for this Contract is listed in *Table 3.6* and shown in *Annex C2*.

Table 3.6 Construction Phase Noise Monitoring Station at North Point Production and Drop Shafts

Worksite	Proposed Construction Noise Monitoring Station				
	ID in EM&A Manual	ID	Location	Type of Measurement	Remark
North Point	M1	NM1	Rooftop of Chan's Creative School (formerly known as Madam Chan Wai Chow Memorial School)	Façade	0700 to 1900 on Monday to Saturday

Worksite	Proposed Construction Noise Monitoring Station			
	ID in EM&A Manual	ID Location	Type of Measurement	Remark
		Pedestrian walkway adjacent to Chan's Creative School (formerly known as Madam Chan Wai Chow Memorial School) boundary along Tin Chiu Street	Façade	1900 – 2300 on all days and 0700 – 2300 on general holidays and Sundays

Monitoring Parameters, Frequency and Programme

Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. Additional noise monitoring was also conducted as per required the EM&A Manual when works were carried out during the school closing periods. The monitoring programme for this reporting period is shown in *Annex C3*.

The construction noise levels were measured in terms of A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). $L_{Aeq(30min)}$ was used as the monitoring parameter for the period between 0700 – 1900 hours on normal weekdays, and $L_{Aeq\ (5min)}$ was used as the monitoring parameter for all the other periods. Supplementary information for data auditing (two statistical sound levels L_{10} and L_{90} which are the levels exceeded for 10 and 90 percent of the time respectively) was also monitored for reference. The measured noise levels were logged every 5 minutes throughout the impact monitoring period.

Monitoring Equipment and Methodology

Construction noise measurements were conducted in accordance with the calibration and measurement procedures as stated in *Annex – General Calibration and Measurement Procedures* of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*) issued under the *Noise Control Ordinance* (*NCO*) (Cap.400).

The sound level meters and calibrator used for the noise measurement, as listed in *Annex C6*, comply with IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in *Annex H*.

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency.

Action and Limit Levels

The Action and Limit (A/L) Levels for noise monitoring during different monitoring periods are summarised in *Table 3.7*.

Table 3.7 ***Action and Limit Levels for Noise Monitoring at North Point Production and Drop Shafts***

Noise Monitoring Location	Action Level	Limit Level		Remark
		Measurement Parameter	Limit Level (dB(A))	
NM1	When one documented complaint is received	$L_{Aeq(30min)}$	70	During normal teaching period
		$L_{Aeq(30min)}$	69 (a)	During the school examination period
		$L_{Aeq(30min)}$	75	During school holidays
		$L_{Aeq(5mins)}$	70	Evening (1900-2300); and Sundays and public holidays (0700-2300)
		$L_{Aeq(5mins)}$	55	Night-time (2300-0700)

Note:

(a) With reference to the Baseline Monitoring Report, the average $L_{Aeq,30min}$ measured at NM1 between 0700 and 1900 hours is 69.0 dB(A), exceeded the Limit Level of daytime construction noise during the examination periods (65 dB(A)). Hence, it was adopted as the Limit Level during the examination period at NM1.

Event and Action Plan

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the EAP presented in *Annex I*.

3.3.3 Cultural Heritage

No vibration monitoring is required for this reporting month as no blasting of tunnel /shaft works was carried out in the vicinity of the historical buildings listed in the EM&A Manual.

3.3.4 Landscape and Visual Monitoring

In accordance with the EM&A Manual, landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures are fully achieved. The landscape and visual monitoring was carried out on site as part of the environmental site inspection. The monitoring procedures and criteria as described in the EM&A Manual were adopted.

Event and Action Plan

The EAP for landscape and visual monitoring is presented in *Annex I*.

3.4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented environmental mitigation measures and fulfilled requirements as stated in the EIA Report, Environmental Permit and EM&A Manual. The implementation status during the reporting period is summarised in *Annex C4*.

3.5 MONITORING RESULTS

3.5.1 Air Quality

A total of 5 sets of 24-hour averaged and 15 sets of 1-hour averaged TSP measurements were carried out at AM1 and 5 sets of 24-hour averaged and 15 sets of 1-hour averaged TSP measurements were carried out at AM2 during the reporting period. The weather conditions during the monitoring period varied from cloudy to sunny. The monitoring data for 24-hour and 1-hour averaged TSP together with wind data and graphical presentations are presented in *Annex C5*.

Other potential emission source in the vicinity (e.g. vehicle emissions) of the monitoring stations (AM1 to AM2) may also contribute to the local air quality. No exceedance of Action and Limit Levels of 1-hr and 24-hr TSP was recorded during the reporting period.

3.5.2 Noise

A total of 4 sets of 30-minute construction noise measurements were carried out at the monitoring station NM1 during normal weekdays of the reporting period. The local impacts at normal hours during weekdays near the monitoring stations of NM1 included contributions from traffic noise from King's Road, Java Road and nearby roads; and noise from the ringing of school bells; students' activities and the construction works undertaken by other parties in the vicinity. No exceedance of the noise A/L Levels was recorded during normal working hours.

4 sets of 3 x 5-minute construction noise measurements were carried out at NM1 during between 1900 and 0700 hours on weekdays and any time on Sundays and public holidays on 5, 10, 21 and 24 January 2016 and no exceedance of the A/L levels was recorded.

The monitoring results together with their graphical presentations are presented in *Annex C6*.

3.5.3 Landscape and Visual

Implementation and maintenance of landscape and visual mitigation measures were fully implemented and no major finding was made during the reporting month.

3.5.4 Cultural Heritage

No vibration monitoring was conducted for this reporting month as the blasting of tunnel/ shaft works has not commenced in the vicinity of the historical buildings listed in the EM&A Manual.

3.5.5 Waste Management

Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials, and marine deposit. Non-inert

C&D materials are made up of general refuse, steel and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. The inert C&D materials generated from this Project were disposed of at Tuen Mun Area 38/Tseung Kwan O Area 137 Fill Bank/Chai Wan Barging Point. The non-inert C&D materials other than steel and paper/cardboard packaging were disposed of at SENT Landfill. Steel, paper / cardboard packaging waste and plastics were sent to recyclers for recycling. No marine deposits was generated during the reporting month

The quantity of different types of wastes generated in the reporting month has been shown in the Monthly Summary Waste Flow Table prepared by the Contractor (*Annex J*).

3.6 ENVIRONMENTAL SITE INSPECTION

Weekly site inspections were carried out by the representatives of the Contractor, Engineer and ET. Site inspections were conducted on 7, 14, 20 and 27 January 2016. The representative of the IEC joined the site inspection on 27 January 2016. There was no non-compliance recorded during the site inspections.

Observations during site inspections and follow-up actions in the reporting period are presented in *Annex K*. All the follow-up actions requested by IEC and Contractor's ET during the site inspection were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting period.

3.7 ENVIRONMENTAL NON-CONFORMANCE

3.7.1 Summary of Monitoring Exceedance

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

No exceedance of the Action and Limit Levels for noise monitoring during normal working hours was recorded.

3.7.2 Summary of Environmental Non-Compliance/ Complaint/ Summons/ Prosecution

No non-compliance event, complaint, summon and prosecution was recorded during the reporting period. The cumulative complaint /summon/prosecution log is shown in *Annex C7*.

3.8 FUTURE KEY ISSUES

3.8.1 Key Issues for the Coming Months

Works to be undertaken in the coming two monitoring periods are summarised in *Table 3.8*.

Table 3.8 Construction Works to be undertaken in the Coming Two Months at North Point Production and Drop Shafts

Worksite	Construction Activities to be Undertaken
Production Shaft (Tunnel J)	• De-mobilize clear area.
Drop Shaft	• No major works.
Sewage By-Pass Structure from Sea Front	• Construction of new intake chamber; and • Pipe trench excavation and lateral supports.

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

3.8.2 Monitoring Schedule for the Next Month

The tentative schedule of TSP and noise monitoring for the next reporting period is presented in *Annex C3*. Environmental monitoring will be conducted at the same monitoring locations in the reporting period.

3.8.3 Construction Programme for Next Month

The most up-to-date construction programme for the Project is presented in *Annex C8*.

4 WAN CHAI EAST PRODUCTION AND DROP SHAFTS

4.1 CONSTRUCTION ACTIVITIES DURING THE REPORTING MONTH

A summary of the major construction activities undertaken in this reporting period is shown in *Table 4.1*. The locations of the construction activities are shown in *Annex D1*.

Table 4.1 Summary of Construction Activities undertaken from 1 to 31 January 2016 at the Wan Chai East Production and Drop Shafts

Worksite	Construction Activities Undertaken
Production Shaft (Tunnel K and Tunnel J)	• Removal of noise shield is completed.
Drop Shaft	• Replacement of safety grilles in connection channels is completed.

4.2 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project which are valid during the reporting month is presented in *Table 4.2*.

Table 4.2 Summary of Environmental Licensing, Notification and Permit Status at Wan Chai East Production and Drop Shafts

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Wastewater Discharge License	Wan Chai East Production Shaft and Drop Shaft WT00019901-2014	8 September 2014 - 31 October 2019	--
Chemical Waste Producer Registration	Wan Chai East Production Shaft and Drop Shaft 5213-135-G2308-03	Throughout the Contract	--
Construction Noise Permit (CNP)	Wan Chai East Production Shaft GW-RS1023-155	6 October 2015 – 5 April 2016	--

4.3 ENVIRONMENTAL MONITORING REQUIREMENTS

4.3.1 *Air Quality Monitoring*

Monitoring Location

In accordance with the EM&A Manual, 24-hour and 1-hour averaged TSP levels should be conducted at designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was denied or not available, alternative locations, therefore, were proposed and agreed by the ER and the IEC. The construction air quality monitoring station for this Contract is listed in *Table 4.3* and shown in *Annex D2*.

Table 4.3 ***Construction Phase Air Monitoring Location at Wan Chai East Production and Drop Shafts***

Worksite	Construction Air Quality Monitoring Station			
	ID in EM&A Manual	ID	Location	Remark
Wan Chai East	-	AM3	Rooftop of Wan Chai East PTW	• The rooftop of the Society for the Prevention of Cruelty to Animals building (CM_WC1) was so crowded with existing facilities (eg water tanks) that the setup of HVSs for baseline monitoring was not feasible.

Monitoring Parameters, Frequency and Programme

Air quality monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual (*Table 4.4*). The monitoring programme for this reporting period is shown in *Annex D3*.

Table 4.4 ***TSP Monitoring Parameter and Frequency at Wan Chai East Production and Drop Shafts***

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

Monitoring Equipment

Continuous 24-hour and 1-hour averaged TSP monitoring were performed using HVS with appropriate sampling inlets installed, located at the designated monitoring station. 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)*. The equipment that was deployed for the 24-hour and 1-hour averaged TSP monitoring is listed in *Annex D5*.

Monitoring Methodology

Installation

The setup location of the HVS at monitoring stations was listed in *Table 4.3*. The HVS was free-standing with no obstruction.

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

- appropriate support to secure the sampler against gusty wind was provided at AM3;
- a minimum of 2 m 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 to 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 did not vary by more than ± 3 °C; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implements 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 the 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;
- the 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 the aluminium strip;
- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flow rate record sheet was set into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 - 1.37 m^3min^{-1} which were within the range specified in the EM&A Manual (ie 0.6 – 1.7 m^3min^{-1});
- the programmable timer was set for a sampling period of 24 hours ± 1 hour, and the starting time, weather condition and 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 so that only surfaces with collected particulate matter were in contact;
- the filter paper 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, such as replacing motor brushes routinely and checking electrical wiring 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 record for the HVS is given in *Annex H*.

Wind Data

The nearest weather station to Wan Chai East Production and Drop Shafts is located at King's Park. The average wind data (wind speed and wind direction) during the monitoring period were obtained from the meteorological station at King's Park of the HKO and is presented in *Annex D5*.

Action and Limit Levels

The Action and Limit levels have been established and are presented in *Table 4.5*.

Table 4.5 Action and Limit Levels for Air Quality at Wan Chai East Production and Drop Shafts

Parameter	Air Monitoring Station	Action Level, μgm^{-3}	Limit Level, μgm^{-3}
24-hour averaged TSP	AM3	181	260
1-hour averaged TSP	AM3	355	500

Event and Action Plan (EAP)

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the EAP presented in *Annex I*.

4.3.2 Noise Monitoring

Monitoring Location

In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was denied or not available, alternative locations were proposed and agreed by the ER and IEC. The construction noise monitoring location for this Contract is listed in *Table 4.6* and shown in *Annex D2*.

Table 4.6 Construction Phase Noise Monitoring Station at Wan Chai East Production and Drop Shafts

Worksite	Construction Noise Monitoring Station				
	ID in EM&A Manual	ID	Location	Type of Measurement	Remark
Wan Chai East	-	NM2	Rooftop of Hyde Building	Façade	• No guaranteed access for equipment set-up due to the non-existence of a caretaker of Kei Wah Building (M2) • Alternative location, NM2, is located next to Kei Wah Building and is also the background noise monitoring station in the HATS2A EIA study.

Monitoring Parameters, Frequency and Programme

Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. Additional noise monitoring was also conducted as per required the EM&A Manual when works were carried out during restricted periods. The monitoring programme for this reporting period is shown in *Annex D3*.

The construction noise levels were measured in terms of A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). $L_{Aeq(30min)}$ was used as the monitoring parameter for the time period between 0700 – 1900 hours on normal weekdays, and $L_{Aeq\ (5min)}$ was used as the monitoring parameter for all restricted periods. Supplementary information for data auditing (two statistical sound levels L_{10} and L_{90}which are the levels exceeded for 10 and 90 percent of the time respectively) was also recorded during the monitoring period for reference. The measured noise levels were logged every 5 minutes throughout the impact monitoring period.

Monitoring Equipment and Methodology

Construction noise measurements were conducted in accordance with the calibration and measurement procedures as stated in *Annex – General*

Calibration and Measurement Procedures of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*) issued under the *Noise Control Ordinance* (*NCO*) (Cap.400).

The sound level meters and calibrator used for the noise measurement, as listed in *Annex D6*, comply with IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in *Annex H*.

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency.

Action and Limit Levels

The Action and Limit (A/L) Levels for noise monitoring during different monitoring periods are summarised in *Table 4.7*.

Table 4.7 Action and Limit Levels for Noise Monitoring at Wan Chai East Production and Drop Shafts

Noise Monitoring Location	Action Level	Limit Level		Remark
		Measurement Parameter	Limit Level (dB(A))	
NM2	When one documented complaint is received	$L_{Aeq(30min)}$	75	Normal working hours during weekdays
		$L_{Aeq(5min)}$	70	Evening (1900-2300); and Sundays and public holidays (0700-2300)
		$L_{Aeq(5min)}$	55	Night-time (2300-0700)

Event and Action Plan (EAP)

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the EAP presented in *Annex I*.

4.3.3 Cultural Heritage

No vibration monitoring is required for this reporting month as blasting of tunnel / shaft works was not carried out in the vicinity of the historical buildings listed in EM&A manual.

4.3.4 Landscape and Visual Monitoring

In accordance with the EM&A Manual, landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures are fully achieved. The landscape and visual monitoring was carried out on site within the environmental site inspection. The monitoring procedures and criteria as described in the EM&A Manual were adopted.

Event and Action Plan

The EAP for landscape and visual monitoring is presented in *Annex I*.

4.4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented environmental mitigation measures and fulfilled the requirements as stated in the EIA Report, Environmental Permit and EM&A Manual. The implementation status during the reporting period is summarised in *Annex D4*.

4.5 MONITORING RESULTS

4.5.1 *Air Quality*

A total of 5 sets of 24-hour averaged and 15 sets of 1-hour averaged TSP measurements were made at AM3 during the reporting period. The weather conditions during the monitoring period varied from rainy to sunny. The monitoring data for 24-hour and 1-hour averaged TSP, together with the wind data and graphical presentations, are presented in *Annex D5*.

Other potential emission sources (e.g. vehicle emissions) in the vicinity of the monitoring station AM3 may also affect local air quality. No exceedance of Action and Limit Levels of 1-hr and 24-hr averaged TSP was recorded during the reporting period.

4.5.2 *Noise*

A total of 4 sets of 30-minute construction noise measurements were carried out at monitoring station NM2 during normal working hours on weekdays of the reporting period. No exceedance of Action and Limit Levels for noise monitoring during normal working hours was recorded.

4 sets of 3 x 5-minute construction noise measurements were carried out during restricted hours (between 1900 and 0700 hours on weekdays, and any time on Sundays and public holidays) on 5, 10, 21 and 24 January 2016. Noise measurements during restricted hours on 5 and 21 January 2016 exceeded the limit level at NM2. Investigation had been conducted to review the potential causes for the noise level recorded.

The monitoring results, together with their graphical presentations, are presented in *Annex D6*. A summary of the exceedances investigation results is presented in *Annex D7*.

4.5.3 *Landscape and Visual*

Implementation and maintenance of landscape and visual mitigation measures are fully achieved and no major finding was made during the reporting month.

4.5.4 Cultural Heritage

No vibration monitoring is required for this reporting month as blasting of tunnel/shaft works was not carried out in the vicinity of the historical buildings listed in EM&A manual.

4.5.5 Waste Management

Waste generated from this Project includes inert C&D materials, non-inert C&D materials, and marine deposit. Non-inert C&D materials are made up of general refuse, steel and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. The inert C&D materials generated from the Project were disposed of at Tuen Mun Area 38/Tseung Kwan O Area 137 Fill Bank/Chai Wan Barging Point. The non-inert C&D materials other than steel and paper/cardboard packaging were disposed of at SENT Landfill. Steel, paper / cardboard packaging waste and plastics were sent to recyclers for recycling. No marine deposit was generated during the reporting month.

The quantity of different types of wastes generated in the reporting month has been shown in the Monthly Summary Waste Flow Table prepared by the Contractor (*Annex J*).

4.6 ENVIRONMENTAL SITE INSPECTION

Weekly site inspections were carried out by representatives of the Contractor, Engineer and ET. Site inspections were conducted on 7, 14, 20 and 27 January 2016. The representative of the IEC joined the site inspection on 27 January 2016. There was no non-compliance recorded during the site inspections.

Observations during site inspections and follow-up actions in the reporting period are presented in *Annex K*. All the follow-up actions requested by IEC and Contractor's ET during the site inspection were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting period.

4.7 ENVIRONMENTAL NON-CONFORMANCE

4.7.1 Summary of Monitoring Exceedance

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

No exceedance of the Action and Limit Levels for noise monitoring during normal working hours was recorded.

Two exceedances of Limit Level during restricted hours were reported at NM2. Since no outdoor construction activities had taken place during the

period with exceedance, it is considered that the exceedances were not due to the DC/2007/23 construction works. Details of the exceedances are presented in *Annex D7*.

4.7.2 Summary of Environmental Non-Compliance/Complaint/Summons/ Prosecution

No non-compliance event, complaint, summons, and prosecution were recorded during the reporting period. The cumulative complaint /summons/prosecution log is shown in *Annex D8*.

4.8 FUTURE KEY ISSUES

4.8.1 Key Issues for the Coming Month

Works to be undertaken for the coming two monitoring periods are summarised in *Table 4.8.*

Table 4.8 Construction Works to be Undertaken in the Coming Two Months at Wan Chai East Production and Drop Shafts

Worksite	Construction Activities to be Undertaken
Production Shaft (Tunnel K and Tunnel J)	• Backfill Shaft.; and • Breaking D wall & noise enclosure footings.
Drop Shaft	• No major works.

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

4.8.2 Monitoring Schedule for Next Month

The tentative schedule of TSP and noise monitoring for the next reporting period is presented in *Annex D3*. Environmental monitoring will be conducted at the same monitoring locations in the reporting period.

4.8.3 Construction Programme for the Next Month

The most up-to-date construction programme for the Project is presented in *Annex D9***.**

5 CENTRAL DROP SHAFT

5.1 CONSTRUCTION ACTIVITIES DURING THE REPORTING MONTH

A summary of the major construction activities undertaken in this reporting period is shown in *Table 5.1*. The location of the construction activities is shown in *Annex E1*.

Table 5.1 Summary of Construction Activities Undertaken from 1 to 31 January 2016 at Central Drop Shaft

Construction Activity Undertaken
• Boundary wall structure construction is completed; and • Wall stone facing is 30% completed.

5.2 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project which are valid during the reporting month is presented in *Table 5.2* below.

Table 5.2 Summary of Environmental Licensing, Notification and Permit Status at Central Drop Shaft

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Wastewater Discharge License	Central PTW Drop Shaft WT00020031-2014	30 September 2014 – 31 October 2019	--
Chemical Waste Producer Registration	Central PTW Drop Shaft 5213-115-G2347-06	Throughout the Contract	--
Construction Noise Permit CNP	Central PTW Drop Shaft GW-RS0833-15	19 August 2015 – 18 February 2016	--

5.3 ENVIRONMENTAL MONITORING REQUIREMENTS

5.3.1 *Air Quality Monitoring*

Monitoring Location

In accordance with the EM&A Manual, 24-hour and 1-hour averaged TSP levels should be conducted at designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was denied or not available, alternative locations were proposed and agreed by the ER and IEC. The construction air quality monitoring station for this Contract is listed in *Table 5.3* and shown in *Annex E2*.

Table 5.3 Construction Phase Air Monitoring Location at Central Drop Shaft

Worksite	Construction Air Quality Monitoring Station

	ID in EM&A Manual	ID	Location	Remark
Central	-	AM4_2	A Location within the DSD Central PTW	• Access to Sheung Wan Fire Station (CM_C1) was declined. • All possible locations along Connaught Road West and Connaught Road East have been exhausted and no suitable location was identified owing to the rejection by the premise owner, security reasons, absence of guaranteed access or inaccessibility. AM4 was the alternative location. • Since air monitoring station AM4 has to return to DSD for other Work Contract, AM4_2 is the alternative location to replace AM4.

Monitoring Parameters, Frequency and Programme

Air quality monitoring has been conducted in accordance with the requirements stipulated in the EM&A Manual (*Table 5.4*). The monitoring programme for this reporting period is shown in *Annex E3*.

Table 5.4 TSP Monitoring Parameter and Frequency at Central Drop Shaft

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

Monitoring Equipment

Continuous 24-hour and 1-hour averaged TSP monitoring were performed using HVS with appropriate sampling inlets installed, located at the designated monitoring station. 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)*. The equipment that was deployed for the 24-hour and 1-hour averaged TSP monitoring is listed in *Annex E5*.

Monitoring Methodology

Installation

The setup location of the HVS was listed in *Table 5.3*. The HVS was free-standing with no obstruction.

The following criteria have been considered in the installation of the HVSs:

- appropriate support to secure the samplers against gusty wind were provided at AM4_2;

- a minimum of 2 m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues were nearby;
- airflow around the sampler was unrestricted; and
- permission was obtained to set up the samplers and to 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 did not vary by more than ± 3 °C; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implements 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 the 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;
- the 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 the aluminium strip;
- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flow rate record sheet was set into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 – 1.37 m^3min^{-1} which were within the range specified in the EM&A Manual (ie 0.6 – 1.7 m^3min^{-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 so that only surfaces with collected particulate matter were in contact;
- the filter paper 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, such as replacing motor brushes routinely and checking electrical wiring 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 record for the HVS is given in *Annex H*.

Wind Data

The nearest weather stations to Central Drop Shaft are located at King's Park and Green Island. The average wind data (wind speed and wind direction) during the monitoring period were obtained from the meteorological stations at Green Island and King's Park of the HKO and is presented in *Annex E5*.

Action and Limit Levels

The Action and Limit levels have been established and are presented in *Table 5.5*.

Table 5.5 Action and Limit Levels for Air Quality at Central Drop Shaft

Parameter	Air Monitoring Station	Action Level, μgm^{-3}	Limit Level, μgm^{-3}
24-hour averaged TSP	AM4_2	211	260
1-hour averaged TSP	AM4_2	393	500

Event and Action Plan (EAP)

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the EAP presented in *Annex I*.

5.3.2 Noise Monitoring

Monitoring Location

In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was denied or not available, alternative locations were proposed and agreed by the ER and the IEC. The construction noise monitoring locations for this Contract are listed in *Table 5.6* and shown in *Annex E2*.

Table 5.6 Construction Phase Noise Monitoring Station at Central Drop Shaft

Worksite	**Construction Noise Monitoring Station**				
	ID in EM&A Manual	**ID**	**Location**	**Type of Measurement**	**Remark**
Central	-	NM3	Rooftop of Goldfield Building	Façade	Chi Cheung Building (M4) is not accessible.

Monitoring Parameters, Frequency and Programme

Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. Additional noise monitoring was also conducted as per required in the EM&A Manual when works were carried out during restricted periods. The monitoring programme for this reporting period is shown in *Annex E3*.

The construction noise levels were measured in terms of A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). $L_{Aeq(30min)}$ was used as the monitoring parameter for the time period in between 0700 – 1900 hours on normal weekdays, and $L_{Aeq\ (5min)}$ was used as the monitoring parameter for all restricted periods. Supplementary information for data auditing (two statistical sound levels L_{10} and L_{90} which are the levels exceeded for 10 and 90 percent of the time respectively) was also recorded during the monitoring for reference. The measured noise levels were logged every 5 minutes throughout the impact monitoring period.

Monitoring Equipment and Methodology

Construction noise measurements were conducted in accordance with the calibration and measurement procedures as stated in *Annex – General Calibration and Measurement Procedures* of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*) issued under the *Noise Control Ordinance* (*NCO*) (Cap.400).

The sound level meters and calibrator used for the noise measurement, as listed in *Annex E6*, comply with IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in *Annex H*.

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency.

Action and Limit Levels

The Action and Limit (A/L) Levels for noise monitoring during different monitoring periods are summarised in *Table 5.7*.

Table 5.7 Action and Limit Levels for Noise Monitoring at Central Drop Shaft

Noise Monitoring Location	Action Level	Limit Level		Remark
		Measurement Parameters	Limit Level (dB(A))	
NM3	When one documented complaint is received	$L_{Aeq(30min)}$	75	Normal working hours during weekdays
		$L_{Aeq(5min)}$	70	Evening (1900-2300); and Sundays and public holidays (0700-2300)
		$L_{Aeq(5min)}$	55	Night-time (2300-0700)

Event and Action Plan (EAP)

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the EAP presented in *Annex I*.

5.3.3 Cultural Heritage

No vibration monitoring is required for this reporting month as no blasting of tunnel / shaft works was carried out in the vicinity of the historical buildings listed in the EM&A Manual.

5.3.4 Landscape and Visual Monitoring

In accordance with the EM&A Manual, landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures are fully achieved. The landscape and visual monitoring was carried out on site within the environmental site inspection. The monitoring procedures and criteria as described in the EM&A Manual were adopted.

Event and Action Plan

The EAP for landscape and visual monitoring is presented in *Annex I*.

5.4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented environmental mitigation measures and fulfilled requirements as stated in the EIA Report, Environmental Permit and EM&A Manual. The implementation status during the reporting period is summarised in *Annex E4*.

5.5 MONITORING RESULTS

5.5.1 Air Quality

A total of 5 sets of 24-hour averaged and 15 sets of 1-hour averaged TSP measurements have been carried out at AM4_2 during the reporting period. The weather condition during the monitoring period varied from fine to sunny. The monitoring data for 24-hour and 1-hour averaged TSP together with the wind data and graphical presentations are presented in *Annex E5*.

Other potential emission sources in the vicinity (e.g. vehicle emissions) of the monitoring stations AM4_2 may also contribute to the local air quality. No exceedance of Action and Limit Levels of 1-hr and 24-hr averaged TSP was recorded during the reporting period.

5.5.2 Noise

A total of 4 sets of 30-minute construction noise measurements were carried out at the monitoring station NM3 during normal weekdays of the reporting period. The monitoring results together with their graphical presentations are presented in *Annex E6*. The local impacts observed near the monitoring stations of NM3 were due to traffic noise from Connaught Road Central.

Noise measurements during normal weekdays on 5, 21 and 27 January 2016 exceeded the limit level at NM3. Investigation had been conducted to review the potential causes for the noise level recorded. A summary of the exceedances investigation results is presented in *Annex E7*.

5.5.3 Landscape and Visual

Implementation and maintenance of landscape and visual mitigation measures are fully achieved and no major finding was made during the reporting month.

5.5.4 Cultural Heritage

No vibration monitoring was conducted for this reporting month as the blasting of tunnel / shaft works has not started in the vicinity of the historical buildings listed in the EM&A Manual.

5.5.5 Waste Management

Waste generated from this Project includes inert C&D materials, non-inert C&D materials, and marine deposit. Non-inert C&D materials are made up of general refuse, steel and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. The inert C&D materials generated from this Project were disposed of at Tuen Mun Area 38/Tseung Kwan O Area 137 Fill Bank/Chai Wan Barging Point. The non-inert C&D materials other than steel and paper/cardboard packaging were disposed of at SENT Landfill. Steel, paper

/ cardboard packaging waste and plastics were sent to recyclers for recycling. No marine deposits were generated during the reporting month.

The quantity of different types of wastes generated in the reporting month has been shown in the Monthly Summary Waste Flow Table prepared by the Contractor (*Annex J*).

5.6 ENVIRONMENTAL SITE INSPECTION

Weekly site inspections were carried out by the representatives of the Contractor, Engineer and ET. Site inspections were conducted on 7 and 14 January 2016. Because of the scheduled SSEMC meeting on 27 January 2016 immediately after the joint inspection, inspection was not arranged for the Central site on that day. There was no non-compliance recorded during the site inspections.

Observations during site inspections and follow-up actions in the reporting period are presented in *Annex K*. All the follow-up actions requested by IEC and Contractor's ET during the site inspection were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting period.

5.7 ENVIRONMENTAL NON-CONFORMANCE

5.7.1 Summary of Monitoring Exceedance

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

Three exceedances of Limit Level during normal weekdays were reported at NM3. Since no outdoor construction activities had taken place during the period with exceedance, it is considered that the exceedances were not due to the DC/2007/23 construction works. Details of the exceedances are presented in *Annex E7*.

5.7.2 Summary of Environmental Non-Compliance/ Complaint/ Summon/ Prosecution

No non-compliance event, complaint, summon, and prosecution was recorded during the reporting period.

The cumulative complaint/ summon/ prosecution log is shown in *Annex E8*.

5.8 FUTURE KEY ISSUES

5.8.1 Key Issues for the Coming Month

Works to be undertaken in the coming two monitoring periods are summarised in *Table 5.8*.

Table 5.8 ***Construction Works to be Undertaken in the Coming Two Months at Central Drop Shaft***

Construction Activities to be Undertaken
• No major works.

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

5.8.2 Monitoring Schedule for Next Month

The tentative schedule of TSP and noise monitoring for the next reporting period is presented in *Annex E3*. Environmental monitoring will be conducted at the same monitoring locations in the reporting period.

5.8.3 Construction Programme for the Next Month

The most up-to-date construction programme for the Project is presented in *Annex E9*.

6 SAI YING PUN JUNCTION SHAFT

6.1 CONSTRUCTION ACTIVITIES DURING THE REPORTING MONTH

A summary of the major construction activities undertaken in this reporting period is shown in *Table 6.1*. The location of the construction activities is shown in *Annex F1*.

Table 6.1 Summary of Construction Activities Undertaken from 1 to 31 January 2016 at the Sai Ying Pun Junction Shaft

Construction Activities Undertaken
• Surface landscaping work is 90% completed; and • E&M installation is 100 % completed.

6.2 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project which are valid during the reporting month is presented in *Table 6.2*.

Table 6.2 Summary of Environmental Licensing, Notification and Permit Status at Sai Ying Pun Junction Shaft

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Wastewater Discharge License	Sai Ying Pun Junction Shaft WT00020318-2014	10 November 2014 – 31 October 2019	--
Chemical Waste Producer Registration	Sai Ying Pun Junction Shaft 5213-112-G2347-05	Throughout the Contract	--
Construction Noise Permit (CNP)	Fung Mat Road GW-RS0812-15	6 August 2015 – 5 February 2016	--

6.3 ENVIRONMENTAL MONITORING REQUIREMENTS

6.3.1 *Air Quality Monitoring*

Monitoring Location

In accordance with the EM&A Manual, 24-hour and 1-hour averaged TSP levels should be conducted at designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was denied or not available, alternative locations were proposed and agreed by the ER and IEC. The construction air quality monitoring station for this Contract is listed in *Table 6.3* and shown in *Annex F2*.

Table 6.3 Construction Phase Air Monitoring Location at Sai Ying Pun Junction Shaft

Worksite	Construction Air Quality Monitoring Station			
	ID in EM&A Manual	ID	Location	Remark
Fung Mat Street	CM_FM1	AM5	Western Wholesale Food Market	-

Monitoring Parameters, Frequency and Programme

Air quality monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual (*Table 6.4*). The monitoring programme for this reporting period is shown in *Annex F3*.

Table 6.4 TSP Monitoring Parameter and Frequency at Sai Ying Pun Junction Shaft

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

Monitoring Equipment

Continuous 24-hour and 1-hour averaged TSP monitoring were performed using HVS with appropriate sampling inlets installed, located at the designated monitoring station. 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)*. The equipment that was deployed for the 24-hour and 1-hour averaged TSP monitoring is listed in *Annex F5*.

Monitoring Methodology

Installation

The setup location of the HVS was listed in *Table 6.3*. The HVS was free-standing with no obstruction.

The following criteria have been considered in the installation of the HVSs:

- appropriate support to secure the samplers against gusty wind were provided at AM5;
- a minimum of 2 m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues were nearby;
- airflow around the sampler was unrestricted; and
- permission was obtained to set up the samplers and to 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 did not vary by more than ± 3 °C; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implements 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 the 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;
- the 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 the aluminium strip;
- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flow rate record sheet was set into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 – 1.37 m^3min^{-1} which were within the range specified in the EM&A Manual (ie 0.6 – 1.7 m^3min^{-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 so that only surfaces with collected particulate matter were in contact;
- the filter paper 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, such as replacing motor brushes routinely and checking electrical wiring 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 record for the HVS is given in *Annex H*.

Wind Data Monitoring

The nearest weather stations to Sai Ying Pun Junction Shaft are located at King's Park Station and Green Island. The average wind data (wind speed and wind direction) during the monitoring period were obtained from the meteorological stations at Green Island and King's Park of the HKO and is presented in *Annex F5*.

Action and Limit Levels

The Action and Limit levels have been established and are presented in *Table 6.5*.

Table 6.5 Action and Limit Levels for Air Quality at Sai Ying Pun Junction Shaft

Parameter	Air Monitoring Station	Action Level, μgm^{-3}	Limit Level, μgm^{-3}
24-hour averaged TSP	AM5	188	260
1-hour averaged TSP	AM5	332	500

Event and Action Plan (EAP)

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the EAP presented in *Annex I*.

6.3.2 *Noise Monitoring*

Monitoring Location

In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was denied or not available; alternative locations were proposed and agreed by the ER and IEC. The construction noise monitoring location for this Contract is listed in *Table 6.6* and shown in *Annex F2*.

Table 6.6 Construction Phase Noise Monitoring Station at Sai Ying Pun Junction Shaft

Worksite	Construction Noise Monitoring Station				
	ID in EM&A Manual	ID	Location	Type of Measurement	Remark
Fung Mat Road	M3	NM4	Rooftop of Block A, Kwan Yick Building Phase III	Façade	-

Monitoring Parameters, Frequency and Programme

Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. Additional noise monitoring were also conducted as per required in the EM&A Manual when works were carried out during restricted periods. The monitoring programme for this reporting period is shown in *Annex F3*.

The construction noise levels were measured in terms of A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). $L_{Aeq(30min)}$ was used as the monitoring parameter for the time period in between 0700 – 1900 hours on normal weekdays, and $L_{Aeq\ (5min)}$ was used as the monitoring parameter for all restricted periods. Supplementary information for data auditing (two statistical sound levels L_{10} and L_{90} which are the levels exceeded for 10 and 90 percent of the time respectively) was also recorded during the monitoring for reference. The measured noise levels were logged every 5 minutes throughout the impact monitoring period.

Monitoring Equipment and Methodology

Construction noise measurements were conducted in accordance with the calibration and measurement procedures as stated in *Annex – General Calibration and Measurement Procedures* of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*) issued under the *Noise Control Ordinance* (*NCO*) (Cap.400).

The sound level meters and calibrator used for the noise measurement, as listed in *Annex F*, comply with IEC 651: 1979 and 804:1985 (Type 1) specifications. The calibration certificates of the sound level meters are included in *Annex H*.

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency.

Action and Limit Levels

The Action and Limit (A/L) Levels for noise monitoring during different monitoring periods are summarised in *Table 6.7*.

Table 6.7 Action and Limit Levels for Noise Monitoring at Sai Ying Pun Junction Shaft

Noise Monitoring Location	Action Level	Limit Level		Remark
		Measurement Parameter	Limit Level (dB(A))	
NM4	When one documented complaint is received	$L_{Aeq(30min)}$	75	Normal working hours during weekdays
		$L_{Aeq(5min)}$	70	Evening (1900-2300); and Sundays and public holidays (0700-2300)
		$L_{Aeq(5min)}$	55	Night-time (2300-0700)

Event and Action Plan

Should non-compliance of the Action and Limit Levels occur, action will be taken in accordance with the EAP presented in *Annex I*.

6.3.3 *Cultural Heritage*

In order to prevent potential damage to historical buildings and structures, maximum limits for safe vibration levels have been set at 25 mm/s. Vibration monitoring shall be undertaken during blasting for tunnel, shafts and effluent conveyance system in the vicinity of the buildings / structures as a requirement of EM&A programme in such a way that a maximum vibration level of 25 mm/s is not exceeded. To ensure that this maximum limit is not exceeded, a monitoring schedule shall be implemented. The monitoring should be undertaken through the use of measures such as tell tales and tilting monitoring points to the historic buildings and structures on a weekly basis. If vibration levels are found to exceed the maximum limit of 25 mm/s, immediate corrective action shall be taken by reducing the rate of forward progress, as necessary, to bring PPV levels within compliance. Monitoring results should be submitted to the engineer in an agreed format within two days of each monitoring undertaken. No vibration monitoring was conducted for this reporting month as the blasting of tunnel / shaft works has not been carried out in the vicinity of the historical buildings listed in the EM&A Manual.

6.3.4 *Landscape and Visual Monitoring*

In accordance with the EM&A Manual, landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures are fully achieved. The landscape and visual monitoring was carried out on site within the environmental site inspection. The monitoring procedures and criteria as described in the EM&A Manual were adopted.

Event and Action Plan

The EAP for landscape and visual monitoring is presented in *Annex I*.

6.4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented environmental mitigation measures and fulfilled requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status during the reporting period is summarised in *Annex F4*.

6.5 MONITORING RESULTS

6.5.1 *Air Quality*

A total of 5 sets of 24-hour averaged and 15 sets of 1-hour averaged TSP measurements have been carried out at AM5 during the reporting period. The weather condition during the monitoring periodvaried from fine to sunny. The monitoring data for 24-hour and 1-hour averaged TSP together with the wind data and graphical presentations are presented in *Annex F5*.

Other potential emission sources in the vicinity (e.g. vehicle emissions) of the monitoring stations AM5 may also affect local air quality. No exceedance of the Action and Limit Levels of 1-hr and 24-hr averaged TSP was recorded during the reporting period.

6.5.2 *Noise*

A total of 4 sets of 30-minute construction noise measurements were carried out at the monitoring station NM4 during normal weekdays of the reporting period. No exceedance of Action and Limit Level for noise monitoring during normal working hours was recorded.

4 sets of 3 x 5-minute construction noise measurements were carried out during restricted hours on 3, 12, 17 and 26 January 2016. No exceedance of the Action and Limit Levels for noise monitoring during restricted hours was recorded.

The monitoring results together with graphical presentations are presented in *Annex F6*. The local impact observed near the monitoring station of NM4 was traffic noise from Connaught Road West.

6.5.3 *Landscape and Visual*

The implementation and maintenance of landscape and visual mitigation measures are fully achieved and no major finding was made during the reporting month.

6.5.4 *Cultural Heritage*

No vibration monitoring was conducted for this reporting month as the blasting of tunnel / shaft works has not been carried out in the vicinity of the historical buildings listed in the EM&A Manual.

6.5.5 Waste Management

Waste generated from this Project includes inert C&D materials, non-inert C&D materials, and marine deposit. Non-inert C&D materials are made up of general refuse, steel and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. The inert C&D materials generated from this Project were disposed of at Tuen Mun Area 38/Tseung Kwan O Area 137 Fill Bank/Chai Wan Barging Point. The non-inert C&D materials other than steel and paper/cardboard packaging were disposed of at SENT Landfill. Steel, paper / cardboard packaging waste and plastics were sent to recyclers for recycling. No marine deposit was generated during the reporting month.

The quantity of different types of wastes generated in the reporting month has been shown in the Monthly Summary Waste Flow Table prepared by the Contractor (*Annex J*).

6.6 ENVIRONMENTAL SITE INSPECTION

Weekly site inspections were carried out by representatives of the Contractor, Engineer and ET. Site inspections were conducted on 7, 14 and 20 January 2016. Because of the scheduled SSEMC meeting on 27 January 2016 immediately after the joint inspection, inspection was not arranged for the Central site on that day. There was no non-compliance recorded during the site inspections.

Observations during site inspections and follow-up actions in the reporting period are presented in *Annex K*. All the follow-up actions requested by IEC and Contractor's ET during the site inspection were undertaken as reported by the Contractor and confirmed in the following weekly site inspection during the reporting period.

6.7 ENVIRONMENTAL NON-CONFORMANCE

6.7.1 Summary of Monitoring Exceedance

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

No exceedance of the Action and Limit Levels for noise was recorded during both normal working hours and restricted hours in the reporting period.

6.7.2 Summary of Environmental Non-Compliance/ Complaint/ Summons / Prosecution

No non-compliance event, complaint /summon /prosecution was recorded during the reporting period.

The cumulative complaint /summon/prosecution log is shown in *Annex F7*.

6.8 FUTURE KEY ISSUES

6.8.1 Key Issues for the Coming Month

Works to be undertaken for the coming two monitoring periods are summarised in *Table 6.8*.

Table 6.8 ***Construction Works to be Undertaken in the Coming Two Months at Sai Ying Pun Junction Shaft***

Construction Activities to be Undertaken
• Landscaping works; and • Connection of water pipe by WSD.

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

6.8.2 Monitoring Schedule for Next Month

The tentative schedule of TSP and noise monitoring for the next reporting period is presented in *Annex F3*. Environmental monitoring will be conducted at the same monitoring locations in the reporting period.

6.8.3 Construction Programme for the Next Month

The most up-to-date construction programme for the Project is presented in *Annex F8*.

The termination of construction phase EM&A programme at the worksites within Stonecutters Island Sewage Treatment Works (SCISTW) for *Contract No. DC/2007/23* was approved by EPD. It is confirmed that the EM&A programme, including the monitoring works at AM6 and NM5 and regular site inspection, have been handed over to the Environment Team of HATS-2A *Contract No. DC/2009/10*.

8 CONCLUSIONS

This Environmental Monitoring and Audit (EM&A) Report presents the EM&A programme undertaken during the period from 1 to 31 January 2016 in accordance with EM&A Manual and the requirement under EP-322/2008/G. The conclusions for the five different sites are summarised below.

8.1 NORTH POINT PRODUCTION AND DROP SHAFTS

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

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

No non-compliance event, complaint, or summon/prosecution was recorded during the reporting period.

8.2 WAN CHAI EAST PRODUCTION AND DROP SHAFTS

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

Limit Level for construction noise was exceeded on 5 and 21 January 2016 during the restricted hours at the monitoring station. The findings of the investigation of exceedance on 5 and 21 January indicated that the exceedances were attributed to other potential noise sources (such as traffic) but not due to this construction as no outdoor construction activity was being carried out during the period.

No non-compliance event, complaint, or summon/prosecution was recorded during the reporting period.

8.3 CENTRAL DROP SHAFT

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

Limit Level for construction noise was exceeded on 5, 21 and 27 January 2016 at the monitoring station. The findings of the investigation of exceedance on 5, 21 and 27 January 2016 indicated that the exceedances were attributed to other potential noise sources (such as traffic) but not due to this construction as no outdoor construction activity was being carried out during the period.

No non-compliance event, complaint, summon or prosecution was recorded during the reporting period.

8.4 SAI YING PUN JUNCTION SHAFT

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

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

No non-compliance event, complaint, or summons/prosecution was recorded during the reporting period.

8.5 STONECUTTERS ISLAND PRODUCTION AND RISER SHAFTS

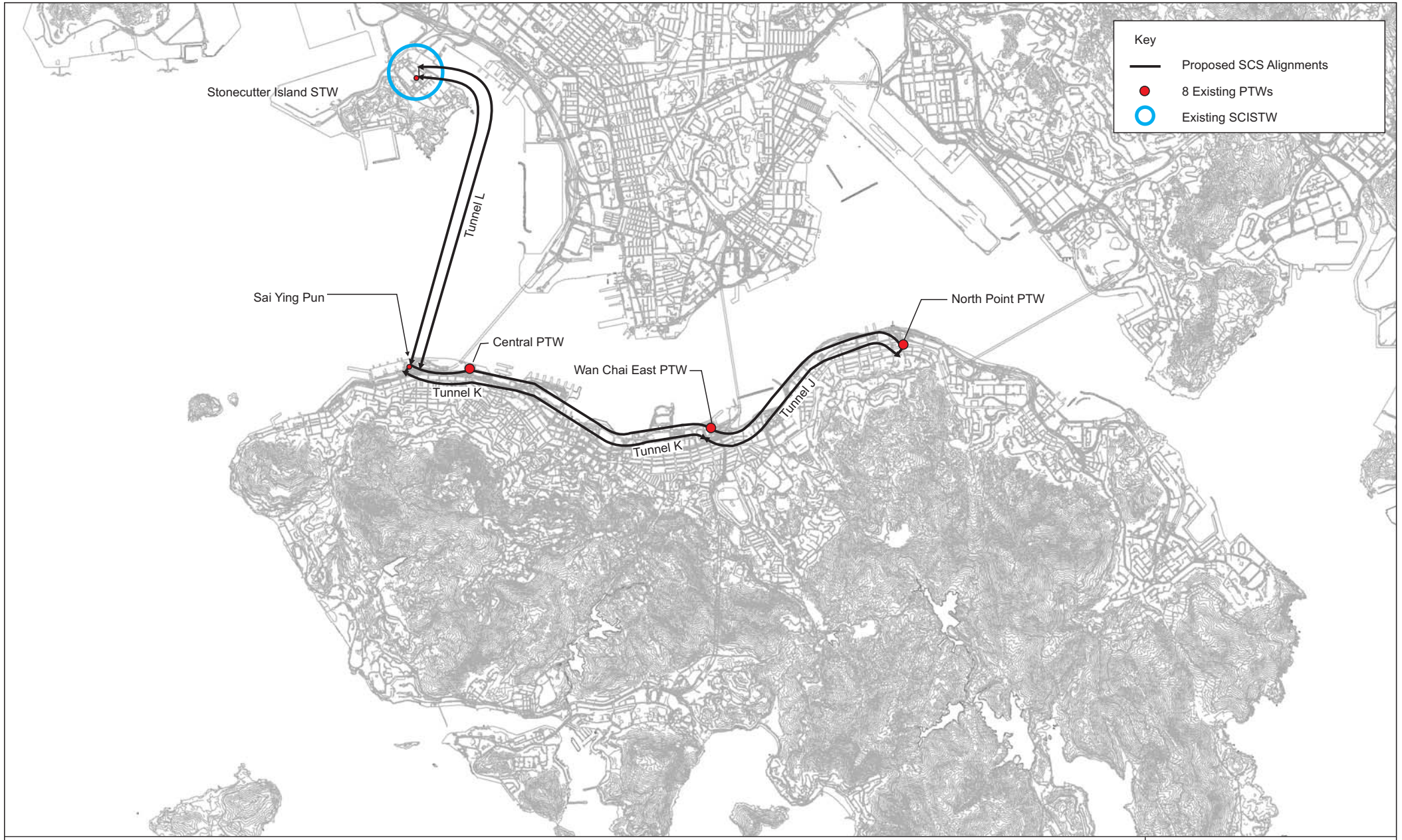
The termination of construction phase EM&A programme at the worksites within SCISTW for *Contract No. DC/2007/23* was approved by EPD. It is confirmed that the EM&A programme, including the monitoring works at AM6 and NM5 and regular site inspection, have been handed over to the Environment Team of HATS-2A *Contract No. DC/2009/10*.

8.6 OVERALL

The ET has managed the EM&A programme to monitor the compliance status of various environmental requirements, and verify the proper implementation of necessary mitigation measures.

Annex A

Locations of Works Areas



Annex A

General Layout Plan of HATS Stage 2A

FILE: 0104887h5
DATE: 17/05/2010

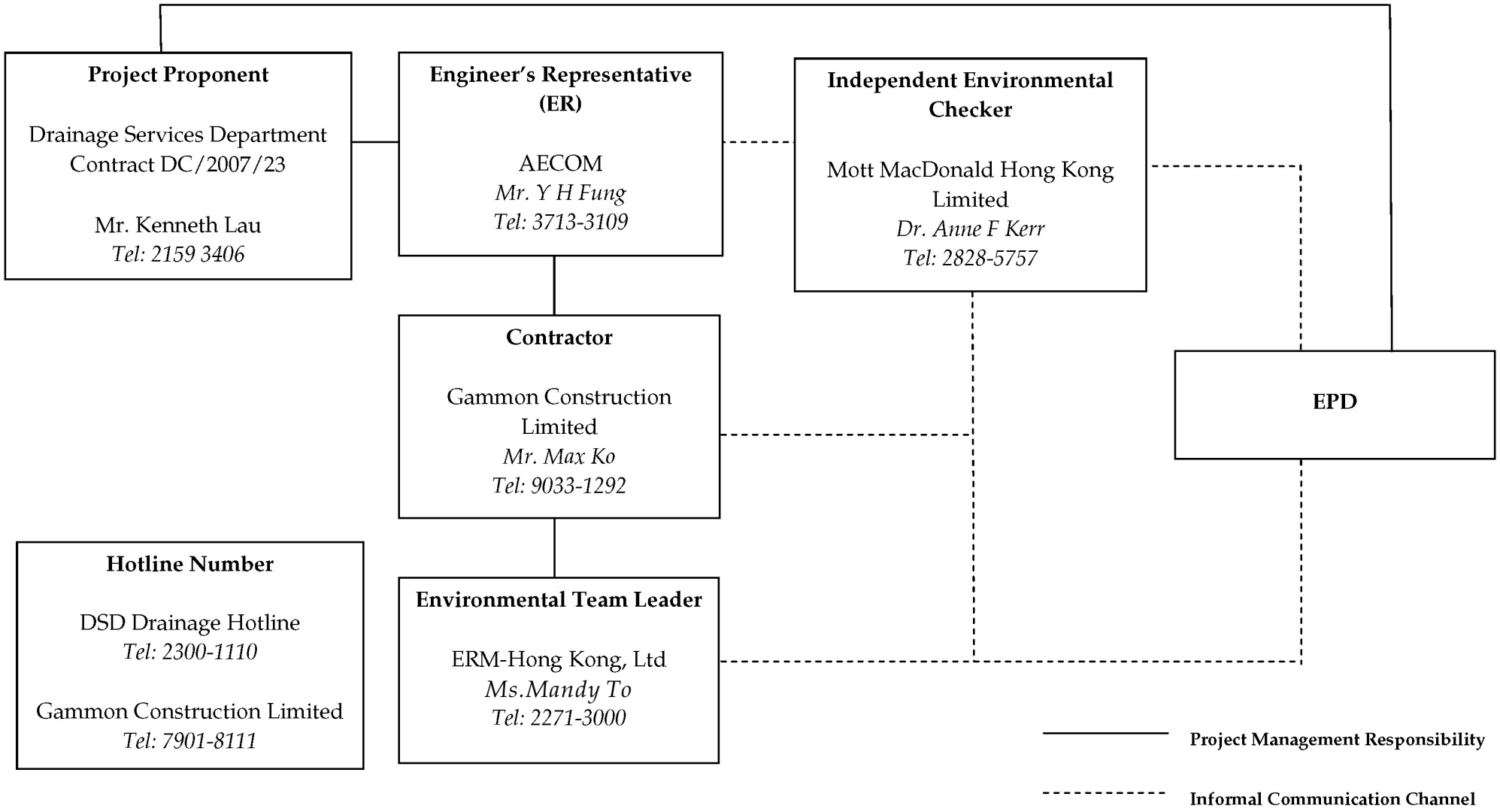
Environmental Resources Management

ERM

Annex B

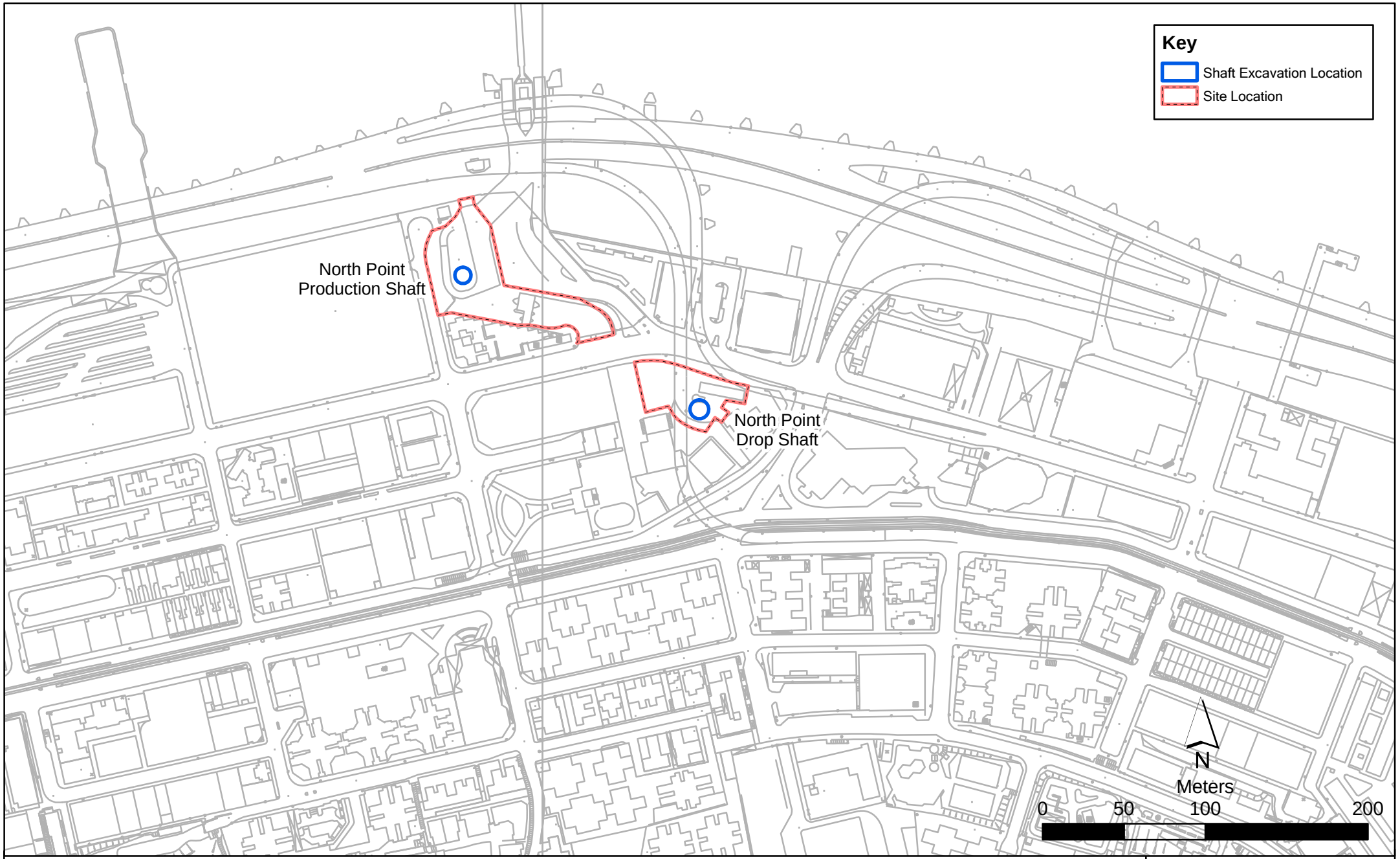
Project Organization Chart and Contact Detail

Project Organization



Annex C

North Point Production and Drop Shafts



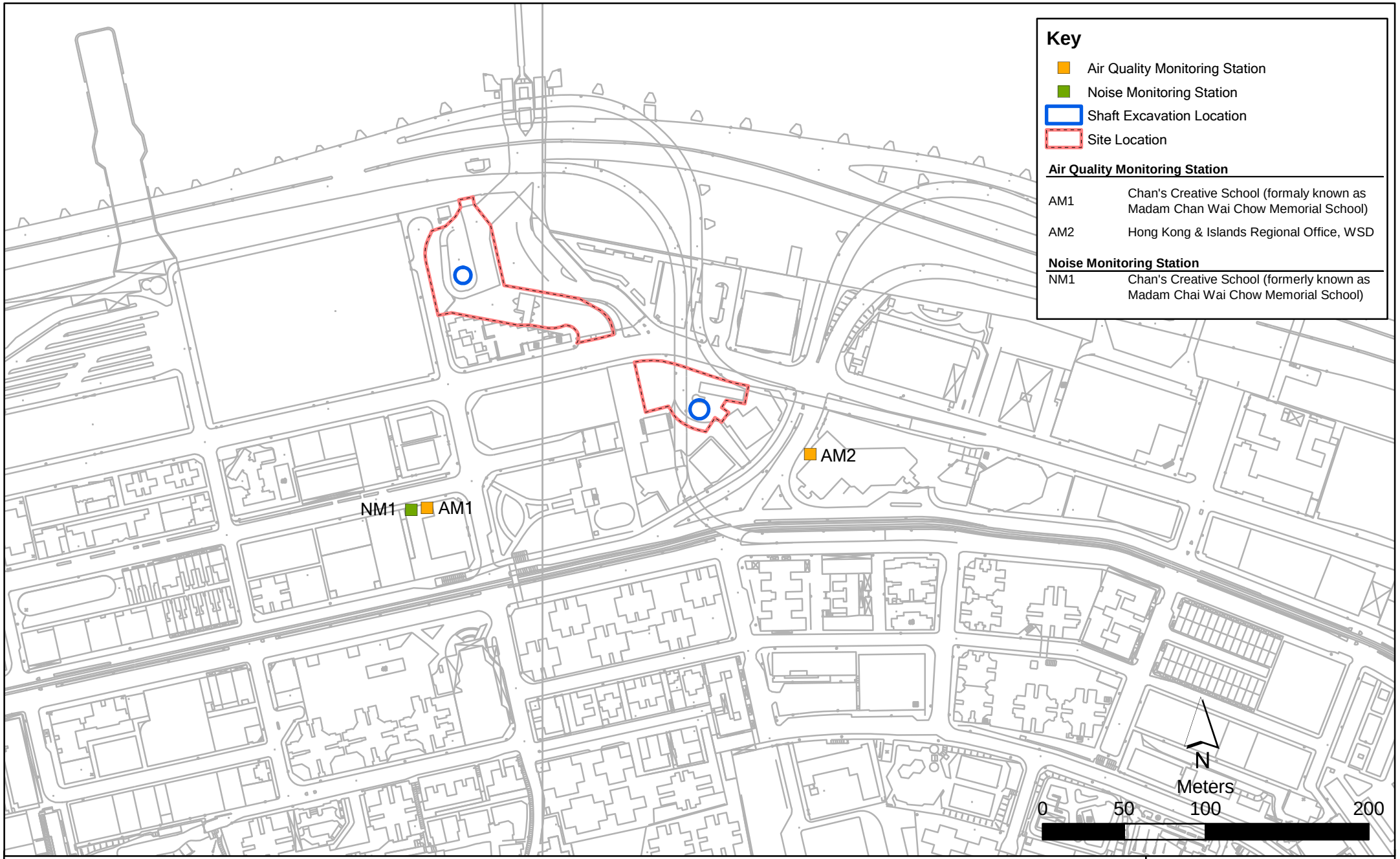
Annex C1

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Construction Site Locations at North Point

File: EM&A and proposed station\0104887_North Point.mxd
Date: 29/10/2009

Environmental Resources Management

ERM



Annex C2

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Air Quality & Noise Monitoring Stations (North Point)

File: EM&A and proposed station\0104887_North Point_NMAM.mxd
Date: 03/03/2010

Environmental Resources Management

ERM

Annex C3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Air Quality Monitoring Schedule

AM1 - Chan's Creative School
Monitoring Month : January 2016

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

February 2016

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

Annex C3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Air Quality Monitoring Schedule

AM2 - Hong Kong and Islands Regional Office, WSD
Monitoring Month : January 2016

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

February 2016

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

Annex C3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23

Harbour Area Treatment Scheme Stage 2A

Construction of Sewage Conveyance System from North Point to Stonecutters Island

Impact Construction Noise Quality Monitoring Schedule

NM1 - Chan's Creative School

Monitoring Month: January 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jan	02-Jan
					Public Holiday	
03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan
		Noise Monitoring (Evening Time)				
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
Noise Monitoring	Noise Monitoring					
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
				Noise Monitoring (Evening Time)		
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
Noise Monitoring			Noise Monitoring			
31-Jan						

February 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb
		Noise Monitoring (Evening Time)				
07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb
	Public Holiday	Public Holiday	Public Holiday		Noise Monitoring (Evening Time)	
14-Feb	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb
Noise Monitoring				Noise Monitoring		
21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb
Noise Monitoring			Noise Monitoring			
28-Feb	29-Feb					

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Construction Phase			
Air Quality	The Air Pollution Control (Construction Dust) Regulation shall be implemented and good site practices shall be incorporated in the contract clauses to minimise construction dust impact. Control measures relevant to this Project are listed below: • 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; • where a site boundary adjoins a road, streets or other accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit; • every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides; • regular watering, with complete coverage, to reduce dust emission from exposed site surfaces and unpaved roads, particularly during dry weather; • site enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines; • open stock piles should be avoided or covered and prevent placing dusty material storage piles near ASRs if possible; • tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; and • instigation of an environmental monitoring auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Air Quality	The following watering measures for specific site would be required to control the fugitive dust impacts: • watering twice per day within the worksites at North Point PTW; and • watering 8 times per day within worksites at the SCS works area at North Point.	All work sites / during construction	√
Operational Phase			
Air Quality	Good housekeeping for SCISTW and PTWs listed below should be followed to ameliorate any odour impact from the plant and these standard practices should be included in the plant operator manual. • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers to minimise odour escape • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly	All work sites / during construction	NA. Measures not required until commencement of operational phase
Air Quality	Commissioning tests for all deodorisation system should be included in the Design and Construction Contract Document.	All PTW and SCISTW/ during operational phase	NA. Measures not required until commencement of operational phase
Construction Phase			
Noise	Use of quiet PME, movable barriers and acoustic mats	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Noise	Good Site Practice: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; • silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program; • mobile plant, if any, should be sited as far from NSRs as possible; • machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • Air compressors should be properly labelled with valid noise emission labels. • plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities; Environmental audit shall be carried out to ensure that appropriate noise control measures would be properly implemented.	All work sites / during construction	√
Construction Phase			
Water Quality	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Effluent Discharge There is a need to apply to EPD for a discharge license for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge license. 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. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.	All work sites / during construction	√
Water Quality	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	All work sites / during construction	√
Water Quality	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps 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.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably 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.	All work sites / during construction	<>

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Construction Works in Close Proximity of Storm Drains or Seafront To minimise the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Operational Phase			
Water Quality	Dual power supply, standby facilities for the main treatment units and standby equipment parts / accessories should be provided as far as possible at the SCISTW to minimise the chance of emergency discharge.	SCISTW and all the Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Water Quality	Standby unit(s) and dual (backup) power supply would be provided at all the Stage 2 PTWs to reduce the risk of equipment breakdown at the PTWs.	Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Construction Phase			
Waste	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimise the use of timber formwork.	All work sites / during the construction period	√
Waste	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals; • 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, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; • Any unused chemicals or those with remaining functional capacity shall be recycled; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All work sites / during the construction period	√
Waste	Recommendations for good site practices during 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 waste handling procedures • Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials. • Provision of sufficient waste disposal points and regular collection of waste • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	All work sites / during the construction period	<>
Waste	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All work sites / during the construction period	NA

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.	All work sites / during the construction period	√
Waste	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.	All work sites / during the construction period	√
Waste	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.	All work sites / during the construction period	√
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, oxidising, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.	All work sites / during the construction period	√
Construction Phase			
Landscape & Visual	• Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction. • Trees unavoidably affected by the works should be transplanted where practical. • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting.	All the works areas, PTWs and SCISTW/ during the construction period	√
Operational Phase	•		
Landscape & Visual	• Aesthetic design of the façade of PTW and associated structures to harmonise with the surrounding settings. • Shrub and Climbing Plants to soften proposed structures / Roof Greening. • Buffer Tree and Shrub Planting to screen proposed associated structures. • Reinstated of disturbed area	All the works areas, PTWs and SCISTW/ during the construction period	NA. Measures not required until commencement of operational phase
Construction Phase			

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Cultural Heritage	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	NA. Vibration monitoring has not been launched during the reporting period.
	Monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	NA. Vibration monitoring has not been launched during the reporting period.

Remark:
√ Compliance of Mitigation Measures
<> Compliance of Mitigation but need improvement
x Non-compliance of Mitigation Measures
Δ Deficiency of Mitigation Measures but rectified by the Contractor
NA Not Applicable

Annex C5 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 (°C)	Wind Speed * (m/s)	Sampler ID
05-Jan-16	13:00	14:00	Rainy	50	340	500	N.A.	20	<5	LD-5C (A.25.02)
	14:00	15:00	Rainy	60	340	500	N.A.	20	<5	LD-5C (A.25.02)
	15:00	16:00	Rainy	70	340	500	N.A.	20	<5	LD-5C (A.25.02)
11-Jan-16	13:00	14:00	Cloudy	51	340	500	N.A.	19	<5	LD-3B (A.02.08)
	14:00	15:00	Cloudy	53	340	500	N.A.	19	<5	LD-3B (A.02.08)
	15:00	16:00	Cloudy	52	340	500	N.A.	19	<5	LD-3B (A.02.08)
15-Jan-16	13:00	14:00	Cloudy	155	340	500	N.A.	15	<5	LD-3B (A.02.08)
	14:00	15:00	Cloudy	156	340	500	N.A.	15	<5	LD-3B (A.02.08)
	15:00	16:00	Cloudy	156	340	500	N.A.	15	<5	LD-3B (A.02.08)
21-Jan-16	13:00	14:00	Cloudy	216	340	500	N.A.	16	<5	LD-3B (A.02.10)
	14:00	15:00	Cloudy	215	340	500	N.A.	16	<5	LD-3B (A.02.10)
	15:00	16:00	Cloudy	217	340	500	N.A.	16	<5	LD-3B (A.02.10)
27-Jan-16	13:00	14:00	Cloudy	95	340	500	N.A.	13	<5	LD-3B (A.02.10)
	14:00	15:00	Cloudy	109	340	500	N.A.	13	<5	LD-3B (A.02.10)
	15:00	16:00	Cloudy	112	340	500	N.A.	13	<5	LD-3B (A.02.10)
			Min.	**50**						
			Max.	**217**						
			Average	**118**						

* Wind Speed data is presented in the Meteorological Data table

Annex C5 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 (°C)	Wind Speed * (m/s)	Sampler ID
05-Jan-16	13:00	14:00	Rainy	80	352	500	N.A.	20	<5	LD-5C (A.25.01)
	14:00	15:00	Rainy	60	352	500	N.A.	20	<5	LD-5C (A.25.01)
	15:00	16:00	Rainy	90	352	500	N.A.	20	<5	LD-5C (A.25.01)
11-Jan-16	13:00	14:00	Cloudy	51	352	500	N.A.	19	<5	LD-3B (A.02.04)
	14:00	15:00	Cloudy	52	352	500	N.A.	19	<5	LD-3B (A.02.04)
	15:00	16:00	Cloudy	53	352	500	N.A.	19	<5	LD-3B (A.02.04)
15-Jan-16	13:00	14:00	Cloudy	191	352	500	N.A.	15	<5	LD-3B (A.02.04)
	14:00	15:00	Cloudy	188	352	500	N.A.	15	<5	LD-3B (A.02.04)
	15:00	16:00	Cloudy	191	352	500	N.A.	15	<5	LD-3B (A.02.04)
21-Jan-16	13:00	14:00	Cloudy	229	352	500	N.A.	16	<5	LD-3B (A.02.08)
	14:00	15:00	Cloudy	226	352	500	N.A.	16	<5	LD-3B (A.02.08)
	15:00	16:00	Cloudy	228	352	500	N.A.	16	<5	LD-3B (A.02.08)
27-Jan-16	13:00	14:00	Cloudy	108	352	500	N.A.	13	<5	LD-3B (A.02.08)
	14:00	15:00	Cloudy	101	352	500	N.A.	13	<5	LD-3B (A.02.08)
	15:00	16:00	Cloudy	109	352	500	N.A.	13	<5	LD-3B (A.02.08)
			Min.	**51**						
			Max.	**229**						
			Average	**130**						

* Wind Speed data is presented in the Meteorological Data table

Annex C5 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
04-Jan-16	9:00	05-Jan-16	9:00	Cloudy	3.2591	3.3198	5981.66	6005.66	24.00	1.22	1.22	1.22	35	185	260	N.A.	TE-5170 A-01-46	151204/029
08-Jan-16	9:00	09-Jan-16	9:00	Sunny	3.3119	3.4448	6005.66	6029.66	24.00	1.22	1.22	1.22	76	185	260	N.A.	TE-5170 A-01-46	151202/077
14-Jan-16	9:00	15-Jan-16	9:00	Cloudy	3.3113	3.4220	6029.66	6053.66	24.00	1.23	1.23	1.23	63	185	260	N.A.	TE-5170 A-01-46	151204/100
20-Jan-16	9:00	21-Jan-16	9:00	Cloudy	3.2852	3.3744	6053.66	6077.66	24.00	1.23	1.23	1.23	50	185	260	N.A.	TE-5170 A-01-46	160101/007
26-Jan-16	9:00	27-Jan-16	9:00	Cloudy	3.3224	3.4818	6077.66	6101.66	24.00	1.24	1.24	1.24	89	185	260	N.A.	TE-5170 A-01-46	160102/046
												Min.	**35**					
												Max.	**89**					
												Average	**62**					

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
04-Jan-16	9:00	05-Jan-16	9:00	Cloudy	3.3249	3.5114	9969.62	9993.62	24.00	1.21	1.21	1.21	107	182	260	N.A.	TE-5170 A-01-44	151202/073
08-Jan-16	9:00	09-Jan-16	9:00	Sunny	3.2914	3.5422	9993.62	10017.62	24.00	1.22	1.22	1.22	143	182	260	N.A.	TE-5170 A-01-44	151202/078
14-Jan-16	9:00	15-Jan-16	9:00	Cloudy	3.3014	3.5154	10017.62	10041.62	24.00	1.22	1.22	1.22	122	182	260	N.A.	TE-5170 A-01-44	160101/001
20-Jan-16	9:00	21-Jan-16	9:00	Cloudy	3.2914	3.4448	10041.62	10065.62	24.00	1.22	1.22	1.22	87	182	260	N.A.	TE-5170 A-01-44	160101/008
26-Jan-16	9:00	27-Jan-16	9:00	Cloudy	3.2878	3.5329	10065.62	10089.62	24.00	1.24	1.24	1.24	137	182	260	N.A.	TE-5170 A-01-44	160102/047
												Min.	**87**					
												Max.	**143**					
												Average	**119**					

Meteorological Data Extracted from the Hong Kong Observatory

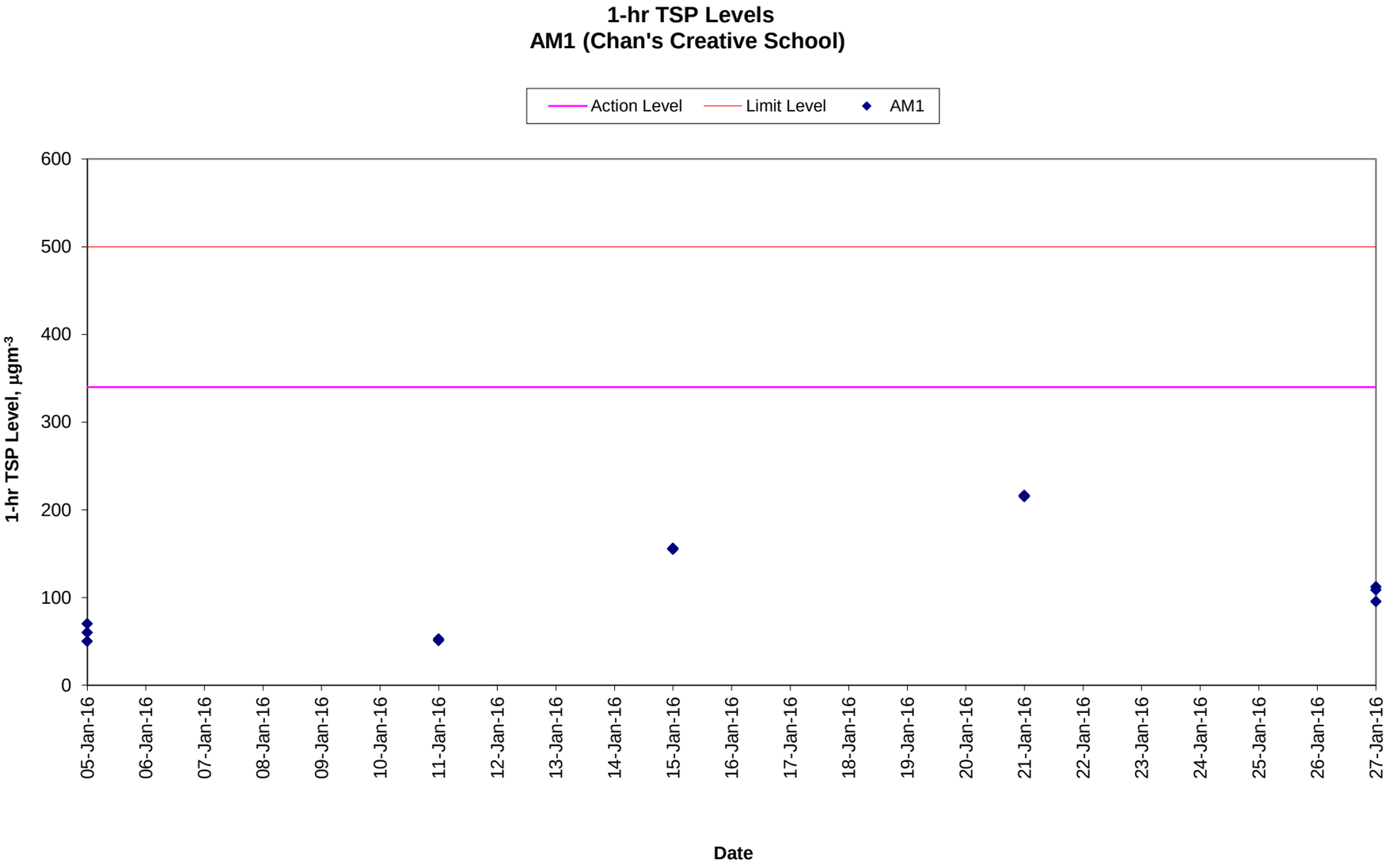
Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	0-17	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	E
2016-01-08	Sunny	19	64-87	0.0	0-10	E
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-19	SE
2016-01-15	Cloudy	15	93-98	38.8	0-16	E/SE
2016-01-20	Cloudy	15	80-96	3.3	9-24	SE
2016-01-21	Cloudy	16	93-97	0.1	0-17	E/SE
2016-01-26	Cloudy	11	42-80	Trace	0-9	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

Date	Weather	Tsing Yi Station				
		Average Air Temperature (°C)	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-17	E/SE
2016-01-05	Rainy	21	92-98	46.7	0-28	E/SE
2016-01-08	Sunny	19	64-87	0.0	0-17	E/SE
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-20	E/SE
2016-01-15	Cloudy	15	93-98	38.8	0-18	SE
2016-01-20	Cloudy	16	80-96	3.3	6-24	E/SE
2016-01-21	Cloudy	17	93-97	0.1	0-11	SE
2016-01-26	Cloudy	10	68-95	Trace	0-18	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

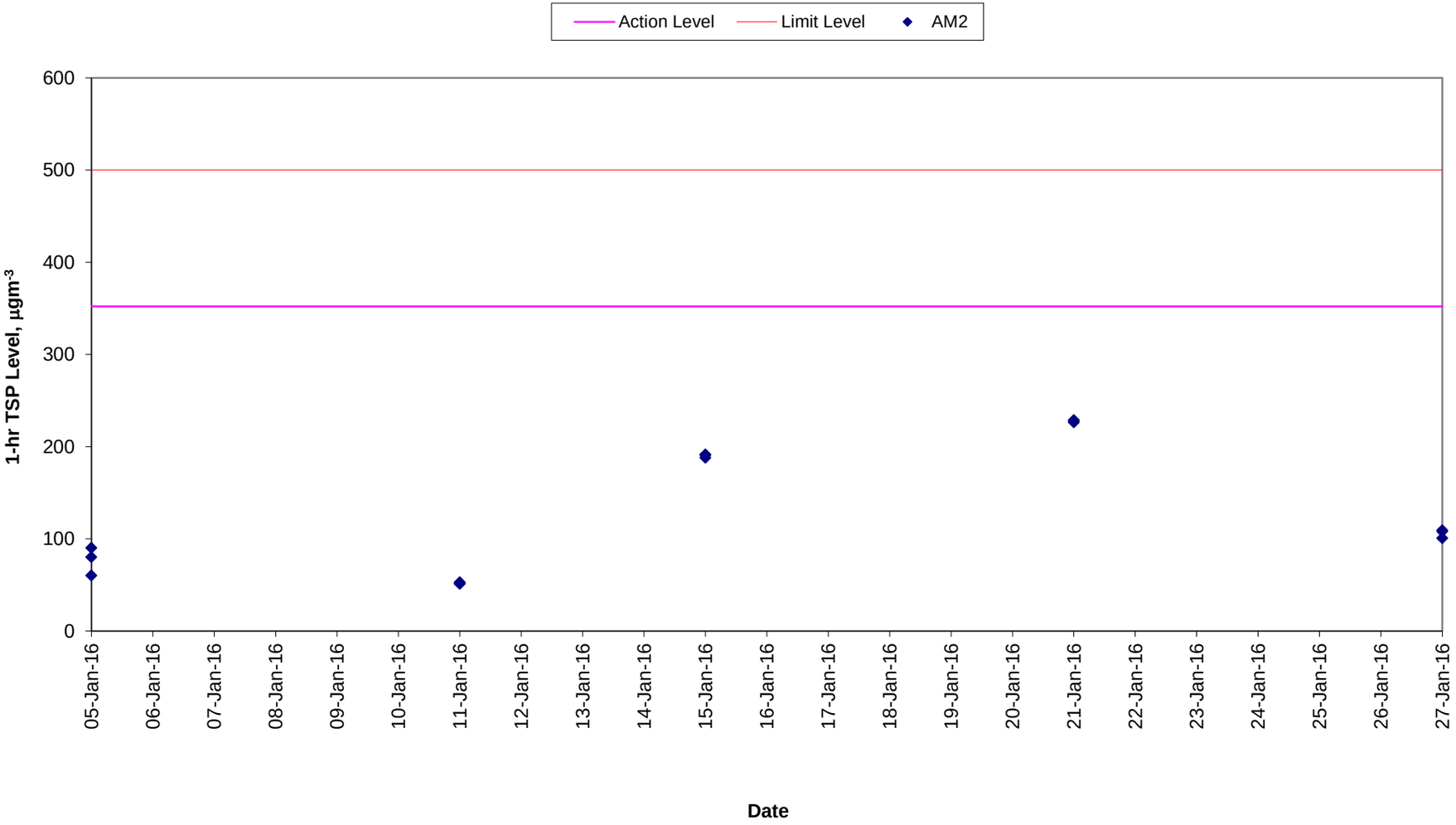
Date	Weather	Kai Tak Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	5-18	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	SW
2016-01-08	Sunny	19	64-87	0.0	0-18	S
2016-01-11	Cloudy	19	78-99	30.7	0-20	SE
2016-01-14	Cloudy	17	73-94	1.1	4-25	E
2016-01-15	Cloudy	15	93-98	38.8	3-24	SW
2016-01-20	Cloudy	15	80-96	3.3	13-34	SW
2016-01-21	Cloudy	16	93-97	0.1	1-20	SW
2016-01-26	Cloudy	11	42-80	Trace	0-17	E
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

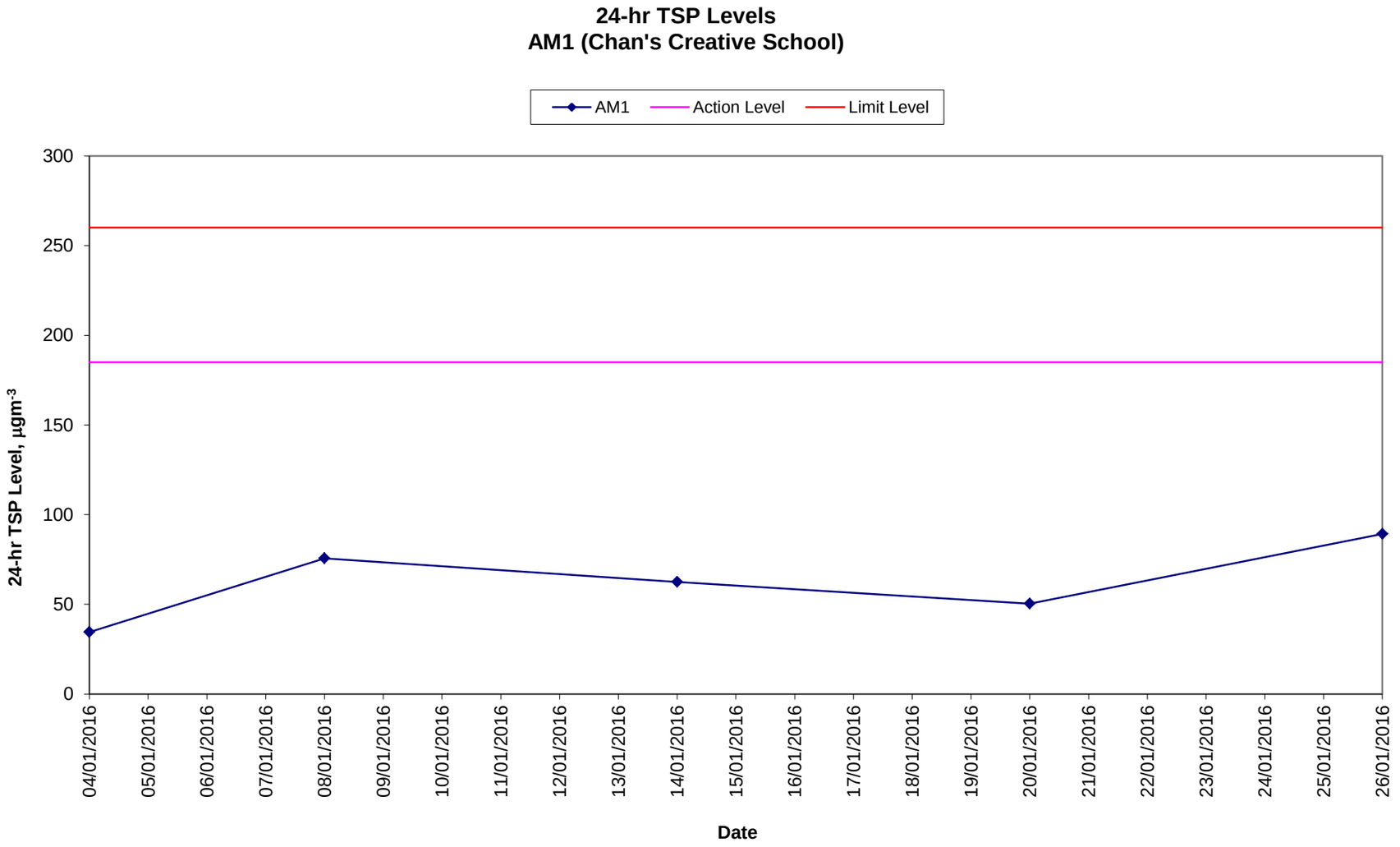
Date	Weather	Green Island Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-30	NE
2016-01-05	Rainy	21	92-98	46.7	0-32	SE/E
2016-01-08	Sunny	19	64-87	0.0	0-30	NE
2016-01-11	Cloudy	19	78-99	30.7	0-45	E
2016-01-14	Cloudy	17	73-94	1.1	4-45	NE
2016-01-15	Cloudy	15	93-98	38.8	10-55	NE
2016-01-20	Cloudy	16	80-96	3.3	37-64	NE
2016-01-21	Cloudy	17	93-97	0.1	0-48	E
2016-01-26	Cloudy	10	68-95	Trace	8-45	SE/E
2016-01-27	Cloudy	13	81-96	3.5	15-50	NE

* King's Park's data
\- Data was not available
\# less than 24 hourly observations per day

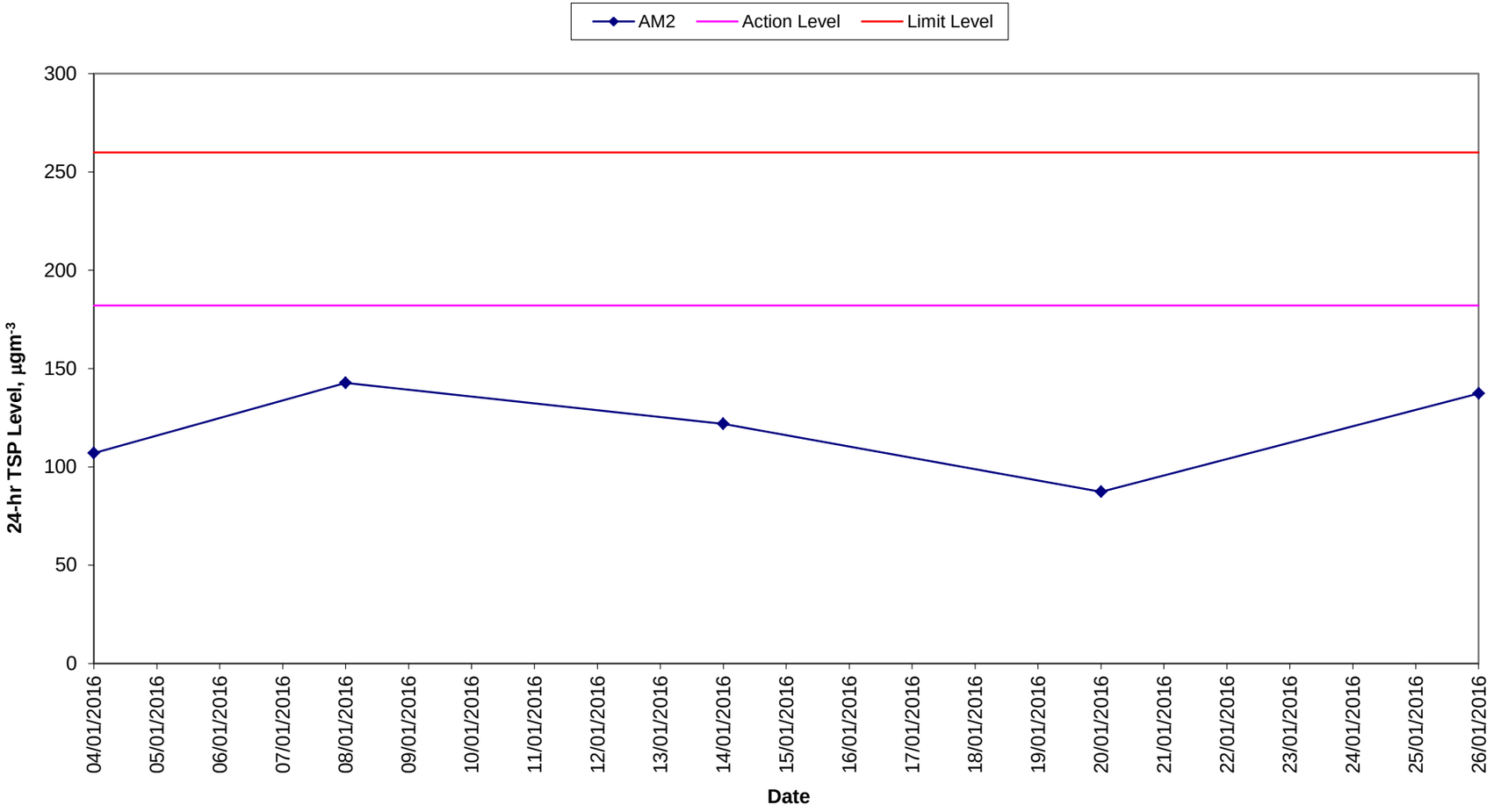

1-hr TSP Levels
AM1 (Chan's Creative School)
Action Level
Limit Level
AM1
1-hr TSP Level, µgm-3
600
500
400
300
200
100
0
05-Jan-16
06-Jan-16
07-Jan-16
08-Jan-16
09-Jan-16
10-Jan-16
11-Jan-16
12-Jan-16
13-Jan-16
14-Jan-16
15-Jan-16
16-Jan-16
17-Jan-16
18-Jan-16
19-Jan-16
20-Jan-16
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
Date

1-hr TSP Levels
AM2 (Hong Kong & Island Regional Office, WSD)




24-hr TSP Levels
AM1 (Chan's Creative School)
AM1
Action Level
Limit Level
300
250
200
150
100
50
0
24-hr TSP Level, µgm-3
04/01/2016
05/01/2016
06/01/2016
07/01/2016
08/01/2016
09/01/2016
10/01/2016
11/01/2016
12/01/2016
13/01/2016
14/01/2016
15/01/2016
16/01/2016
17/01/2016
18/01/2016
19/01/2016
20/01/2016
21/01/2016
22/01/2016
23/01/2016
24/01/2016
25/01/2016
26/01/2016
Date

24-hr TSP Levels
AM2 (Hong Kong & Island Regional Office, WSD)



Annex C6 Noise Monitoring Results

Daytime Noise Monitoring Results

Station NM1

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
05-Jan-16	13:05	13:35	Cloudy	66	67	65	N.A.	Traffic noise	-	20	0.5	SVAN957 (N.08.12)	SV30A (N.09.03)
11-Jan-16	13:15	13:45	Cloudy	67	69	64	N.A.	Traffic noise	-	19	0.2	SVAN957 (N.08.08)	B&K4231 (N.02.03)
21-Jan-16	13:15	13:45	Cloudy	67	69	64	N.A.	Traffic noise	-	16	0.3	SVAN957 (N.08.09)	SV30A (N.09.03)
27-Jan-16	13:10	13:40	Cloudy	68	69	67	N.A.	Traffic noise	-	13	0.5	SVAN957 (N.08.08)	B&K4231 (N.02.03)
			Min.	**66**									
			Max.	**68**									

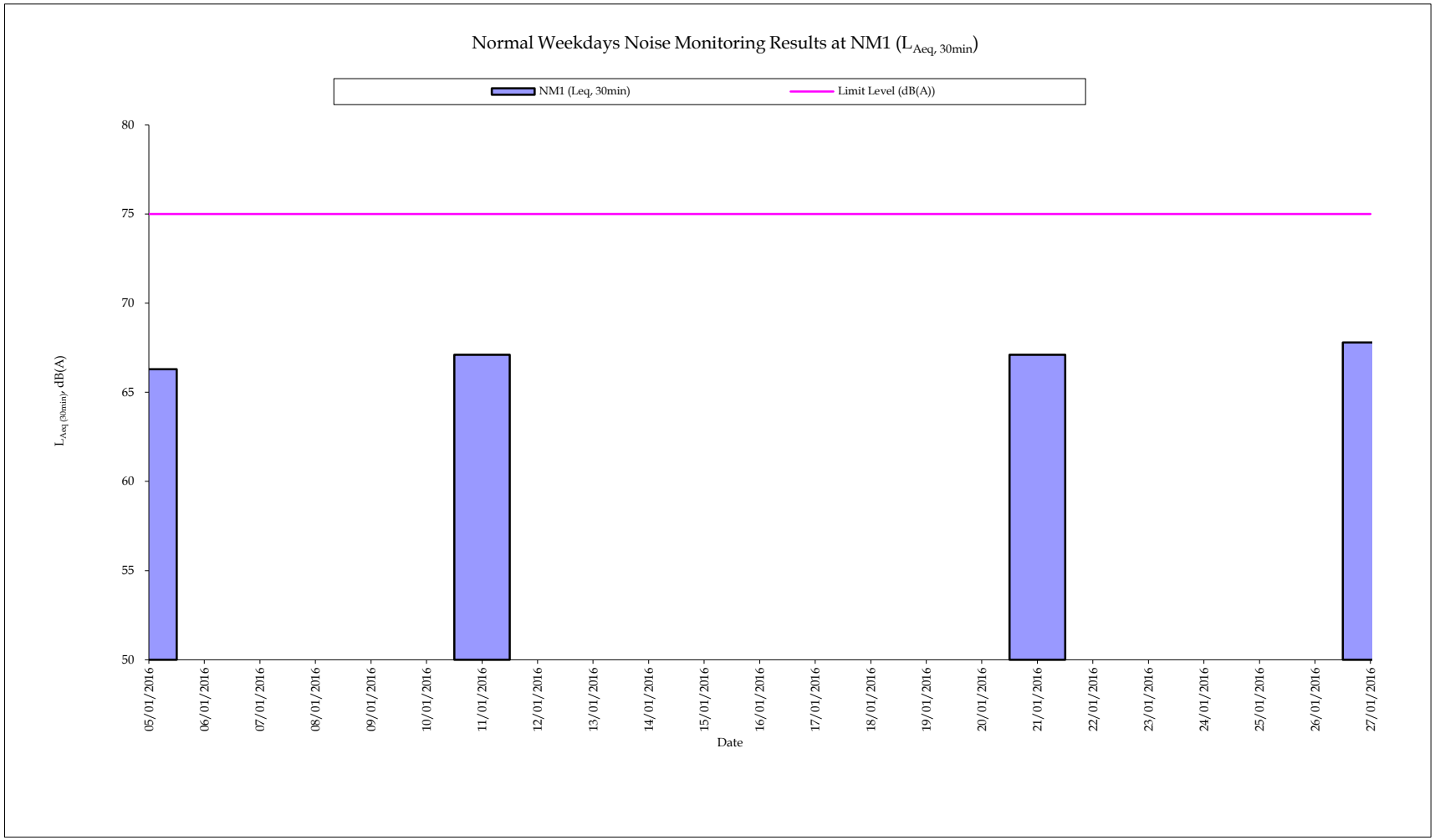
Annex C6 Noise Monitoring Results

Restricted Hours Noise Monitoring Results [1]

Station NM1

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
05-Jan-16	20:15	20:20	Cloudy	67	68	64	-	Traffic noise	-	21	0.2	SVAN957 (N.08.12)	SV30A (N.09.03)
	20:20	20:25	Cloudy	67	68	64			-				
	20:25	20:30	Cloudy	67	68	65			-				
	20:15	20:30	Cloudy	67	-	-			-				
10-Jan-16	9:10	9:15	Cloudy	69	71	66	-	Traffic noise	-	20	0.5	SVAN957 (N.08.12)	SV30A (N.09.05)
	9:15	9:20	Cloudy	70	72	66			-				
	9:20	9:25	Cloudy	69	72	66			-				
	9:10	9:25	Cloudy	69	-	-			-				
21-Jan-16	19:00	19:05	Cloudy	68	68	65	-	Traffic noise	-	16	0.3	SVAN957 (N.08.10)	SV30A (N.09.02)
	19:05	19:10	Cloudy	67	68	65			-				
	19:10	19:15	Cloudy	67	68	65			-				
	19:00	19:15	Cloudy	67	-	-			-				
24-Jan-16	11:00	11:05	Cloudy	70	72	66	-	Traffic noise	-	14	0.2	SVAN957 (N.08.08)	B&K4231 (N.02.03)
	11:05	11:10	Cloudy	70	72	67			-				
	11:10	11:15	Cloudy	70	72	66			-				
	11:00	11:15	Cloudy	70	-	-			-				
			Min.	**67**									
			Max.	**70**									

[1] No class was held at the school during all the measurement period.


Normal Weekdays Noise Monitoring Results at NM1 ($L_{Aeq, 30min}$)
NM1 (Leq, 30min)
Limit Level (dB(A))
80
75
70
65
60
55
50
$L_{Aeq (30min)}$, dB(A)
05/01/2016
06/01/2016
07/01/2016
08/01/2016
09/01/2016
10/01/2016
11/01/2016
12/01/2016
13/01/2016
14/01/2016
15/01/2016
16/01/2016
17/01/2016
18/01/2016
19/01/2016
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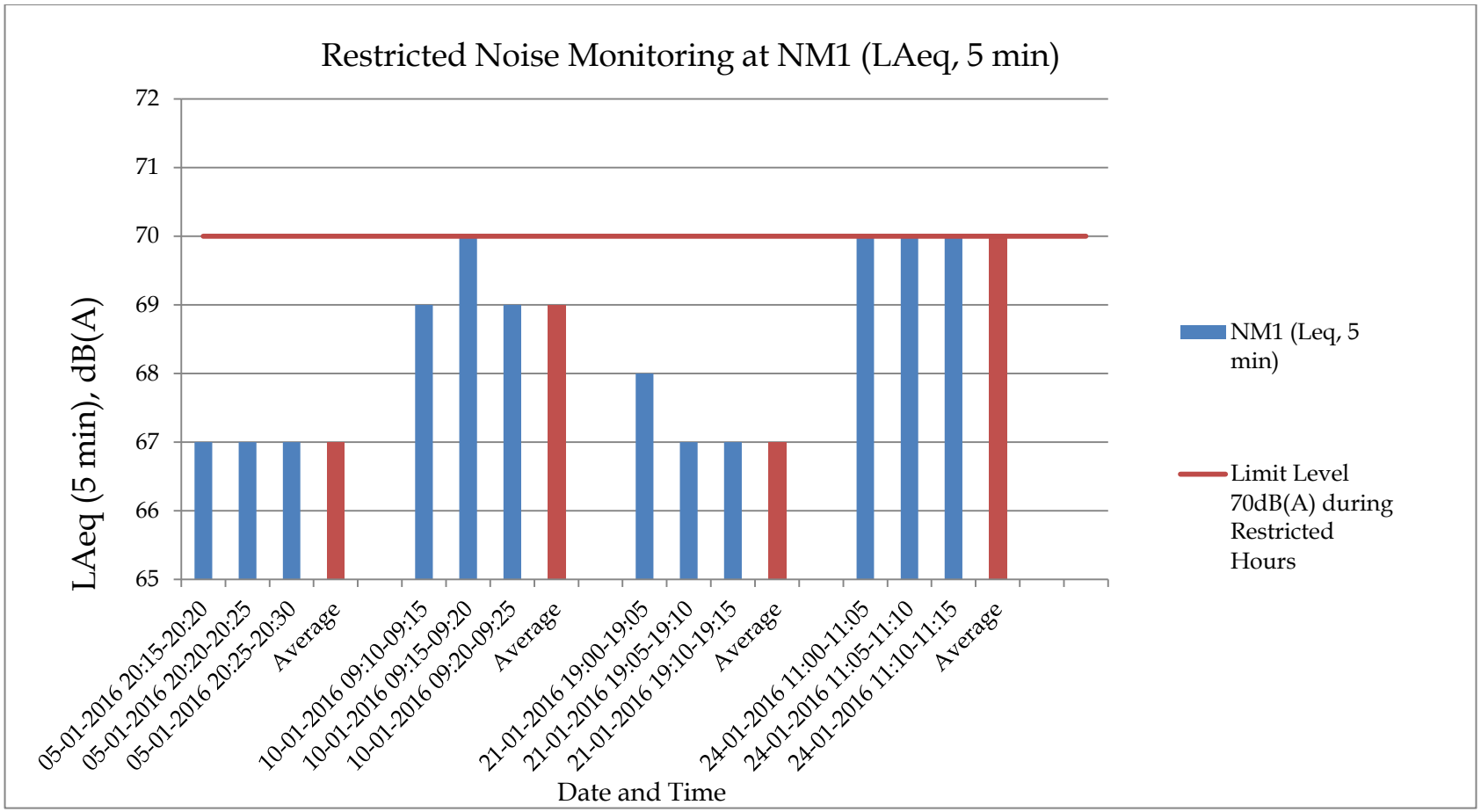
27/01/2016
Date


Restricted Noise Monitoring at NM1 (LAeq, 5 min)
LAeq (5 min), dB(A)
72
71
70
69
68
67
66
65
05-01-2016 20:15-20:20
05-01-2016 20:20-20:25
05-01-2016 20:25-20:30
Average
10-01-2016 09:10-09:15
10-01-2016 09:15-09:20
10-01-2016 09:20-09:25
Average
21-01-2016 19:00-19:05
21-01-2016 19:05-19:10
21-01-2016 19:10-19:15
Average
24-01-2016 11:00-11:05
24-01-2016 11:05-11:10
24-01-2016 11:10-11:15
Average
Date and Time
NM1 (Leq, 5 min)
Limit Level 70dB(A) during Restricted Hours

Annex C7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2009	0	0
January 2010	0	0
February 2010	0	0
March 2010	0	0
April 2010	0	0
May 2010	0	0
June 2010	0	0
July 2010	0	0
August 2010	0	0
September 2010	0	0
October 2010	0	0
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

Annex C7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
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
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

Annex C7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2012	0	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
June 2013	0	0
July 2013	0	0
August 2013	0	0
September 2013	0	0
October 2013	0	0
November 2013	0	0
December 2013	0	0
January 2014	0	0
February 2014	0	0
March 2014	0	0
April 2014	0	0
May 2014	0	0

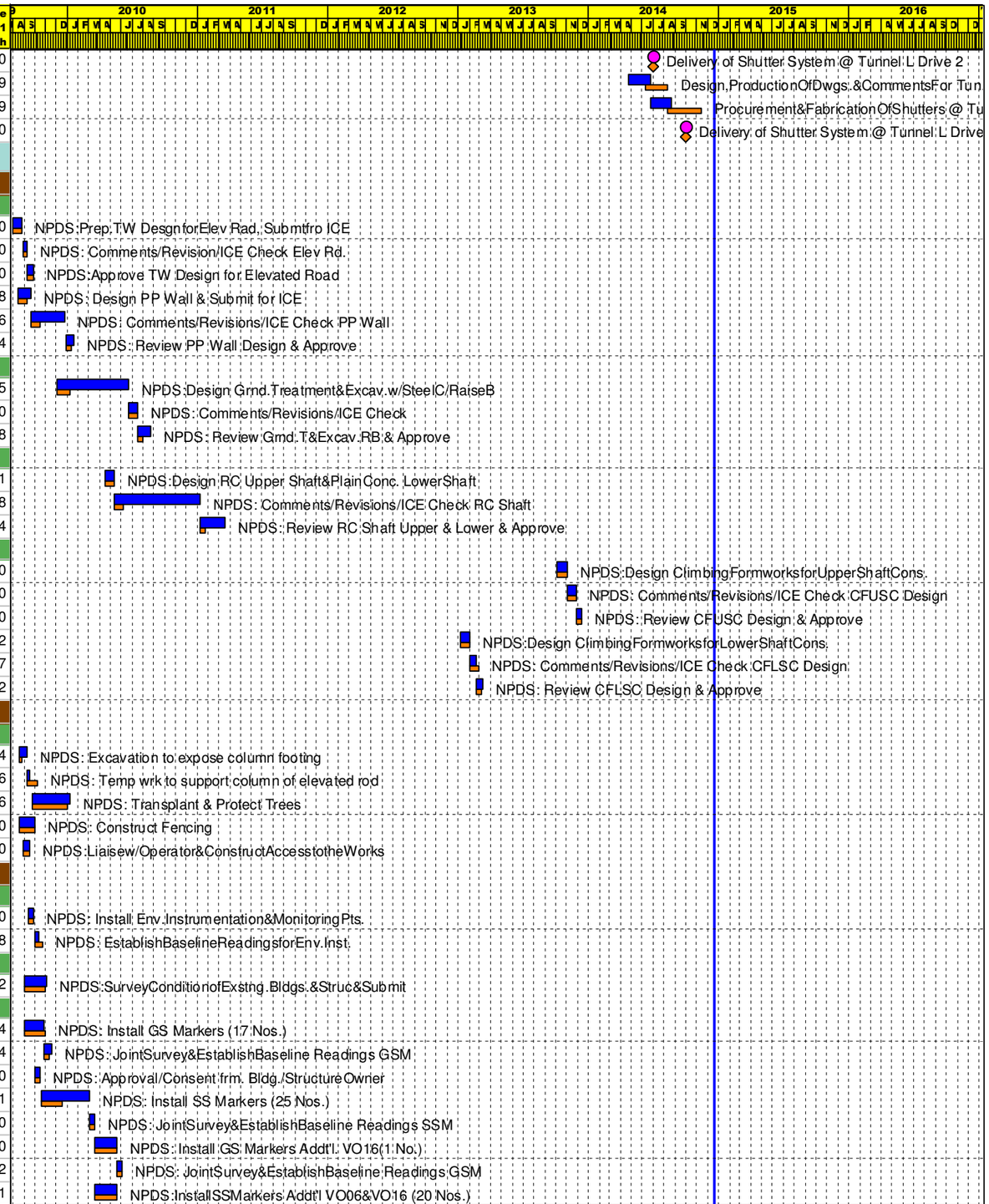
Annex C7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
June 2014	0	0
July 2014	0	0
August 2014	0	0
September 2014	0	0
October 2014	0	0
November 2014	0	0
December 2014	0	0
January 2015	0	0
February 2015	0	0
March 2015	0	0
April 2015	0	0
May 2015	0	0
June 2015	0	0
July 2015	0	0
August 2015	0	0
September 2015	0	0
October 2015	0	0
November 2015	0	0

Annex C7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2015	0	0
January 2016	0	0
Overall Total	0	0

Activity ID	Activity Name	Origina Dura..	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
TW0491	Delivery of Shutter System @ Tunnel L Drive 2	0	02-Jul-14 A		100%			0
TW0493	Design,ProductionOfDwgs.&CommentsFor Tun.LDrive1	52	22-Apr-14 A	24-Jun-14 A	100%			39
TW0495	Procurement&FabricationOfShutters @ Tun.LDrive 1	78	24-Jun-14 A	20-Aug-14 A	100%			69
TW0497	Delivery of Shutter System @ Tunnel L Drive 1	0	30-Sep-14 A		100%			0
North Point PTW Drop Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
NPDS0123	NPDS:Prep.TW DesgnforElev Rad, Submtfro ICE	24	31-Jul-09 A	27-Aug-09 A	100%			0
NPDS0124	NPDS: Comments/Revision/ICE Check Elev Rd.	12	28-Aug-09 A	10-Sep-09 A	100%			0
NPDS0127	NPDS:Approve TW Design for Elevated Road	14	11-Sep-09 A	26-Sep-09 A	100%			0
NPDS10010	NPDS: Design PP Wall & Submit for ICE	24	15-Aug-09 A	21-Sep-09 A	100%			-8
NPDS10012	NPDS: Comments/Revisions/ICE Check PP Wall	21	22-Sep-09 A	23-Dec-09 A	100%			-56
NPDS10020	NPDS: Review PP Wall Design & Approve	14	28-Dec-09 A	18-Jan-10 A	100%			-4
Grnd.Treatment&Excavw/SteelCasing/RaiseBoring								
NPDS10100	NPDS:Design Grnd.Treatment&Excav.w/SteelC/RaiseB	29	03-Dec-09 A	21-Jun-10 A	100%			-135
NPDS10102	NPDS: Comments/Revisions/ICE Check	21	22-Jun-10 A	16-Jul-10 A	100%			0
NPDS10104	NPDS: Review Grnd.T&Excav.RB & Approve	14	16-Jul-10 A	21-Aug-10 A	100%			-18
Permanent Works								
NPDS10106	NPDS:Design RC Upper Shaft&PlainConc. LowerShaft	24	15-Apr-10 A	12-May-10 A	100%			1
NPDS10108	NPDS: Comments/Revisions/ICE Check RC Shaft	21	13-May-10 A	07-Jan-11 A	100%			-178
NPDS10110	NPDS: Review RC Shaft Upper & Lower & Approve	14	08-Jan-11 A	18-Mar-11 A	100%			-44
Temporary Works & Other Design								
NPDS10130	NPDS:Design ClimbingFormworksforUpperShaftCons.	24	05-Oct-13 A	02-Nov-13 A	100%			0
NPDS10132	NPDS: Comments/Revisions/ICE Check CFUSC Design	21	04-Nov-13 A	27-Nov-13 A	100%			0
NPDS10134	NPDS: Review CFUSC Design & Approve	14	28-Nov-13 A	13-Dec-13 A	100%			0
NPDS10140	NPDS:Design ClimbingFormworksforLowerShaftCons.	24	07-Jan-13 A	31-Jan-13 A	100%			2
NPDS10142	NPDS: Comments/Revisions/ICE Check CFLSC Design	21	01-Feb-13 A	20-Feb-13 A	100%			7
NPDS10144	NPDS: Review CFLSC Design & Approve	14	21-Feb-13 A	11-Mar-13 A	100%			-2
Preliminaries Works								
No Significant Evnt								
NPDS0130	NPDS: Excavation to expose column footing	6	18-Aug-09 A	09-Sep-09 A	100%			-14
NPDS0140	NPDS: Temp wrk to support column of elevated rod	24	10-Sep-09 A	18-Sep-09 A	100%			16
NPDS0150	NPDS: Transplant & Protect Trees	80	25-Sep-09 A	08-Jan-10 A	100%			-6
NPDS0160	NPDS: Construct Fencing	38	18-Aug-09 A	30-Sep-09 A	100%			0
NPDS0240	NPDS:Liaisew/Operator&ConstructAccesstotheWorks	15	29-Aug-09 A	15-Sep-09 A	100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
NPDS0190	NPDS: Install Env.Instrumentation&MonitoringPts.	14	14-Sep-09 A	29-Sep-09 A	100%			0
NPDS0200	NPDS: EstablishBaselineReadingsforEnv.Inst.	18	30-Sep-09 A	13-Oct-09 A	100%			8
EBS Works								
NPDS0210	NPDS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	03-Nov-09 A	100%			-2
Markers/UMP's/Others(Same note as Piez.)								
NPDS0250	NPDS: Install GS Markers (17 Nos.)	50	01-Sep-09 A	27-Oct-09 A	100%			4
NPDS0260	NPDS: JointSurvey&EstablishBaseline Readings GSM	14	28-Oct-09 A	17-Nov-09 A	100%			-4
NPDS0261	NPDS: Approval/Consent frm. Bldg./StructureOwner	14	30-Sep-09 A	17-Oct-09 A	100%			0
NPDS0263	NPDS: Install SS Markers (25 Nos.)	50	19-Oct-09 A	03-Mar-10 A	100%			-61
NPDS0264	NPDS: JointSurvey&EstablishBaseline Readings SSM	14	04-Mar-10 A	19-Mar-10 A	100%			0
NPDS0266	NPDS: Install GS Markers Addt'l. VO16(1 No.)	50	20-Mar-10 A	19-May-10 A	100%			0
NPDS0268	NPDS: JointSurvey&EstablishBaseline Readings GSM	14	20-May-10 A	02-Jun-10 A	100%			2
NPDS0269A	NPDS:InstallSSMarkers Addt'l VO06&VO16 (20 Nos.)	50	19-Mar-10 A	19-May-10 A	100%			-1



Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66

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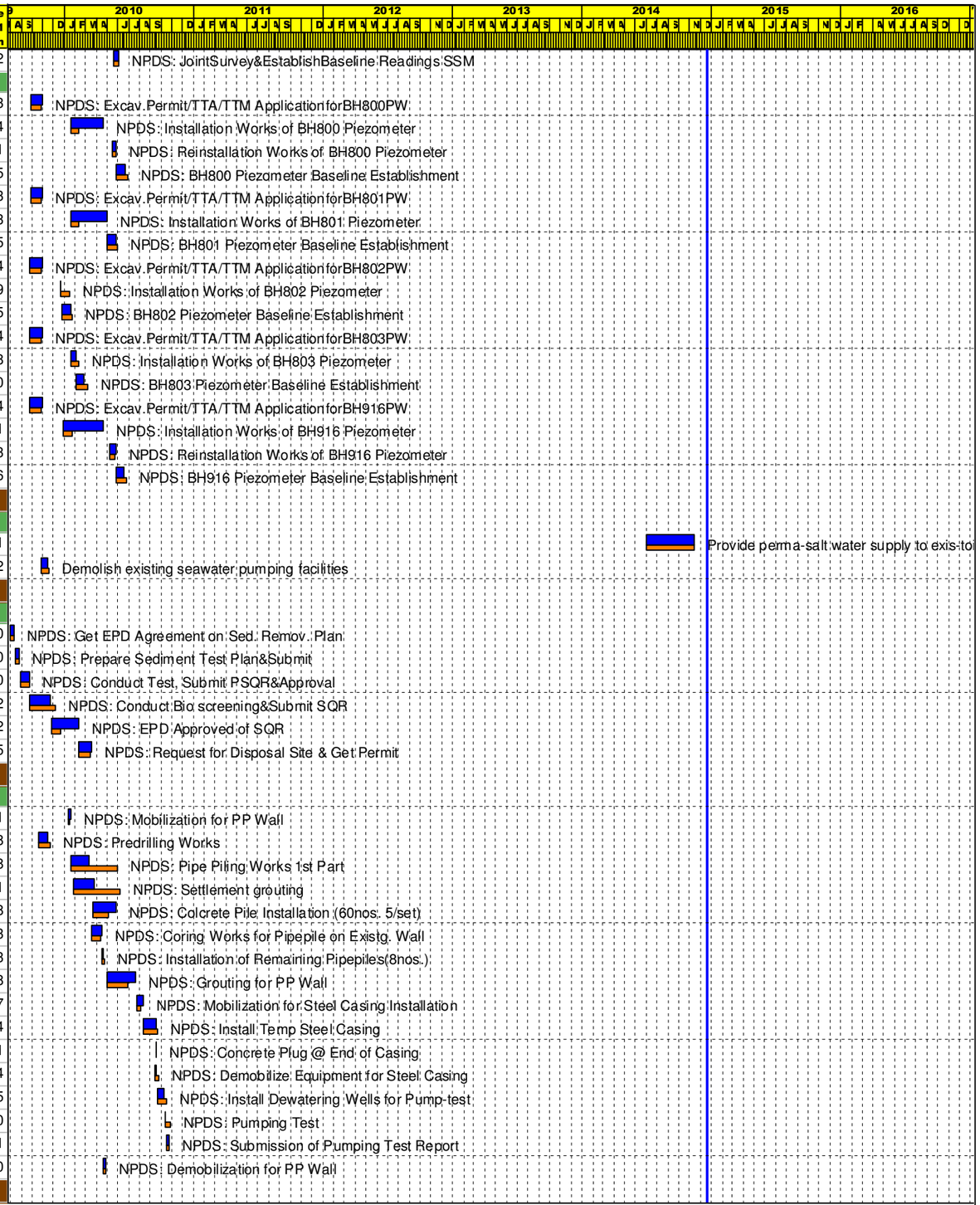
Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura..	Start	Finish	Activity % omplete	Total Float	naining Float	riance - BL1 Finish
NPDS0269C	NPDS: JointSurvey&EstablishBaseline Readings SSM	14	20-May-10 A	02-Jun-10 A	100%			2
Piezometers(NearbyPTWorPScovered inthisInstalln)								
NPDS0270	NPDS: Excav.Permit/TTA/TTM ApplicationforBH800PW	24	28-Sep-09 A	31-Oct-09 A	100%			-3
NPDS0280	NPDS: Installation Works of BH800 Piezometer	21	18-Jan-10 A	19-Apr-10 A	100%			-54
NPDS0280A	NPDS: Reinstallation Works of BH800 Piezometer	12	15-May-10 A	27-May-10 A	100%			1
NPDS0290	NPDS: BH800 Piezometer Baseline Establishment	26	28-May-10 A	22-Jun-10 A	100%			5
NPDS0380	NPDS: Excav.Permit/TTA/TTM ApplicationforBH801PW	24	28-Sep-09 A	31-Oct-09 A	100%			-3
NPDS0383	NPDS: Installation Works of BH801 Piezometer	21	18-Jan-10 A	30-Apr-10 A	100%			-63
NPDS0385	NPDS: BH801 Piezometer Baseline Establishment	26	01-May-10 A	25-May-10 A	100%			5
NPDS0387	NPDS: Excav.Permit/TTA/TTM ApplicationforBH802PW	24	26-Sep-09 A	31-Oct-09 A	100%			-4
NPDS0389	NPDS: Installation Works of BH802 Piezometer	21	21-Dec-09 A	22-Dec-09 A	100%			19
NPDS0391	NPDS: BH802 Piezometer Baseline Establishment	26	23-Dec-09 A	18-Jan-10 A	100%			5
NPDS0393	NPDS: Excav.Permit/TTA/TTM ApplicationforBH803PW	24	26-Sep-09 A	31-Oct-09 A	100%			-4
NPDS0395	NPDS: Installation Works of BH803 Piezometer	21	18-Jan-10 A	01-Feb-10 A	100%			8
NPDS0397	NPDS: BH803 Piezometer Baseline Establishment	26	02-Feb-10 A	23-Feb-10 A	100%			10
NPDS0399	NPDS: Excav.Permit/TTA/TTM ApplicationforBH916PW	24	26-Sep-09 A	31-Oct-09 A	100%			-4
NPDS0401	NPDS: Installation Works of BH916 Piezometer	21	28-Dec-09 A	19-Apr-10 A	100%			-71
NPDS0401A	NPDS: Reinstallation Works of BH916 Piezometer	12	10-May-10 A	26-May-10 A	100%			-3
NPDS0403	NPDS: BH916 Piezometer Baseline Establishment	26	27-May-10 A	19-Jun-10 A	100%			6
Diversion of Existing Utilities								
No Significant Evnt								
NPDS0100	Provide perma-salt water supply to exis-toi faci	115	02-Jul-14 A	15-Nov-14 A	100%			1
NPDS0110	Demolish existing seawater pumping facilities	18	27-Oct-09 A	13-Nov-09 A	100%			2
Marine Dumping Permit								
No Significant Evnt								
NPDS0207	NPDS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0
NPDS0208	NPDS: Prepare Sediment Test Plan&Submit	12	14-Aug-09 A	27-Aug-09 A	100%			0
NPDS0209	NPDS: Conduct Test, Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0
NPDS0211	NPDS: Conduct Bio screening&Submit SQR	60	25-Sep-09 A	23-Nov-09 A	100%			12
NPDS0212	NPDS: EPD Approved of SQR	24	24-Nov-09 A	10-Feb-10 A	100%			-42
NPDS0213	NPDS: Request for Disposal Site & Get Permit	24	11-Feb-10 A	19-Mar-10 A	100%			-5
Pipe Piling								
No Significant Evnt								
NPDS0300	NPDS: Mobilization for PP Wall	6	11-Jan-10 A	18-Jan-10 A	100%			-1
NPDS0302	NPDS: Predrilling Works	30	19-Oct-09 A	13-Nov-09 A	100%			8
NPDS0305	NPDS: Pipe Piling Works 1st Part	110	19-Jan-10 A	11-Mar-10 A	100%			68
NPDS0305B	NPDS: Settlement grouting	110	26-Jan-10 A	26-Mar-10 A	100%			61
NPDS0306	NPDS: Colcrete Pile Installation (60nos. 5/set)	36	24-Mar-10 A	27-May-10 A	100%			-18
NPDS0307	NPDS: Coring Works for Pipepile on Existg. Wall	21	19-Mar-10 A	16-Apr-10 A	100%			-3
NPDS0308	NPDS: Installation of Remaining Pipepiles(8nos.)	7	17-Apr-10 A	21-Apr-10 A	100%			3
NPDS0310	NPDS: Grouting for PP Wall	51	30-Apr-10 A	22-Jul-10 A	100%			-18
NPDS0310A	NPDS: Mobilization for Steel Casing Installation	10	23-Jul-10 A	11-Aug-10 A	100%			-7
NPDS0320	NPDS: Install Temp Steel Casing	35	12-Aug-10 A	16-Sep-10 A	100%			4
NPDS0330	NPDS: Concrete Plug @ End of Casing	2	17-Sep-10 A	17-Sep-10 A	100%			1
NPDS0335	NPDS: Demobilize Equipment for Steel Casing	10	13-Sep-10 A	18-Sep-10 A	100%			4
NPDS0340	NPDS: Install Dewatering Wells for Pump-test	21	20-Sep-10 A	09-Oct-10 A	100%			5
NPDS0350	NPDS: Pumping Test	14	11-Oct-10 A	14-Oct-10 A	100%			10
NPDS0360	NPDS: Submission of Pumping Test Report	6	15-Oct-10 A	23-Oct-10 A	100%			-1
NPDS0370	NPDS: Demobilization for PP Wall	6	22-Apr-10 A	28-Apr-10 A	100%			0
Shaft Excavation								



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Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

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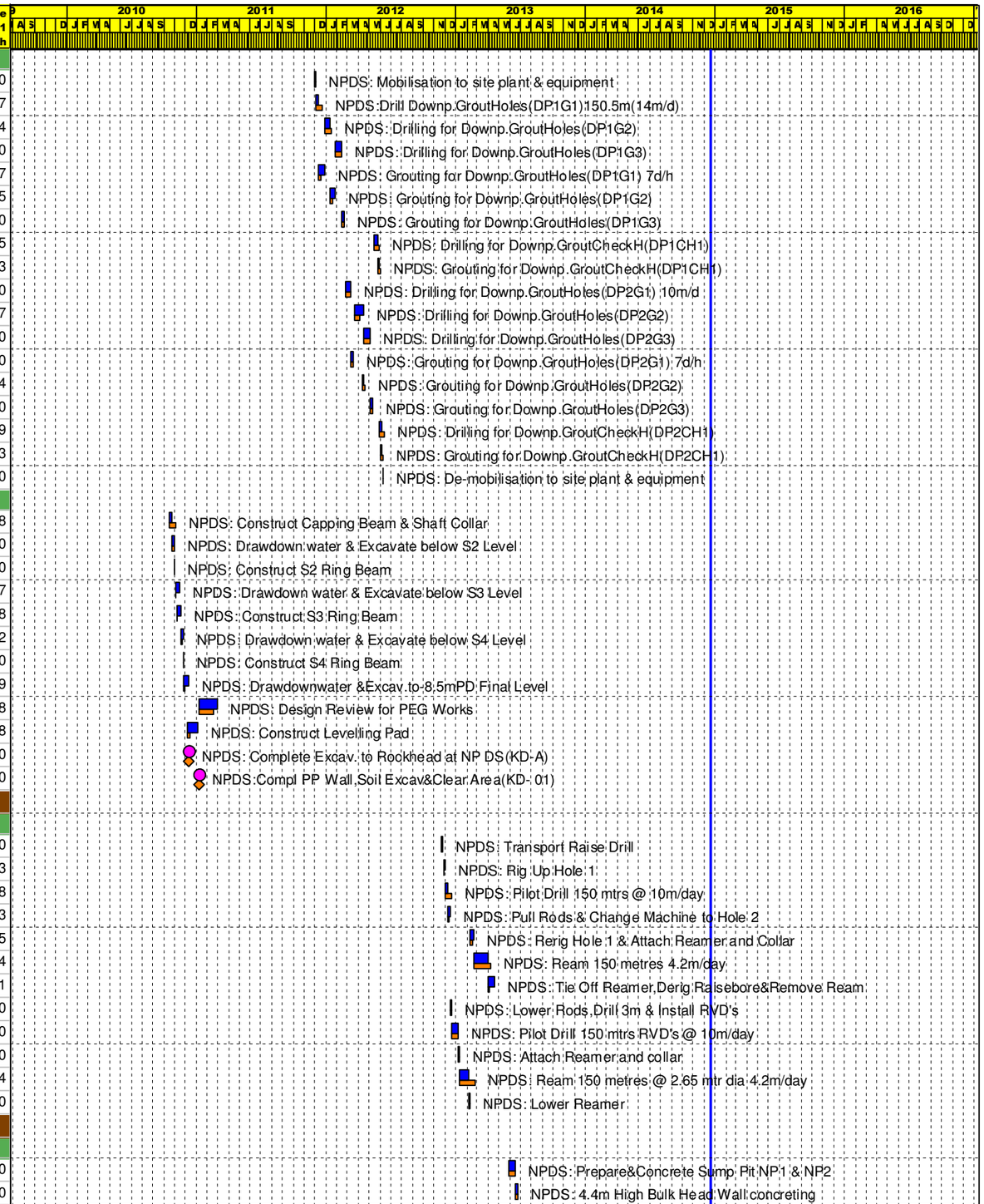
Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
Pre-Excavation Grouting								
NPDS0557	NPDS: Mobilisation to site plant & equipment	3	29-Nov-11 A	01-Dec-11 A	100%			0
NPDS0559	NPDS:Drill Downp.GroutHoles(DP1G1)150.5m(14m/d)	15	02-Dec-11 A	10-Dec-11 A	100%			7
NPDS0561	NPDS: Drilling for Downp.GroutHoles(DP1G2)	15	28-Dec-11 A	10-Jan-12 A	100%			4
NPDS0563	NPDS: Drilling for Downp.GroutHoles(DP1G3)	15	28-Jan-12 A	14-Feb-12 A	100%			0
NPDS0565	NPDS: Grouting for Downp.GroutHoles(DP1G1) 7d/h	7	10-Dec-11 A	27-Dec-11 A	100%			-7
NPDS0567	NPDS: Grouting for Downp.GroutHoles(DP1G2)	7	11-Jan-12 A	27-Jan-12 A	100%			-5
NPDS0569	NPDS: Grouting for Downp.GroutHoles(DP1G3)	7	15-Feb-12 A	22-Feb-12 A	100%			0
NPDS0571	NPDS: Drilling for Downp.GroutCheckH(DP1CH1)	15	14-May-12 A	24-May-12 A	100%			5
NPDS0573	NPDS: Grouting for Downp.GroutCheckH(DP1CH1)	7	25-May-12 A	29-May-12 A	100%			3
NPDS0575	NPDS: Drilling for Downp.GroutHoles(DP2G1) 10m/d	15	23-Feb-12 A	10-Mar-12 A	100%			0
NPDS0577	NPDS: Drilling for Downp.GroutHoles(DP2G2)	15	20-Mar-12 A	14-Apr-12 A	100%			-7
NPDS0579	NPDS: Drilling for Downp.GroutHoles(DP2G3)	15	17-Apr-12 A	04-May-12 A	100%			0
NPDS0581	NPDS: Grouting for Downp.GroutHoles(DP2G1) 7d/h	7	12-Mar-12 A	19-Mar-12 A	100%			0
NPDS0583	NPDS: Grouting for Downp.GroutHoles(DP2G2)	7	14-Apr-12 A	17-Apr-12 A	100%			4
NPDS0585	NPDS: Grouting for Downp.GroutHoles(DP2G3)	7	05-May-12 A	12-May-12 A	100%			0
NPDS0587	NPDS: Drilling for Downp.GroutCheckH(DP2CH1)	15	29-May-12 A	04-Jun-12 A	100%			9
NPDS0589	NPDS: Grouting for Downp.GroutCheckH(DP2CH1)	7	04-Jun-12 A	07-Jun-12 A	100%			3
NPDS0591	NPDS: De-mobilisation to site plant & equipment	1	09-Jun-12 A	09-Jun-12 A	100%			0
No Significant Evnt								
NPDS0400	NPDS: Construct Capping Beam & Shaft Collar	15	15-Oct-10 A	23-Oct-10 A	100%			8
NPDS0450	NPDS: Drawdown water & Excavate below S2 Level	5	25-Oct-10 A	29-Oct-10 A	100%			0
NPDS0460	NPDS: Construct S2 Ring Beam	2	30-Oct-10 A	01-Nov-10 A	100%			0
NPDS0470	NPDS: Drawdown water & Excavate below S3 Level	4	02-Nov-10 A	13-Nov-10 A	100%			-7
NPDS0480	NPDS: Construct S3 Ring Beam	2	06-Nov-10 A	17-Nov-10 A	100%			-8
NPDS0490	NPDS: Drawdown water & Excavate below S4 Level	4	18-Nov-10 A	24-Nov-10 A	100%			-2
NPDS0500	NPDS: Construct S4 Ring Beam	2	25-Nov-10 A	26-Nov-10 A	100%			0
NPDS0510	NPDS: Drawdownwater &Excav.to-8.5mPD Final Level	3	27-Nov-10 A	10-Dec-10 A	100%			-9
NPDS0511	NPDS: Design Review for PEG Works	35	07-Jan-11 A	28-Feb-11 A	100%			-8
NPDS0512	NPDS: Construct Levelling Pad	6	08-Dec-10 A	06-Jan-11 A	100%			-18
NPDS0800	NPDS: Complete Excav. to Rockhead at NP DS(KD-A)	0		11-Dec-10 A	100%			0
NPDS0810	NPDS:Compl PP Wall,Soil Excav&Clear Area(KD- 01)	0		07-Jan-11 A	100%			0
Raised Boring								
No Significant Evnt								
NPDS0699	NPDS: Transport Raise Drill	4	22-Nov-12 A	26-Nov-12 A	100%			0
NPDS0700	NPDS: Rig Up Hole 1	2	27-Nov-12 A	01-Dec-12 A	100%			-3
NPDS0710	NPDS: Pilot Drill 150 mtrs @ 10m/day	15	03-Dec-12 A	10-Dec-12 A	100%			8
NPDS0714	NPDS: Pull Rods & Change Machine to Hole 2	3	11-Dec-12 A	17-Dec-12 A	100%			-3
NPDS0720	NPDS: Rerig Hole 1 & Attach Reamer and Collar	3	09-Feb-13 A	21-Feb-13 A	100%			-5
NPDS0730	NPDS: Ream 150 metres 4.2m/day	36	22-Feb-13 A	02-Apr-13 A	100%			4
NPDS0740	NPDS: Tie Off Reamer,Derig Raisebore&Remove Ream	3	03-Apr-13 A	19-Apr-13 A	100%			-11
NPDS0750	NPDS: Lower Rods,Drill 3m & Install RVD's	2	18-Dec-12 A	19-Dec-12 A	100%			0
NPDS0760	NPDS: Pilot Drill 150 mtrs RVD's @ 10m/day	15	20-Dec-12 A	08-Jan-13 A	100%			0
NPDS0770	NPDS: Attach Reamer and collar	2	09-Jan-13 A	10-Jan-13 A	100%			0
NPDS0780	NPDS: Ream 150 metres @ 2.65 mtr dia 4.2m/day	36	11-Jan-13 A	05-Feb-13 A	100%			14
NPDS0790	NPDS: Lower Reamer	3	06-Feb-13 A	08-Feb-13 A	100%			0
Lower Shaft Construction								
No Significant Evnt								
NPDS0895	NPDS: Prepare&Concrete Sump Pit NP1 & NP2	15	30-May-13 A	17-Jun-13 A	100%			0
NPDS0900	NPDS: 4.4m High Bulk Head Wall concreting	7	17-Jun-13 A	24-Jun-13 A	100%			0



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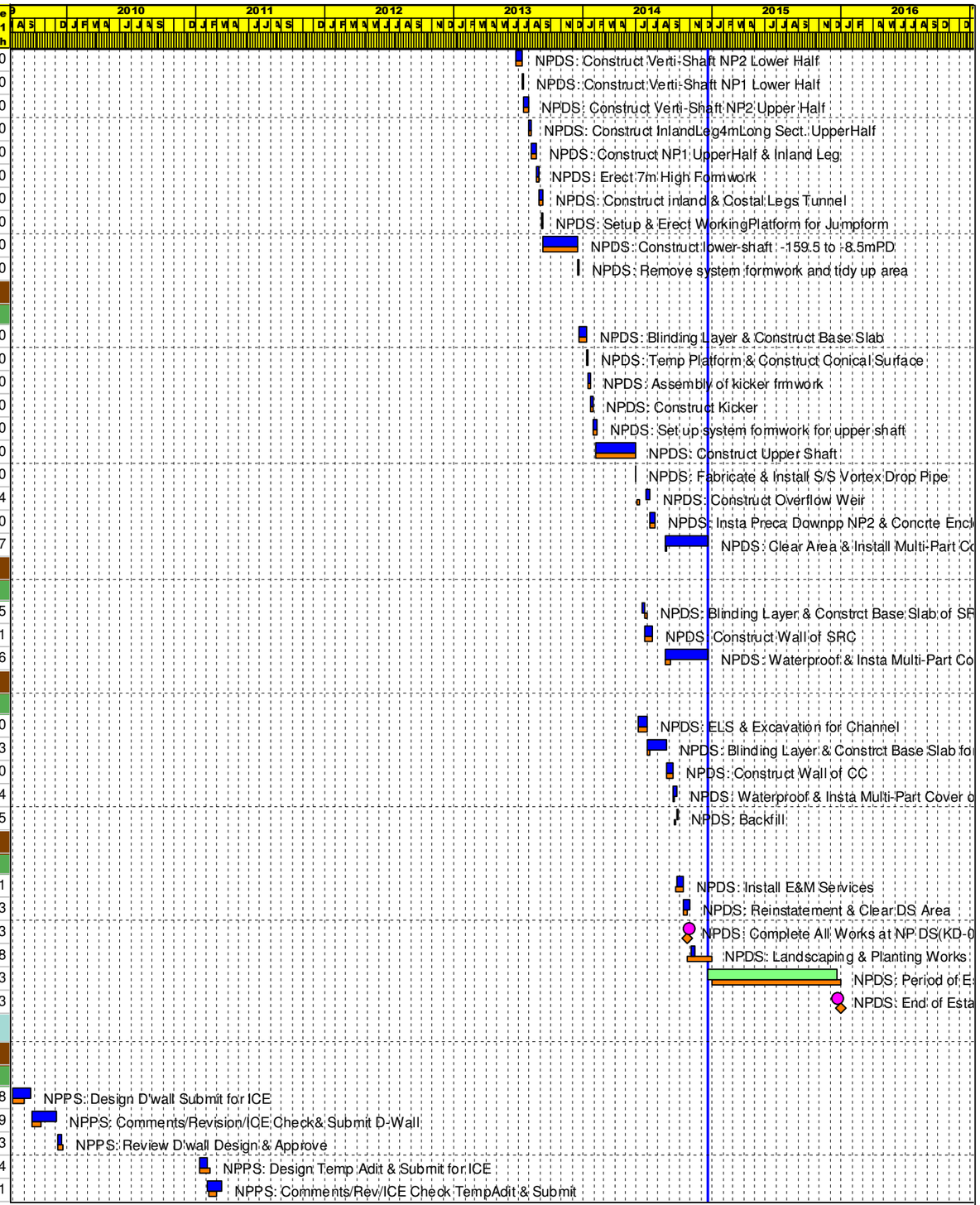
Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
NPDS0905	NPDS: Construct Verti-Shaft NP2 Lower Half	17	24-Jun-13 A	13-Jul-13 A	100%			0
NPDS0910	NPDS: Construct Verti-Shaft NP1 Lower Half	2	13-Jul-13 A	15-Jul-13 A	100%			0
NPDS0912	NPDS: Construct Verti-Shaft NP2 Upper Half	16	15-Jul-13 A	01-Aug-13 A	100%			0
NPDS0920	NPDS: Construct InlandLeg4mLong Sect. UpperHalf	7	01-Aug-13 A	08-Aug-13 A	100%			0
NPDS0925	NPDS: Construct NP1 UpperHalf & Inland Leg	13	08-Aug-13 A	22-Aug-13 A	100%			0
NPDS0955	NPDS: Erect 7m High Formwork	7	22-Aug-13 A	29-Aug-13 A	100%			0
NPDS0995	NPDS: Construct inland & Costal Legs Tunnel	9	29-Aug-13 A	07-Sep-13 A	100%			0
NPDS0998	NPDS: Setup & Erect WorkingPlatform for Jumpform	2	07-Sep-13 A	09-Sep-13 A	100%			0
NPDS1015	NPDS: Construct lower-shaft -159.5 to -8.5mPD	84	09-Sep-13 A	18-Dec-13 A	100%			0
NPDS1020	NPDS: Remove system formwork and tidy up area	2	18-Dec-13 A	19-Dec-13 A	100%			0
Upper Shaft Construction								
No Significant Evnt								
NPDS1025	NPDS: Blinding Layer & Construct Base Slab	18	19-Dec-13 A	11-Jan-14 A	100%			0
NPDS1065	NPDS: Temp Platform & Construct Conical Surface	4	11-Jan-14 A	15-Jan-14 A	100%			0
NPDS1110	NPDS: Assembly of kicker frmwork	8	15-Jan-14 A	23-Jan-14 A	100%			0
NPDS1135	NPDS: Construct Kicker	7	23-Jan-14 A	30-Jan-14 A	100%			0
NPDS1140	NPDS: Set up system formwork for upper shaft	7	30-Jan-14 A	10-Feb-14 A	100%			0
NPDS1145	NPDS: Construct Upper Shaft	93	04-Feb-14 A	29-May-14 A	100%			0
NPDS1305	NPDS: Fabricate & Install S/S Vortex Drop Pipe	3	29-May-14 A	31-May-14 A	100%			0
NPDS1345	NPDS: Construct Overflow Weir	6	30-Jun-14 A	08-Jul-14 A	100%			-24
NPDS1385	NPDS: Insta Preca Downpp NP2 & Concrte Enclosure	12	09-Jul-14 A	22-Jul-14 A	100%			0
NPDS1395	NPDS: Clear Area & Install Multi-Part Cover	2	23-Aug-14 A	20-Dec-14	98.96%	524	524	-97
Scum Removal Chamber								
No Significant Evnt								
NPDS1585	NPDS: Blinding Layer & Constrct Base Slab of SRC	6	18-Jun-14 A	24-Jun-14 A	100%			5
NPDS1625	NPDS: Construct Wall of SRC	18	24-Jun-14 A	16-Jul-14 A	100%			-1
NPDS1645	NPDS: Waterproof & Insta Multi-Part Cover of SRC and ba...	13	23-Aug-14 A	20-Dec-14	99.01%	524	524	-86
Connection Channel								
No Significant Evnt								
NPDS1454	NPDS: ELS & Excavation for Channel	22	06-Jun-14 A	03-Jul-14 A	100%			0
NPDS1455	NPDS: Blinding Layer & Constrct Base Slab for CC	4	03-Jul-14 A	26-Aug-14 A	100%			-43
NPDS1515	NPDS: Construct Wall of CC	13	27-Aug-14 A	11-Sep-14 A	100%			0
NPDS1525	NPDS: Waterproof & Insta Multi-Part Cover of CC	5	12-Sep-14 A	22-Sep-14 A	100%			-4
NPDS1540	NPDS: Backfill	3	23-Sep-14 A	26-Sep-14 A	100%			-5
Miscellaneous Works								
No Significant Evnt								
NPDS2010	NPDS: Install E&M Services	16	24-Sep-14 A	11-Oct-14 A	100%			-1
NPDS2020	NPDS: Reinstatement & Clear DS Area	12	11-Oct-14 A	28-Oct-14 A	100%			-3
NPDS2025	NPDS: Complete All Works at NP DS(KD-05)	0		28-Oct-14 A	100%			-3
NPDS2030	NPDS: Landscaping & Planting Works	10	04-Nov-14 A	14-Nov-14 A	100%			48
NPDS2040	NPDS: Period of Establishment Works	365	20-Dec-14	19-Dec-15	0%	278	278	13
NPDS2050	NPDS: End of Establishment Period	0		19-Dec-15	0%	278	278	13
North Point Production Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
NPPS10010	NPPS: Design D'wall Submit for ICE	28	31-Jul-09 A	22-Sep-09 A	100%			-18
NPPS10015	NPPS: Comments/Revision/ICE Check& Submit D-Wall	21	23-Sep-09 A	04-Dec-09 A	100%			-39
NPPS10020	NPPS: Review D'wall Design & Approve	14	05-Dec-09 A	17-Dec-09 A	100%			3
NPPS10050	NPPS: Design Temp Adit & Submit for ICE	24	11-Jan-11 A	02-Feb-11 A	100%			4
NPPS10055	NPPS: Comments/Rev/ICE Check TempAdit & Submit	21	03-Feb-11 A	14-Mar-11 A	100%			-11



Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

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Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66 **Sheet 15 of 60**

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014 © Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
NPPS10060	NPPS: Review Temp Adit Design & Approve	24	15-Mar-11 A	25-Jul-11 A	100%			-86
NPPS10140	NPPS:PrepareBlastingAssessmentReport,ICE&Submit	50	09-Sep-09 A	30-Dec-09 A	100%			-43
NPPS10150	NPPS: Review and Approve BAR Report	77	31-Dec-09 A	16-Dec-10 A	100%			-213
NPPS10160	NPPS: Prepare BlastingPermit Application&Submit	24	14-May-10 A	07-Dec-10 A	100%			-149
NPPS10170	NPPS: Review & Approve BlastingPermitApplication	8	08-Dec-10 A	17-Dec-10 A	100%			-1
NPPS1018	NPPS: PrepareDesignofNPVFPOffice &SubmitforICE	24	25-Aug-09 A	21-Sep-09 A	100%			0
NPPS1019	NPPS: Comments/Rev/ICE Check NPVFPOffice& Submit	21	22-Sep-09 A	03-Nov-09 A	100%			-13
NPPS1020	NPPS: Review Design of NP VFP Office & Approve	14	03-Nov-09 A	08-Dec-09 A	100%			-17
NPPS1050	NPPS: PrepareTWDesignforNP Ramp&SubmitforICE	24	25-Aug-09 A	21-Sep-09 A	100%			0
NPPS1080	NPPS: Comment/Revisions/ICE Check NP Ramp	7	22-Sep-09 A	29-Sep-09 A	100%			0
NPPS1082	NPPS: Review TW Design for NP Ramp&Approve	10	30-Sep-09 A	20-Oct-09 A	100%			-6
ELS in Rock to Shaft Bottom Level								
NPPS10250	NPPS: Design ELS to Shaft Bottom Submit for ICE	28	02-Nov-09 A	18-Jan-10 A	100%			-37
NPPS10252	NPPS: Comments/Revision/ICE Check ELS & Submit	21	19-Jan-10 A	29-Jun-10 A	100%			-112
NPPS10254	NPPS: Review ELS Design & Approve	14	30-Jun-10 A	16-Jul-10 A	100%			0
Temporary Works & Other Design								
NPPS10256	NPPS: Design Headframe @ Shaft	28	26-Nov-09 A	19-Dec-09 A	100%			7
NPPS10258	NPPS: Comments/Revision/ICE Check HeadF & Submit	21	20-Dec-09 A	15-Mar-10 A	100%			-47
NPPS10260	NPPS: Review Headframe Design & Approve	14	16-Mar-10 A	05-Aug-10 A	100%			-105
NPPS10262	NPPS: Design Travelling Gantry for Shaft	28	26-Nov-09 A	28-Dec-09 A	100%			1
NPPS10264	NPPS: Comments/Revision/ICECheck Trav.G & Submit	21	29-Dec-09 A	15-Sep-10 A	100%			-195
NPPS10266	NPPS: Review Trav. Gant. Design & Approve	14	16-Sep-10 A	02-Oct-10 A	100%			1
NPPS10270	NPPS: Design Noise Enclosure for Shaft	28	26-Nov-09 A	05-Mar-10 A	100%			-53
NPPS10272	NPPS: Comments/Revision/ICENoise Encl. & Submit	21	06-Mar-10 A	29-May-10 A	100%			-50
NPPS10274	NPPS: Review Noise Enclosure Design & Approve	14	31-May-10 A	06-Aug-10 A	100%			-43
NPPS10280	NPPS: Design AccessStaircase for Shaft	28	26-Nov-09 A	28-Dec-09 A	100%			1
NPPS10282	NPPS: Comments/Revision/ICEAcc.Stairc.& Submit	21	29-Dec-09 A	08-Sep-10 A	100%			-189
NPPS10284	NPPS: Review Access Staircase Design & Approve	14	09-Sep-10 A	19-Sep-10 A	100%			5
NPPS10288	NPPS: Design Mucking System for Shaft	28	26-Nov-09 A	05-Mar-10 A	100%			-53
NPPS10290	NPPS: Comments/Revision/ICE Muck System & Submit	21	06-Mar-10 A	20-Aug-10 A	100%			-119
NPPS10292	NPPS: Review Muck System Design & Approve	14	21-Aug-10 A	24-Aug-10 A	100%			11
NPPS10296	NPPS: Design Temp.Works@ShaftPitBottom for Shaft	28	26-Nov-09 A	29-Dec-10 A	100%			-301
NPPS10298	NPPS: Comments/Revision/ICE TW & Submit	21	30-Jan-11 A	25-Jun-11 A	100%			-100
NPPS10300	NPPS: Review Temp.Works@ShaftPB Design & Approve	14	27-Jun-11 A	31-Aug-11 A	100%			-42
NPPS10400	NPPS: Design Ramp Portion for Reinstatement @ NP	28	23-Aug-14 A	25-Sep-14 A	100%			0
NPPS10401	NPPS: Comments/Revision/ICE Check & Submit	21	20-Sep-14 A	16-Oct-14 A	100%			5
NPPS10402	NPPS: Review Ramp Portion Design & Approve	14	17-Oct-14 A	01-Nov-14 A	100%			5
Preliminaries Works								
No Significant Evnt								
NPPS0160	NPPS: Construct Hoarding/Fencing	38	18-Aug-09 A	30-Sep-09 A	100%			0
NPPS10180	NPPS:Construct/Install Blast Protection	2	20-Nov-10 A	22-Nov-10 A	100%			0
NPPS10190	NPPS: Site Inspection from Mines	12	23-Nov-10 A	06-Dec-10 A	100%			0
NPPS10200	NPPS: Issue Blasting Permit	1	20-Jan-11 A	28-Feb-11 A	100%			-31
EBS, Env. & Geotechnical Instrumentations								
Environmental								
NPPS0190	NPPS: InstallEnv.Instrumentation&MonitoringPts.	14	28-Aug-09 A	12-Sep-09 A	100%			0
NPPS0350	NPPS: EstablishEnv.BaselineReadingsforInst.&Mon.	24	14-Sep-09 A	13-Oct-09 A	100%			0
EBS Works								
NPPS0360	NPPS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	05-Nov-09 A	100%			-4
Electrical & Mechanical Installations								

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MP66

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
Power Supply Application								
NPPS0500	NPPS: Construct HVDP Foundation	9	16-Mar-10 A	22-Mar-10 A	100%			3
NPPS0502	NPPS: Install HVDP	2	23-Mar-10 A	24-Mar-10 A	100%			0
NPPS0504	NPPS: Construct Switchroom Foundation	6	07-Apr-10 A	13-Apr-10 A	100%			0
NPPS0506	NPPS: Deliver and Install Switchroom	2	29-Apr-10 A	04-Jun-10 A	100%			-29
NPPS0508	NPPS: HVDP to Switchroom cable to fit	4	21-May-10 A	25-May-10 A	100%			0
NPPS0510	NPPS: Install Main Earthing	18	07-May-10 A	15-May-10 A	100%			10
NPPS0512	NPPS: Testing & Commissioning 11kV Supply	2	20-Aug-10 A	21-Sep-10 A	100%			-26
NPPS0514	NPPS: HKEC Handover	2	22-Sep-10 A	24-Sep-10 A	100%			0
NPPS0516	NPPS: Install Containment Ducts	7	20-Aug-10 A	27-Aug-10 A	100%			0
NPPS0518	NPPS: Construct Substation Footings	15	30-Jul-10 A	12-Aug-10 A	100%			3
NPPS0520	NPPS: Install Lower Substation	2	13-Aug-10 A	14-Aug-10 A	100%			0
NPPS0522	NPPS: Install Spacer Units	2	16-Aug-10 A	17-Aug-10 A	100%			0
NPPS0524	NPPS: Install Upper Container	2	18-Aug-10 A	19-Aug-10 A	100%			0
NPPS0526	NPPS: Install Containment	2	20-Aug-10 A	21-Aug-10 A	100%			0
NPPS0528	NPPS: Install 11kV Cable	7	19-Aug-10 A	24-Aug-10 A	100%			2
NPPS0530	NPPS: Intercouple Substations 11kV	2	19-Aug-10 A	20-Aug-10 A	100%			0
NPPS0532	NPPS: Testing & Commissioning 11kV System	2	20-Sep-10 A	21-Sep-10 A	100%			0
NPPS0533	NPPS: 11KV System Ready for Power ON	0		25-Sep-10 A	100%			0
NPPS0534	NPPS: Install LV Containment	10	20-Aug-10 A	24-Sep-10 A	100%			-20
NPPS0536	NPPS: Install LV Cables	12	31-Aug-10 A	04-Oct-10 A	100%			-16
NPPS0537	NPPS: 11KV Connection and Power On	0		05-Oct-10 A	100%			0
NPPS0600	NPPS: LV Application to HKEC	6	17-Jul-09 A	17-Jul-09 A	100%			5
NPPS0605	NPPS: Installation Works for LV Application	60	01-Aug-09 A	11-Dec-09 A	100%			-51
NPPS0610	NPPS: LV Connection & Power On	4	12-Dec-09 A	17-Dec-09 A	100%			-1
NPPS0615	NPPS: 11KV Application to HKEC	6	28-Aug-09 A	28-Aug-09 A	100%			5
Unit Installations & Cablings								
NPPS0625	NPPS: Installation of Shaft Services	25	08-Dec-11 A	11-Feb-12 A	100%			-27
NPPS0636	NPPS: Installation of Tunnel Services @ Drive6	303	03-Feb-12 A	09-Jun-14 A	100%			-397
Office at North Point Vehicular Ferry Pier								
No Significant Evnt								
NPPS1045	Civil/Structure Works for New Office at NP VFP	48	09-Nov-09 A	16-Dec-09 A	100%			15
NPPS1055	ABWF Works for NPV Office at NP VFP	18	21-Dec-09 A	25-Jan-10 A	100%			-11
NPPS1065	E&M Services for New Office at NP VFP	18	26-Dec-09 A	05-Feb-10 A	100%			-17
NPPS1075	T&C Works for New Office at NP VFP	4	06-Feb-10 A	10-Feb-10 A	100%			0
NPPS1077	Obtain Electricity, Water & FSD Supply	55	11-Feb-10 A	16-Nov-10 A	100%			-174
NPPS1079	Obtain Fire Certificate from FSD	28	05-Jul-10 A	19-Nov-10 A	100%			-88
NPPS1081	Complete All Works KD-04	0		04-Jul-10 A	100%			0
NPPS1081 A	Comp.Sect.IV:NP-viiibOffi.Bldg.atNPVFP Remaining	0		10-Dec-10 A	100%			0
NPPS1085	Relocate to New Office at NP VFP	4	05-Jul-10 A	07-Jul-10 A	100%			1
NPPS1087	Complete Additional Works	15	20-Nov-10 A	09-Dec-10 A	100%			-2
NPPS1089	Completion Certificate from FSD	20	20-Nov-10 A	09-Dec-10 A	100%			3
NPPS1090	Demolish Existing Office at NP VFP	6	05-Oct-09 A	12-Oct-09 A	100%			-1
North Point Vehicular Ramp								
No Significant Evnt								
NPPS1070	Demolish Part of NP Vehicular Ramp	22	15-Oct-09 A	14-Nov-09 A	100%			-4
NPPS1100	Reinstate Part of NP Vehicular Ramp	54	02-Apr-14 A	11-Jun-14 A	100%			0
Fire Wall								
No Significant Evnt								
NPPS10070	NPPS: Design 3.5h F'Wall, ICE Check & Submit	24	31-Aug-09 A	26-Sep-09 A	100%			0

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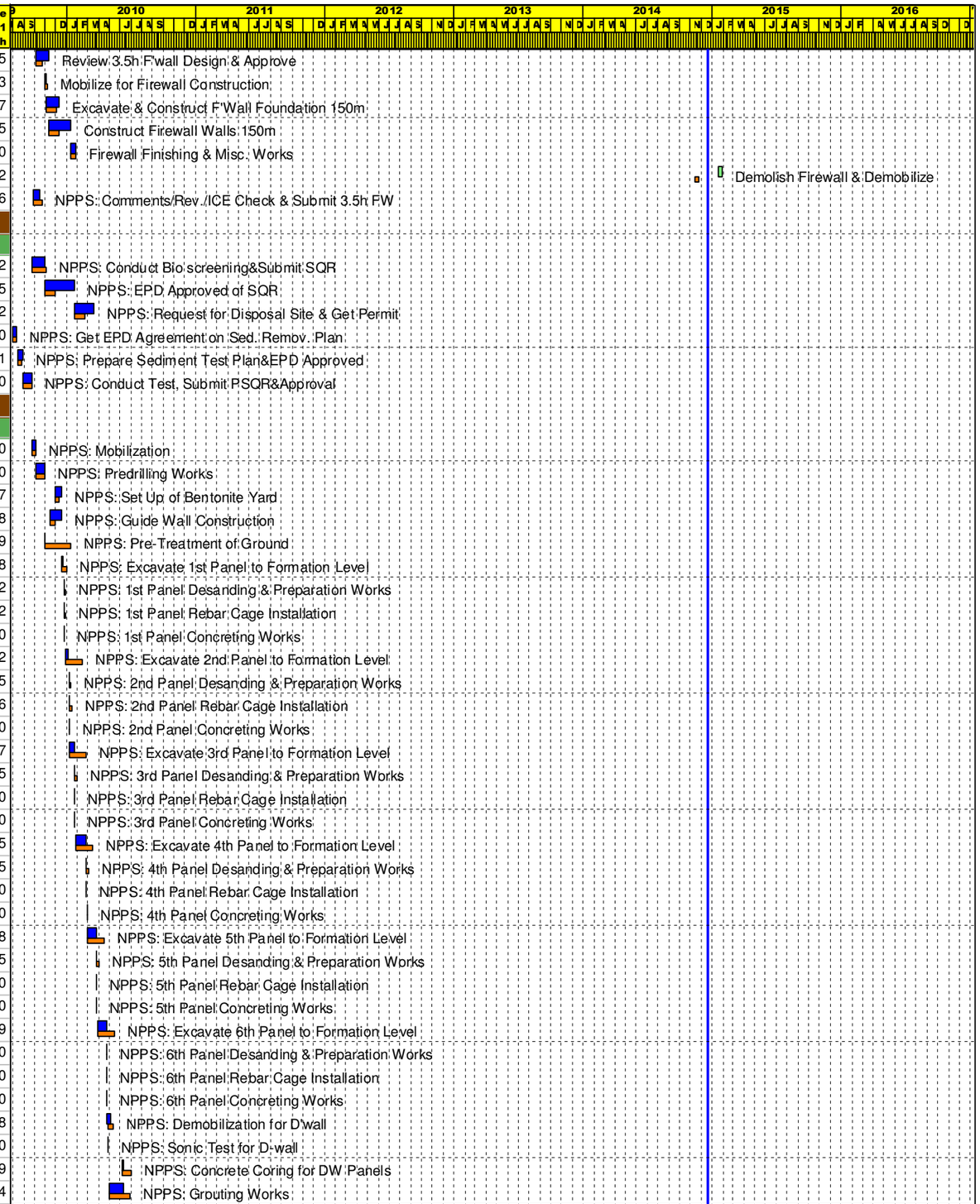
Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
NPPS10080	Review 3.5h F'wall Design & Approve	14	07-Oct-09 A	10-Nov-09 A	100%			-15
NPPS10090	Mobilize for Firewall Construction	6	30-Oct-09 A	02-Nov-09 A	100%			3
NPPS10100	Excavate & Construct F'Wall Foundation 150m	25	03-Nov-09 A	09-Dec-09 A	100%			-7
NPPS10110	Construct Firewall Walls 150m	25	12-Nov-09 A	11-Jan-10 A	100%			-25
NPPS10120	Firewall Finishing & Misc. Works	12	12-Jan-10 A	25-Jan-10 A	100%			0
NPPS10130	Demolish Firewall & Demobilize	8	19-Jan-15	28-Jan-15	0%	494	494	-52
NPPS10240	NPPS: Comments/Rev./ICE Check & Submit 3.5h FW	21	28-Sep-09 A	16-Oct-09 A	100%			6
Marine Dumping Permit								
No Significant Evnt								
NPPS02011	NPPS: Conduct Bio screening&Submit SQR	30	25-Sep-09 A	30-Oct-09 A	100%			2
NPPS02012	NPPS: EPD Approved of SQR	24	31-Oct-09 A	21-Jan-10 A	100%			-45
NPPS02013	NPPS: Request for Disposal Site & Get Permit	24	22-Jan-10 A	19-Mar-10 A	100%			-22
NPPS0207	NPPS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0
NPPS0208	NPPS: Prepare Sediment Test Plan&EPD Approved	12	14-Aug-09 A	28-Aug-09 A	100%			-1
NPPS0209	NPPS: Conduct Test, Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0
Diaphragm Wall								
No Significant Evnt								
NPPS0200	NPPS: Mobilization	6	26-Sep-09 A	05-Oct-09 A	100%			0
NPPS0205	NPPS: Predrilling Works	21	06-Oct-09 A	30-Oct-09 A	100%			0
NPPS0220	NPPS: Set Up of Bentonite Yard	9	30-Nov-09 A	17-Dec-09 A	100%			-7
NPPS0240	NPPS: Guide Wall Construction	12	14-Nov-09 A	18-Dec-09 A	100%			-18
NPPS0246	NPPS: Pre-Treatment of Ground	60	31-Oct-09 A	31-Oct-09 A	100%			59
NPPS0380	NPPS: Excavate 1st Panel to Formation Level	13	17-Dec-09 A	22-Dec-09 A	100%			8
NPPS0390	NPPS: 1st Panel Desanding & Preparation Works	3	24-Dec-09 A	24-Dec-09 A	100%			2
NPPS0400	NPPS: 1st Panel Rebar Cage Installation	3	24-Dec-09 A	24-Dec-09 A	100%			2
NPPS0410	NPPS: 1st Panel Concreting Works	1	24-Dec-09 A	24-Dec-09 A	100%			0
NPPS0414	NPPS: Excavate 2nd Panel to Formation Level	40	28-Dec-09 A	06-Jan-10 A	100%			32
NPPS0416	NPPS: 2nd Panel Desanding & Preparation Works	6	07-Jan-10 A	07-Jan-10 A	100%			5
NPPS0418	NPPS: 2nd Panel Rebar Cage Installation	7	07-Jan-10 A	07-Jan-10 A	100%			6
NPPS0420	NPPS: 2nd Panel Concreting Works	1	07-Jan-10 A	07-Jan-10 A	100%			0
NPPS0422	NPPS: Excavate 3rd Panel to Formation Level	40	08-Jan-10 A	22-Jan-10 A	100%			27
NPPS0424	NPPS: 3rd Panel Desanding & Preparation Works	6	23-Jan-10 A	23-Jan-10 A	100%			5
NPPS0426	NPPS: 3rd Panel Rebar Cage Installation	1	23-Jan-10 A	23-Jan-10 A	100%			0
NPPS0428	NPPS: 3rd Panel Concreting Works	1	23-Jan-10 A	23-Jan-10 A	100%			0
NPPS0432	NPPS: Excavate 4th Panel to Formation Level	40	25-Jan-10 A	25-Feb-10 A	100%			15
NPPS0434	NPPS: 4th Panel Desanding & Preparation Works	6	26-Feb-10 A	26-Feb-10 A	100%			5
NPPS0436	NPPS: 4th Panel Rebar Cage Installation	1	26-Feb-10 A	26-Feb-10 A	100%			0
NPPS0438	NPPS: 4th Panel Concreting Works	1	27-Feb-10 A	27-Feb-10 A	100%			0
NPPS0440	NPPS: Excavate 5th Panel to Formation Level	40	01-Mar-10 A	25-Mar-10 A	100%			18
NPPS0442	NPPS: 5th Panel Desanding & Preparation Works	6	26-Mar-10 A	26-Mar-10 A	100%			5
NPPS0444	NPPS: 5th Panel Rebar Cage Installation	1	26-Mar-10 A	26-Mar-10 A	100%			0
NPPS0446	NPPS: 5th Panel Concreting Works	1	27-Mar-10 A	27-Mar-10 A	100%			0
NPPS0448	NPPS: Excavate 6th Panel to Formation Level	40	29-Mar-10 A	22-Apr-10 A	100%			19
NPPS0452	NPPS: 6th Panel Desanding & Preparation Works	2	23-Apr-10 A	24-Apr-10 A	100%			0
NPPS0453	NPPS: 6th Panel Rebar Cage Installation	1	24-Apr-10 A	24-Apr-10 A	100%			0
NPPS0454	NPPS: 6th Panel Concreting Works	1	24-Apr-10 A	24-Apr-10 A	100%			0
NPPS0456A	NPPS: Demobilization for D'wall	15	25-Apr-10 A	04-May-10 A	100%			8
NPPS0456A1	NPPS: Sonic Test for D-wall	4	26-Apr-10 A	29-Apr-10 A	100%			0
NPPS0456C	NPPS: Concrete Coring for DW Panels	21	08-Jun-10 A	09-Jun-10 A	100%			19
NPPS0460	NPPS: Grouting Works	51	30-Apr-10 A	12-Jun-10 A	100%			14



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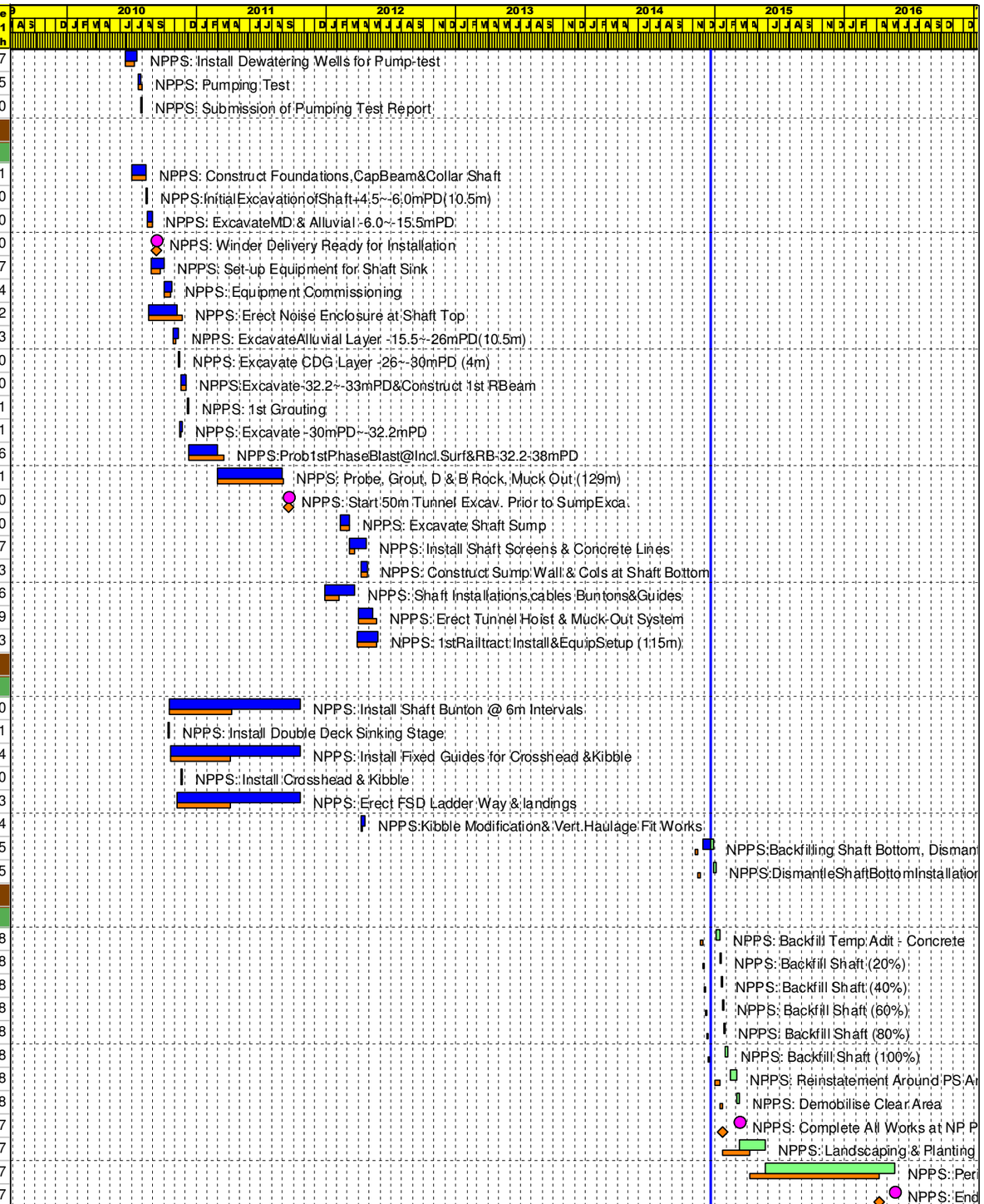
Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
NPPS0462	NPPS: Install Dewatering Wells for Pump-test	21	14-Jun-10 A	17-Jul-10 A	100%			-7
NPPS0464	NPPS: Pumping Test	12	19-Jul-10 A	26-Jul-10 A	100%			5
NPPS0466	NPPS: Submission of Pumping Test Report	6	27-Jul-10 A	02-Aug-10 A	100%			0
Shaft Excavation								
General Works								
NPPS0310	NPPS: Construct Foundations,CapBeam&Collar Shaft	35	02-Jul-10 A	10-Aug-10 A	100%			1
NPPS0320	NPPS:InitialExcavationofShaft+4.5~-6.0mPD(10.5m)	4	11-Aug-10 A	14-Aug-10 A	100%			0
NPPS0321	NPPS: ExcavateMD & Alluvial -6.0~-15.5mPD	12	16-Aug-10 A	28-Aug-10 A	100%			0
NPPS0323	NPPS: Winder Delivery Ready for Installation	0	11-Sep-10 A		100%			0
NPPS0330	NPPS: Set-up Equipment for Shaft Sink	22	27-Aug-10 A	30-Sep-10 A	100%			-7
NPPS0331	NPPS: Equipment Commissioning	15	02-Oct-10 A	25-Oct-10 A	100%			-4
NPPS0333	NPPS: Erect Noise Enclosure at Shaft Top	79	18-Aug-10 A	06-Nov-10 A	100%			12
NPPS0335	NPPS: ExcavateAlluvial Layer -15.5~-26mPD(10.5m)	10	26-Oct-10 A	09-Nov-10 A	100%			-3
NPPS0340	NPPS: Excavate CDG Layer -26~-30mPD (4m)	4	10-Nov-10 A	13-Nov-10 A	100%			0
NPPS0341	NPPS:Excavate-32.2~-33mPD&Construct 1st RBeam	13	20-Nov-10 A	04-Dec-10 A	100%			0
NPPS0343	NPPS: 1st Grouting	5	06-Dec-10 A	11-Dec-10 A	100%			-1
NPPS0345	NPPS: Excavate -30mPD~-32.2mPD	5	15-Nov-10 A	20-Nov-10 A	100%			-1
NPPS0345A	NPPS:Prob1stPhaseBlast@Incl.Surf&RB-32.2-38mPD	81	10-Dec-10 A	28-Feb-11 A	100%			16
NPPS0355	NPPS: Probe, Grout, D & B Rock, Muck Out (129m)	134	01-Mar-11 A	31-Aug-11 A	100%			1
NPPS0357	NPPS: Start 50m Tunnel Excav. Prior to SumpExca.	0	16-Sep-11 A		100%			0
NPPS0365	NPPS: Excavate Shaft Sump	22	10-Feb-12 A	06-Mar-12 A	100%			0
NPPS0369	NPPS: Install Shaft Screens & Concrete Lines	14	07-Mar-12 A	24-Apr-12 A	100%			-27
NPPS0450	NPPS: Construct Sump Wall & Cols at Shaft Bottom	14	10-Apr-12 A	28-Apr-12 A	100%			-3
NPPS0457	NPPS: Shaft Installations,cables Buntons&Guides	32	29-Dec-11 A	21-Mar-12 A	100%			-36
NPPS0470	NPPS: Erect Tunnel Hoist & Muck-Out System	43	02-Apr-12 A	12-May-12 A	100%			9
NPPS0483	NPPS: 1stRailtract Install&EquipSetup (115m)	43	30-Mar-12 A	24-May-12 A	100%			-3
Shaft Sinking Equipments & Installations								
Shaft Sinking Line Assembly								
NPPS1550	NPPS: Install Shaft Bunton @ 6m Intervals	145	18-Oct-10 A	20-Oct-11 A	100%			-160
NPPS1555	NPPS: Install Double Deck Sinking Stage	4	12-Oct-10 A	15-Oct-10 A	100%			1
NPPS1560	NPPS: Install Fixed Guides for Crosshead &Kibble	140	19-Oct-10 A	20-Oct-11 A	100%			-164
NPPS1565	NPPS: Install Crosshead & Kibble	2	20-Nov-10 A	22-Nov-10 A	100%			0
NPPS1570	NPPS: Erect FSD Ladder Way & landings	125	06-Nov-10 A	20-Oct-11 A	100%			-163
NPPS1575	NPPS:Kibble Modification& Vert.Haulage Fit Works	4	10-Apr-12 A	18-Apr-12 A	100%			-4
NPPS1700	NPPS:Backfilling Shaft Bottom, DismantleNoiseEnclosure&...	6	28-Nov-14 A	27-Dec-14	20%	99	99	-35
NPPS1710	NPPS:DismantleShaftBottomInstallations&Equipts.:	6	27-Dec-14	05-Jan-15	0%	99	99	-35
Backfill, Reinstatement & Landscaping								
No Significant Evnt								
NPPS0900	NPPS: Backfill Temp Adit - Concrete	8	05-Jan-15	14-Jan-15	0%	99	99	-38
NPPS0910	NPPS: Backfill Shaft (20%)	3	14-Jan-15	17-Jan-15	0%	99	99	-38
NPPS0920	NPPS: Backfill Shaft (40%)	3	17-Jan-15	21-Jan-15	0%	99	99	-38
NPPS0930	NPPS: Backfill Shaft (60%)	3	21-Jan-15	24-Jan-15	0%	99	99	-38
NPPS0940	NPPS: Backfill Shaft (80%)	3	24-Jan-15	28-Jan-15	0%	99	99	-38
NPPS0950	NPPS: Backfill Shaft (100%)	6	28-Jan-15	04-Feb-15	0%	99	99	-38
NPPS0960	NPPS: Reinstatement Around PS Area	12	13-Feb-15	02-Mar-15	0%	99	99	-38
NPPS0970	NPPS: Demobilise Clear Area	6	02-Mar-15	09-Mar-15	0%	99	99	-38
NPPS0975	NPPS: Complete All Works at NP PS (KD-06)	0		09-Mar-15	0%	563	563	-47
NPPS0980	NPPS: Landscaping & Planting Works	76	09-Mar-15	24-May-15	0%	122	122	-47
NPPS0990	NPPS: Period of Establishment Works	365	24-May-15	23-May-16	0%	122	122	-47
NPPS1000	NPPS: End of Establishment Period	0		23-May-16	0%	122	122	-47



Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura..	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
Sewage By-Pass Structure frm Sea Front (Excin 1)								
No Sub-Project								
No Significant Evnt								
SIS005	Instruction to Exercise Excision No. 1 from Engr	0	16-Jul-11 A		100%			0
SIS010	Prepare construction proposal to DSD	48	18-Jul-11 A	31-Dec-12 A	100%			-393
SIS012	Temporary Works Design	48	18-Jul-11 A	28-Feb-12 A	100%			-138
SIS014	ICE Review & Submission	28	29-Feb-12 A	22-Dec-14	92.86%	116	116	-814
SIS016	Prepare Method Statement & Submit to RSS/DSD	36	27-Mar-12 A	10-Jan-15	55.56%	116	116	-797
SIS017	Trial Pits Adjacent to Seawall	92	02-Jan-13 A	19-Apr-13 A	100%			5
SIS017B	Prepare & Redesign Scheme for Approval by KWah	65	10-Jun-14 A	25-Aug-14 A	100%			0
SIS018	Proposal and Approval by Kawah of TTA Scheme	30	20-Dec-14	27-Jan-15	0%	77	77	-99
SIS020	Review and approval of proposal by DSD	24	12-Jan-15*	07-Feb-15	0%	116	116	-99
SIS030	Submit application for TTA and XP to Highway	30	09-Apr-12 A	18-Jul-12 A	100%			-54
SIS033	Resubmit application for TTA and XP to Highway	25	28-Jan-15*	27-Feb-15	0%	77	77	-18
SIS040	Application of approved TTA to RMO	24	28-Feb-15	27-Mar-15	0%	77	77	-18
SIS050	Implementation of TTA (Stage 1)	12	28-Mar-15	13-Apr-15	0%	77	77	-18
SIS075	Site setup and Plant Mobilization (Stage 1)	6	14-Apr-15	20-Apr-15	0%	77	77	-18
SIS080	Prebored Sheetpiles for Stage 1 and grouting curtain	78	21-Apr-15	24-Jul-15	0%	77	77	-18
SIS090	Excavation and ELS Works and reinstate seawall	28	25-Jul-15	26-Aug-15	0%	77	77	-18
SIS100	Reinstate the sea wall	6	27-Aug-15	02-Sep-15	0%	77	77	-18
SIS110	Install 1650mm pipe and casting remaining wall	16	03-Sep-15	21-Sep-15	0%	77	77	-18
SIS120	Backfill stage 1	5	22-Sep-15	26-Sep-15	0%	77	77	-18
SIS130	Reinstate roadwork and install multipart cover	12	29-Sep-15	13-Oct-15	0%	77	77	-18
SIS140	Application of approved TTA to RMO for stage 2	12	14-Oct-15	28-Oct-15	0%	77	77	-18
SIS185	Implementation of TTA (Stage 2)	6	29-Oct-15	04-Nov-15	0%	77	77	-18
SIS190	Site setup and Plant Mobilization for stage 2	6	05-Nov-15	11-Nov-15	0%	77	77	-18
SIS200	Prebored sheetpile for stage 2 and grouting curtain	84	12-Nov-15	23-Feb-16	0%	77	77	-18
SIS245	Excavation and ELS Works	18	24-Feb-16	15-Mar-16	0%	77	77	-18
SIS250	Demolish the existing manhole	12	16-Mar-16	31-Mar-16	0%	77	77	-18
SIS260	Saw cut the existing 1200mm pipes	3	01-Apr-16	05-Apr-16	0%	77	77	-18
SIS270	Install precast chamber	6	06-Apr-16	12-Apr-16	0%	77	77	-18
SIS280	Install twin 1200mm pipe	6	11-Apr-16	16-Apr-16	0%	77	77	-18
SIS290	Connect and cast the 1200mm pipes	6	18-Apr-16	23-Apr-16	0%	77	77	-18
SIS300	Construct the remaining wall SBP	24	25-Apr-16	24-May-16	0%	77	77	-18
SIS310	Backfill stage 2	12	25-May-16	07-Jun-16	0%	77	77	-18
SIS320	Reinstatement of road	6	08-Jun-16	15-Jun-16	0%	77	77	-18
SIS330	Install multi-part cover	6	16-Jun-16	22-Jun-16	0%	77	77	-18
Wan Chai East PTW Drop Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
WCDS0500	WCDS: Design NewChamber&Div.2400OverflowPipe	24	31-Jul-09 A	27-Aug-09 A	100%			0
WCDS0520	WCDS: Comments/Rev/ICE Check Chamber&2400&Submit	26	28-Aug-09 A	26-Sep-09 A	100%			0
WCDS0530	WCDS: Review NewChambDiv.2400OP & Approve	14	28-Sep-09 A	03-Nov-09 A	100%			-15
WCDS10010	WCDS: Design D'wall & Submit for ICE	28	15-Jul-09 A	03-Sep-09 A	100%			-16
WCDS10015	WCDS: Comments/Revisions/ICEcheck D'Wall& Submit	21	22-Sep-09 A	12-Feb-10 A	100%			-98
WCDS10020	WCDS: Review D'wall Design & Approve	14	19-Feb-10 A	16-Mar-10 A	100%			-8
Grnd.Treatment&Excavw/SteelCasing/RaiseBoring								
WCDS10200	WCDS:Design Grnd.Treatment&Excav.w/SteelC/RaiseB	24	04-Jan-10 A	20-Jan-11 A	100%			-292
WCDS10202	WCDS: Comments/Revisions/ICE Check	21	12-Oct-10 A	22-Jan-11 A	100%			-65

Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66 **Sheet 20 of 60**

Harbour Area Treatment Scheme Stage 2A

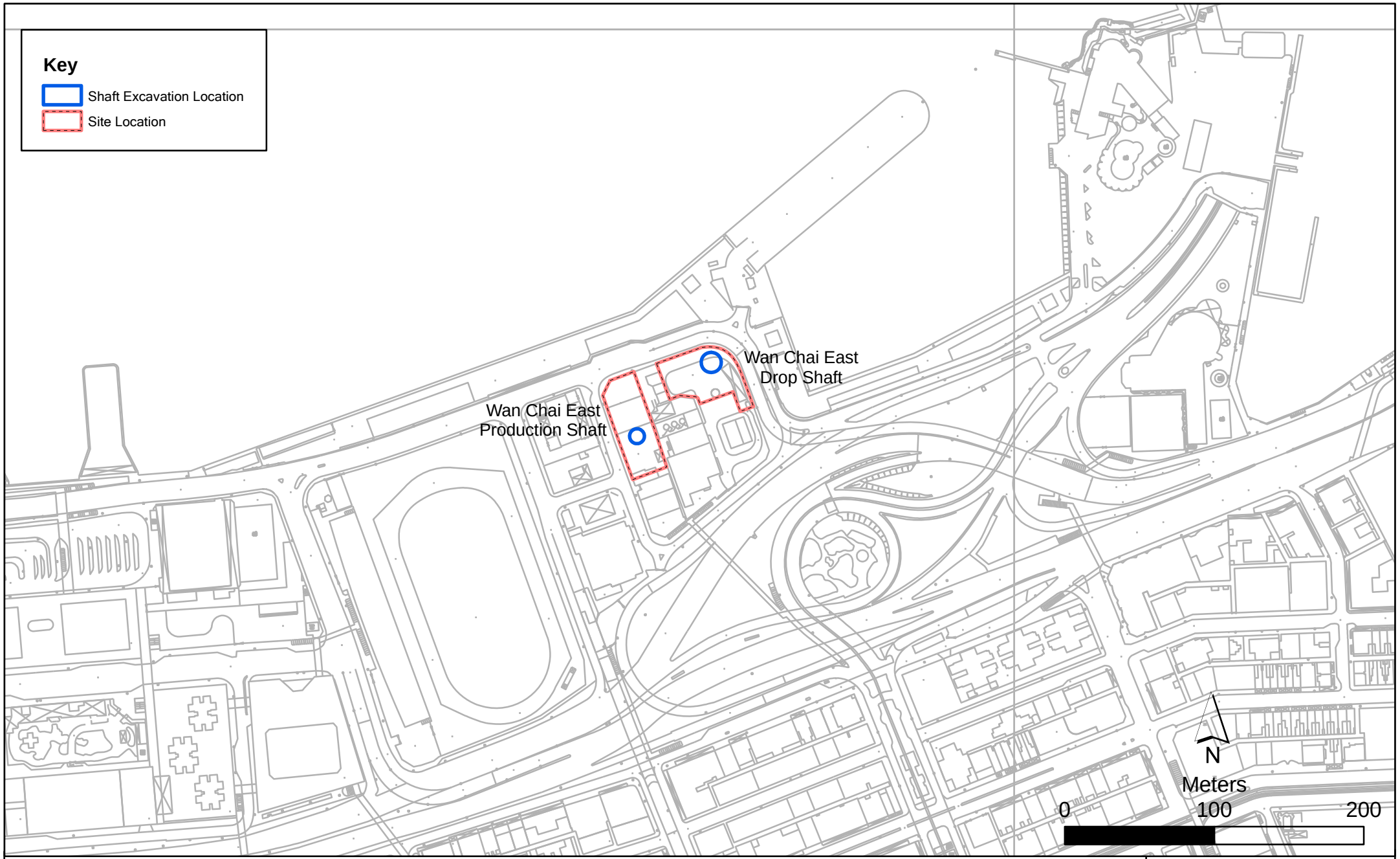
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Annex D

Wan Chai East Production and Drop Shafts



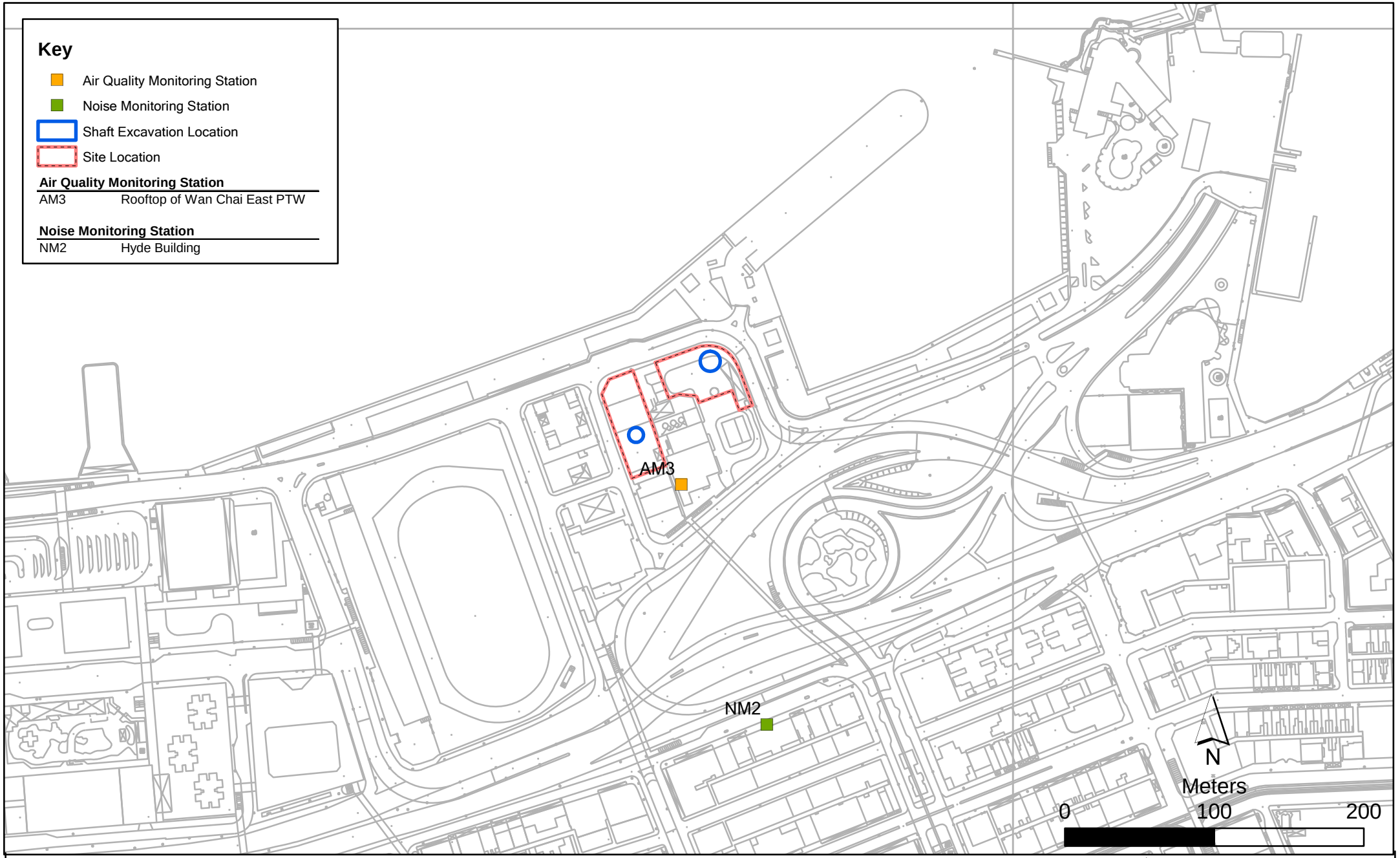
Annex D1

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Construction Site Locations at Wai Chai East

File: EM&A and proposed station\0104887_Wan Chai.mxd
Date: 29/10/2009

Environmental Resources Management

ERM



Annex D2

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Air Quality & Noise Monitoring Stations (Wan Chai East)

File: EM&A and proposed station\0104887_Wan Chai_NMAM.mxd
Date: 03/03/2010

Environmental Resources Management

ERM

Annex D3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Air Quality Monitoring Schedule

AM3 - Wan Chai East PTW
Monitoring Month : January 2016

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

February 2016

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

Annex D3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23

Harbour Area Treatment Scheme Stage 2A

Construction of Sewage Conveyance System from North Point to Stonecutters Island

Impact Construction Noise Quality Monitoring Schedule

NM2 - Hyde Building

Monitoring Month: January 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jan	02-Jan
					Public Holiday	
03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan
		Noise Monitoring (Evening Time)				
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
Noise Monitoring	Noise Monitoring					
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
				Noise Monitoring (Evening Time)		
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
Noise Monitoring			Noise Monitoring			
31-Jan						

February 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb
		Noise Monitoring (Evening Time)				
07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb
	Public Holiday	Public Holiday	Public Holiday		Noise Monitoring (Evening Time)	
14-Feb	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb
Noise Monitoring				Noise Monitoring		
21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb
Noise Monitoring			Noise Monitoring			
28-Feb	29-Feb					

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Construction Phase			
Air Quality	The Air Pollution Control (Construction Dust) Regulation shall be implemented and good site practices shall be incorporated in the contract clauses to minimise construction dust impact. Control measures relevant to this Project are listed below: • 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; • where a site boundary adjoins a road, streets or other accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit; • every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides; • regular watering, with complete coverage, to reduce dust emission from exposed site surfaces and unpaved roads, particularly during dry weather; • site enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines; • open stock piles should be avoided or covered and prevent placing dusty material storage piles near ASRs if possible; • tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; and • instigation of an environmental monitoring auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All work sites / during construction	<>

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Air Quality	The following watering measures for specific site would be required to control the fugitive dust impacts: • watering twice per day within the worksites at Wan Chai East PTW; • the barging points should be continuous watering throughout the whole unloading process; and • watering 8 times per day within worksites at the SCS works area at Wan Chai East.	All work sites / during construction	√
Operational Phase			
Air Quality	Good housekeeping for SCISTW and PTWs listed below should be followed to ameliorate any odour impact from the plant and these standard practices should be included in the plant operator manual. • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers to minimise odour escape • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly	All work sites / during construction	NA. Measures not required until commencement of operational phase
Air Quality	Commissioning tests for all deodorisation system should be included in the Design and Construction Contract Document.	All PTW and SCISTW/ during operational phase	NA. Measures not required until commencement of operational phase
Construction Phase			
Noise	Use of quiet PME, movable barriers and acoustic mats	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Noise	Good Site Practice: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; • silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program; • mobile plant, if any, should be sited as far from NSRs as possible; • machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities; Environmental audit shall be carried out to ensure that appropriate noise control measures would be properly implemented.	All work sites / during construction	√
Construction Phase			
Water Quality	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Effluent Discharge There is a need to apply to EPD for a discharge license for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge license. 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. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.	All work sites / during construction	√
Water Quality	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	All work sites / during construction	√
Water Quality	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps 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.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably 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.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Construction Works in Close Proximity of Storm Drains or Seafront To minimise the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Operational Phase			
Water Quality	Dual power supply, standby facilities for the main treatment units and standby equipment parts / accessories should be provided as far as possible at the SCISTW to minimise the chance of emergency discharge.	SCISTW and all the Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Water Quality	Standby unit(s) and dual (backup) power supply would be provided at all the Stage 2 PTWs to reduce the risk of equipment breakdown at the PTWs.	Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Construction Phase			
Waste	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimise the use of timber formwork.	All work sites / during the construction period	√
Waste	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals; • 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, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; • Any unused chemicals or those with remaining functional capacity shall be recycled; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All work sites / during the construction period	√
Waste	Recommendations for good site practices during 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 waste handling procedures • Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials. • Provision of sufficient waste disposal points and regular collection of waste • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	All work sites / during the construction period	√
Waste	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All work sites / during the construction period	NA

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.	All work sites / during the construction period	√
Waste	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.	All work sites / during the construction period	√
Waste	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.	All work sites / during the construction period	√
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, oxidising, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.	All work sites / during the construction period	√
Construction Phase			
Landscape & Visual	• Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction. • Trees unavoidably affected by the works should be transplanted where practical. • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting.	All the works areas, PTWs and SCISTW/ during the construction period	√
Operational Phase	•		
Landscape & Visual	• Aesthetic design of the façade of PTW and associated structures to harmonise with the surrounding settings. • Shrub and Climbing Plants to soften proposed structures / Roof Greening. • Buffer Tree and Shrub Planting to screen proposed associated structures. • Reinstated of disturbed area	All the works areas, PTWs and SCISTW/ during the construction period	NA. Measures not required until commencement of operational phase
Construction Phase			

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Cultural Heritage	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	NA. Vibration monitoring has not been launched during the reporting period.
	Monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	NA. Vibration monitoring has not been launched during the reporting period.

Remark:
√ Compliance of Mitigation Measures
<> Compliance of Mitigation but need improvement
x Non-compliance of Mitigation Measures
Δ Deficiency of Mitigation Measures but rectified by Gammon Construction Limited
NA Not Applicable

Annex D5 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM3

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 (°C)	Wind Speed * (m/s)	Sampler ID
05-Jan-16	9:00	10:00	Rainy	60	355	500	Operation of the Mobile Crane	20	<5	LD-5C (A.25.02)
	10:00	11:00	Rainy	70	355	500	Operation of the Mobile Crane	20	<5	LD-5C (A.25.02)
	11:00	12:00	Rainy	90	355	500	Operation of the Mobile Crane	20	<5	LD-5C (A.25.02)
11-Jan-16	9:00	10:00	Cloudy	81	355	500	N.A.	19	<5	LD-3B (A.02.08)
	10:00	11:00	Cloudy	83	355	500	N.A.	19	<5	LD-3B (A.02.08)
	11:00	12:00	Cloudy	82	355	500	N.A.	19	<5	LD-3B (A.02.08)
15-Jan-16	9:00	10:00	Cloudy	266	355	500	N.A.	15	<5	LD-3B (A.02.04)
	10:00	11:00	Cloudy	265	355	500	N.A.	15	<5	LD-3B (A.02.04)
	11:00	12:00	Cloudy	267	355	500	N.A.	15	<5	LD-3B (A.02.04)
21-Jan-16	9:00	10:00	Cloudy	241	355	500	N.A.	16	<5	LD-3B (A.02.10)
	10:00	11:00	Cloudy	243	355	500	N.A.	16	<5	LD-3B (A.02.10)
	11:00	12:00	Cloudy	241	355	500	N.A.	16	<5	LD-3B (A.02.10)
27-Jan-16	13:00	14:00	Cloudy	115	355	500	N.A.	13	<5	LD-3B (A.02.08)
	14:00	15:00	Cloudy	123	355	500	N.A.	13	<5	LD-3B (A.02.08)
	15:00	16:00	Cloudy	121	355	500	N.A.	13	<5	LD-3B (A.02.08)
			Min.	**60**						
			Max.	**267**						
			Average	**157**						

* Wind Speed data is presented in the Meteorological Data table

Annex D5 24-hour and 1-hour TSP Monitoring Results

24-hour TSP Monitoring Results

Station AM3

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
04-Jan-16	9:00	05-Jan-16	9:00	Cloudy	3.3351	3.5608	9048.20	9072.20	24.00	1.20	1.20	1.20	131	181	260	Operation of Mobile Crane	TE-5170 A-01-48	151202/074
08-Jan-16	16:25	09-Jan-16	16:25	Sunny	3.3296	3.5796	9072.20	9096.20	24.00	1.21	1.20	1.21	144	181	260	N.A.	TE-5170 A-01-48	151202/076
14-Jan-16	9:00	15-Jan-16	9:00	Cloudy	3.3339	3.6037	9096.20	9120.20	24.00	1.21	1.21	1.21	155	181	260	N.A.	TE-5170 A-01-48	151204/099
20-Jan-16	9:00	21-Jan-16	9:00	Cloudy	3.3004	3.5064	9120.20	9144.20	24.00	1.21	1.21	1.21	118	181	260	N.A.	TE-5170 A-01-48	160101/006
26-Jan-16	9:00	27-Jan-16	9:00	Cloudy	3.3028	3.5557	9144.20	9168.20	24.00	1.23	1.23	1.23	143	181	260	N.A.	TE-5170 A-01-48	160102/044
												Min.	**118**					
												Max.	**155**					
												Average	**138**					

Meteorological Data Extracted from the Hong Kong Observatory

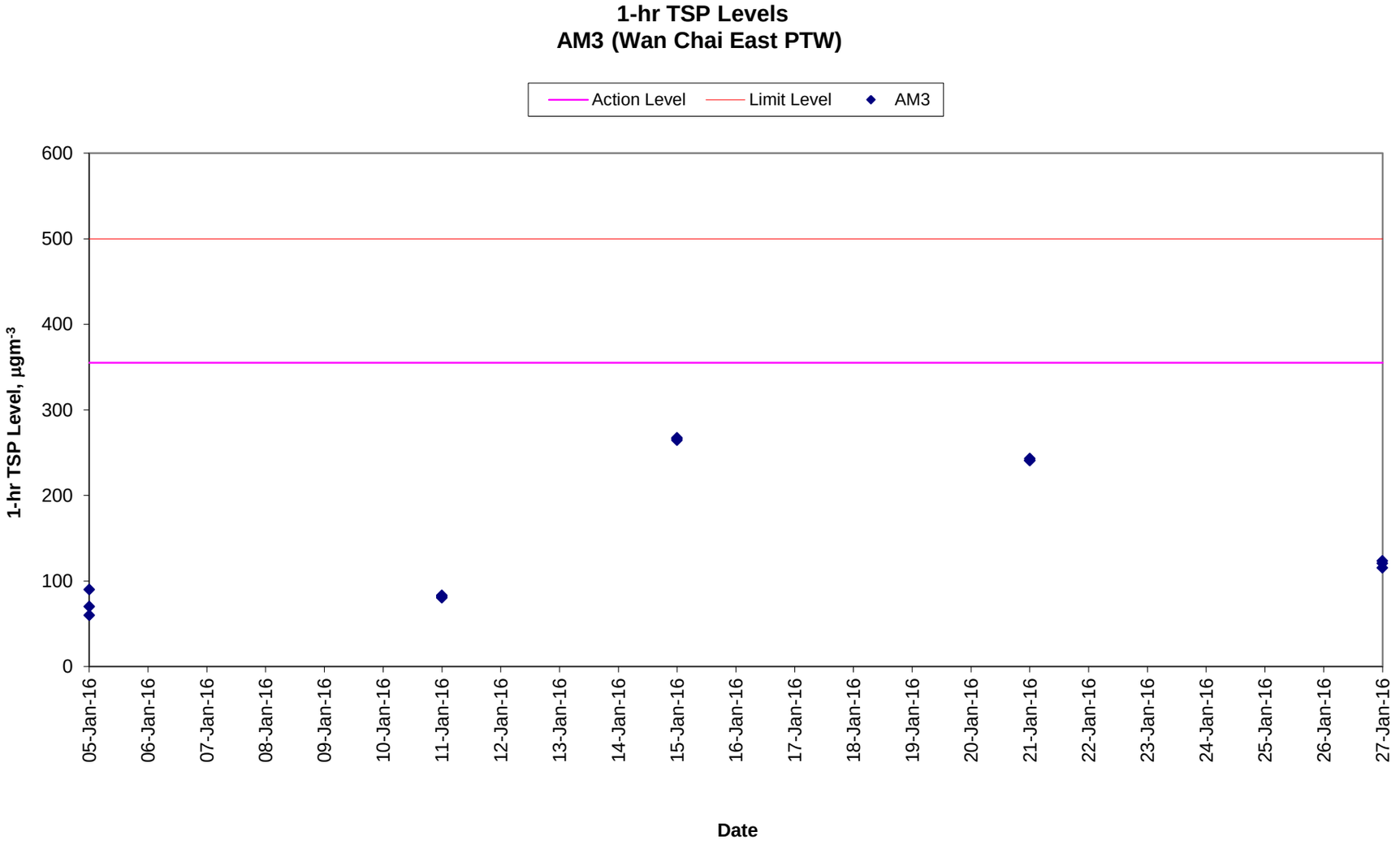
Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	0-17	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	E
2016-01-08	Sunny	19	64-87	0.0	0-10	E
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-19	SE
2016-01-15	Cloudy	15	93-98	38.8	0-16	E/SE
2016-01-20	Cloudy	15	80-96	3.3	9-24	SE
2016-01-21	Cloudy	16	93-97	0.1	0-17	E/SE
2016-01-26	Cloudy	11	42-80	Trace	0-9	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

Date	Weather	Tsing Yi Station				
		Average Air Temperature (°C)	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-17	E/SE
2016-01-05	Rainy	21	92-98	46.7	0-28	E/SE
2016-01-08	Sunny	19	64-87	0.0	0-17	E/SE
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-20	E/SE
2016-01-15	Cloudy	15	93-98	38.8	0-18	SE
2016-01-20	Cloudy	16	80-96	3.3	6-24	E/SE
2016-01-21	Cloudy	17	93-97	0.1	0-11	SE
2016-01-26	Cloudy	10	68-95	Trace	0-18	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

Date	Weather	Kai Tak Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	5-18	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	SW
2016-01-08	Sunny	19	64-87	0.0	0-18	S
2016-01-11	Cloudy	19	78-99	30.7	0-20	SE
2016-01-14	Cloudy	17	73-94	1.1	4-25	E
2016-01-15	Cloudy	15	93-98	38.8	3-24	SW
2016-01-20	Cloudy	15	80-96	3.3	13-34	SW
2016-01-21	Cloudy	16	93-97	0.1	1-20	SW
2016-01-26	Cloudy	11	42-80	Trace	0-17	E
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

Date	Weather	Green Island Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-30	NE
2016-01-05	Rainy	21	92-98	46.7	0-32	SE/E
2016-01-08	Sunny	19	64-87	0.0	0-30	NE
2016-01-11	Cloudy	19	78-99	30.7	0-45	E
2016-01-14	Cloudy	17	73-94	1.1	4-45	NE
2016-01-15	Cloudy	15	93-98	38.8	10-55	NE
2016-01-20	Cloudy	16	80-96	3.3	37-64	NE
2016-01-21	Cloudy	17	93-97	0.1	0-48	E
2016-01-26	Cloudy	10	68-95	Trace	8-45	SE/E
2016-01-27	Cloudy	13	81-96	3.5	15-50	NE

* King's Park's data
\- Data was not available
\# less than 24 hourly observations per day


1-hr TSP Levels
AM3 (Wan Chai East PTW)
Action Level
Limit Level
AM3
1-hr TSP Level, µgm-3
600
500
400
300
200
100
0
05-Jan-16
06-Jan-16
07-Jan-16
08-Jan-16
09-Jan-16
10-Jan-16
11-Jan-16
12-Jan-16
13-Jan-16
14-Jan-16
15-Jan-16
16-Jan-16
17-Jan-16
18-Jan-16
19-Jan-16
20-Jan-16
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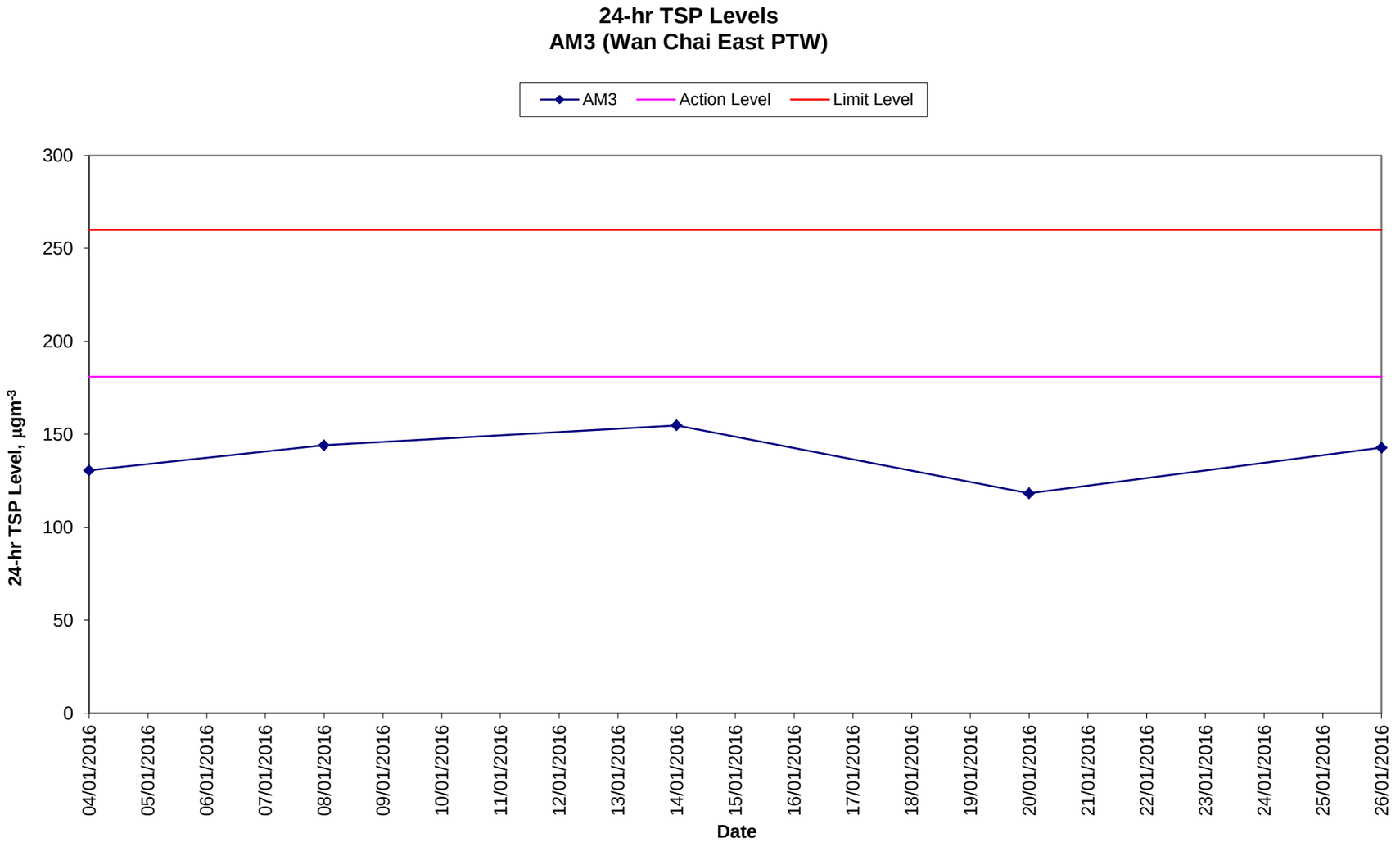
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
Date


24-hr TSP Levels
AM3 (Wan Chai East PTW)
AM3
Action Level
Limit Level
300
250
200
150
100
50
0
24-hr TSP Level, µgm-3
04/01/2016
05/01/2016
06/01/2016
07/01/2016
08/01/2016
09/01/2016
10/01/2016
11/01/2016
12/01/2016
13/01/2016
14/01/2016
15/01/2016
16/01/2016
17/01/2016
18/01/2016
19/01/2016
20/01/2016
21/01/2016
22/01/2016
23/01/2016
24/01/2016
25/01/2016
26/01/2016
Date

Annex D6 Noise Monitoring Results

Daytime Noise Monitoring Results

Station NM2

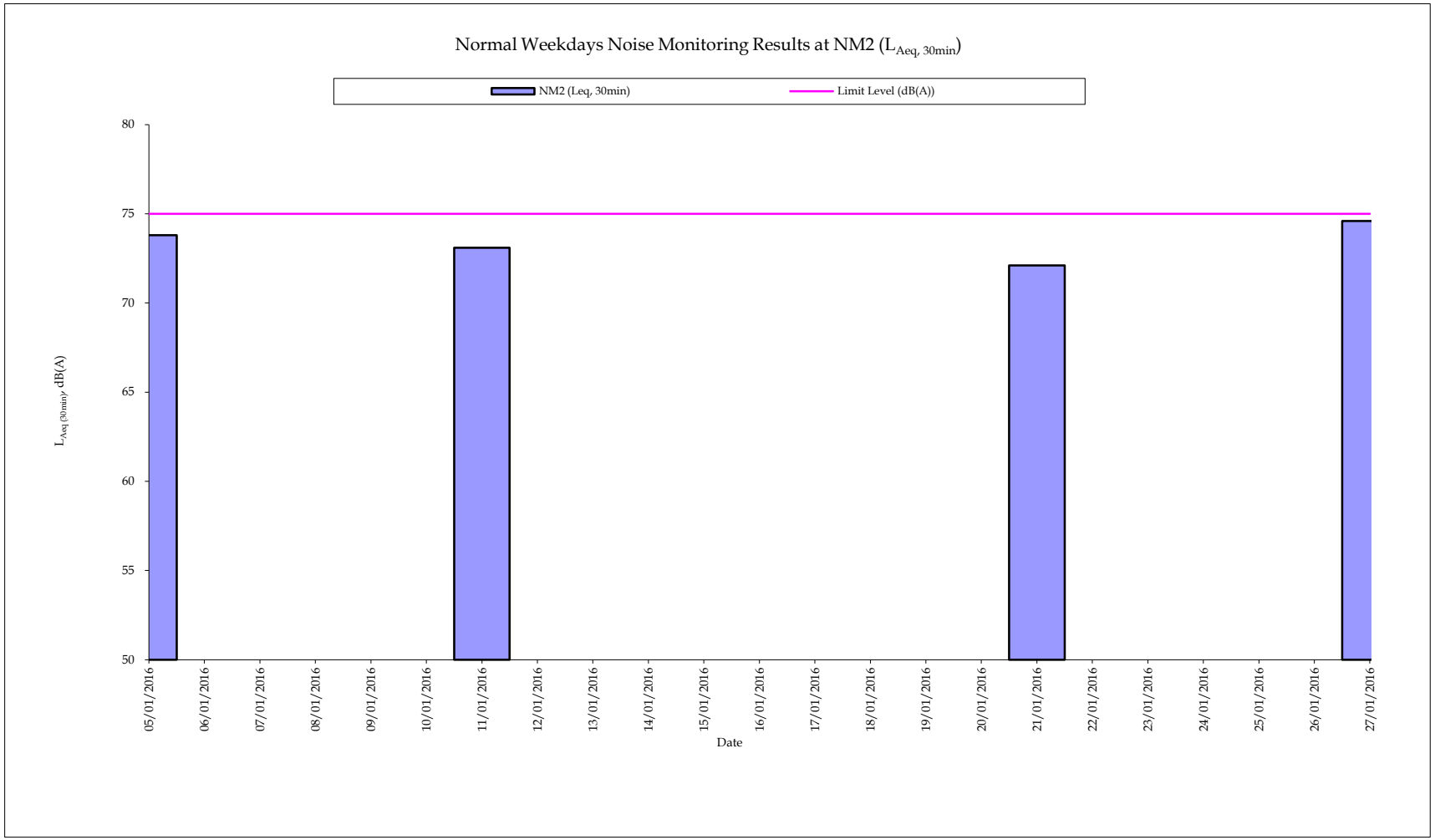
Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
05-Jan-16	11:15	11:45	Cloudy	74	75	70	Operation of Mobile Crane	Traffic noise	-	20	0.5	SVAN957 (N.08.12)	SV30A (N.09.03)
11-Jan-16	11:10	11:40	Cloudy	73	73	71	N.A.	Traffic noise	-	19	0.2	SVAN957 (N.08.08)	B&K4231 (N.02.03)
21-Jan-16	18:15	18:45	Cloudy	72	73	71	N.A.	Traffic noise	-	16	0.3	SVAN957 (N.08.09)	SV30A (N.09.03)
27-Jan-16	11:20	11:50	Cloudy	75	75	73	N.A.	Traffic noise	-	13	0.5	SVAN957 (N.08.08)	B&K4231 (N.02.03)
			Min.	**72**									
			Max.	**75**									

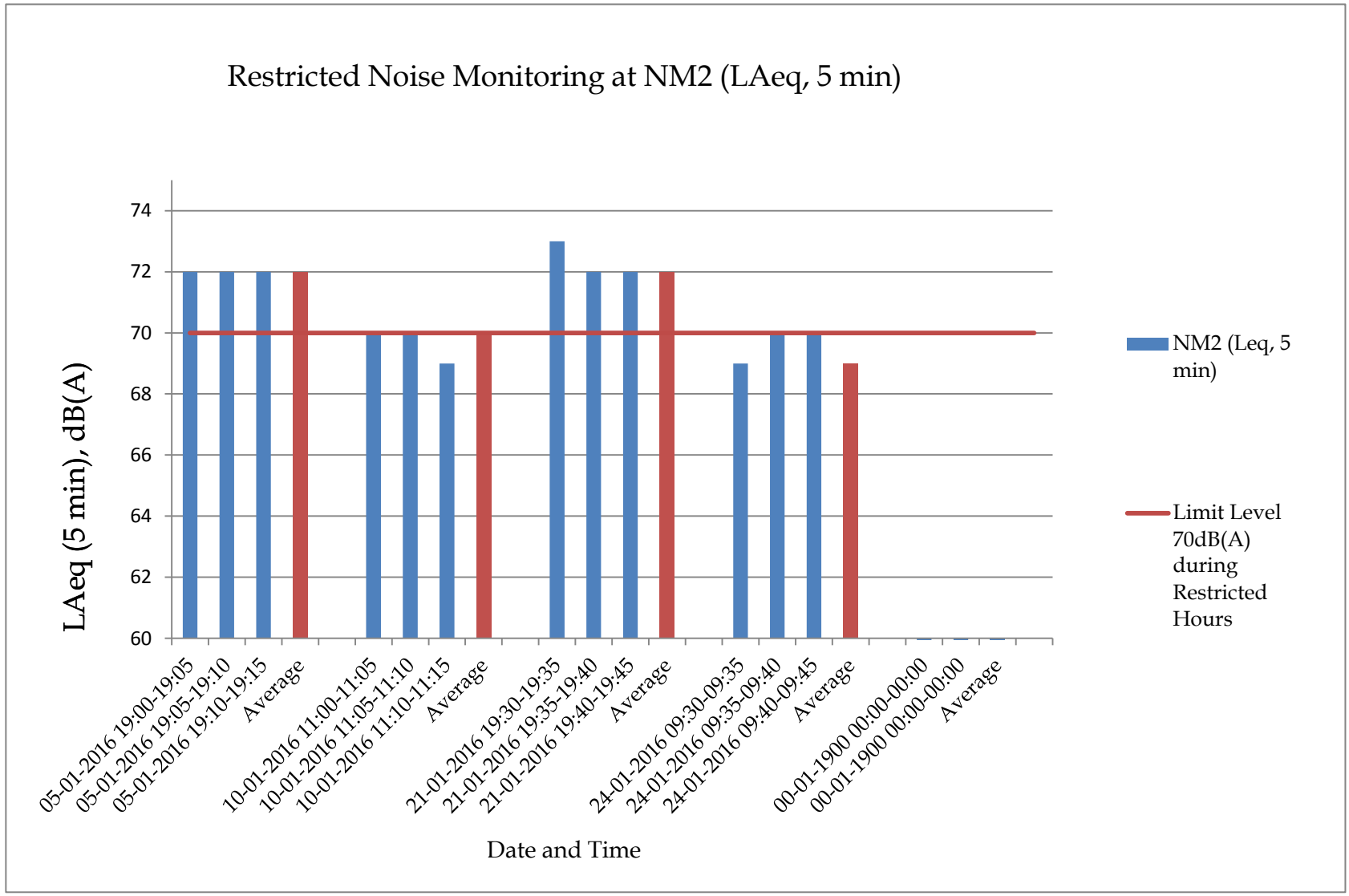
Annex D6 Noise Monitoring Results

Restricted Hours Noise Monitoring Results

Station NM2

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
05-Jan-16	19:00	19:05	Cloudy	72	75	70	-	Traffic noise	-	21	0.2	SVAN957 (N.08.12)	SV30A (N.09.03)
	19:05	19:10	Cloudy	72	75	70			-				
	19:10	19:15	Cloudy	72	75	70			-				
	19:00	19:15	Cloudy	72	-	-			-				
10-Jan-16	11:00	11:05	Cloudy	70	73	68	-	Traffic noise	-	20	0.5	SVAN957 (N.08.12)	SV30A (N.09.05)
	11:05	11:10	Cloudy	70	72	67			-				
	11:10	11:15	Cloudy	69	73	67			-				
	11:00	11:15	Cloudy	70	-	-			-				
21-Jan-16	19:30	19:35	Cloudy	73	73	70	-	Traffic noise	-	16	0.3	SVAN957 (N.08.12)	SV30A (N.09.03)
	19:35	19:40	Cloudy	72	73	70			-				
	19:40	19:45	Cloudy	72	73	71			-				
	19:30	19:45	Cloudy	72	-	-			-				
24-Jan-16	9:30	9:35	Cloudy	69	70	64	-	Traffic noise	-	14	0.2	SVAN957 (N.08.08)	B&K4231 (N.02.03)
	9:35	9:40	Cloudy	70	71	64			-				
	9:40	9:45	Cloudy	70	72	66			-				
	9:30	9:45	Cloudy	69	-	-			-				
	:		**Min.**	**69**									
			Max.	**73**									


Normal Weekdays Noise Monitoring Results at NM2 ($L_{Aeq, 30min}$)
NM2 (Leq, 30min)
Limit Level (dB(A))
80
75
70
65
60
55
50
$L_{Aeq (30min)}$, dB(A)
05/01/2016
06/01/2016
07/01/2016
08/01/2016
09/01/2016
10/01/2016
11/01/2016
12/01/2016
13/01/2016
14/01/2016
15/01/2016
16/01/2016
17/01/2016
18/01/2016
19/01/2016
20/01/2016
21/01/2016
22/01/2016
23/01/2016
24/01/2016
25/01/2016
26/01/2016
27/01/2016
Date


Restricted Noise Monitoring at NM2 (LAeq, 5 min)
LAeq (5 min), dB(A)
74
72
70
68
66
64
62
60
05-01-2016 19:00-19:05
05-01-2016 19:05-19:10
05-01-2016 19:10-19:15
Average
10-01-2016 11:00-11:05
10-01-2016 11:05-11:10
10-01-2016 11:10-11:15
Average
21-01-2016 19:30-19:35
21-01-2016 19:35-19:40
21-01-2016 19:40-19:45
Average
24-01-2016 09:30-09:35
24-01-2016 09:35-09:40
24-01-2016 09:40-09:45
Average
00-01-1900 00:00-00:00
00-01-1900 00:00-00:00
Average
Date and Time
NM2 (Leq, 5 min)
Limit Level 70dB(A) during Restricted Hours

Annex D7

Summary of Exceedance Investigation

Contract No. DC/2009/23 – HATS Stage 2A
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Report No. 160105_noise_NM2

Date of Measurement: 5th January 2016
Time of Measurement: 19:00 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Average Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM2	Construction Noise	72.1	72.2	When one documented complaint is received	70.0*	Limit
		72.3				
		72.1				

* 70dB (A) was adopted as the Limit Level during restricted hours in January 2016.

Remarks

(a) Statement of exceedance(s)

Construction noise measured at NM2(Wan Chai East PTW) - The roof of Hyde Building exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

1) During the continuous measurements, the major noise source was the traffic noise.
2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 5th January 2016 is well within the range of baseline noise levels (68.6 – 76.8dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: _____ Date: 21 January 2016

Contract No. DC/2009/23 – HATS Stage 2A
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Report No. 160121_noise_NM2

Date of Measurement: 21st January 2016
Time of Measurement: 19:30 (3 consecutive 5-min measurements)

Location	Parameter	Measured Level (Leq dB(A))	Average Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM2	Construction Noise	72.8	72.3	When one documented complaint is received	70.0*	Limit
		71.9				
		72.0				

* 70dB (A) was adopted as the Limit Level during restricted hours in January 2016.

Remarks

(a) Statement of exceedance(s)

Construction noise measured at NM2(Wan Chai East PTW) - The roof of Hyde Building exceeded the construction noise limit (70dB(A)) during the restricted hour (07:00 to 23:00 holidays & 19:00 to 23:00 on all other days).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

1) During the continuous measurements, the major noise source was the traffic noise.
2) According to information provided by the Contractor, no construction works for the Contract No. DC/2009/23 was carried out during the restricted hours noise monitoring.
3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 21st January 2016 is well within the range of baseline noise levels (68.6 – 76.8dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: _____ Date: 26 January 2016

Annex D8 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2009	0	0
January 2010	0	0
February 2010	0	0
March 2010	0	0
April 2010	0	0
May 2010	0	0
June 2010	0	0
July 2010	0	0
August 2010	0	0
September 2010	0	0
October 2010	0	0
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

Annex D8 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
June 2011	0	0
July 2011	0	0
August 2011	0	0
September 2011	0	0
October 2011	0	0
November 2011	1	0
December 2011	0	0
January 2012	0	0
February 2012	0	0
March 2012	0	0
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

Annex D8 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2012	0	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
June 2013	0	0
July 2013	0	0
August 2013	0	0
September 2013	0	0
October 2013	0	0
November 2013	0	0
December 2013	0	0
January 2014	0	0
February 2014	0	0
March 2014	0	0
April 2014	0	0
May 2014	0	0

Annex D8 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
June 2014	0	0
July 2014	0	0
August 2014	0	0
September 2014	0	0
October 2014	0	0
November 2014	0	0
December 2014	0	0
January 2015	0	0
February 2015	0	0
March 2015	0	0
April 2015	0	0
May 2015	0	0
June 2015	0	0
July 2015	0	0
August 2015	0	0
September 2015	0	0
October 2015	0	0
November 2015	0	0

Annex D8 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2015	0	0
January 2016	0	0
Overall Total	1	0

Activity ID	Activity Name	Origina Dura..	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
Sewage By-Pass Structure frm Sea Front (Excin 1)								
No Sub-Project								
No Significant Evnt								
SIS005	Instruction to Exercise Excision No. 1 from Engr	0	16-Jul-11 A		100%			0
SIS010	Prepare construction proposal to DSD	48	18-Jul-11 A	31-Dec-12 A	100%			-393
SIS012	Temporary Works Design	48	18-Jul-11 A	28-Feb-12 A	100%			-138
SIS014	ICE Review & Submission	28	29-Feb-12 A	22-Dec-14	92.86%	116	116	-814
SIS016	Prepare Method Statement & Submit to RSS/DSD	36	27-Mar-12 A	10-Jan-15	55.56%	116	116	-797
SIS017	Trial Pits Adjacent to Seawall	92	02-Jan-13 A	19-Apr-13 A	100%			5
SIS017B	Prepare & Redesign Scheme for Approval by KWah	65	10-Jun-14 A	25-Aug-14 A	100%			0
SIS018	Proposal and Approval by Kawah of TTA Scheme	30	20-Dec-14	27-Jan-15	0%	77	77	-99
SIS020	Review and approval of proposal by DSD	24	12-Jan-15*	07-Feb-15	0%	116	116	-99
SIS030	Submit application for TTA and XP to Highway	30	09-Apr-12 A	18-Jul-12 A	100%			-54
SIS033	Resubmit application for TTA and XP to Highway	25	28-Jan-15*	27-Feb-15	0%	77	77	-18
SIS040	Application of approved TTA to RMO	24	28-Feb-15	27-Mar-15	0%	77	77	-18
SIS050	Implementation of TTA (Stage 1)	12	28-Mar-15	13-Apr-15	0%	77	77	-18
SIS075	Site setup and Plant Mobilization (Stage 1)	6	14-Apr-15	20-Apr-15	0%	77	77	-18
SIS080	Prebored Sheetpiles for Stage 1 and grouting curtain	78	21-Apr-15	24-Jul-15	0%	77	77	-18
SIS090	Excavation and ELS Works and reinstate seawall	28	25-Jul-15	26-Aug-15	0%	77	77	-18
SIS100	Reinstate the sea wall	6	27-Aug-15	02-Sep-15	0%	77	77	-18
SIS110	Install 1650mm pipe and casting remaining wall	16	03-Sep-15	21-Sep-15	0%	77	77	-18
SIS120	Backfill stage 1	5	22-Sep-15	26-Sep-15	0%	77	77	-18
SIS130	Reinstate roadwork and install multipart cover	12	29-Sep-15	13-Oct-15	0%	77	77	-18
SIS140	Application of approved TTA to RMO for stage 2	12	14-Oct-15	28-Oct-15	0%	77	77	-18
SIS185	Implementation of TTA (Stage 2)	6	29-Oct-15	04-Nov-15	0%	77	77	-18
SIS190	Site setup and Plant Mobilization for stage 2	6	05-Nov-15	11-Nov-15	0%	77	77	-18
SIS200	Prebored sheetpile for stage 2 and grouting curtain	84	12-Nov-15	23-Feb-16	0%	77	77	-18
SIS245	Excavation and ELS Works	18	24-Feb-16	15-Mar-16	0%	77	77	-18
SIS250	Demolish the existing manhole	12	16-Mar-16	31-Mar-16	0%	77	77	-18
SIS260	Saw cut the existing 1200mm pipes	3	01-Apr-16	05-Apr-16	0%	77	77	-18
SIS270	Install precast chamber	6	06-Apr-16	12-Apr-16	0%	77	77	-18
SIS280	Install twin 1200mm pipe	6	11-Apr-16	16-Apr-16	0%	77	77	-18
SIS290	Connect and cast the 1200mm pipes	6	18-Apr-16	23-Apr-16	0%	77	77	-18
SIS300	Construct the remaining wall SBP	24	25-Apr-16	24-May-16	0%	77	77	-18
SIS310	Backfill stage 2	12	25-May-16	07-Jun-16	0%	77	77	-18
SIS320	Reinstatement of road	6	08-Jun-16	15-Jun-16	0%	77	77	-18
SIS330	Install multi-part cover	6	16-Jun-16	22-Jun-16	0%	77	77	-18
Wan Chai East PTW Drop Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
WCDS0500	WCDS: Design NewChamber&Div.2400OverflowPipe	24	31-Jul-09 A	27-Aug-09 A	100%			0
WCDS0520	WCDS: Comments/Rev/ICE Check Chamber&2400&Submit	26	28-Aug-09 A	26-Sep-09 A	100%			0
WCDS0530	WCDS: Review NewChambDiv.2400OP & Approve	14	28-Sep-09 A	03-Nov-09 A	100%			-15
WCDS10010	WCDS: Design D'wall & Submit for ICE	28	15-Jul-09 A	03-Sep-09 A	100%			-16
WCDS10015	WCDS: Comments/Revisions/ICEcheck D'Wall& Submit	21	22-Sep-09 A	12-Feb-10 A	100%			-98
WCDS10020	WCDS: Review D'wall Design & Approve	14	19-Feb-10 A	16-Mar-10 A	100%			-8
Grnd.Treatment&Excavw/SteelCasing/RaiseBoring								
WCDS10200	WCDS:Design Grnd.Treatment&Excav.w/SteelC/RaiseB	24	04-Jan-10 A	20-Jan-11 A	100%			-292
WCDS10202	WCDS: Comments/Revisions/ICE Check	21	12-Oct-10 A	22-Jan-11 A	100%			-65

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Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

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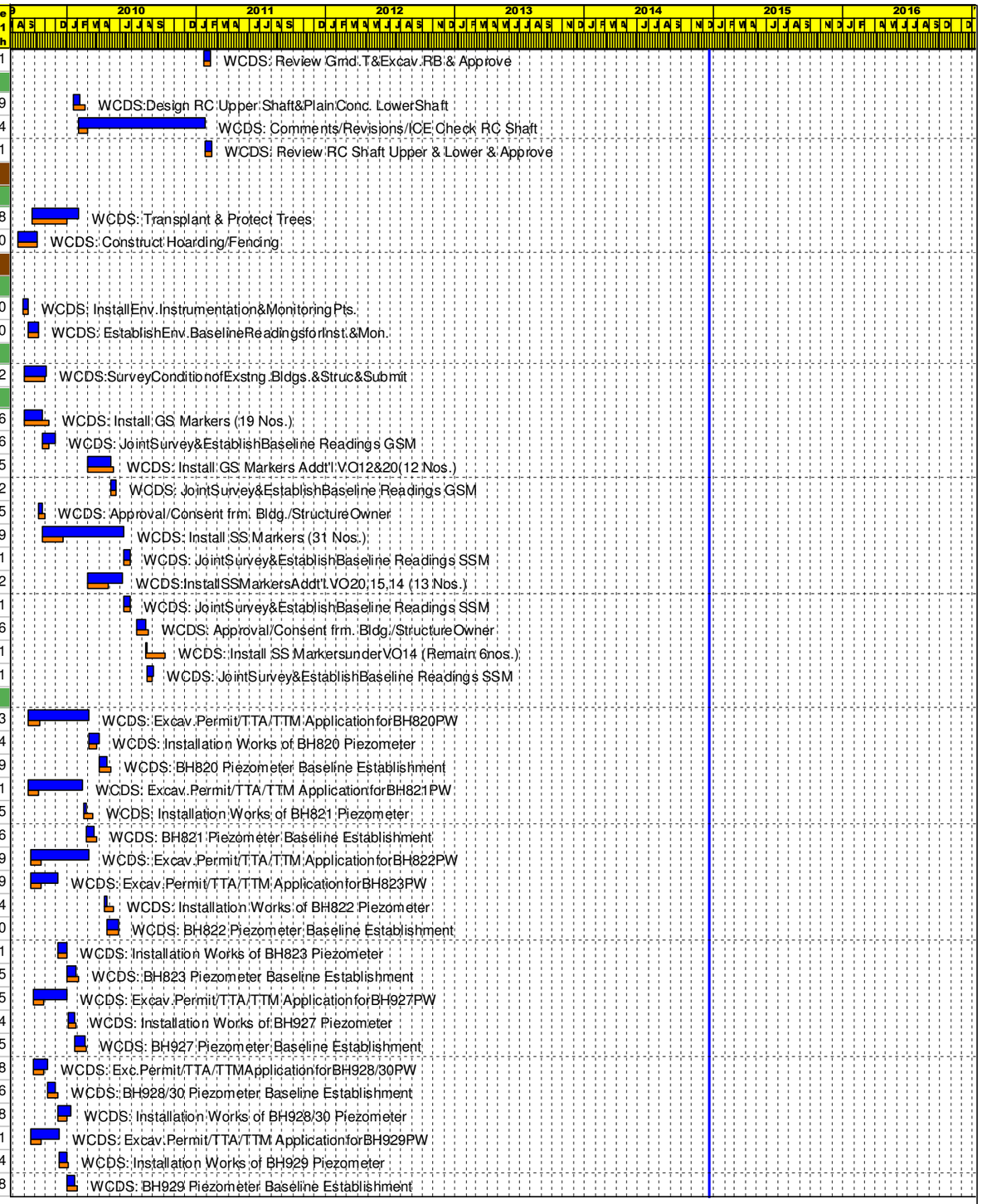
Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
WCDS10204	WCDS: Review Grnd.T&Excav.RB & Approve	14	24-Jan-11 A	11-Feb-11 A	100%			-1
Permanent Works								
WCDS10206	WCDS:Design RC Upper Shaft&PlainConc. LowerShaft	24	20-Jan-10 A	05-Feb-10 A	100%			9
WCDS10208	WCDS: Comments/Revisions/ICE Check RC Shaft	21	02-Feb-10 A	25-Jan-11 A	100%			-274
WCDS10210	WCDS: Review RC Shaft Upper & Lower & Approve	14	26-Jan-11 A	14-Feb-11 A	100%			-1
Preliminaries Works								
No Significant Evnt								
WCDS0150	WCDS: Transplant & Protect Trees	80	25-Sep-09 A	03-Feb-10 A	100%			-28
WCDS0160	WCDS: Construct Hoarding/Fencing	45	14-Aug-09 A	07-Oct-09 A	100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
WCDS0173	WCDS: InstallEnv.Instrumentation&MonitoringPts.	14	28-Aug-09 A	12-Sep-09 A	100%			0
WCDS0177	WCDS: EstablishEnv.BaselineReadingsforInst.&Mon.	24	14-Sep-09 A	13-Oct-09 A	100%			0
EBS Works								
WCDS0362	WCDS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	03-Nov-09 A	100%			-2
Markers/UMP's/Others(Same note as Piez.)								
WCDS0436	WCDS: Install GS Markers (19 Nos.)	60	01-Sep-09 A	23-Oct-09 A	100%			16
WCDS0438	WCDS: JointSurvey&EstablishBaseline Readings GSM	14	24-Oct-09 A	28-Nov-09 A	100%			-16
WCDS0438A	WCDS: Install GS Markers Addt'l VO12&20(12 Nos.)	60	01-Mar-10 A	05-May-10 A	100%			5
WCDS0438C	WCDS: JointSurvey&EstablishBaseline Readings GSM	14	06-May-10 A	19-May-10 A	100%			2
WCDS0441	WCDS: Approval/Consent frm. Bldg./StructureOwner	14	14-Oct-09 A	23-Oct-09 A	100%			5
WCDS0442	WCDS: Install SS Markers (31 Nos.)	50	24-Oct-09 A	10-Jun-10 A	100%			-139
WCDS0444	WCDS: JointSurvey&EstablishBaseline Readings SSM	14	11-Jun-10 A	29-Jun-10 A	100%			-1
WCDS0444A	WCDS:InstallSSMarkersAddt'l.VO20,15,14 (13 Nos.)	50	01-Mar-10 A	05-Jun-10 A	100%			-32
WCDS0444C	WCDS: JointSurvey&EstablishBaseline Readings SSM	14	11-Jun-10 A	29-Jun-10 A	100%			-1
WCDS0447	WCDS: Approval/Consent frm. Bldg./StructureOwner	28	16-Jul-10 A	10-Aug-10 A	100%			6
WCDS0449	WCDS: Install SS MarkersunderVO14 (Remain 6nos.)	45	11-Aug-10 A	14-Aug-10 A	100%			41
WCDS0451	WCDS: JointSurvey&EstablishBaseline Readings SSM	14	16-Aug-10 A	01-Sep-10 A	100%			-1
Piezometers(NearbyPTWorPScovered inthisInstalln)								
WCDS0369	WCDS: Excav.Permit/TTA/TTM ApplicationforBH820PW	25	15-Sep-09 A	03-Mar-10 A	100%			-113
WCDS0371	WCDS: Installation Works of BH820 Piezometer	21	04-Mar-10 A	01-Apr-10 A	100%			-4
WCDS0373	WCDS: BH820 Piezometer Baseline Establishment	26	02-Apr-10 A	22-Apr-10 A	100%			9
WCDS0377	WCDS: Excav.Permit/TTA/TTM ApplicationforBH821PW	24	15-Sep-09 A	12-Feb-10 A	100%			-101
WCDS0379	WCDS: Installation Works of BH821 Piezometer	21	18-Feb-10 A	24-Feb-10 A	100%			15
WCDS0381	WCDS: BH821 Piezometer Baseline Establishment	26	25-Feb-10 A	19-Mar-10 A	100%			6
WCDS0383	WCDS: Excav.Permit/TTA/TTM ApplicationforBH822PW	24	22-Sep-09 A	04-Mar-10 A	100%			-109
WCDS0384	WCDS: Excav.Permit/TTA/TTM ApplicationforBH823PW	24	22-Sep-09 A	07-Dec-09 A	100%			-39
WCDS0385	WCDS: Installation Works of BH822 Piezometer	21	16-Apr-10 A	23-Apr-10 A	100%			14
WCDS0387	WCDS: BH822 Piezometer Baseline Establishment	26	24-Apr-10 A	25-May-10 A	100%			0
WCDS0388	WCDS: Installation Works of BH823 Piezometer	21	08-Dec-09 A	31-Dec-09 A	100%			1
WCDS0393	WCDS: BH823 Piezometer Baseline Establishment	26	01-Jan-10 A	26-Jan-10 A	100%			5
WCDS0397	WCDS: Excav.Permit/TTA/TTM ApplicationforBH927PW	24	28-Sep-09 A	02-Jan-10 A	100%			-55
WCDS0399	WCDS: Installation Works of BH927 Piezometer	21	04-Jan-10 A	22-Jan-10 A	100%			4
WCDS0401	WCDS: BH927 Piezometer Baseline Establishment	26	23-Jan-10 A	19-Feb-10 A	100%			5
WCDS0403	WCDS: Exc.Permit/TTA/TTMApplicationforBH928/30PW	24	28-Sep-09 A	06-Nov-09 A	100%			-8
WCDS0405	WCDS: BH928/30 Piezometer Baseline Establishment	26	07-Nov-09 A	30-Nov-09 A	100%			6
WCDS0407	WCDS: Installation Works of BH928/30 Piezometer	21	07-Dec-09 A	11-Jan-10 A	100%			-8
WCDS0409	WCDS: Excav.Permit/TTA/TTM ApplicationforBH929PW	24	22-Sep-09 A	09-Dec-09 A	100%			-41
WCDS0411	WCDS: Installation Works of BH929 Piezometer	21	10-Dec-09 A	30-Dec-09 A	100%			4
WCDS0413	WCDS: BH929 Piezometer Baseline Establishment	26	31-Dec-09 A	21-Jan-10 A	100%			8



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@Primavera Systems, Inc.

Primary Baseline
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Critical Remaining Work
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Harbour Area Treatment Scheme Stage 2A

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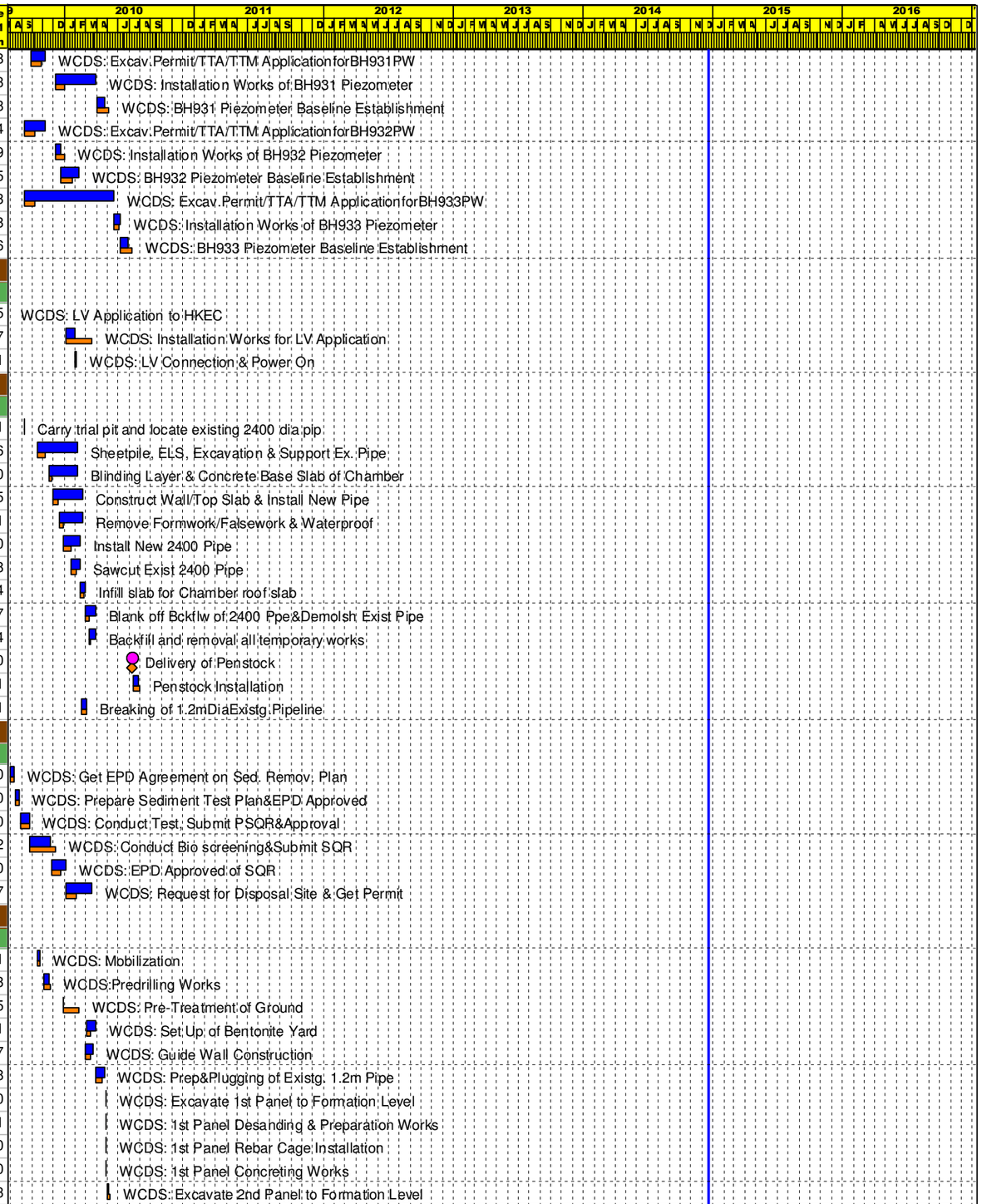
Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
WCDS0415	WCDS: Excav.Permit/TTA/TTM ApplicationforBH931PW	24	28-Sep-09 A	06-Nov-09 A	100%			-8
WCDS0417	WCDS: Installation Works of BH931 Piezometer	21	07-Dec-09 A	31-Mar-10 A	100%			-73
WCDS0419	WCDS: BH931 Piezometer Baseline Establishment	26	01-Apr-10 A	22-Apr-10 A	100%			8
WCDS0421	WCDS: Excav.Permit/TTA/TTM ApplicationforBH932PW	24	09-Sep-09 A	06-Nov-09 A	100%			-24
WCDS0423	WCDS: Installation Works of BH932 Piezometer	21	07-Dec-09 A	19-Dec-09 A	100%			9
WCDS0425	WCDS: BH932 Piezometer Baseline Establishment	26	20-Dec-09 A	08-Feb-10 A	100%			-15
WCDS0427	WCDS: Excav.Permit/TTA/TTM ApplicationforBH933PW	24	09-Sep-09 A	19-May-10 A	100%			-183
WCDS0429	WCDS: Installation Works of BH933 Piezometer	12	20-May-10 A	05-Jun-10 A	100%			-3
WCDS0431	WCDS: BH933 Piezometer Baseline Establishment	26	06-Jun-10 A	30-Jun-10 A	100%			6
Electrical & Mechanical Installations								
Power Supply Application								
WCDS0800	WCDS: LV Application to HKEC	6	17-Jul-09 A	17-Jul-09 A	100%			5
WCDS0805	WCDS: Installation Works for LV Application	60	04-Jan-10 A	29-Jan-10 A	100%			37
WCDS0810	WCDS: LV Connection & Power On	4	30-Jan-10 A	02-Feb-10 A	100%			1
New Chamber and Overflow Pipe								
No Significant Evnt								
WCDS0510	Carry trial pit and locate existing 2400 dia pip	3	08-Sep-09 A	11-Sep-09 A	100%			-1
WCDS0525	Sheetpile, ELS, Excavation & Support Ex. Pipe	18	16-Oct-09 A	05-Feb-10 A	100%			-76
WCDS0565	Blinding Layer & Concrete Base Slab of Chamber	6	19-Nov-09 A	05-Feb-10 A	100%			-60
WCDS0605	Construct Wall/Top Slab & Install New Pipe	12	30-Nov-09 A	20-Feb-10 A	100%			-55
WCDS0625	Remove Formwork/Falsework & Waterproof	9	18-Dec-09 A	19-Feb-10 A	100%			-41
WCDS0645	Install New 2400 Pipe	18	30-Dec-09 A	12-Feb-10 A	100%			-20
WCDS0665	Sawcut Exist 2400 Pipe	15	18-Jan-10 A	12-Feb-10 A	100%			-8
WCDS0670	Infill slab for Chamber roof slab	7	12-Feb-10 A	27-Feb-10 A	100%			-4
WCDS0695	Blank off Bckflw of 2400 Ppe&Demolsh Exist Pipe	10	27-Feb-10 A	30-Mar-10 A	100%			-17
WCDS0698	Backfill and removal all temporary works	4	11-Mar-10 A	31-Mar-10 A	100%			-14
WCDS0699	Delivery of Penstock	0		10-Jul-10 A	100%			0
WCDS0701	Penstock Installation	14	15-Jul-10 A	29-Jul-10 A	100%			1
WCDS0703	Breaking of 1.2mDiaExistg.Pipeline	14	17-Feb-10 A	04-Mar-10 A	100%			1
Marine Dumping Permit								
No Significant Evnt								
WCDS0330	WCDS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0
WCDS0340	WCDS: Prepare Sediment Test Plan&EPD Approved	12	14-Aug-09 A	27-Aug-09 A	100%			0
WCDS0350	WCDS: Conduct Test, Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0
WCDS0360	WCDS: Conduct Bio screening&Submit SQR	60	25-Sep-09 A	23-Nov-09 A	100%			12
WCDS0370	WCDS: EPD Approved of SQR	24	24-Nov-09 A	04-Jan-10 A	100%			-10
WCDS0380	WCDS: Request for Disposal Site & Get Permit	24	05-Jan-10 A	19-Mar-10 A	100%			-37
Diaphragm Wall								
No Significant Evnt								
WCDS0200	WCDS: Mobilization	6	17-Oct-09 A	24-Oct-09 A	100%			-1
WCDS0203	WCDS:Predrilling Works	18	02-Nov-09 A	18-Nov-09 A	100%			3
WCDS0205	WCDS: Pre-Treatment of Ground	36	29-Dec-09 A	29-Dec-09 A	100%			35
WCDS0210	WCDS: Set Up of Bentonite Yard	9	05-Mar-10 A	28-Mar-10 A	100%			-11
WCDS0230	WCDS: Guide Wall Construction	12	01-Mar-10 A	22-Mar-10 A	100%			-7
WCDS0239	WCDS: Prep&Plugging of Existg. 1.2m Pipe	15	29-Mar-10 A	24-Apr-10 A	100%			-8
WCDS0242	WCDS: Excavate 1st Panel to Formation Level	3	26-Apr-10 A	28-Apr-10 A	100%			0
WCDS0244	WCDS: 1st Panel Desanding & Preparation Works	2	28-Apr-10 A	28-Apr-10 A	100%			1
WCDS0246	WCDS: 1st Panel Rebar Cage Installation	1	29-Apr-10 A	29-Apr-10 A	100%			0
WCDS0248	WCDS: 1st Panel Concreting Works	1	29-Apr-10 A	29-Apr-10 A	100%			0
WCDS0251	WCDS: Excavate 2nd Panel to Formation Level	6	03-May-10 A	04-May-10 A	100%			3



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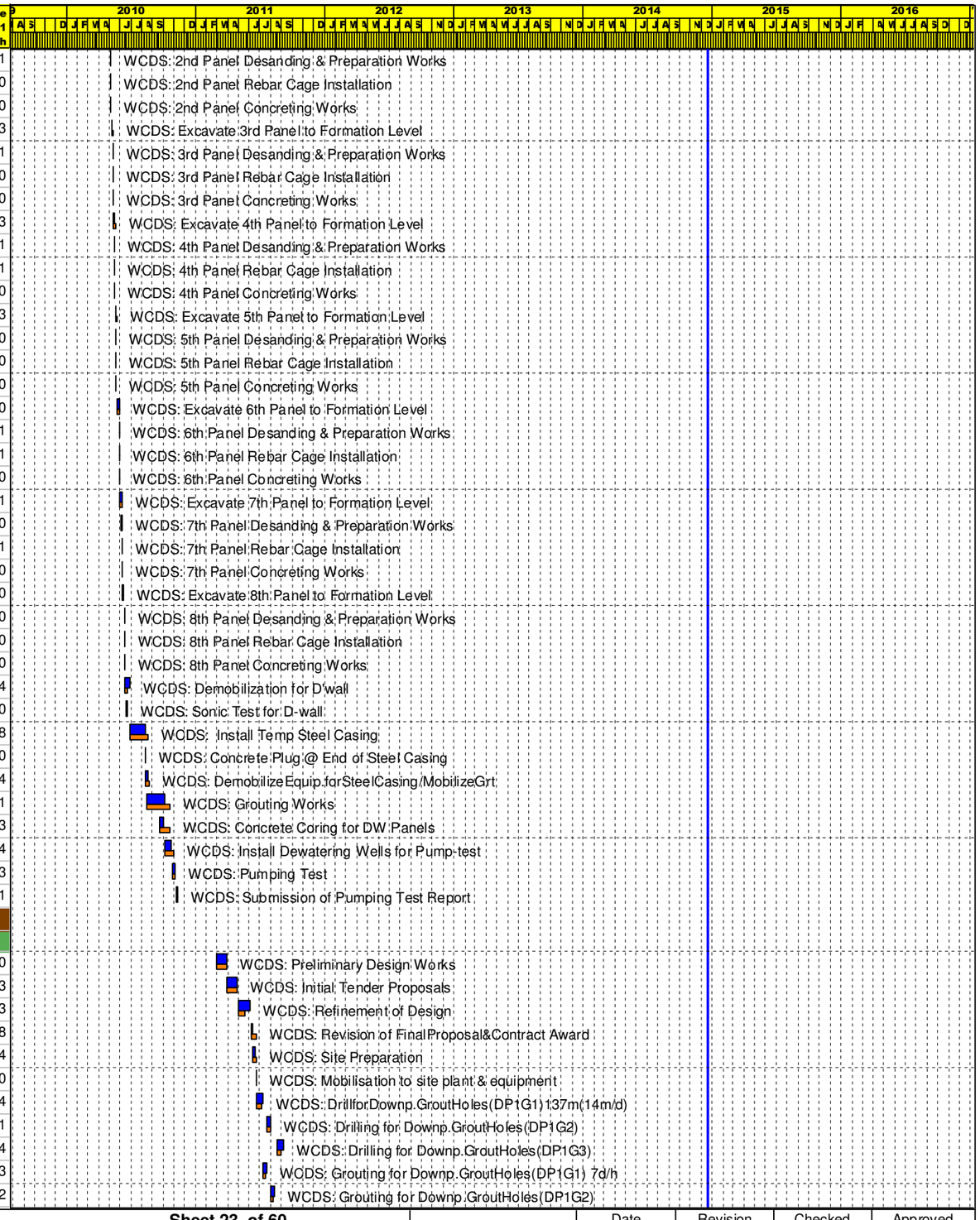
Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
WCDS0253	WCDS: 2nd Panel Desanding & Preparation Works	2	05-May-10 A	05-May-10 A	100%			1
WCDS0255	WCDS: 2nd Panel Rebar Cage Installation	1	05-May-10 A	05-May-10 A	100%			0
WCDS0257	WCDS: 2nd Panel Concreting Works	1	06-May-10 A	06-May-10 A	100%			0
WCDS0259	WCDS: Excavate 3rd Panel to Formation Level	6	07-May-10 A	10-May-10 A	100%			3
WCDS0261	WCDS: 3rd Panel Desanding & Preparation Works	2	11-May-10 A	11-May-10 A	100%			1
WCDS0263	WCDS: 3rd Panel Rebar Cage Installation	1	11-May-10 A	11-May-10 A	100%			0
WCDS0265	WCDS: 3rd Panel Concreting Works	1	12-May-10 A	12-May-10 A	100%			0
WCDS0267	WCDS: Excavate 4th Panel to Formation Level	6	13-May-10 A	15-May-10 A	100%			3
WCDS0269	WCDS: 4th Panel Desanding & Preparation Works	2	15-May-10 A	15-May-10 A	100%			1
WCDS0271	WCDS: 4th Panel Rebar Cage Installation	1	17-May-10 A	17-May-10 A	100%			1
WCDS0273	WCDS: 4th Panel Concreting Works	1	17-May-10 A	17-May-10 A	100%			0
WCDS0275	WCDS: Excavate 5th Panel to Formation Level	6	18-May-10 A	20-May-10 A	100%			3
WCDS0277	WCDS: 5th Panel Desanding & Preparation Works	1	21-May-10 A	21-May-10 A	100%			0
WCDS0279	WCDS: 5th Panel Rebar Cage Installation	1	21-May-10 A	21-May-10 A	100%			0
WCDS0281	WCDS: 5th Panel Concreting Works	1	21-May-10 A	21-May-10 A	100%			0
WCDS0283	WCDS: Excavate 6th Panel to Formation Level	6	24-May-10 A	29-May-10 A	100%			0
WCDS0285	WCDS: 6th Panel Desanding & Preparation Works	1	31-May-10 A	31-May-10 A	100%			1
WCDS0287	WCDS: 6th Panel Rebar Cage Installation	1	31-May-10 A	31-May-10 A	100%			1
WCDS0289	WCDS: 6th Panel Concreting Works	1	31-May-10 A	31-May-10 A	100%			0
WCDS0291	WCDS: Excavate 7th Panel to Formation Level	6	01-Jun-10 A	05-Jun-10 A	100%			1
WCDS0293	WCDS: 7th Panel Desanding & Preparation Works	1	05-Jun-10 A	05-Jun-10 A	100%			0
WCDS0295	WCDS: 7th Panel Rebar Cage Installation	1	07-Jun-10 A	07-Jun-10 A	100%			1
WCDS0297	WCDS: 7th Panel Concreting Works	1	07-Jun-10 A	07-Jun-10 A	100%			0
WCDS0299	WCDS: Excavate 8th Panel to Formation Level	5	08-Jun-10 A	12-Jun-10 A	100%			0
WCDS0301	WCDS: 8th Panel Desanding & Preparation Works	1	14-Jun-10 A	14-Jun-10 A	100%			0
WCDS0303	WCDS: 8th Panel Rebar Cage Installation	1	14-Jun-10 A	14-Jun-10 A	100%			0
WCDS0305	WCDS: 8th Panel Concreting Works	1	14-Jun-10 A	14-Jun-10 A	100%			0
WCDS0305A	WCDS: Demobilization for D'wall	6	15-Jun-10 A	27-Jun-10 A	100%			-4
WCDS0305A1	WCDS: Sonic Test for D-wall	3	19-Jun-10 A	22-Jun-10 A	100%			0
WCDS0305B	WCDS: Install Temp Steel Casing	45	28-Jun-10 A	10-Aug-10 A	100%			8
WCDS0310	WCDS: Concrete Plug @ End of Steel Casing	2	11-Aug-10 A	12-Aug-10 A	100%			0
WCDS0320	WCDS: DemobilizeEquip.forSteelCasing/MobilizeGrt	10	13-Aug-10 A	19-Aug-10 A	100%			4
WCDS0390	WCDS: Grouting Works	51	17-Aug-10 A	04-Oct-10 A	100%			11
WCDS0392A	WCDS: Concrete Coring for DW Panels	23	20-Sep-10 A	02-Oct-10 A	100%			13
WCDS0394	WCDS: Install Dewatering Wells for Pump-test	21	05-Oct-10 A	25-Oct-10 A	100%			4
WCDS0471	WCDS: Pumping Test	7	26-Oct-10 A	05-Nov-10 A	100%			-3
WCDS0473	WCDS: Submission of Pumping Test Report	6	06-Nov-10 A	11-Nov-10 A	100%			1
Shaft Excavation								
Pre-Excavation Grouting								
WCDS0900	WCDS: Preliminary Design Works	24	01-Mar-11 A	28-Mar-11 A	100%			0
WCDS0902	WCDS: Initial Tender Proposals	24	29-Mar-11 A	29-Apr-11 A	100%			-3
WCDS0904	WCDS: Refinement of Design	17	30-Apr-11 A	04-Jun-11 A	100%			-13
WCDS0906	WCDS: Revision of FinalProposal&Contract Award	12	07-Jun-11 A	10-Jun-11 A	100%			8
WCDS0907	WCDS: Site Preparation	12	10-Jun-11 A	18-Jun-11 A	100%			4
WCDS0908	WCDS: Mobilisation to site plant & equipment	3	20-Jun-11 A	22-Jun-11 A	100%			0
WCDS0910	WCDS: DrillforDownp.GroutHoles(DP1G1)137m(14m/d)	10	23-Jun-11 A	09-Jul-11 A	100%			-4
WCDS0912	WCDS: Drilling for Downp.GroutHoles(DP1G2)	10	22-Jul-11 A	01-Aug-11 A	100%			1
WCDS0914	WCDS: Drilling for Downp.GroutHoles(DP1G3)	10	20-Aug-11 A	05-Sep-11 A	100%			-4
WCDS0916	WCDS: Grouting for Downp.GroutHoles(DP1G1) 7d/h	7	11-Jul-11 A	21-Jul-11 A	100%			-3
WCDS0918	WCDS: Grouting for Downp.GroutHoles(DP1G2)	7	02-Aug-11 A	11-Aug-11 A	100%			-2



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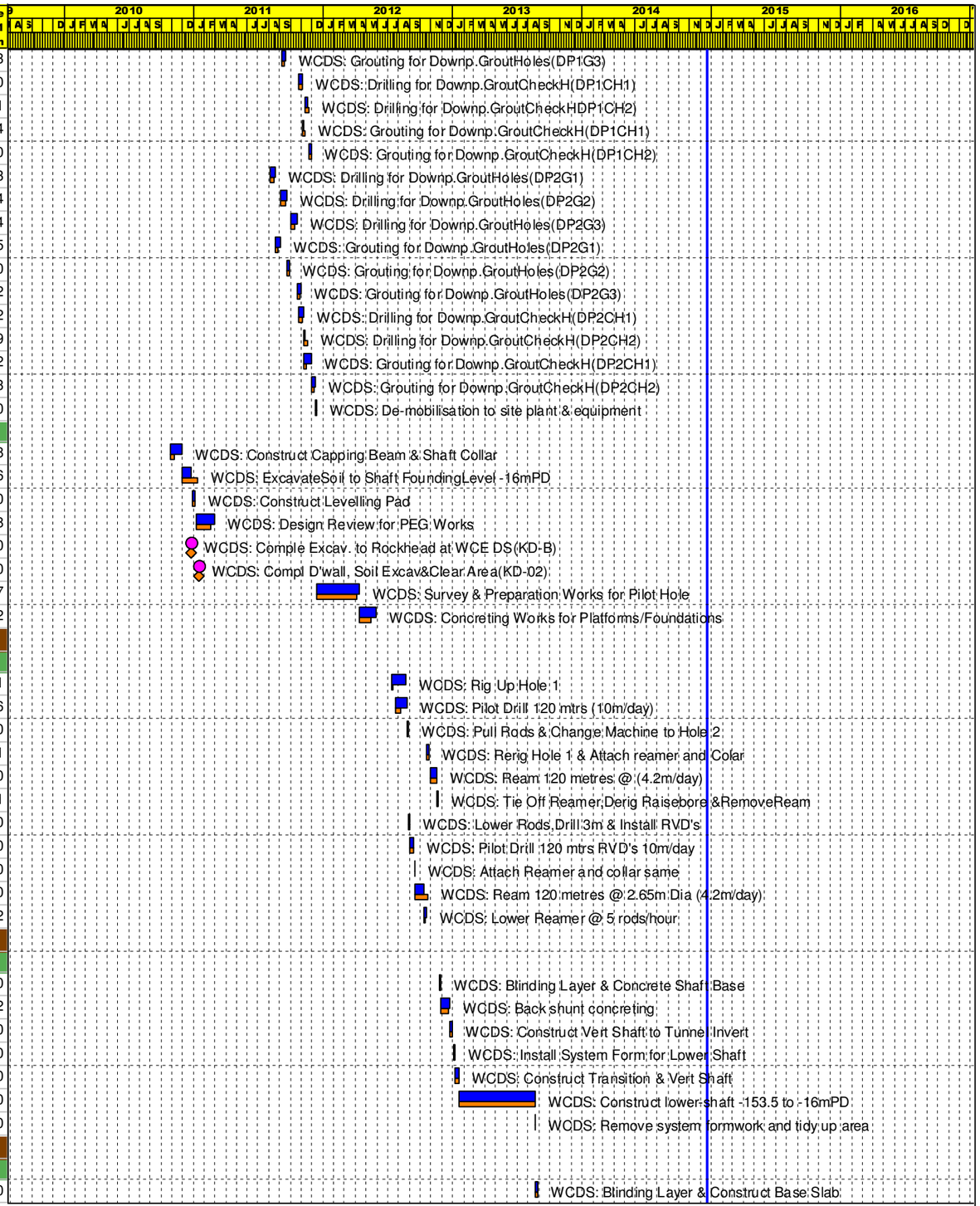
WCDS0920	WCDS: Grouting for Downp.GroutHoles(DP1G3)	7	06-Sep-11 A	17-Sep-11 A	100%			-3
WCDS0922	WCDS: Drilling for Downp.GroutCheckH(DP1CH1)	10	24-Oct-11 A	03-Nov-11 A	100%			0
WCDS0924	WCDS: Drilling for Downp.GroutCheckHDP1CH2)	10	10-Nov-11 A	19-Nov-11 A	100%			1
WCDS0926	WCDS: Grouting for Downp.GroutCheckH(DP1CH1)	7	04-Nov-11 A	07-Nov-11 A	100%			4
WCDS0928	WCDS: Grouting for Downp.GroutCheckH(DP1CH2)	7	21-Nov-11 A	28-Nov-11 A	100%			0
WCDS0932	WCDS: Drilling for Downp.GroutHoles(DP2G1)	10	04-Aug-11 A	18-Aug-11 A	100%			-3
WCDS0934	WCDS: Drilling for Downp.GroutHoles(DP2G2)	10	03-Sep-11 A	20-Sep-11 A	100%			-4
WCDS0936	WCDS: Drilling for Downp.GroutHoles(DP2G3)	10	03-Oct-11 A	19-Oct-11 A	100%			-4
WCDS0938	WCDS: Grouting for Downp.GroutHoles(DP2G1)	7	20-Aug-11 A	02-Sep-11 A	100%			-5
WCDS0940	WCDS: Grouting for Downp.GroutHoles(DP2G2)	7	21-Sep-11 A	28-Sep-11 A	100%			0
WCDS0942	WCDS: Grouting for Downp.GroutHoles(DP2G3)	7	20-Oct-11 A	30-Oct-11 A	100%			-2
WCDS0944	WCDS: Drilling for Downp.GroutCheckH(DP2CH1)	10	24-Oct-11 A	06-Nov-11 A	100%			-2
WCDS0946	WCDS: Drilling for Downp.GroutCheckH(DP2CH2)	10	09-Nov-11 A	09-Nov-11 A	100%			9
WCDS0948	WCDS: Grouting for Downp.GroutCheckH(DP2CH1)	7	07-Nov-11 A	28-Nov-11 A	100%			-12
WCDS0950	WCDS: Grouting for Downp.GroutCheckH(DP2CH2)	7	29-Nov-11 A	09-Dec-11 A	100%			-3
WCDS0952	WCDS: De-mobilisation to site plant & equipment	2	10-Dec-11 A	12-Dec-11 A	100%			0
No Significant Evnt								
WCDS0400	WCDS: Construct Capping Beam & Shaft Collar	12	26-Oct-10 A	29-Nov-10 A	100%			-18
WCDS0410	WCDS: ExcavateSoil to Shaft FoundingLevel -16mPD	37	30-Nov-10 A	24-Dec-10 A	100%			16
WCDS0420	WCDS: Construct Levelling Pad	6	27-Dec-10 A	03-Jan-11 A	100%			0
WCDS0421A	WCDS: Design Review for PEG Works	35	07-Jan-11 A	28-Feb-11 A	100%			-8
WCDS1650	WCDS: Comple Excav. to Rockhead at WCE DS(KD-B)	0		25-Dec-10 A	100%			0
WCDS1660	WCDS: Compl D'wall, Soil Excav&Clear Area(KD-02)	0		14-Jan-11 A	100%			0
WCDS1670	WCDS: Survey & Preparation Works for Pilot Hole	90	15-Dec-11 A	12-Apr-12 A	100%			-7
WCDS1675	WCDS: Concreting Works for Platforms/Foundations	28	13-Apr-12 A	30-May-12 A	100%			-12
Raised Boring								
No Significant Evnt								
WCDS0700	WCDS: Rig Up Hole 1	5	11-Jul-12 A	21-Aug-12 A	100%			-31
WCDS0710	WCDS: Pilot Drill 120 mtrs (10m/day)	14	23-Jul-12 A	25-Aug-12 A	100%			-16
WCDS0714	WCDS: Pull Rods & Change Machine to Hole 2	3	27-Aug-12 A	29-Aug-12 A	100%			0
WCDS0720	WCDS: Rerig Hole 1 & Attach reamer and Colar	7	18-Oct-12 A	27-Oct-12 A	100%			-1
WCDS0730	WCDS: Ream 120 metres @ (4.2m/day)	17	29-Oct-12 A	16-Nov-12 A	100%			0
WCDS0740	WCDS: Tie Off Reamer,Derig Raisebore &RemoveReam	3	17-Nov-12 A	21-Nov-12 A	100%			-1
WCDS0750	WCDS: Lower Rods,Drill 3m & Install RVD's	2	30-Aug-12 A	31-Aug-12 A	100%			0
WCDS0760	WCDS: Pilot Drill 120 mtrs RVD's 10m/day	12	01-Sep-12 A	14-Sep-12 A	100%			0
WCDS0770	WCDS: Attach Reamer and collar same	2	15-Sep-12 A	17-Sep-12 A	100%			0
WCDS0780	WCDS: Ream 120 metres @ 2.65m Dia (4.2m/day)	29	18-Sep-12 A	11-Oct-12 A	100%			10
WCDS0790	WCDS: Lower Reamer @ 5 rods/hour	3	12-Oct-12 A	17-Oct-12 A	100%			-2
Lower Shaft Construction								
No Significant Evnt								
WCDS0845	WCDS: Blinding Layer & Concrete Shaft Base	6	23-Nov-12 A	29-Nov-12 A	100%			0
WCDS0850	WCDS: Back shunt concreting	18	30-Nov-12 A	22-Dec-12 A	100%			-2
WCDS0885	WCDS: Construct Vert Shaft to Tunnel Invert	6	24-Dec-12 A	31-Dec-12 A	100%			0
WCDS0905	WCDS: Install System Form for Lower Shaft	6	02-Jan-13 A	08-Jan-13 A	100%			0
WCDS0945	WCDS: Construct Transition & Vert Shaft	9	09-Jan-13 A	18-Jan-13 A	100%			0
WCDS0965	WCDS: Construct lower-shaft -153.5 to -16mPD	173	19-Jan-13 A	20-Aug-13 A	100%			0
WCDS0970	WCDS: Remove system formwork and tidy up area	2	20-Aug-13 A	21-Aug-13 A	100%			0
Upper Shaft Construction								
No Significant Evnt								
WCDS1015	WCDS: Blinding Layer & Construct Base Slab	9	21-Aug-13 A	30-Aug-13 A	100%			0



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Harbour Area Treatment Scheme Stage 2A

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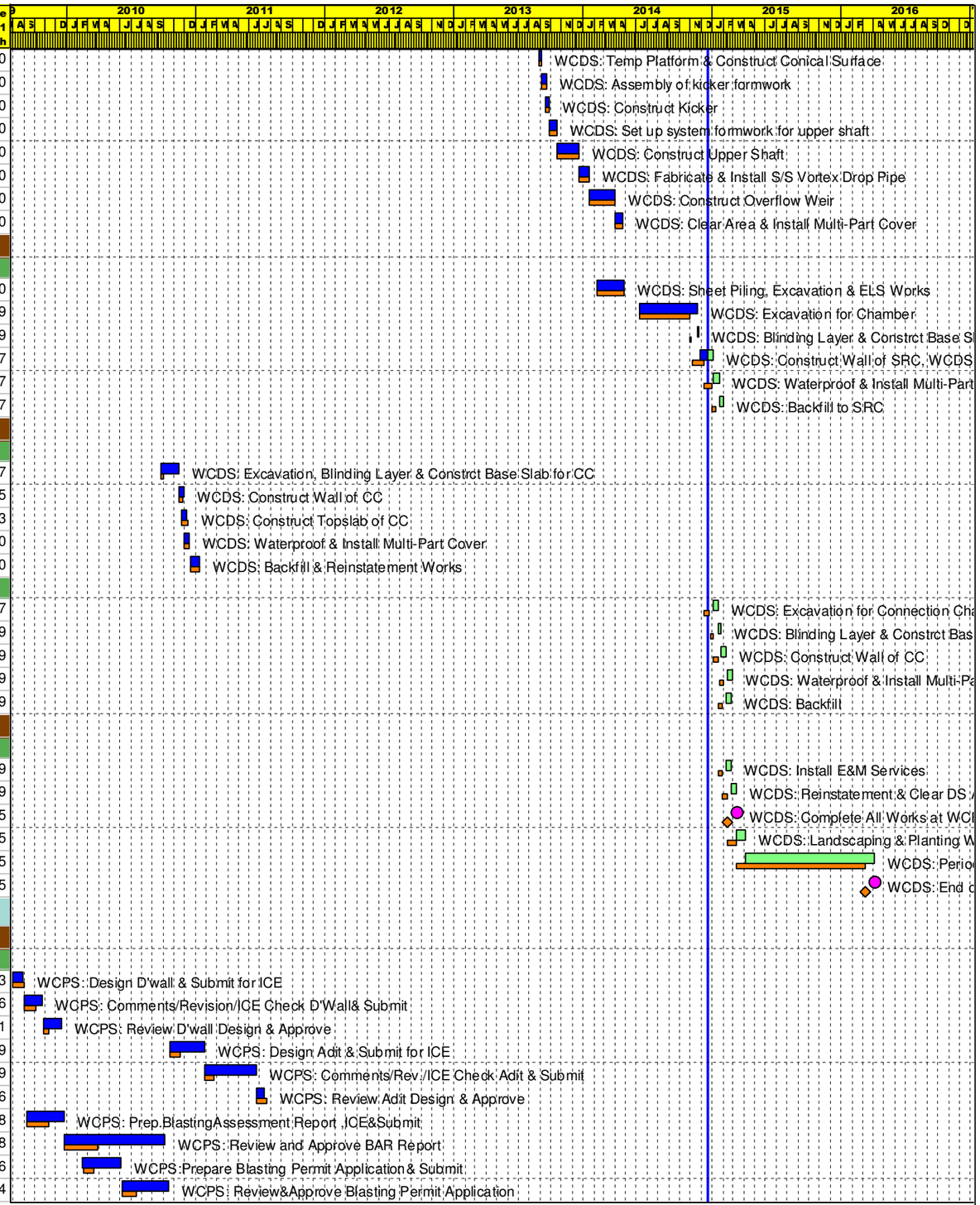
Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
WCDS1055	WCDS: Temp Platform & Construct Conical Surface	6	30-Aug-13 A	05-Sep-13 A	100%			0
WCDS1060	WCDS: Assembly of kicker formwork	12	05-Sep-13 A	18-Sep-13 A	100%			0
WCDS1095	WCDS: Construct Kicker	9	18-Sep-13 A	28-Sep-13 A	100%			0
WCDS1100	WCDS: Set up system formwork for upper shaft	16	28-Sep-13 A	18-Oct-13 A	100%			0
WCDS1145	WCDS: Construct Upper Shaft	55	18-Oct-13 A	20-Dec-13 A	100%			0
WCDS1265	WCDS: Fabricate & Install S/S Vortex Drop Pipe	22	20-Dec-13 A	17-Jan-14 A	100%			0
WCDS1275	WCDS: Construct Overflow Weir	62	17-Jan-14 A	02-Apr-14 A	100%			0
WCDS1300	WCDS: Clear Area & Install Multi-Part Cover	16	02-Apr-14 A	24-Apr-14 A	100%			0
Scum Removal Chamber								
No Significant Evnt								
WCDS1533	WCDS: Sheet Piling, Excavation & ELS Works	62	08-Feb-14 A	25-Apr-14 A	100%			0
WCDS1535	WCDS: Excavation for Chamber	118	09-Jun-14 A	20-Nov-14 A	100%			-19
WCDS1575	WCDS: Blinding Layer & Constrct Base Slab of SRC	6	20-Nov-14 A	26-Nov-14 A	100%			-19
WCDS1615	WCDS: Construct Wall of SRC	30	27-Nov-14 A	02-Jan-15	72%	145	145	-17
WCDS1635	WCDS: Waterproof & Install Multi-Part Cover	15	03-Jan-15	21-Jan-15	0%	490	490	-17
WCDS1640	WCDS: Backfill to SRC	10	21-Jan-15	02-Feb-15	0%	490	490	-17
Connection Channel								
Connection Channel Phase 1 (WCEPTW-ib)								
WCDS1550	WCDS: Excavation, Blinding Layer & Constrct Base Slab fo...	6	24-Sep-10 A	15-Nov-10 A	100%			-37
WCDS1552	WCDS: Construct Wall of CC	8	16-Nov-10 A	30-Nov-10 A	100%			-5
WCDS1553	WCDS: Construct Topslab of CC	15	23-Nov-10 A	06-Dec-10 A	100%			3
WCDS1554	WCDS: Waterproof & Install Multi-Part Cover	15	29-Nov-10 A	15-Dec-10 A	100%			0
WCDS1556	WCDS: Backfill & Reinstatement Works	23	16-Dec-10 A	13-Jan-11 A	100%			0
Connection Channel Phase 2 (WCEPTW-ia)								
WCDS1440	WCDS: Excavation for Connection Channel	12	02-Jan-15	20-Jan-15	0%	126	126	-17
WCDS1445	WCDS: Blinding Layer & Constrct Base Slab for CC	6	20-Jan-15	27-Jan-15	0%	143	143	-19
WCDS1505	WCDS: Construct Wall of CC	12	27-Jan-15	10-Feb-15	0%	143	143	-19
WCDS1525	WCDS: Waterproof & Install Multi-Part Cover	10	12-Feb-15	26-Feb-15	0%	471	471	-19
WCDS1530	WCDS: Backfill	10	10-Feb-15	24-Feb-15	0%	473	473	-19
Miscellaneous Works								
No Significant Evnt								
WCDS2010	WCDS: Install E&M Services	10	10-Feb-15	24-Feb-15	0%	143	143	-19
WCDS2020	WCDS: Reinstatement & Clear DS Area	12	24-Feb-15	10-Mar-15	0%	143	143	-19
WCDS2025	WCDS: Complete All Works at WCE DS (KD-07)	0		10-Mar-15	0%	563	563	-25
WCDS2030	WCDS: Landscaping & Planting Works	25	10-Mar-15	04-Apr-15	0%	173	173	-25
WCDS2040	WCDS: Period of Establishment Works	365	04-Apr-15	03-Apr-16	0%	173	173	-25
WCDS2050	WCDS: End of Establishment Period	0		03-Apr-16	0%	173	173	-25
Wan Chai East Production Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
WCPS10010	WCPS: Design D'wall & Submit for ICE	28	31-Jul-09 A	28-Aug-09 A	100%			3
WCPS10015	WCPS: Comments/Revision/ICE Check D'Wall& Submit	28	01-Sep-09 A	23-Oct-09 A	100%			-16
WCPS10020	WCPS: Review D'wall Design & Approve	14	28-Oct-09 A	18-Dec-09 A	100%			-31
WCPS10050	WCPS: Design Adit & Submit for ICE	24	20-Oct-10 A	26-Jan-11 A	100%			-59
WCPS10055	WCPS: Comments/Rev./ICE Check Adit & Submit	21	27-Jan-11 A	21-Jun-11 A	100%			-99
WCPS10060	WCPS: Review Adit Design & Approve	24	22-Jun-11 A	13-Jul-11 A	100%			6
WCPS10065	WCPS: Prep.BlastingAssessment Report ,ICE&Submit	50	09-Sep-09 A	23-Dec-09 A	100%			-38
WCPS10070	WCPS: Review and Approve BAR Report	77	24-Dec-09 A	06-Oct-10 A	100%			-158
WCPS10075	WCPS:Prepare Blasting Permit Application& Submit	24	15-Feb-10 A	04-Jun-10 A	100%			-66
WCPS10080	WCPS: Review&Approve Blasting Permit Application	34	07-Jun-10 A	15-Oct-10 A	100%			-74



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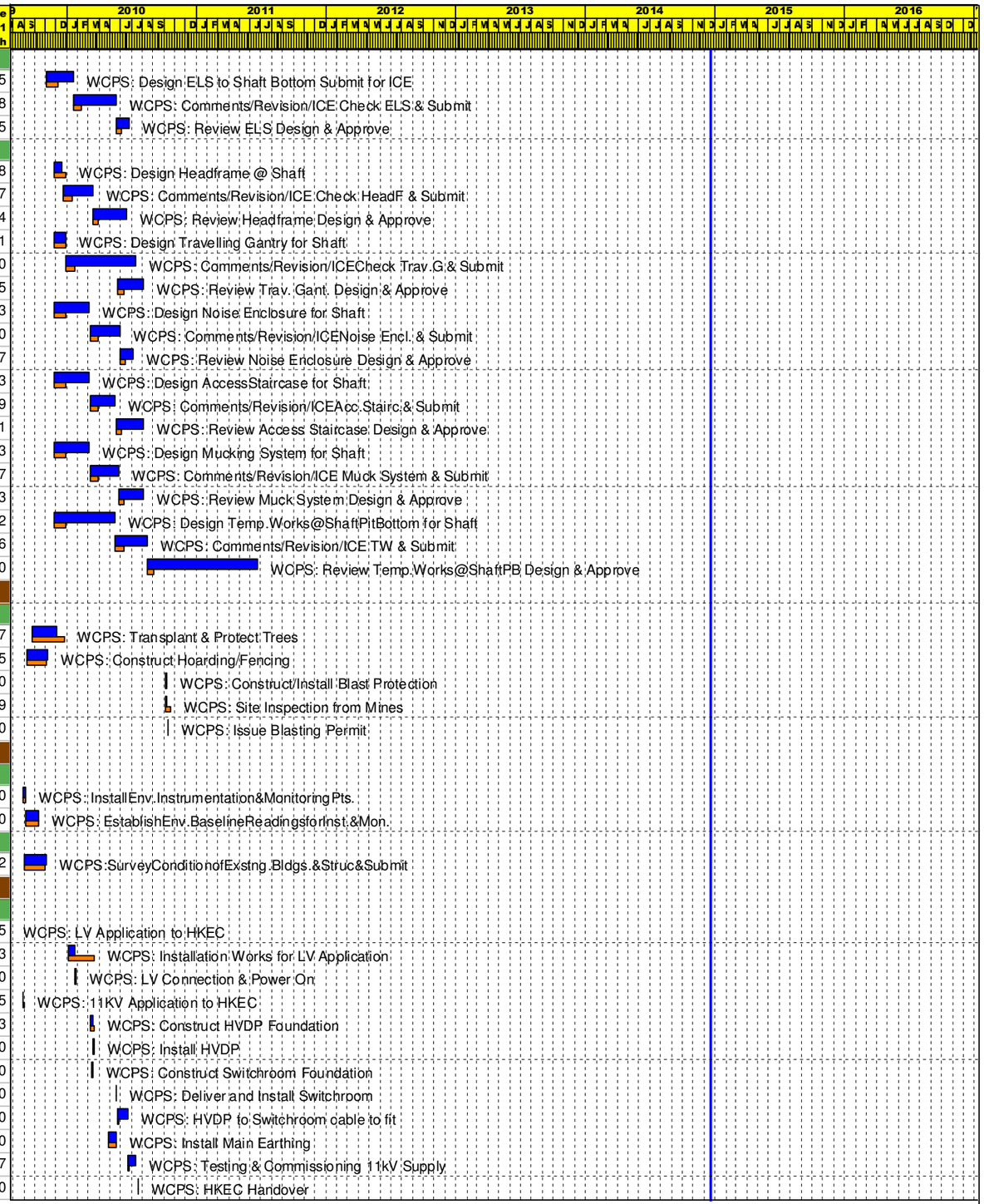
ELS in Rock to Shaft Bottom Level								
WCPS10200	WCPS: Design ELS to Shaft Bottom Submit for ICE	28	04-Nov-09 A	18-Jan-10 A	100%			-35
WCPS10202	WCPS: Comments/Revision/ICE Check ELS & Submit	21	19-Jan-10 A	19-May-10 A	100%			-78
WCPS10204	WCPS: Review ELS Design & Approve	14	20-May-10 A	23-Jun-10 A	100%			-15
Temporary Works & Other Design								
WCPS10210	WCPS: Design Headframe @ Shaft	28	26-Nov-09 A	18-Dec-09 A	100%			8
WCPS10212	WCPS: Comments/Revision/ICE Check HeadF & Submit	21	21-Dec-09 A	15-Mar-10 A	100%			-47
WCPS10214	WCPS: Review Headframe Design & Approve	14	16-Mar-10 A	17-Jun-10 A	100%			-64
WCPS10216	WCPS: Design Travelling Gantry for Shaft	28	26-Nov-09 A	28-Dec-09 A	100%			1
WCPS10218	WCPS: Comments/Revision/ICECheck Trav.G & Submit	21	29-Dec-09 A	13-Jul-10 A	100%			-140
WCPS10220	WCPS: Review Trav. Gant. Design & Approve	14	25-May-10 A	03-Aug-10 A	100%			-45
WCPS10222	WCPS: Design Noise Enclosure for Shaft	28	26-Nov-09 A	05-Mar-10 A	100%			-53
WCPS10224	WCPS: Comments/Revision/ICENoise Encl. & Submit	21	06-Mar-10 A	29-May-10 A	100%			-50
WCPS10226	WCPS: Review Noise Enclosure Design & Approve	14	31-May-10 A	07-Jul-10 A	100%			-17
WCPS10228	WCPS: Design AccessStaircase for Shaft	28	26-Nov-09 A	05-Mar-10 A	100%			-53
WCPS10230	WCPS: Comments/Revision/ICEAcc.Stairc.& Submit	21	06-Mar-10 A	17-May-10 A	100%			-39
WCPS10232	WCPS: Review Access Staircase Design & Approve	14	18-May-10 A	03-Aug-10 A	100%			-51
WCPS10234	WCPS: Design Mucking System for Shaft	28	26-Nov-09 A	05-Mar-10 A	100%			-53
WCPS10236	WCPS: Comments/Revision/ICE Muck System & Submit	21	06-Mar-10 A	26-May-10 A	100%			-47
WCPS10238	WCPS: Review Muck System Design & Approve	14	27-May-10 A	03-Aug-10 A	100%			-43
WCPS10240	WCPS: Design Temp.Works@ShaftPitBottom for Shaft	28	26-Nov-09 A	15-May-10 A	100%			-112
WCPS10242	WCPS: Comments/Revision/ICE TW & Submit	21	17-May-10 A	16-Aug-10 A	100%			-56
WCPS10244	WCPS: Review Temp.Works@ShaftPB Design & Approve	14	17-Aug-10 A	20-Jun-11 A	100%			-240
Preliminaries Works								
No Significant Evnt								
WCPS0150	WCPS: Transplant & Protect Trees	75	25-Sep-09 A	04-Dec-09 A	100%			17
WCPS0160	WCPS: Construct Hoarding/Fencing	45	08-Sep-09 A	07-Nov-09 A	100%			-5
WCPS10085	WCPS: Construct/Install Blast Protection	2	07-Oct-10 A	08-Oct-10 A	100%			0
WCPS10090	WCPS: Site Inspection from Mines	12	07-Oct-10 A	09-Oct-10 A	100%			9
WCPS10095	WCPS: Issue Blasting Permit	1	11-Oct-10 A	11-Oct-10 A	100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
WCPS0174	WCPS: InstallEnv.Instrumentation&MonitoringPts.	7	28-Aug-09 A	04-Sep-09 A	100%			0
WCPS0177	WCPS: EstablishEnv.BaselineReadingsforInst.&Mon.	31	05-Sep-09 A	13-Oct-09 A	100%			0
EBS Works								
WCPS0362	WCPS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	03-Nov-09 A	100%			-2
Electrical & Mechanical Installations								
Power Supply Application								
WCPS0600	WCPS: LV Application to HKEC	6	17-Jul-09 A	17-Jul-09 A	100%			5
WCPS0605	WCPS: Installation Works for LV Application	60	04-Jan-10 A	22-Jan-10 A	100%			43
WCPS0610	WCPS: LV Connection & Power On	4	23-Jan-10 A	27-Jan-10 A	100%			0
WCPS0615	WCPS: 11KV Application to HKEC	6	28-Aug-09 A	28-Aug-09 A	100%			5
WCPS0630	WCPS: Construct HVDP Foundation	9	09-Mar-10 A	15-Mar-10 A	100%			3
WCPS0632	WCPS: Install HVDP	2	16-Mar-10 A	17-Mar-10 A	100%			0
WCPS0634	WCPS: Construct Switchroom Foundation	6	10-Mar-10 A	16-Mar-10 A	100%			0
WCPS0636	WCPS: Deliver and Install Switchroom	2	20-May-10 A	21-May-10 A	100%			0
WCPS0638	WCPS: HVDP to Switchroom cable to fit	5	22-May-10 A	21-Jun-10 A	100%			-20
WCPS0640	WCPS: Install Main Earthing	16	29-Apr-10 A	18-May-10 A	100%			0
WCPS0642	WCPS: Testing & Commissioning 11kV Supply	2	22-Jun-10 A	14-Jul-10 A	100%			-17
WCPS0644	WCPS: HKEC Handover	1	20-Jul-10 A	20-Jul-10 A	100%			0



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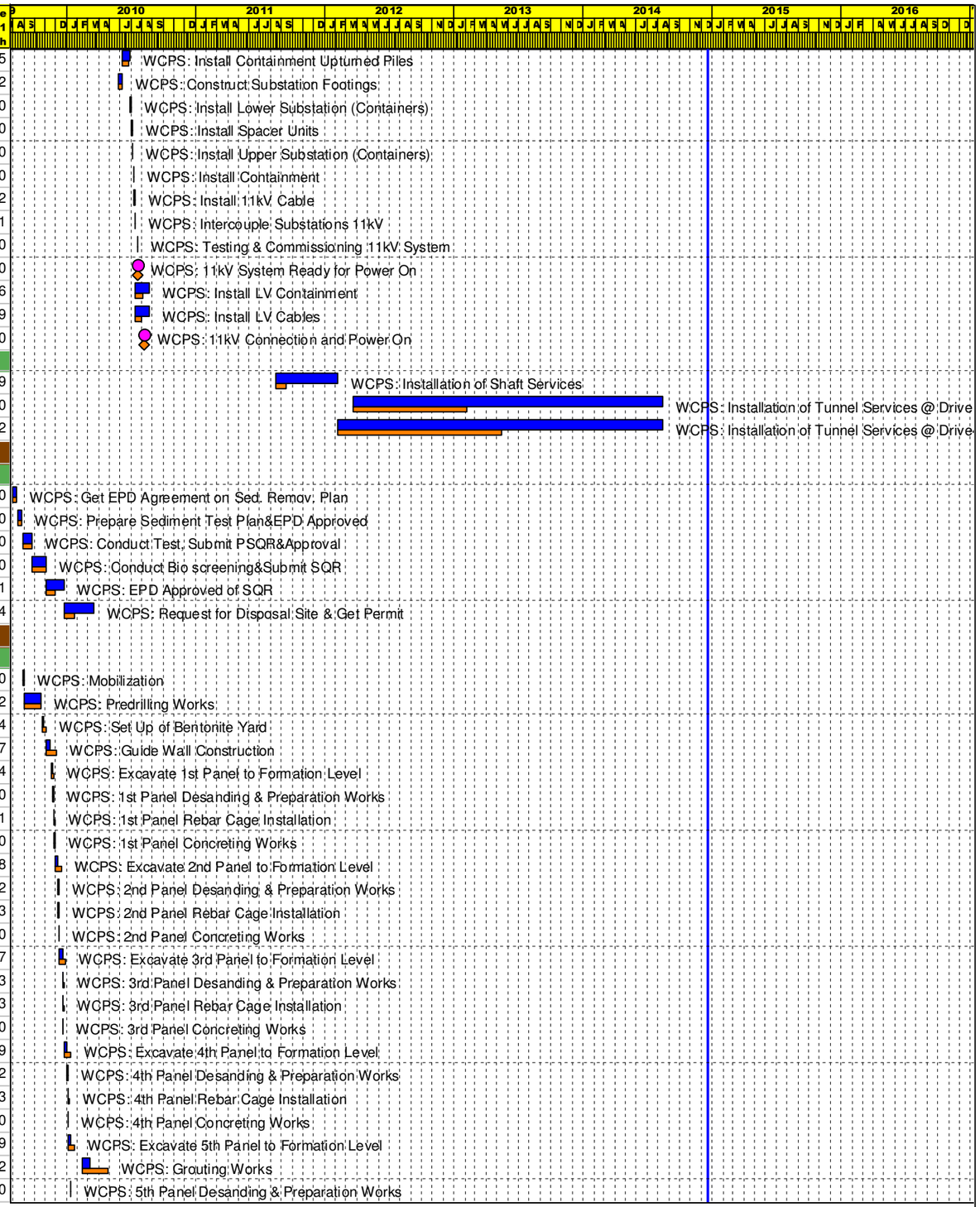
WCPS0646	WCPS: Install Containment Upturned Piles	15	06-Jun-10 A	30-Jun-10 A	100%			-5
WCPS0648	WCPS: Construct Substation Footings	12	26-May-10 A	05-Jun-10 A	100%			2
WCPS0650	WCPS: Install Lower Substation (Containers)	2	30-Jun-10 A	02-Jul-10 A	100%			0
WCPS0652	WCPS: Install Spacer Units	2	03-Jul-10 A	05-Jul-10 A	100%			0
WCPS0654	WCPS: Install Upper Substation (Containers)	2	06-Jul-10 A	07-Jul-10 A	100%			0
WCPS0656	WCPS: Install Containment	2	08-Jul-10 A	09-Jul-10 A	100%			0
WCPS0658	WCPS: Install 11kV Cable	4	10-Jul-10 A	12-Jul-10 A	100%			2
WCPS0660	WCPS: Intercouple Substations 11kV	2	12-Jul-10 A	14-Jul-10 A	100%			-1
WCPS0662	WCPS: Testing & Commissioning 11kV System	2	20-Jul-10 A	21-Jul-10 A	100%			0
WCPS0663	WCPS: 11kV System Ready for Power On	0		22-Jul-10 A	100%			0
WCPS0664	WCPS: Install LV Containment	21	12-Jul-10 A	23-Aug-10 A	100%			-16
WCPS0666	WCPS: Install LV Cables	18	12-Jul-10 A	23-Aug-10 A	100%			-19
WCPS0668	WCPS: 11kV Connection and Power On	0		08-Aug-10 A	100%			0
Unit Installations & Cablings								
WCPS0702	WCPS: Installation of Shaft Services	25	15-Aug-11 A	07-Feb-12 A	100%			-119
WCPS0714	WCPS: Installation of Tunnel Services @ Drive 5	267	20-Mar-12 A	15-Aug-14 A	100%			-450
WCPS0892	WCPS: Installation of Tunnel Services @ Drive4	380	08-Feb-12 A	14-Aug-14 A	100%			-372
Marine Dumping Permit								
No Significant Evnt								
WCPS0190	WCPS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0
WCPS0192	WCPS: Prepare Sediment Test Plan&EPD Approved	12	14-Aug-09 A	27-Aug-09 A	100%			0
WCPS0194	WCPS: Conduct Test, Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0
WCPS0196	WCPS: Conduct Bio screening&Submit SQR	30	25-Sep-09 A	02-Nov-09 A	100%			0
WCPS0198	WCPS: EPD Approved of SQR	24	03-Nov-09 A	24-Dec-09 A	100%			-21
WCPS0199	WCPS: Request for Disposal Site & Get Permit	24	26-Dec-09 A	19-Mar-10 A	100%			-44
Diaphragm Wall								
No Significant Evnt								
WCPS0200	WCPS: Mobilization	6	28-Aug-09 A	03-Sep-09 A	100%			0
WCPS0207	WCPS: Predrilling Works	39	04-Sep-09 A	19-Oct-09 A	100%			2
WCPS0210	WCPS: Set Up of Bentonite Yard	9	22-Oct-09 A	28-Oct-09 A	100%			4
WCPS0230	WCPS: Guide Wall Construction	28	03-Nov-09 A	14-Nov-09 A	100%			17
WCPS0243	WCPS: Excavate 1st Panel to Formation Level	7	19-Nov-09 A	21-Nov-09 A	100%			4
WCPS0245	WCPS: 1st Panel Desanding & Preparation Works	2	23-Nov-09 A	24-Nov-09 A	100%			0
WCPS0247	WCPS: 1st Panel Rebar Cage Installation	3	25-Nov-09 A	26-Nov-09 A	100%			1
WCPS0249	WCPS: 1st Panel Concreting Works	1	27-Nov-09 A	27-Nov-09 A	100%			0
WCPS0251	WCPS: Excavate 2nd Panel to Formation Level	16	28-Nov-09 A	07-Dec-09 A	100%			8
WCPS0253	WCPS: 2nd Panel Desanding & Preparation Works	3	08-Dec-09 A	08-Dec-09 A	100%			2
WCPS0255	WCPS: 2nd Panel Rebar Cage Installation	4	08-Dec-09 A	08-Dec-09 A	100%			3
WCPS0257	WCPS: 2nd Panel Concreting Works	1	09-Dec-09 A	09-Dec-09 A	100%			0
WCPS0259	WCPS: Excavate 3rd Panel to Formation Level	16	10-Dec-09 A	19-Dec-09 A	100%			7
WCPS0261	WCPS: 3rd Panel Desanding & Preparation Works	3	20-Dec-09 A	20-Dec-09 A	100%			3
WCPS0263	WCPS: 3rd Panel Rebar Cage Installation	4	21-Dec-09 A	21-Dec-09 A	100%			3
WCPS0265	WCPS: 3rd Panel Concreting Works	1	22-Dec-09 A	22-Dec-09 A	100%			0
WCPS0267	WCPS: Excavate 4th Panel to Formation Level	15	23-Dec-09 A	30-Dec-09 A	100%			9
WCPS0269	WCPS: 4th Panel Desanding & Preparation Works	3	01-Jan-10 A	03-Jan-10 A	100%			2
WCPS0271	WCPS: 4th Panel Rebar Cage Installation	4	04-Jan-10 A	04-Jan-10 A	100%			3
WCPS0273	WCPS: 4th Panel Concreting Works	1	05-Jan-10 A	05-Jan-10 A	100%			0
WCPS0275	WCPS: Excavate 5th Panel to Formation Level	15	06-Jan-10 A	12-Jan-10 A	100%			9
WCPS0276	WCPS: Grouting Works	58	13-Feb-10 A	06-Mar-10 A	100%			42
WCPS0277	WCPS: 5th Panel Desanding & Preparation Works	1	13-Jan-10 A	13-Jan-10 A	100%			0



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WCPS0279	WCPS: 5th Panel Rebar Cage Installation	1	13-Jan-10 A	13-Jan-10 A	100%			0
WCPS0281	WCPS: 5th Panel Concreting Works	1	14-Jan-10 A	14-Jan-10 A	100%			0
WCPS0283	WCPS: Excavate 6th Panel to Formation Level	9	05-Jan-10 A	22-Jan-10 A	100%			-7
WCPS0285	WCPS: 6th Panel Desanding & Preparation Works	2	23-Jan-10 A	23-Jan-10 A	100%			1
WCPS0287	WCPS: 6th Panel Rebar Cage Installation	1	23-Jan-10 A	23-Jan-10 A	100%			0
WCPS0289	WCPS: 6th Panel Concreting Works	1	23-Jan-10 A	23-Jan-10 A	100%			0
WCPS0289A	WCPS: Sonic Test for D-wall	4	25-Jan-10 A	28-Jan-10 A	100%			0
WCPS0289C	WCPS: Concrete Coring forDW Panels6x35m(12m/day)	18	08-Mar-10 A	27-Mar-10 A	100%			0
WCPS0292	WCPS: Install Dewatering Wells for Pump-test	21	12-Mar-10 A	23-Mar-10 A	100%			11
WCPS0294	WCPS: Pumping Test	17	24-Mar-10 A	31-Mar-10 A	100%			10
WCPS0295	WCPS: Demobilization	6	10-Apr-10 A	16-Apr-10 A	100%			0
WCPS0296	WCPS: Submission of Pumping Test Report	6	10-Apr-10 A	16-Apr-10 A	100%			0
Shaft Excavation								
General Works								
WCPS0300	WCPS: Construct Foundations,CapBeam&Collar Shaft	32	17-Apr-10 A	27-May-10 A	100%			-2
WCPS0310	WCPS: Initial Excavation of Shaft (7m)	4	28-May-10 A	05-Jun-10 A	100%			-4
WCPS0320	WCPS: Set-up Equipment for Shaft Sink	11	05-Jun-10 A	28-Jun-10 A	100%			-8
WCPS0321	WCPS: Equipment Commissioning	6	29-Jun-10 A	13-Jul-10 A	100%			-6
WCPS0322	WCPS: Erect Noise Enclosure of Shaft Top	32	21-Jun-10 A	05-Aug-10 A	100%			-7
WCPS0325	WCPS: ExcavateSoil -2.2~-14.2mPD (12m)	16	26-Jul-10 A	14-Aug-10 A	100%			-2
WCPS0330	WCPS:ExcavateSoil -14.2~-28.8.0mPD (14.6m)	8	14-Sep-10 A	20-Sep-10 A	100%			2
WCPS0331	WCPS: 1st Grouting Works	5	22-Sep-10 A	18-Oct-10 A	100%			-15
WCPS0333	WCPS:ExcavateSoil&RingBeams -25~-30mPD(5m)	9	21-Sep-10 A	04-Oct-10 A	100%			-1
WCPS0337	WCPS:Start Blasting @ WCEPS	0	19-Oct-10 A		100%			0
WCPS0375	WCPS: Probe, Grout, D&B Rock, Muck Out (128m)	153	05-Oct-10 A	12-Jul-11 A	100%			-71
WCPS0377	WCPS: Start 80mTunnel Excav.Prior to Sump Excav.	0	13-Jul-11 A		100%			0
WCPS0385	WCPS: Excavate Shaft Sump	12	15-Sep-11 A	11-Oct-11 A	100%			-4
WCPS0389	WCPS: Install FSD Ladders/ServicesWinch Removal	12	08-Oct-11 A	15-Oct-11 A	100%			5
WCPS0440	WCPS: Construct Sump at Shaft Bottom	4	12-Oct-11 A	19-Oct-11 A	100%			-3
WCPS0442	WCPS: Shaft Installations,cables Buntons&Guides	47	19-Oct-11 A	08-Feb-12 A	100%			-45
WCPS0465	WCPSErect Steelworks,Tunnel Hoist&Muck-Out Syst.	28	12-Dec-11 A	31-Jan-12 A	100%			-11
WCPS0467	WCPS:1st Railtrack Inst.&EquipSetup Drive4(139m)	15	05-May-12 A	07-Jun-12 A	100%			-14
WCPS0468	WCPS:Commissioning of Railbound Equipts.	12	08-Jun-12 A	20-Jun-12 A	100%			1
WCPS0471	WCPS:1st Railtrack Inst.&EquipSetup Drive5(190m)	19	14-Jun-12 A	25-Oct-12 A	100%			-91
WCPS0472	WCPS:Commissioning of Railbound Equipts.	12	26-Oct-12 A	08-Nov-12 A	100%			0
Shaft Sinking Equipments & Installations								
Shaft Sinking Line Assembly								
WCPS1600	WCPS: Install Shaft Bunton @ 6m Intervals	150	16-Aug-10 A	04-Jul-11 A	100%			-116
WCPS1605	WCPS: Erect FSD Ladder Way & landings	145	10-Aug-10 A	04-Jul-11 A	100%			-126
WCPS1610	WCPS: Install Fixed Guides for Crosshead &Kibble	165	10-Aug-10 A	04-Jul-11 A	100%			-106
WCPS1615	WCPS: Install Double Deck Sinking Stage	4	17-Aug-10 A	06-Sep-10 A	100%			-14
WCPS1620	WCPS: Install Crosshead & Kibble	2	07-Sep-10 A	09-Sep-10 A	100%			-1
WCPS1625	WCPS:Kibble Modification& Vert.Haulage Fit Works	4	03-Jan-12 A	06-Jan-12 A	100%			0
WCPS1700	WCPS:DismantleShaftBottomInstallations&Equipts.	6	06-Jul-15	11-Jul-15	0%	0	0	-15
WCPS1712	WCPS:DismantleNoiseEnclosure&SSEquipts.	6	13-Jul-15	18-Jul-15	0%	0	0	-15
Backfill, Reinstatement & Landscaping								
No Significant Evnt								
WCPS0900	WCPS: Backfill Temp Adit - Concrete	5	20-Jul-15	24-Jul-15	0%	0	0	-15
WCPS0910	WCPS: Backfill Shaft (20%)	3	25-Jul-15	28-Jul-15	0%	0	0	-15
WCPS0920	WCPS: Backfill Shaft (40%)	3	29-Jul-15	31-Jul-15	0%	0	0	-15

Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66

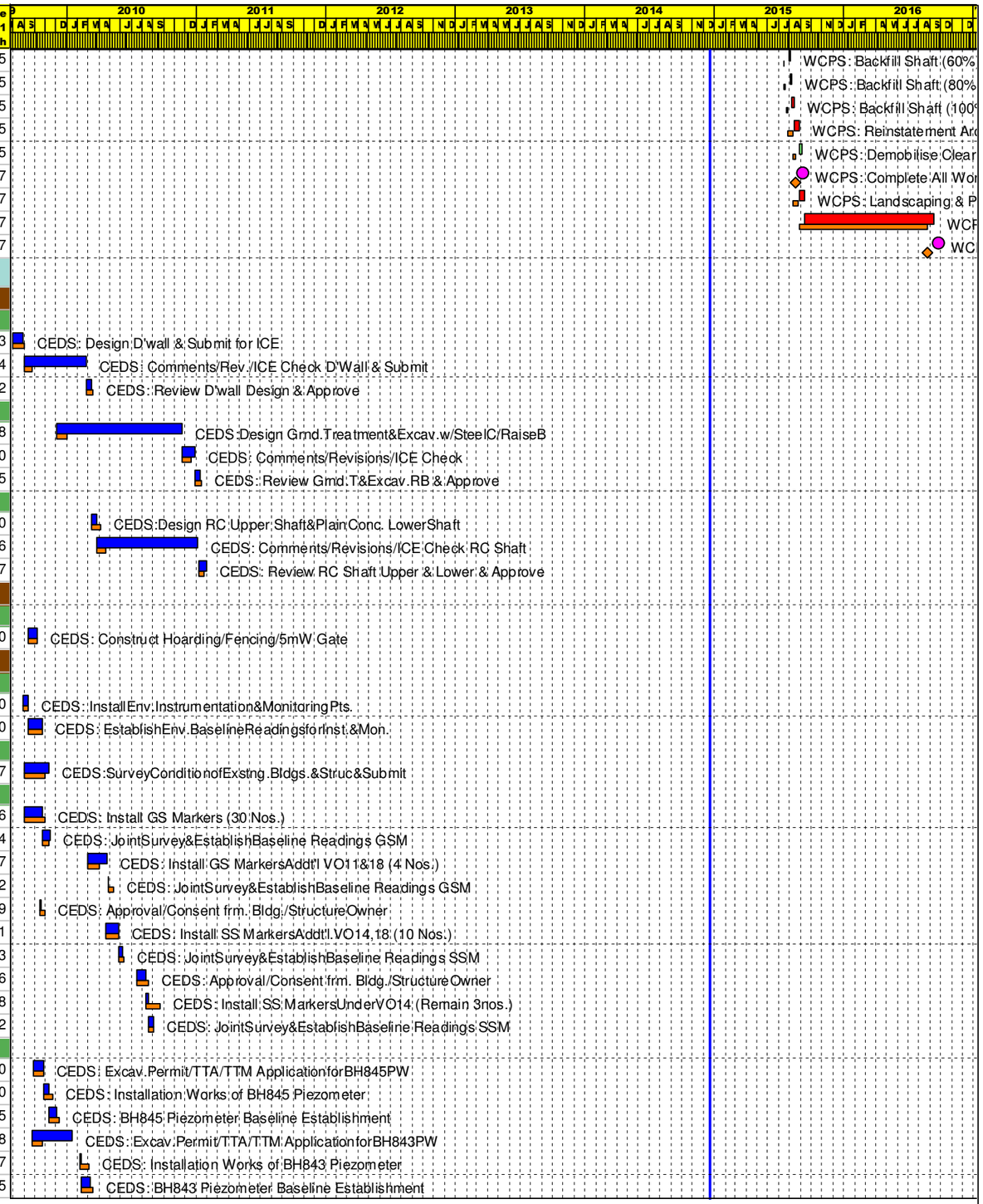
Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
WCPS0930	WCPS: Backfill Shaft (60%)	3	01-Aug-15	04-Aug-15	0%	0	0	-15
WCPS0940	WCPS: Backfill Shaft (80%)	3	05-Aug-15	07-Aug-15	0%	0	0	-15
WCPS0950	WCPS: Backfill Shaft (100%)	6	08-Aug-15	14-Aug-15	0%	0	0	-15
WCPS0960	WCPS: Reinstatement Around PS Area	12	15-Aug-15	28-Aug-15	0%	0	0	-15
WCPS0970	WCPS: Demobilise Clear Area	6	29-Aug-15	04-Sep-15	0%	312	312	-15
WCPS0975	WCPS: Complete All Works at WCE PS (KD-08)	0		05-Sep-15	0%	383	383	-17
WCPS0980	WCPS: Landscaping & Planting Works	15	29-Aug-15	12-Sep-15	0%	0	0	-17
WCPS0990	WCPS: Period of Establishment Works	365	14-Sep-15	12-Sep-16	0%	0	0	-17
WCPS1000	WCPS: End of Establishment Period	0		22-Sep-16	0%	0	0	-27
Central PTW Drop Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
CEDS10010	CEDS: Design D'wall & Submit for ICE	28	31-Jul-09 A	28-Aug-09 A	100%			3
CEDS10012	CEDS: Comments/Rev./ICE Check D'Wall & Submit	21	01-Sep-09 A	25-Feb-10 A	100%			-124
CEDS10020	CEDS: Review D'wall Design & Approve	14	26-Feb-10 A	11-Mar-10 A	100%			2
Grnd.Treatment&Excavw/SteelCasing/RaiseBoring								
CEDS10200	CEDS:Design Grnd.Treatment&Excav.w/SteelC/RaiseB	24	03-Dec-09 A	22-Nov-10 A	100%			-268
CEDS10202	CEDS: Comments/Revisions/ICE Check	21	23-Nov-10 A	29-Dec-10 A	100%			-10
CEDS10204	CEDS: Review Grnd.T&Excav.RB & Approve	14	30-Dec-10 A	10-Jan-11 A	100%			5
Permanent Works								
CEDS10206	CEDS:Design RC Upper Shaft&PlainConc. LowerShaft	24	10-Mar-10 A	25-Mar-10 A	100%			10
CEDS10208	CEDS: Comments/Revisions/ICE Check RC Shaft	21	26-Mar-10 A	06-Jan-11 A	100%			-216
CEDS10210	CEDS: Review RC Shaft Upper & Lower & Approve	14	07-Jan-11 A	31-Jan-11 A	100%			-7
Preliminaries Works								
No Significant Evnt								
CEDS0160	CEDS: Construct Hoarding/Fencing/5mW Gate	20	14-Sep-09 A	08-Oct-09 A	100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
CEDS0174	CEDS: InstallEnv.Instrumentation&MonitoringPts.	14	28-Aug-09 A	12-Sep-09 A	100%			0
CEDS0177	CEDS: EstablishEnv.BaselineReadingsforInst.&Mon.	34	14-Sep-09 A	24-Oct-09 A	100%			0
EBS Works								
CEDS0362	CEDS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	09-Nov-09 A	100%			-7
Markers/UMP's/Others(Same note as Piez.)								
CEDS0433	CEDS: Install GS Markers (30 Nos.)	50	01-Sep-09 A	23-Oct-09 A	100%			6
CEDS0435	CEDS: JointSurvey&EstablishBaseline Readings GSM	14	24-Oct-09 A	14-Nov-09 A	100%			-4
CEDS0435A	CEDS: Install GS MarkersAddt'l VO11&18 (4 Nos.)	30	01-Mar-10 A	25-Apr-10 A	100%			-17
CEDS0435C	CEDS: JointSurvey&EstablishBaseline Readings GSM	14	26-Apr-10 A	27-Apr-10 A	100%			12
CEDS0437	CEDS: Approval/Consent frm. Bldg./StructureOwner	14	15-Oct-09 A	20-Oct-09 A	100%			9
CEDS0439	CEDS: Install SS MarkersAddt'l.VO14,18 (10 Nos.)	30	21-Apr-10 A	25-May-10 A	100%			1
CEDS0441	CEDS: JointSurvey&EstablishBaseline Readings SSM	14	26-May-10 A	07-Jun-10 A	100%			3
CEDS0445	CEDS: Approval/Consent frm. Bldg./StructureOwner	28	16-Jul-10 A	10-Aug-10 A	100%			6
CEDS0447	CEDS: Install SS MarkersUnderVO14 (Remain 3nos.)	35	11-Aug-10 A	18-Aug-10 A	100%			28
CEDS0449	CEDS: JointSurvey&EstablishBaseline Readings SSM	14	19-Aug-10 A	01-Sep-10 A	100%			2
Piezometers(NearbyPTWorPScovered inthisInstalln)								
CEDS0389	CEDS: Excav.Permit/TTA/TTM ApplicationforBH845PW	24	28-Sep-09 A	28-Oct-09 A	100%			0
CEDS0391	CEDS: Installation Works of BH845 Piezometer	21	29-Oct-09 A	10-Nov-09 A	100%			10
CEDS0393	CEDS: BH845 Piezometer Baseline Establishment	26	11-Nov-09 A	04-Dec-09 A	100%			5
CEDS0395	CEDS: Excav.Permit/TTA/TTM ApplicationforBH843PW	24	25-Sep-09 A	15-Jan-10 A	100%			-68
CEDS0397	CEDS: Installation Works of BH843 Piezometer	21	05-Feb-10 A	09-Feb-10 A	100%			17
CEDS0399	CEDS: BH843 Piezometer Baseline Establishment	26	10-Feb-10 A	09-Mar-10 A	100%			5



Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

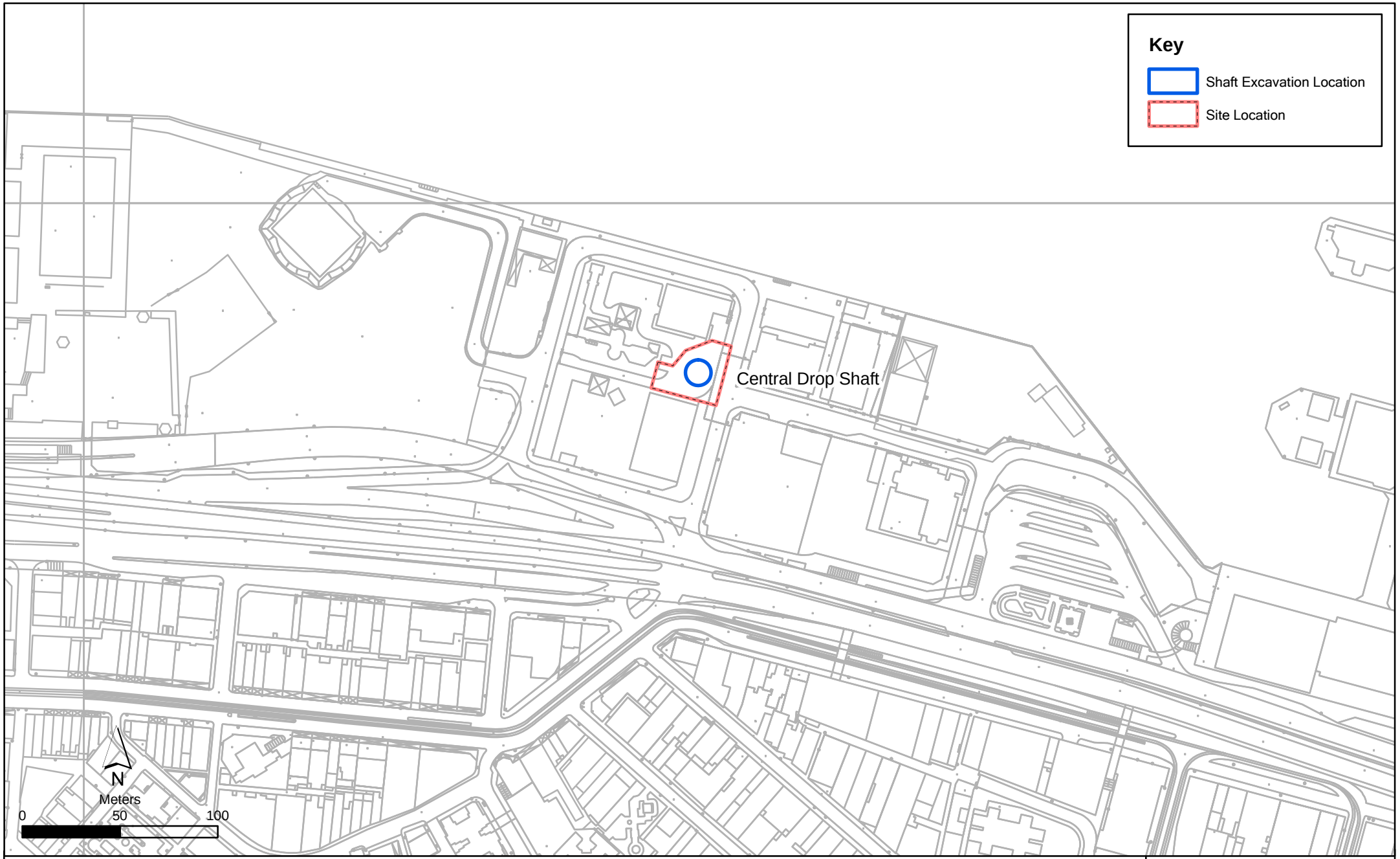
Date	Revision	Checked	Approved

Annex D7

Summary of Exceedance Investigation

Annex E

Central Drop Shaft



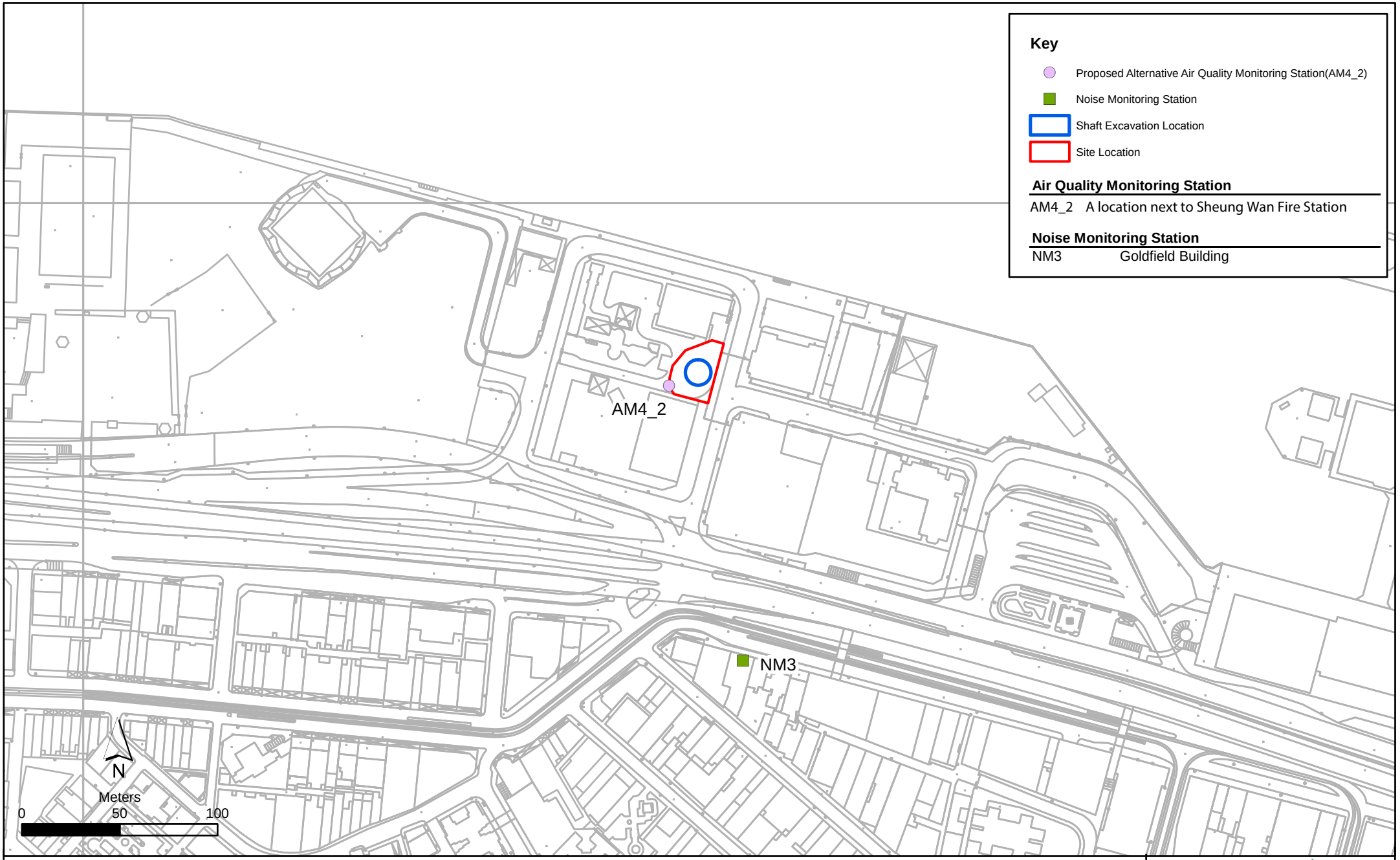
Annex E1

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Construction Site Locations at Central

File: EM&A and proposed station\0104887_Central.mxd
Date: 03/03/2010

Environmental Resources Management

ERM



Annex E2

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Air Quality & Noise Monitoring Stations (Central)

File: EM&A and proposed stations\
0104887_Centra_NMAM_Annex_Oct2012.mxd
Date: 10-Oct-12

Environmental Resources Management

ERM

Annex E3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Air Quality Monitoring Schedule

AM4_2 - A Location within the DSD Central PTW
Monitoring Month : January 2016

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

February 2016

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

Annex E3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Noise Quality Monitoring Schedule

NM3 - Goldfield Building
Monitoring Month: January 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jan	02-Jan
					Public Holiday	
03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan
		Noise Monitoring				
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
	Noise Monitoring					
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
				Noise Monitoring		
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
			Noise Monitoring			
31-Jan						

February 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb
		Noise Monitoring				
07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb
	Public Holiday	Public Holiday	Public Holiday		Noise Monitoring	
14-Feb	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb
				Noise Monitoring		
21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb
			Noise Monitoring			
28-Feb	29-Feb					

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Construction Phase			
Air Quality	The Air Pollution Control (Construction Dust) Regulation shall be implemented and good site practices shall be incorporated in the contract clauses to minimise construction dust impact. Control measures relevant to this Project are listed below: • 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; • where a site boundary adjoins a road, streets or other accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit; • every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides; • regular watering, with complete coverage, to reduce dust emission from exposed site surfaces and unpaved roads, particularly during dry weather; • site enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines; • open stock piles should be avoided or covered and prevent placing dusty material storage piles near ASRs if possible; • tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; and • instigation of an environmental monitoring auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All work sites / during construction	√
Air Quality	The following watering measures for specific site would be required to control the fugitive dust impacts: • watering four times per day within worksites at the Central PTW.	All work sites / during construction	√
Operational Phase			

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Air Quality	Good housekeeping for SCISTW and PTWs listed below should be followed to ameliorate any odour impact from the plant and these standard practices should be included in the plant operator manual. • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers to minimise odour escape • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly	All work sites / during construction	NA. Measures not required until commencement of operational phase
Air Quality	Commissioning tests for all deodorisation system should be included in the Design and Construction Contract Document.	All PTW and SCISTW/ during operational phase	NA. Measures not required until commencement of operational phase
Construction Phase			
Noise	Use of quiet PME, movable barriers and acoustic mats	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Noise	Good Site Practice: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; • silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program; • mobile plant, if any, should be sited as far from NSRs as possible; • machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities; Environmental audit shall be carried out to ensure that appropriate noise control measures would be properly implemented.	All work sites / during construction	√
Construction Phase			
Water Quality	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All work sites / during construction	√
Water Quality	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. 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. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	All work sites / during construction	√
Water Quality	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps 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.	All work sites / during construction	√
Water Quality	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably 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.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Construction Works in Close Proximity of Storm Drains or Seafront To minimise the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Operational Phase			
Water Quality	Dual power supply, standby facilities for the main treatment units and standby equipment parts / accessories should be provided as far as possible at the SCISTW to minimise the chance of emergency discharge.	SCISTW and all the Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Water Quality	Standby unit(s) and dual (backup) power supply would be provided at all the Stage 2 PTWs to reduce the risk of equipment breakdown at the PTWs.	Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Construction Phase			
Waste	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimise the use of timber formwork.	All work sites / during the construction period	√
Waste	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals; • 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, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; • Any unused chemicals or those with remaining functional capacity shall be recycled; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All work sites / during the construction period	√
Waste	Recommendations for good site practices during 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 waste handling procedures • Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials. • Provision of sufficient waste disposal points and regular collection of waste • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	All work sites / during the construction period	√
Waste	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All work sites / during the construction period	NA
Waste	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.	All work sites / during the construction period	√
Waste	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.	All work sites / during the construction period	√
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, oxidising, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	All work sites / during the construction period	√
Waste	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.	All work sites / during the construction period	√
Construction Phase			

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	• Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction. • Trees unavoidably affected by the works should be transplanted where practical. • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting.	All the works areas, PTWs and SCISTW/ during the construction period	√
Operational Phase	•		
Landscape & Visual	• Aesthetic design of the façade of PTW and associated structures to harmonise with the surrounding settings. • Shrub and Climbing Plants to soften proposed structures / Roof Greening. • Buffer Tree and Shrub Planting to screen proposed associated structures. • Reinstated of disturbed area	All the works areas, PTWs and SCISTW/ during the construction period	NA. Measures not required until commencement of operational phase
Construction Phase			
Cultural Heritage	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	NA. Vibration monitoring has not been launched during the reporting period.

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	Monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	NA. Vibration monitoring has not been launched during the reporting period.

Remark:
√ Compliance of Mitigation Measures
<> Compliance of Mitigation but need improvement
x Non-compliance of Mitigation Measures
Δ Deficiency of Mitigation Measures but rectified by Gammon Construction Limited
NA Not Applicable

Annex E5 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM4_2

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 (°C)	Wind Speed * (m/s)	Sampler ID
05-Jan-16	9:00	10:00	Rainy	70	393	500	N.A.	20	<5	LD-5C (A.25.01)
	10:00	11:00	Rainy	60	393	500	N.A.	20	<5	LD-5C (A.25.01)
	11:00	12:00	Rainy	70	393	500	N.A.	20	<5	LD-5C (A.25.01)
11-Jan-16	9:00	10:00	Cloudy	78	393	500	N.A.	19	<5	LD-3B (A.02.04)
	10:00	11:00	Cloudy	83	393	500	N.A.	19	<5	LD-3B (A.02.04)
	11:00	12:00	Cloudy	81	393	500	N.A.	19	<5	LD-3B (A.02.04)
15-Jan-16	9:00	10:00	Cloudy	246	393	500	N.A.	15	<5	LD-3B (A.02.08)
	10:00	11:00	Cloudy	246	393	500	N.A.	15	<5	LD-3B (A.02.08)
	11:00	12:00	Cloudy	244	393	500	N.A.	15	<5	LD-3B (A.02.08)
21-Jan-16	9:00	10:00	Cloudy	248	393	500	N.A.	16	<5	LD-3B (A.02.08)
	10:00	11:00	Cloudy	251	393	500	N.A.	16	<5	LD-3B (A.02.08)
	11:00	12:00	Cloudy	250	393	500	N.A.	16	<5	LD-3B (A.02.08)
27-Jan-16	9:00	10:00	Cloudy	105	393	500	N.A.	13	<5	LD-3B (A.02.10)
	10:00	11:00	Cloudy	96	393	500	N.A.	13	<5	LD-3B (A.02.10)
	11:00	12:00	Cloudy	108	393	500	N.A.	13	<5	LD-3B (A.02.10)
			Min.	**60**						
			Max.	**251**						
			Average	**149**						

* Wind Speed data is presented in the Meteorological Data table

Annex E5 24-hour and 1-hour TSP Monitoring Results

24-hour TSP Monitoring Results

Station AM4_2

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
04-Jan-16	9:00	05-Jan-16	9:00	Cloudy	3.2728	3.4944	9977.37	10001.37	24.00	1.22	1.22	1.22	126	211	260	N.A.	GS-2310-105 A-01-15	151101/100
08-Jan-16	9:00	09-Jan-16	9:00	Sunny	3.3221	3.5657	10001.37	10025.37	24.00	1.23	1.22	1.23	138	211	260	N.A.	GS-2310-105 A-01-15	151202/075
14-Jan-16	9:00	15-Jan-16	9:00	Cloudy	3.2934	3.5576	10025.37	10049.37	24.00	1.23	1.23	1.23	149	211	260	N.A.	GS-2310-105 A-01-15	151204/098
20-Jan-16	9:00	21-Jan-16	9:00	Cloudy	3.2787	3.5352	10049.37	10073.37	24.00	1.23	1.23	1.23	145	211	260	N.A.	GS-2310-105 A-01-15	160101/005
26-Jan-16	9:00	27-Jan-16	9:00	Cloudy	3.3013	3.5790	10073.37	10097.37	24.00	1.25	1.25	1.25	154	211	260	N.A.	GS-2310-105 A-01-15	160102/045
												Min.	**126**					
												Max.	**154**					
												Average	**142**					

Meteorological Data Extracted from the Hong Kong Observatory

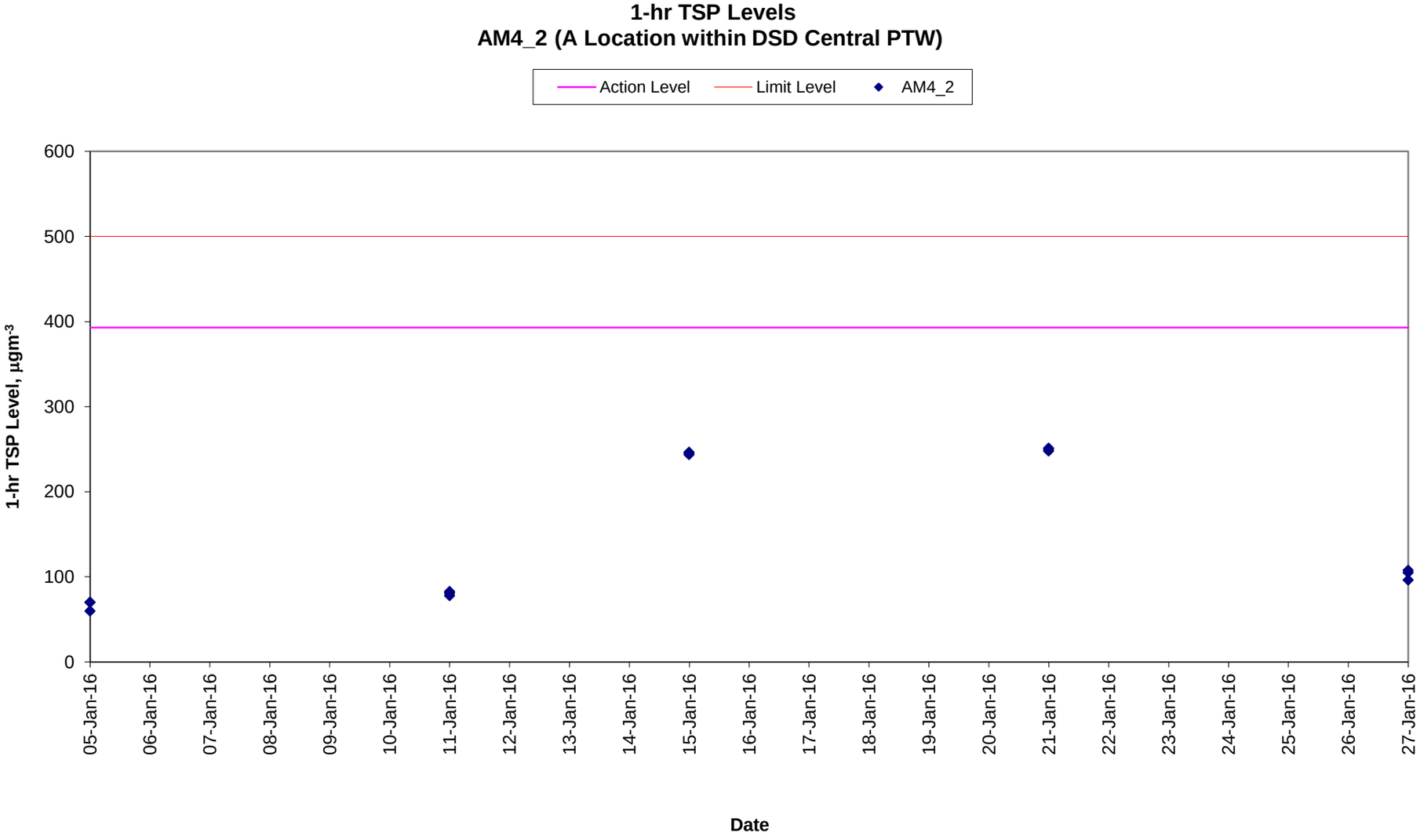
Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	0-17	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	E
2016-01-08	Sunny	19	64-87	0.0	0-10	E
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-19	SE
2016-01-15	Cloudy	15	93-98	38.8	0-16	E/SE
2016-01-20	Cloudy	15	80-96	3.3	9-24	SE
2016-01-21	Cloudy	16	93-97	0.1	0-17	E/SE
2016-01-26	Cloudy	11	42-80	Trace	0-9	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

Date	Weather	Tsing Yi Station				
		Average Air Temperature (°C)	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-17	E/SE
2016-01-05	Rainy	21	92-98	46.7	0-28	E/SE
2016-01-08	Sunny	19	64-87	0.0	0-17	E/SE
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-20	E/SE
2016-01-15	Cloudy	15	93-98	38.8	0-18	SE
2016-01-20	Cloudy	16	80-96	3.3	6-24	E/SE
2016-01-21	Cloudy	17	93-97	0.1	0-11	SE
2016-01-26	Cloudy	10	68-95	Trace	0-18	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

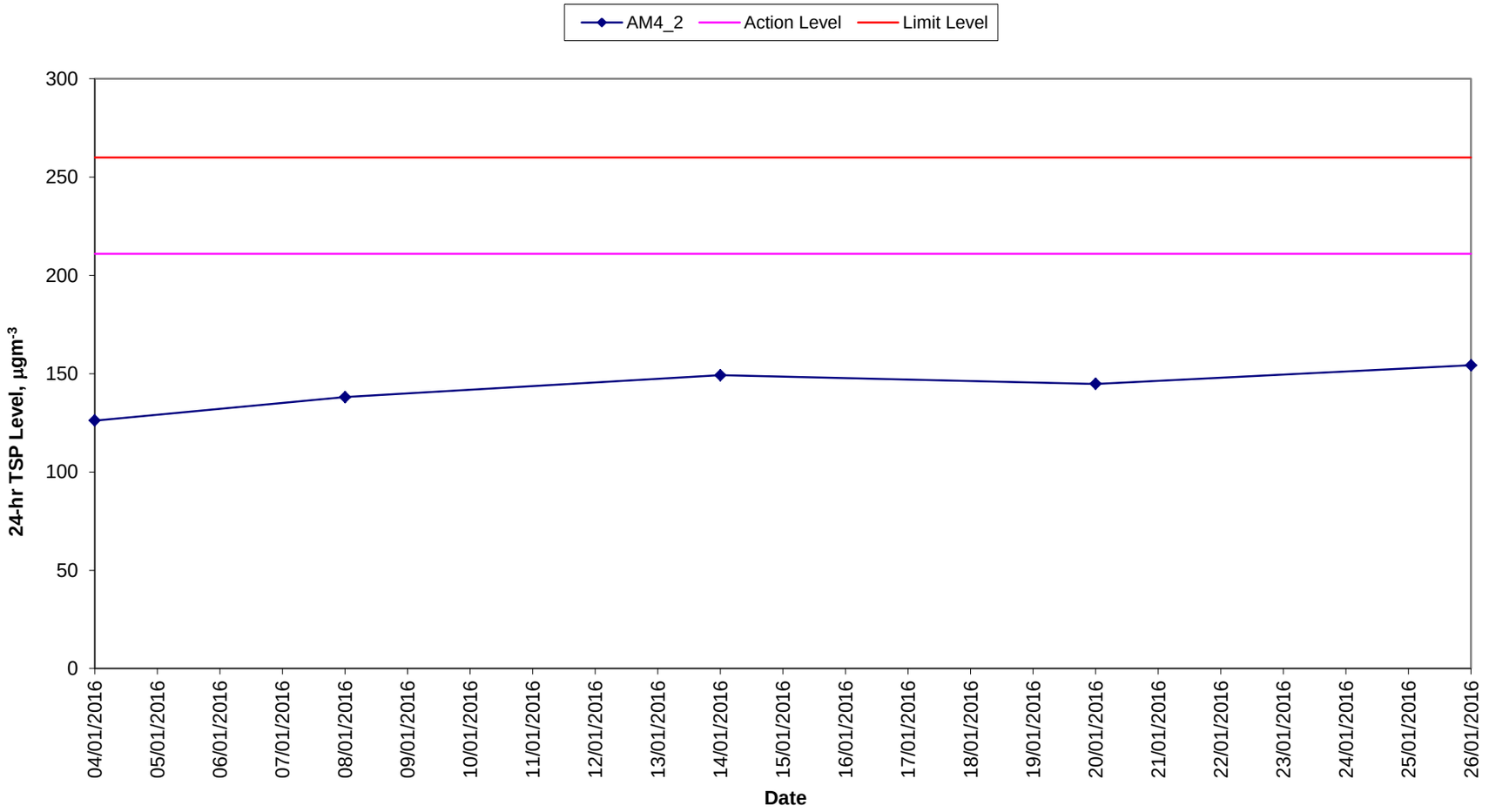
Date	Weather	Kai Tak Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	5-18	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	SW
2016-01-08	Sunny	19	64-87	0.0	0-18	S
2016-01-11	Cloudy	19	78-99	30.7	0-20	SE
2016-01-14	Cloudy	17	73-94	1.1	4-25	E
2016-01-15	Cloudy	15	93-98	38.8	3-24	SW
2016-01-20	Cloudy	15	80-96	3.3	13-34	SW
2016-01-21	Cloudy	16	93-97	0.1	1-20	SW
2016-01-26	Cloudy	11	42-80	Trace	0-17	E
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

Date	Weather	Green Island Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-30	NE
2016-01-05	Rainy	21	92-98	46.7	0-32	SE/E
2016-01-08	Sunny	19	64-87	0.0	0-30	NE
2016-01-11	Cloudy	19	78-99	30.7	0-45	E
2016-01-14	Cloudy	17	73-94	1.1	4-45	NE
2016-01-15	Cloudy	15	93-98	38.8	10-55	NE
2016-01-20	Cloudy	16	80-96	3.3	37-64	NE
2016-01-21	Cloudy	17	93-97	0.1	0-48	E
2016-01-26	Cloudy	10	68-95	Trace	8-45	SE/E
2016-01-27	Cloudy	13	81-96	3.5	15-50	NE

* King's Park's data
\- Data was not available
\# less than 24 hourly observations per day


1-hr TSP Levels
AM4_2 (A Location within DSD Central PTW)
Action Level
Limit Level
AM4_2
1-hr TSP Level, µgm-3
600
500
400
300
200
100
0
05-Jan-16
06-Jan-16
07-Jan-16
08-Jan-16
09-Jan-16
10-Jan-16
11-Jan-16
12-Jan-16
13-Jan-16
14-Jan-16
15-Jan-16
16-Jan-16
17-Jan-16
18-Jan-16
19-Jan-16
20-Jan-16
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
Date

24-hr TSP Levels
AM4_2 (A Location within DSD Central PTW)

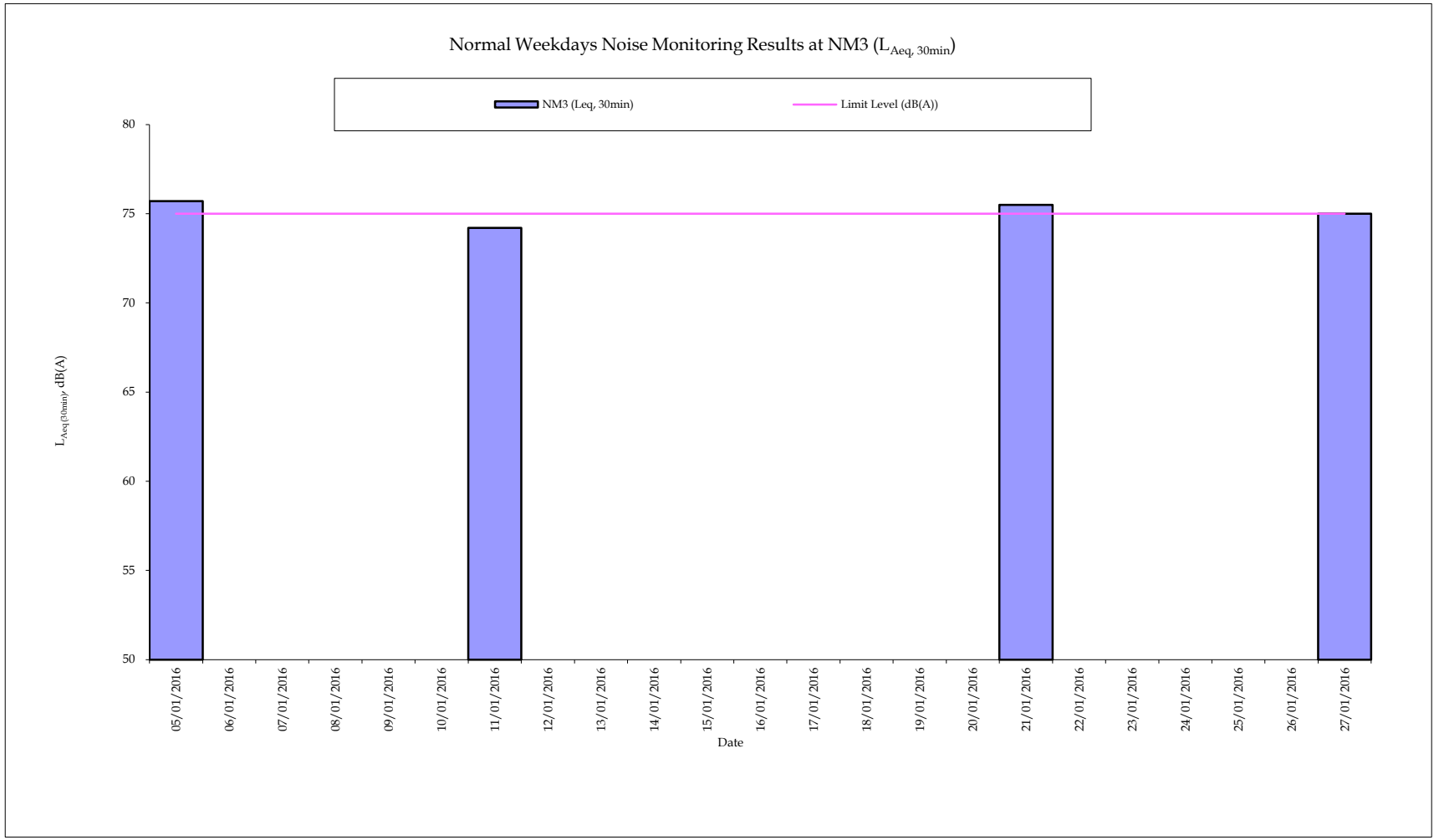


Annex E6 Noise Monitoring Results

Daytime Noise Monitoring Results

Station NM3

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
05-Jan-16	9:15	9:45	Cloudy	**76**	77	74	N.A.	Traffic noise	-	20	0.5	SVAN957 (N.08.12)	SV30A (N.09.03)
11-Jan-16	9:15	9:45	Cloudy	74	76	73	N.A.	Traffic noise	-	19	0.5	SVAN957 (N.08.08)	B&K4231 (N.02.03)
21-Jan-16	18:15	18:45	Cloudy	**76**	77	74	N.A.	Traffic noise	-	16	0.3	SVAN957 (N.08.08)	B&K4231 (N.02.03)
27-Jan-16	9:15	9:45	Cloudy	75	76	73	N.A.	Traffic noise	-	13	0.5	SVAN957 (N.08.08)	B&K4231 (N.02.03)
			Min.	**74**									
			Max.	**76**									


Normal Weekdays Noise Monitoring Results at NM3 ($L_{Aeq, 30min}$)
NM3 (Leq, 30min)
Limit Level (dB(A))
80
75
70
65
60
55
50
$L_{Aeq(30min)}$, dB(A)
05/01/2016
06/01/2016
07/01/2016
08/01/2016
09/01/2016
10/01/2016
11/01/2016
12/01/2016
13/01/2016
14/01/2016
15/01/2016
16/01/2016
17/01/2016
18/01/2016
19/01/2016
20/01/2016
21/01/2016
22/01/2016
23/01/2016
24/01/2016
25/01/2016
26/01/2016
27/01/2016
Date

Annex E7

Summary of Exceedance Investigation

Contract No. DC/2009/23 – HATS Stage 2A
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Report No. 160105_noise_NM3

Date of Measurement: 5th January 2016
Time of Measurement: 09:15 (30-min measurement)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM3	Construction Noise	75.7	When one documented complaint is received	75.0	Limit

Remarks

(a) Statement of exceedance(s)

Construction noise measured at NM3(Central PTW) - The roof of Goldfield Building exceeded the construction noise limit (75dB(A)) during the daytime (07:00 to 19:00 on normal weekdays).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

1) During the continuous measurements, the major noise source was the traffic noise.
2) According to the information from the Contractor of DC/2009/23, no construction plant for the Contract No. DC/2009/23 was operated during the daytime noise monitoring.
3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 5th January 2016 is well within the range of baseline noise levels (71.2 – 80.6dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: _____ Date: 26 January 2016

Contract No. DC/2009/23 – HATS Stage 2A
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Report No. 160121_noise_NM3

Date of Measurement: 21st January 2016
Time of Measurement: 18:15 (30-min measurement)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM3	Construction Noise	75.5	When one documented complaint is received	75.0	Limit

Remarks

(a) Statement of exceedance(s)

Construction noise measured at NM3(Central PTW) - The roof of Goldfield Building exceeded the construction noise limit (75dB(A)) during the daytime (07:00 to 19:00 on normal weekdays).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

1) During the continuous measurements, the major noise source was the traffic noise.
2) According to the information from the Contractor of DC/2009/23, all site works of DC/2009/23 in Central PTW was completed before 18:00 on 21st January 2016; therefore, no construction works was carried out during the daytime noise monitoring.
3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 21st January 2016 is well within the range of baseline noise levels (71.2 – 80.6dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: _____ Date: 29 January 2016

Contract No. DC/2009/23 – HATS Stage 2A
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Report No. 160127_noise_NM3

Date of Measurement: 27th January 2016
Time of Measurement: 09:15 (30-min measurement)

Location	Parameter	Measured Level (Leq dB(A))	Action Level	Limit Level (Leq dB(A))	Level exceeded
NM3	Construction Noise	75.1	When one documented complaint is received	75.0	Limit

Remarks

(a) Statement of exceedance(s)

Construction noise measured at NM3(Central PTW) - The roof of Goldfield Building exceeded the construction noise limit (75dB(A)) during the daytime (07:00 to 19:00 on normal weekdays).

(b) Cause of exceedance(s)

The exceedance was considered not due to the Contract No. DC/2009/23 based on the following reason(s):-

1) During the continuous measurements, the major noise source was the traffic noise.
2) According to the information from the Contractor of DC/2009/23, no construction plant for the Contract No. DC/2009/23 was operated during the daytime noise monitoring.
3) Comparing with the similar monitoring period during the baseline noise monitoring, the average of the noise level on 27th January 2016 is well within the range of baseline noise levels (71.2 – 80.6dB(A)).

Therefore, the exceedance was considered to be non-project related.

(c) Conclusions and Recommendations:

- The exceedance was considered not due to the Contract No. DC/2009/23.
- The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.

ETL Signature: _____ Date: 4 February 2016

Annex E9 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2009	0	0
January 2010	0	0
February 2010	0	0
March 2010	0	0
April 2010	0	0
May 2010	0	0
June 2010	0	0
July 2010	0	0
August 2010	0	0
September 2010	0	0
October 2010	0	0
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

Annex E9 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
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
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

Annex E9 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2012	0	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
June 2013	0	0
July 2013	0	0
August 2013	0	0
September 2013	0	0
October 2013	0	0
November 2013	0	0
December 2013	0	0
January 2014	0	0
February 2014	0	0
March 2014	0	0
April 2014	0	0
May 2014	0	0

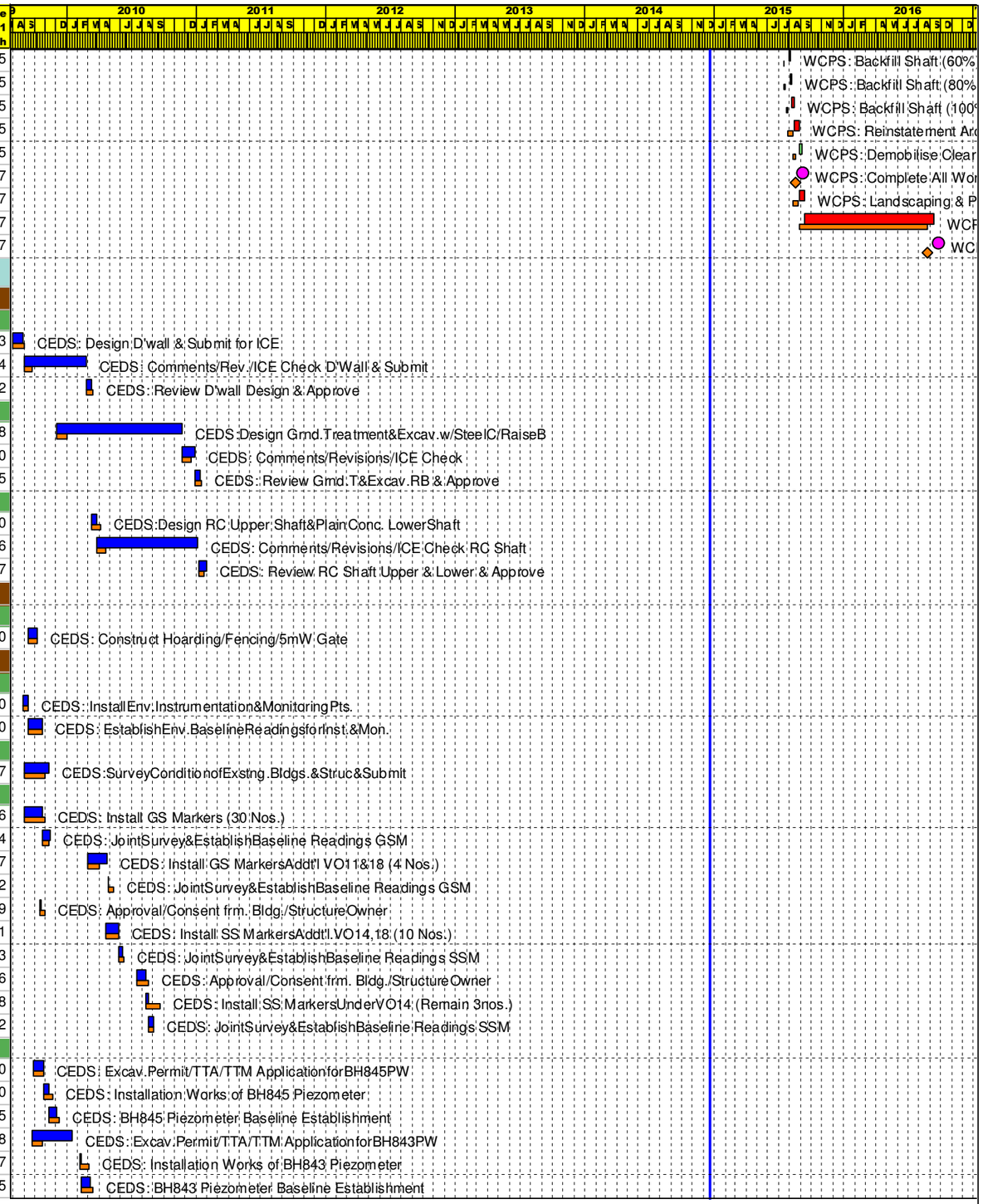
Annex E9 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
June 2014	0	0
July 2014	0	0
August 2014	0	0
September 2014	0	0
October 2014	0	0
November 2014	0	0
December 2014	0	0
January 2015	0	0
February 2015	0	0
March 2015	0	0
April 2015	0	0
May 2015	0	0
June 2015	0	0
July 2015	0	0
August 2015	0	0
September 2015	0	0
October 2015	0	0
November 2015	0	0

Annex E9 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2015	0	0
January 2016	0	0
Overall Total	0	0

Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
WCPS0930	WCPS: Backfill Shaft (60%)	3	01-Aug-15	04-Aug-15	0%	0	0	-15
WCPS0940	WCPS: Backfill Shaft (80%)	3	05-Aug-15	07-Aug-15	0%	0	0	-15
WCPS0950	WCPS: Backfill Shaft (100%)	6	08-Aug-15	14-Aug-15	0%	0	0	-15
WCPS0960	WCPS: Reinstatement Around PS Area	12	15-Aug-15	28-Aug-15	0%	0	0	-15
WCPS0970	WCPS: Demobilise Clear Area	6	29-Aug-15	04-Sep-15	0%	312	312	-15
WCPS0975	WCPS: Complete All Works at WCE PS (KD-08)	0		05-Sep-15	0%	383	383	-17
WCPS0980	WCPS: Landscaping & Planting Works	15	29-Aug-15	12-Sep-15	0%	0	0	-17
WCPS0990	WCPS: Period of Establishment Works	365	14-Sep-15	12-Sep-16	0%	0	0	-17
WCPS1000	WCPS: End of Establishment Period	0		22-Sep-16	0%	0	0	-27
Central PTW Drop Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
CEDS10010	CEDS: Design D'wall & Submit for ICE	28	31-Jul-09 A	28-Aug-09 A	100%			3
CEDS10012	CEDS: Comments/Rev./ICE Check D'Wall & Submit	21	01-Sep-09 A	25-Feb-10 A	100%			-124
CEDS10020	CEDS: Review D'wall Design & Approve	14	26-Feb-10 A	11-Mar-10 A	100%			2
Grnd.Treatment&Excavw/SteelCasing/RaiseBoring								
CEDS10200	CEDS:Design Grnd.Treatment&Excav.w/SteelC/RaiseB	24	03-Dec-09 A	22-Nov-10 A	100%			-268
CEDS10202	CEDS: Comments/Revisions/ICE Check	21	23-Nov-10 A	29-Dec-10 A	100%			-10
CEDS10204	CEDS: Review Grnd.T&Excav.RB & Approve	14	30-Dec-10 A	10-Jan-11 A	100%			5
Permanent Works								
CEDS10206	CEDS:Design RC Upper Shaft&PlainConc. LowerShaft	24	10-Mar-10 A	25-Mar-10 A	100%			10
CEDS10208	CEDS: Comments/Revisions/ICE Check RC Shaft	21	26-Mar-10 A	06-Jan-11 A	100%			-216
CEDS10210	CEDS: Review RC Shaft Upper & Lower & Approve	14	07-Jan-11 A	31-Jan-11 A	100%			-7
Preliminaries Works								
No Significant Evnt								
CEDS0160	CEDS: Construct Hoarding/Fencing/5mW Gate	20	14-Sep-09 A	08-Oct-09 A	100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
CEDS0174	CEDS: InstallEnv.Instrumentation&MonitoringPts.	14	28-Aug-09 A	12-Sep-09 A	100%			0
CEDS0177	CEDS: EstablishEnv.BaselineReadingsforInst.&Mon.	34	14-Sep-09 A	24-Oct-09 A	100%			0
EBS Works								
CEDS0362	CEDS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	09-Nov-09 A	100%			-7
Markers/UMP's/Others(Same note as Piez.)								
CEDS0433	CEDS: Install GS Markers (30 Nos.)	50	01-Sep-09 A	23-Oct-09 A	100%			6
CEDS0435	CEDS: JointSurvey&EstablishBaseline Readings GSM	14	24-Oct-09 A	14-Nov-09 A	100%			-4
CEDS0435A	CEDS: Install GS MarkersAddt'l VO11&18 (4 Nos.)	30	01-Mar-10 A	25-Apr-10 A	100%			-17
CEDS0435C	CEDS: JointSurvey&EstablishBaseline Readings GSM	14	26-Apr-10 A	27-Apr-10 A	100%			12
CEDS0437	CEDS: Approval/Consent frm. Bldg./StructureOwner	14	15-Oct-09 A	20-Oct-09 A	100%			9
CEDS0439	CEDS: Install SS MarkersAddt'l.VO14,18 (10 Nos.)	30	21-Apr-10 A	25-May-10 A	100%			1
CEDS0441	CEDS: JointSurvey&EstablishBaseline Readings SSM	14	26-May-10 A	07-Jun-10 A	100%			3
CEDS0445	CEDS: Approval/Consent frm. Bldg./StructureOwner	28	16-Jul-10 A	10-Aug-10 A	100%			6
CEDS0447	CEDS: Install SS MarkersUnderVO14 (Remain 3nos.)	35	11-Aug-10 A	18-Aug-10 A	100%			28
CEDS0449	CEDS: JointSurvey&EstablishBaseline Readings SSM	14	19-Aug-10 A	01-Sep-10 A	100%			2
Piezometers(NearbyPTWorPScovered inthisInstalln)								
CEDS0389	CEDS: Excav.Permit/TTA/TTM ApplicationforBH845PW	24	28-Sep-09 A	28-Oct-09 A	100%			0
CEDS0391	CEDS: Installation Works of BH845 Piezometer	21	29-Oct-09 A	10-Nov-09 A	100%			10
CEDS0393	CEDS: BH845 Piezometer Baseline Establishment	26	11-Nov-09 A	04-Dec-09 A	100%			5
CEDS0395	CEDS: Excav.Permit/TTA/TTM ApplicationforBH843PW	24	25-Sep-09 A	15-Jan-10 A	100%			-68
CEDS0397	CEDS: Installation Works of BH843 Piezometer	21	05-Feb-10 A	09-Feb-10 A	100%			17
CEDS0399	CEDS: BH843 Piezometer Baseline Establishment	26	10-Feb-10 A	09-Mar-10 A	100%			5



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@Primavera Systems, Inc.

Primary Baseline
Actual Work
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Critical Remaining Work
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MP66

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

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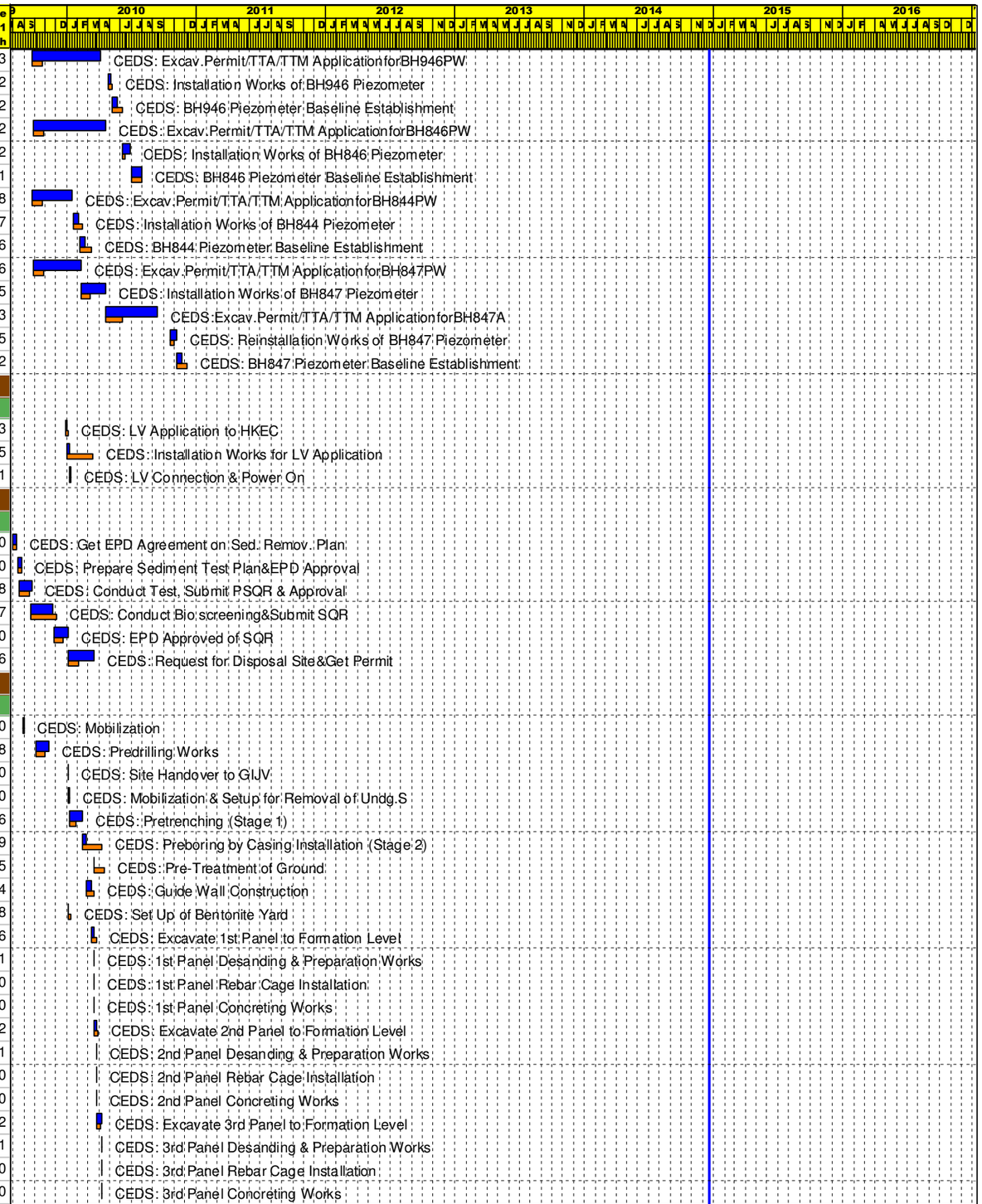
Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
CEDS0401	CEDS: Excav.Permit/TTA/TTM ApplicationforBH946PW	24	25-Sep-09 A	06-Apr-10 A	100%			-133
CEDS0403	CEDS: Installation Works of BH946 Piezometer	11	26-Apr-10 A	06-May-10 A	100%			2
CEDS0405	CEDS: BH946 Piezometer Baseline Establishment	26	07-May-10 A	22-May-10 A	100%			12
CEDS0407	CEDS: Excav.Permit/TTA/TTM ApplicationforBH846PW	24	28-Sep-09 A	19-Apr-10 A	100%			-142
CEDS0409	CEDS: Installation Works of BH846 Piezometer	7	08-Jun-10 A	30-Jun-10 A	100%			-12
CEDS0411	CEDS: BH846 Piezometer Baseline Establishment	26	01-Jul-10 A	02-Aug-10 A	100%			-1
CEDS0413	CEDS: Excav.Permit/TTA/TTM ApplicationforBH844PW	24	25-Sep-09 A	15-Jan-10 A	100%			-68
CEDS0415	CEDS: Installation Works of BH844 Piezometer	21	20-Jan-10 A	04-Feb-10 A	100%			7
CEDS0417	CEDS: BH844 Piezometer Baseline Establishment	26	05-Feb-10 A	19-Feb-10 A	100%			16
CEDS0419	CEDS: Excav.Permit/TTA/TTM ApplicationforBH847PW	24	28-Sep-09 A	08-Feb-10 A	100%			-86
CEDS0421	CEDS: Installation Works of BH847 Piezometer	21	09-Feb-10 A	19-Apr-10 A	100%			-35
CEDS0421A	CEDS:Excav.Permit/TTA/TTM ApplicationforBH847A	40	20-Apr-10 A	13-Sep-10 A	100%			-83
CEDS0421C	CEDS: Reinstallation Works of BH847 Piezometer	11	20-Oct-10 A	06-Nov-10 A	100%			-5
CEDS0423	CEDS: BH847 Piezometer Baseline Establishment	26	08-Nov-10 A	23-Nov-10 A	100%			12
Electrical & Mechanical Installations								
Power Supply Application								
CEDS0600	CEDS: LV Application to HKEC	6	28-Dec-09 A	30-Dec-09 A	100%			3
CEDS0605	CEDS: Installation Works for LV Application	60	02-Jan-10 A	07-Jan-10 A	100%			55
CEDS0610	CEDS: LV Connection & Power On	4	08-Jan-10 A	11-Jan-10 A	100%			1
Marine Dumping Permit								
No Significant Evnt								
CEDS0340	CEDS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0
CEDS0350	CEDS: Prepare Sediment Test Plan&EPD Approval	12	14-Aug-09 A	27-Aug-09 A	100%			0
CEDS0360	CEDS: Conduct Test, Submit PSQR & Approval	24	19-Aug-09 A	24-Sep-09 A	100%			-8
CEDS0370	CEDS: Conduct Bio screening&Submit SQR	60	19-Sep-09 A	23-Nov-09 A	100%			7
CEDS0380	CEDS: EPD Approved of SQR	25	24-Nov-09 A	05-Jan-10 A	100%			-10
CEDS0390	CEDS: Request for Disposal Site&Get Permit	24	06-Jan-10 A	19-Mar-10 A	100%			-36
Diaphragm Wall								
No Significant Evnt								
CEDS0200	CEDS: Mobilization	6	28-Aug-09 A	03-Sep-09 A	100%			0
CEDS0205	CEDS: Predrilling Works	21	07-Oct-09 A	10-Nov-09 A	100%			-8
CEDS0205A	CEDS: Site Handover to GIJV	1	05-Jan-10 A	05-Jan-10 A	100%			0
CEDS0205C	CEDS: Mobilization & Setup for Removal of Undg.S	3	06-Jan-10 A	08-Jan-10 A	100%			0
CEDS0205E	CEDS: Pretrenching (Stage 1)	14	09-Jan-10 A	12-Feb-10 A	100%			-16
CEDS0205G	CEDS: Preboring by Casing Installation (Stage 2)	45	13-Feb-10 A	23-Feb-10 A	100%			39
CEDS0210	CEDS: Pre-Treatment of Ground	26	17-Mar-10 A	17-Mar-10 A	100%			25
CEDS0215	CEDS: Guide Wall Construction	18	25-Feb-10 A	12-Mar-10 A	100%			4
CEDS0220	CEDS: Set Up of Bentonite Yard	9	04-Jan-10 A	04-Jan-10 A	100%			8
CEDS0252	CEDS: Excavate 1st Panel to Formation Level	12	13-Mar-10 A	19-Mar-10 A	100%			6
CEDS0253	CEDS: 1st Panel Desanding & Preparation Works	2	19-Mar-10 A	19-Mar-10 A	100%			1
CEDS0254	CEDS: 1st Panel Rebar Cage Installation	1	19-Mar-10 A	19-Mar-10 A	100%			0
CEDS0256	CEDS: 1st Panel Concreting Works	1	20-Mar-10 A	20-Mar-10 A	100%			0
CEDS0257	CEDS: Excavate 2nd Panel to Formation Level	9	19-Mar-10 A	26-Mar-10 A	100%			2
CEDS0259	CEDS: 2nd Panel Desanding & Preparation Works	2	26-Mar-10 A	26-Mar-10 A	100%			1
CEDS0261	CEDS: 2nd Panel Rebar Cage Installation	1	26-Mar-10 A	26-Mar-10 A	100%			0
CEDS0263	CEDS: 2nd Panel Concreting Works	1	27-Mar-10 A	27-Mar-10 A	100%			0
CEDS0265	CEDS: Excavate 3rd Panel to Formation Level	9	26-Mar-10 A	08-Apr-10 A	100%			-2
CEDS0267	CEDS: 3rd Panel Desanding & Preparation Works	2	08-Apr-10 A	08-Apr-10 A	100%			1
CEDS0269	CEDS: 3rd Panel Rebar Cage Installation	1	08-Apr-10 A	08-Apr-10 A	100%			0
CEDS0271	CEDS: 3rd Panel Concreting Works	1	09-Apr-10 A	09-Apr-10 A	100%			0



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CEDS0273	CEDS: Excavate 4th Panel to Formation Level	9	08-Apr-10 A	18-Apr-10 A	100%			0
CEDS0275	CEDS: 4th Panel Desanding & Preparation Works	1	18-Apr-10 A	18-Apr-10 A	100%			1
CEDS0277	CEDS: 4th Panel Rebar Cage Installation	1	19-Apr-10 A	19-Apr-10 A	100%			0
CEDS0279	CEDS: 4th Panel Concreting Works	1	19-Apr-10 A	19-Apr-10 A	100%			0
CEDS0281	CEDS: Excavate 5th Panel to Formation Level	8	20-Apr-10 A	03-May-10 A	100%			-3
CEDS0283	CEDS: 5th Panel Desanding & Preparation Works	1	03-May-10 A	03-May-10 A	100%			0
CEDS0285	CEDS: 5th Panel Rebar Cage Installation	1	03-May-10 A	03-May-10 A	100%			0
CEDS0287	CEDS: 5th Panel Concreting Works	1	04-May-10 A	04-May-10 A	100%			0
CEDS0289	CEDS: Excavate 6th Panel to Formation Level	7	03-May-10 A	12-May-10 A	100%			-2
CEDS0291	CEDS: 6th Panel Desanding & Preparation Works	1	12-May-10 A	12-May-10 A	100%			0
CEDS0293	CEDS: 6th Panel Rebar Cage Installation	1	12-May-10 A	12-May-10 A	100%			0
CEDS0295	CEDS: 6th Panel Concreting Works	1	13-May-10 A	13-May-10 A	100%			0
CEDS0297	CEDS: Excavate 7th Panel to Formation Level	7	14-May-10 A	28-May-10 A	100%			-6
CEDS0299	CEDS: 7th Panel Desanding & Preparation Works	1	28-May-10 A	28-May-10 A	100%			0
CEDS0301	CEDS: 7th Panel Rebar Cage Installation	1	28-May-10 A	28-May-10 A	100%			0
CEDS0303	CEDS: 7th Panel Concreting Works	1	29-May-10 A	29-May-10 A	100%			0
CEDS0303E	CEDS: Excavate 8th Panel to Formation Level	7	15-May-10 A	19-May-10 A	100%			3
CEDS0303G	CEDS: 8th Panel Desanding & Preparation Works	1	19-May-10 A	19-May-10 A	100%			0
CEDS0303I	CEDS: 8th Panel Rebar Cage Installation	1	20-May-10 A	20-May-10 A	100%			0
CEDS0303K	CEDS: 8th Panel Concreting Works	1	20-May-10 A	20-May-10 A	100%			0
CEDS0303M	CEDS: Excavate 9th Panel to Formation Level	7	28-May-10 A	03-Jun-10 A	100%			1
CEDS0303O	CEDS: 9th Panel Desanding & Preparation Works	1	03-Jun-10 A	03-Jun-10 A	100%			0
CEDS0303Q	CEDS: 9th Panel Rebar Cage Installation	1	03-Jun-10 A	03-Jun-10 A	100%			0
CEDS0303S	CEDS: 9th Panel Concreting Works	1	04-Jun-10 A	04-Jun-10 A	100%			0
CEDS0303U	CEDS: Excavate 10th Panel to Formation Level	7	02-Jun-10 A	10-Jun-10 A	100%			-1
CEDS0303W	CEDS: 10th Panel Desanding & Preparation Works	1	11-Jun-10 A	11-Jun-10 A	100%			0
CEDS0303Y	CEDS: 10th Panel Rebar Cage Installation	1	11-Jun-10 A	11-Jun-10 A	100%			0
CEDS0304A	CEDS: 10th Panel Concreting Works	1	11-Jun-10 A	11-Jun-10 A	100%			0
CEDS0304C	CEDS: Excavate 11th Panel to Formation Level	6	04-Jun-10 A	21-Jun-10 A	100%			-8
CEDS0304E	CEDS: 11th Panel Desanding & Preparation Works	1	21-Jun-10 A	21-Jun-10 A	100%			0
CEDS0304G	CEDS: 11th Panel Rebar Cage Installation	1	21-Jun-10 A	21-Jun-10 A	100%			0
CEDS0304I	CEDS: 11th Panel Concreting Works	1	22-Jun-10 A	22-Jun-10 A	100%			0
CEDS0304K	CEDS: Excavate 12th Panel to Formation Level	6	19-Jun-10 A	25-Jun-10 A	100%			0
CEDS0304M	CEDS: 12th Panel Desanding & Preparation Works	1	25-Jun-10 A	25-Jun-10 A	100%			0
CEDS0304O	CEDS: 12th Panel Rebar Cage Installation	1	26-Jun-10 A	26-Jun-10 A	100%			0
CEDS0304Q	CEDS: 12th Panel Concreting Works	1	26-Jun-10 A	26-Jun-10 A	100%			0
CEDS0304S	CEDS: Excavate 13th Panel to Formation Level	6	26-Jun-10 A	07-Jul-10 A	100%			-3
CEDS0304U	CEDS: 13th Panel Desanding & Preparation Works	1	07-Jul-10 A	07-Jul-10 A	100%			0
CEDS0304W	CEDS: 13th Panel Rebar Cage Installation	1	07-Jul-10 A	07-Jul-10 A	100%			0
CEDS0304Y	CEDS: 13th Panel Concreting Works	1	08-Jul-10 A	08-Jul-10 A	100%			0
CEDS0305A	CEDS: Excavate 14th Panel to Formation Level	6	06-Jul-10 A	19-Jul-10 A	100%			-6
CEDS0305C	CEDS: 14th Panel Desanding & Preparation Works	1	20-Jul-10 A	20-Jul-10 A	100%			0
CEDS0305E	CEDS: 14th Panel Rebar Cage Installation	1	20-Jul-10 A	20-Jul-10 A	100%			0
CEDS0305G	CEDS: 14th Panel Concreting Works	1	20-Jul-10 A	20-Jul-10 A	100%			0
CEDS0305I	CEDS: Excavate 15th Panel to Formation Level	6	10-Jul-10 A	26-Jul-10 A	100%			-8
CEDS0305K	CEDS: 15th Panel Desanding & Preparation Works	1	26-Jul-10 A	26-Jul-10 A	100%			0
CEDS0305M	CEDS: 15th Panel Rebar Cage Installation	1	27-Jul-10 A	27-Jul-10 A	100%			0
CEDS0305O	CEDS: 15th Panel Concreting Works	1	27-Jul-10 A	27-Jul-10 A	100%			0
CEDS0305Q	CEDS: Excavate 16th Panel to Formation Level	12	26-Jul-10 A	06-Aug-10 A	100%			1

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MP66 **Sheet 31 of 60**

Harbour Area Treatment Scheme Stage 2A

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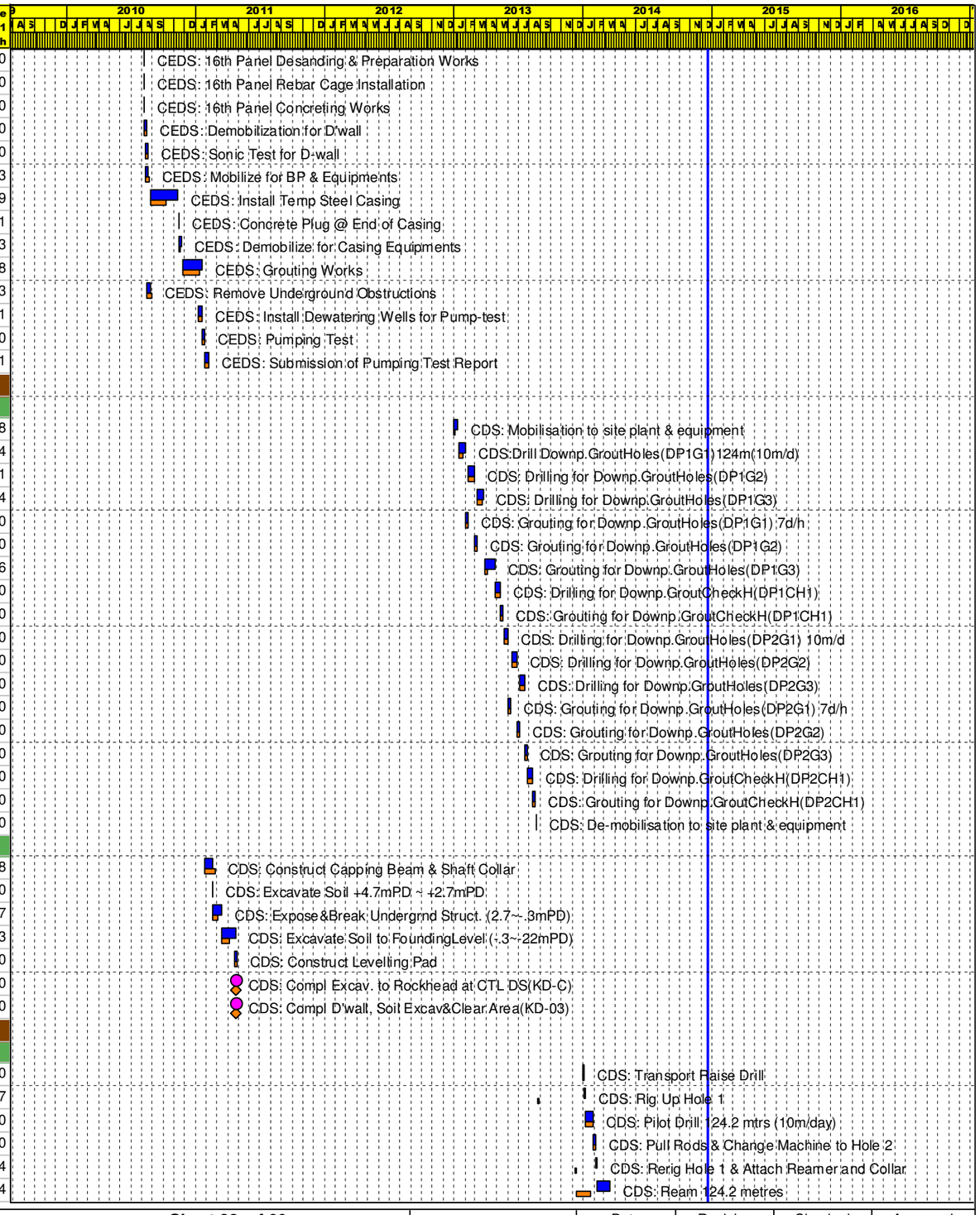
Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
CEDS0305S	CEDS: 16th Panel Desanding & Preparation Works	1	07-Aug-10 A	07-Aug-10 A	100%			0
CEDS0305U	CEDS: 16th Panel Rebar Cage Installation	1	07-Aug-10 A	07-Aug-10 A	100%			0
CEDS0305W	CEDS: 16th Panel Concreting Works	1	07-Aug-10 A	07-Aug-10 A	100%			0
CEDS0305X	CEDS: Demobilization for D'wall	6	09-Aug-10 A	14-Aug-10 A	100%			0
CEDS0305Y	CEDS: Sonic Test for D-wall	4	13-Aug-10 A	17-Aug-10 A	100%			0
CEDS0305Y0	CEDS: Mobilize for BP & Equipments	10	13-Aug-10 A	20-Aug-10 A	100%			3
CEDS0305Y1	CEDS: Install Temp Steel Casing	34	28-Aug-10 A	12-Nov-10 A	100%			-29
CEDS0305Y2	CEDS: Concrete Plug @ End of Casing	2	13-Nov-10 A	13-Nov-10 A	100%			1
CEDS0305Y3	CEDS: Demobilize for Casing Equipments	5	15-Nov-10 A	23-Nov-10 A	100%			-3
CEDS0305Y5	CEDS: Grouting Works	39	24-Nov-10 A	19-Jan-11 A	100%			-8
CEDS0305Z	CEDS: Remove Underground Obstructions	14	16-Aug-10 A	27-Aug-10 A	100%			3
CEDS0307	CEDS: Install Dewatering Wells for Pump-test	12	07-Jan-11 A	19-Jan-11 A	100%			1
CEDS0310	CEDS: Pumping Test	7	20-Jan-11 A	27-Jan-11 A	100%			0
CEDS0320	CEDS: Submission of Pumping Test Report	6	28-Jan-11 A	07-Feb-11 A	100%			-1
Shaft Excavation								
Pre-Excavation Grouting								
CEDS0500	CDS: Mobilisation to site plant & equipment	3	31-Dec-12 A	12-Jan-13 A	100%			-8
CEDS0502	CDS:Drill Downp.GroutHoles(DP1G1)124m(10m/d)	12	14-Jan-13 A	31-Jan-13 A	100%			-4
CEDS0504	CDS: Drilling for Downp.GroutHoles(DP1G2)	12	09-Feb-13 A	27-Feb-13 A	100%			-1
CEDS0506	CDS: Drilling for Downp.GroutHoles(DP1G3)	12	08-Mar-13 A	26-Mar-13 A	100%			-4
CEDS0508	CDS: Grouting for Downp.GroutHoles(DP1G1) 7d/h	7	01-Feb-13 A	08-Feb-13 A	100%			0
CEDS0510	CDS: Grouting for Downp.GroutHoles(DP1G2)	7	28-Feb-13 A	07-Mar-13 A	100%			0
CEDS0512	CDS: Grouting for Downp.GroutHoles(DP1G3)	7	27-Mar-13 A	25-Apr-13 A	100%			-16
CEDS0514	CDS: Drilling for Downp.GroutCheckH(DP1CH1)	12	26-Apr-13 A	10-May-13 A	100%			0
CEDS0516	CDS: Grouting for Downp.GroutCheckH(DP1CH1)	7	11-May-13 A	20-May-13 A	100%			0
CEDS0518	CDS: Drilling for Downp.GroutHoles(DP2G1) 10m/d	12	21-May-13 A	03-Jun-13 A	100%			0
CEDS0520	CDS: Drilling for Downp.GroutHoles(DP2G2)	12	13-Jun-13 A	26-Jun-13 A	100%			0
CEDS0522	CDS: Drilling for Downp.GroutHoles(DP2G3)	12	06-Jul-13 A	19-Jul-13 A	100%			0
CEDS0524	CDS: Grouting for Downp.GroutHoles(DP2G1) 7d/h	7	04-Jun-13 A	11-Jun-13 A	100%			0
CEDS0526	CDS: Grouting for Downp.GroutHoles(DP2G2)	7	27-Jun-13 A	05-Jul-13 A	100%			0
CEDS0528	CDS: Grouting for Downp.GroutHoles(DP2G3)	7	20-Jul-13 A	27-Jul-13 A	100%			0
CEDS0530	CDS: Drilling for Downp.GroutCheckH(DP2CH1)	12	29-Jul-13 A	10-Aug-13 A	100%			0
CEDS0532	CDS: Grouting for Downp.GroutCheckH(DP2CH1)	7	12-Aug-13 A	19-Aug-13 A	100%			0
CEDS0534	CDS: De-mobilisation to site plant & equipment	1	20-Aug-13 A	20-Aug-13 A	100%			0
No Significant Evnt								
CEDS0400	CDS: Construct Capping Beam & Shaft Collar	23	28-Jan-11 A	16-Feb-11 A	100%			8
CEDS0410	CDS: Excavate Soil +4.7mPD ~ +2.7mPD	1	18-Feb-11 A	18-Feb-11 A	100%			0
CEDS0410B	CDS: Expose&Break Undergrnd Struct. (2.7~-.3mPD)	13	19-Feb-11 A	14-Mar-11 A	100%			-7
CEDS0410D	CDS: Excavate Soil to FoundingLevel (-.3~-22mPD)	20	15-Mar-11 A	22-Apr-11 A	100%			-13
CEDS0420	CDS: Construct Levelling Pad	6	20-Apr-11 A	26-Apr-11 A	100%			0
CEDS1580	CDS: Compl Excav. to Rockhead at CTL DS(KD-C)	0		23-Apr-11 A	100%			0
CEDS1590	CDS: Compl D'wall, Soil Excav&Clear Area(KD-03)	0		23-Apr-11 A	100%			0
Raised Boring								
No Significant Evnt								
CEDS0698	CDS: Transport Raise Drill	4	31-Dec-13 A	04-Jan-14 A	100%			0
CEDS0700	CDS: Rig Up Hole 1	2	04-Jan-14 A	06-Jan-14 A	100%			-107
CEDS0710	CDS: Pilot Drill 124.2 mtrs (10m/day)	20	07-Jan-14 A	29-Jan-14 A	100%			0
CEDS0714	CDS: Pull Rods & Change Machine to Hole 2	3	29-Jan-14 A	04-Feb-14 A	100%			0
CEDS0720	CDS: Rerig Hole 1 & Attach Reamer and Collar	3	07-Feb-14 A	10-Feb-14 A	100%			-44
CEDS0730	CDS: Ream 124.2 metres	30	11-Feb-14 A	17-Mar-14 A	100%			-44



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Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura..	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
CEDS0740	CDS: Tie Off Reamer,Derig Raisebore& Remove Ream	3	18-Mar-14 A	20-Mar-14 A	100%			-44
CEDS0750	CDS: Lower Rods,Drill 3m & install RVD's	2	16-Sep-13 A	18-Sep-13 A	100%			0
CEDS0760	CDS: Pilot Drill 124.2 mtrs RVDS @ 10m/day	13	18-Sep-13 A	04-Oct-13 A	100%			0
CEDS0770	CDS: Attach Reamer and collar same	2	31-Oct-13 A	01-Nov-13 A	100%			0
CEDS0780	CDS: Ream 124.2 metres	27	31-Dec-13 A	04-Feb-14 A	100%			-48
CEDS0790	CDS: Lower Ream	3	04-Feb-14 A	06-Feb-14 A	100%			0
Lower Shaft Construction								
No Significant Evnt								
CEDS0835	CDS: Prepare&Concrete Sump Pit Ctl1 & Ctl2	20	21-Mar-14 A	15-Apr-14 A	100%			-25
CEDS0840	CDS: Back shunt concreting	28	15-Apr-14 A	22-May-14 A	100%			-46
CEDS0875	CDS: Construct Vert Shaft to Tunnel Invert	5	22-May-14 A	27-May-14 A	100%			-70
CEDS0895	CDS: Install System Form for LS	4	27-May-14 A	30-May-14 A	100%			16
CEDS0935	CDS: Construct Transition & Vert Shaft	6	30-May-14 A	06-Jun-14 A	100%			0
CEDS0955	CDS: Construct lower-shaft -153.5 to -22mPD	56	06-Jun-14 A	15-Sep-14 A	100%			-29
CEDS0960	CDS: Remove system formwork and tidy up area	4	16-Sep-14 A	19-Sep-14 A	100%			0
Upper Shaft Construction								
No Significant Evnt								
CEDS1015	CDS: Blinding Layer & Base Slab for US	9	20-Sep-14 A	30-Sep-14 A	100%			0
CEDS1045	CDS: Temp Platform & Construct Conical Surface	6	03-Oct-14 A	09-Oct-14 A	100%			0
CEDS1050	CDS: Assembly of kicker formwork	12	24-Sep-14 A	09-Oct-14 A	100%			0
CEDS1085	CDS: Construct Kicker	8	10-Oct-14 A	18-Oct-14 A	100%			0
CEDS1090	CDS: Set up system formwork for upper shaft	12	10-Oct-14 A	18-Oct-14 A	100%			4
CEDS1145	CDS: Construct Upper Shaft	53	18-Oct-14 A	20-Jan-15	55%	94	94	-20
CEDS1265	CDS: Fabricate & Install S/S Vortex Drop Pipe	12	16-Jan-15	30-Jan-15	0%	94	94	-20
CEDS1305	CDS: Construct Overflow Weir	18	30-Jan-15	23-Feb-15	0%	94	94	-20
CEDS1315	CDS: Clear Area & Install Multi-Part Cover	14	23-Feb-15	11-Mar-15	0%	94	94	-20
Scum Removal Chamber								
No Significant Evnt								
CEDS1463	CDS: Sheet Piling, Excavation & ELS Works	24	03-Dec-14 A	20-Jan-15	90%	94	94	-20
CEDS1465	CDS: Excavation for Chamber & Channel	9	20-Jan-15	30-Jan-15	0%	94	94	-20
CEDS1505	CDS: Blinding Layer & Base Slab of SRC	9	30-Jan-15	10-Feb-15	0%	94	94	-20
CEDS1545	CDS: Construct Wall of SRC	14	10-Feb-15	28-Feb-15	0%	94	94	-20
CEDS1565	CDS: Waterproof & Install Multi-Part Cover	6	28-Feb-15	07-Mar-15	0%	94	94	-20
CEDS1570	CDS: Backfill to Scum Removal Chamber	3	07-Mar-15	11-Mar-15	0%	94	94	-20
Connection Channel								
No Significant Evnt								
CEDS1375	CDS: Blinding Layer & Base Slab of CC	9	30-Jan-15	10-Feb-15	0%	94	94	-20
CEDS1435	CDS: Construct Wall of CC	12	10-Feb-15	26-Feb-15	0%	94	94	-20
CEDS1455	CDS: Waterproof & Install Multi-Part Cover	6	28-Feb-15	07-Mar-15	0%	94	94	-20
CEDS1460	CDS: Backfill to Connection Channel	3	07-Mar-15	11-Mar-15	0%	94	94	-20
Miscellaneous Works								
No Significant Evnt								
CEDS2010	CDS: Install E&M Services	5	11-Mar-15	17-Mar-15	0%	94	94	-7
CEDS2020	CDS: Reinstatement & Clear DS Area	12	18-Mar-15	31-Mar-15	0%	94	94	-7
CEDS2025	CDS: Complete All Works at CTL DS (KD-09)	0		31-Mar-15	0%	541	541	-8
CEDS2030	CDS: Landscaping & Planting Works	60	01-Apr-15	30-May-15	0%	116	116	-8
CEDS2040	CDS: Period of Establishment Works	365	31-May-15	29-May-16	0%	116	116	-8
CEDS2050	CDS: End of Establishment Period	0		29-May-16	0%	116	116	-8
Sai Ying Pun Junction/Production Shaft								
Design Submissions								

Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66 **Sheet 33 of 60**

Harbour Area Treatment Scheme Stage 2A

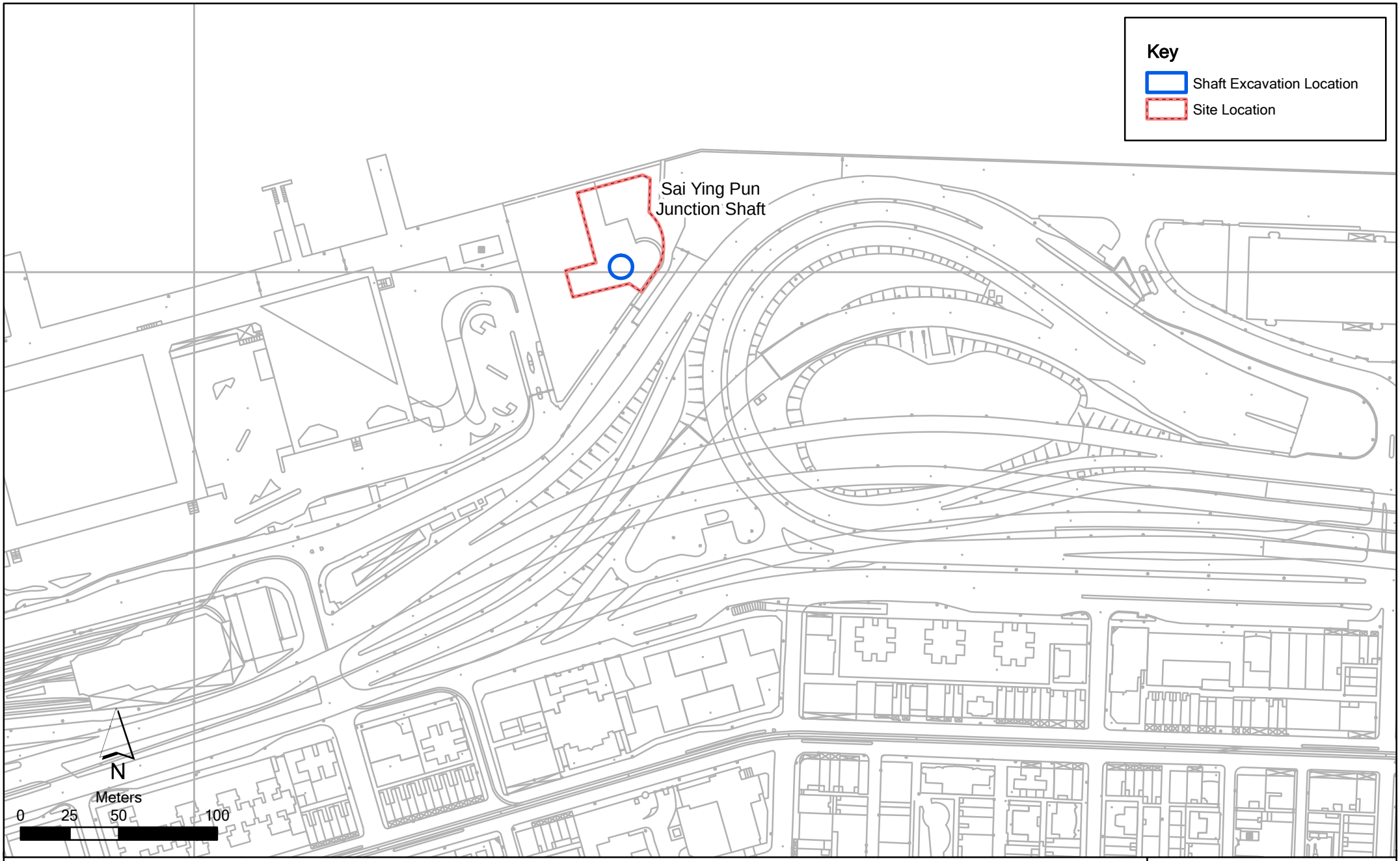
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Annex F

Sai Ying Pun Junction Shaft



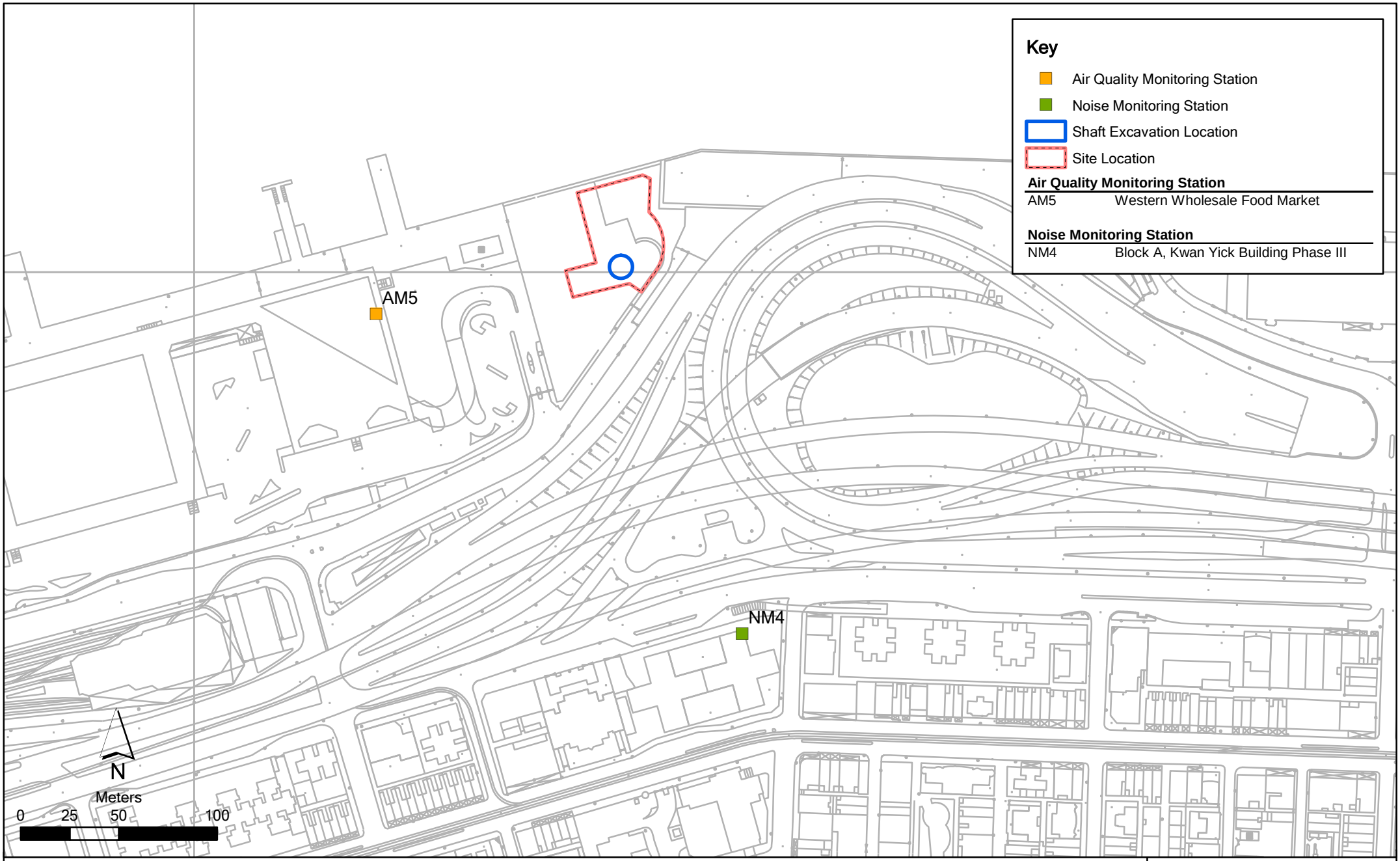
Annex F1

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Construction Site Locations at Sai Ying Pun

File: EM&A and proposed station\0104887_Sai Ying Pun.mxd
Date: 03/03/2010

Environmental Resources Management

ERM



Annex F2

Contract No. DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Air Quality & Noise Monitoring Stations (Fung Mat Road)

File: EM&A and proposed station\
0104887_Sai Ting Pun_NMAM.mxd
Date: 03/03/2010

Environmental Resources Management

ERM

Annex F3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Air Quality Monitoring Schedule

AM5 - Western Wholesale Food Market
Monitoring Month : January 2016

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

February 2016

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

Annex F3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Noise Quality Monitoring Schedule

NM4 - Block A, Kwan Yick Building Phase III
Monitoring Month: January 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jan	02-Jan
					Public Holiday	
03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan
Noise Monitoring		Noise Monitoring				
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
	Noise Monitoring	Noise Monitoring (Evening Time)				
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
Noise Monitoring				Noise Monitoring		
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
		Noise Monitoring (Evening Time)	Noise Monitoring			
31-Jan						

February 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb
		Noise Monitoring (Evening Time)				
07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb
Noise Monitoring	Public Holiday	Public Holiday	Public Holiday		Noise Monitoring	
14-Feb	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb
		Noise Monitoring (Evening Time)	Noise Monitoring			
21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb
Noise Monitoring		Noise Monitoring				
28-Feb	29-Feb					
	Noise Monitoring					

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Construction Phase			
Air Quality	The Air Pollution Control (Construction Dust) Regulation shall be implemented and good site practices shall be incorporated in the contract clauses to minimise construction dust impact. Control measures relevant to this Project are listed below: • 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; • where a site boundary adjoins a road, streets or other accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit; • every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides; • regular watering, with complete coverage, to reduce dust emission from exposed site surfaces and unpaved roads, particularly during dry weather; • site enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines; • open stock piles should be avoided or covered and prevent placing dusty material storage piles near ASRs if possible; • tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; and • instigation of an environmental monitoring auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Air Quality	The following watering measures for specific site would be required to control the fugitive dust impacts: • watering twice per day within the worksites at Fung Mat Road Site; • the barging points should be continuous watering throughout the whole unloading process.	All work sites / during construction	√
Operational Phase			
Air Quality	Good housekeeping for SCISTW and PTWs listed below should be followed to ameliorate any odour impact from the plant and these standard practices should be included in the plant operator manual. • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers to minimise odour escape • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly	All work sites / during construction	NA. Measures not required until commencement of operational phase
Air Quality	Commissioning tests for all deodorisation system should be included in the Design and Construction Contract Document.	All PTW and SCISTW/ during operational phase	NA. Measures not required until commencement of operational phase
Construction Phase			
Noise	Use of quiet PME, movable barriers and acoustic mats	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Noise	Good Site Practice: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; • silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program; • mobile plant, if any, should be sited as far from NSRs as possible; • machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities; Environmental audit shall be carried out to ensure that appropriate noise control measures would be properly implemented.	All work sites / during construction	√
Construction Phase			
Water Quality	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All work sites / during construction	√
Water Quality	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. 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. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	All work sites / during construction	√
Water Quality	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps 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.	All work sites / during construction	√
Water Quality	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably 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.	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Water Quality	Construction Works in Close Proximity of Storm Drains or Seafront To minimise the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during the construction works. • Stockpiles of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate a large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea	All work sites / during construction	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Operational Phase			
Water Quality	Dual power supply, standby facilities for the main treatment units and standby equipment parts / accessories should be provided as far as possible at the SCISTW to minimise the chance of emergency discharge.	SCISTW and all the Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Water Quality	Standby unit(s) and dual (backup) power supply would be provided at all the Stage 2 PTWs to reduce the risk of equipment breakdown at the PTWs.	Stage 2 PTWs / Operation Stage	NA. Measures not required until commencement of operational phase
Construction Phase			
Waste	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimise the use of timber formwork.	All work sites / during the construction period	√
Waste	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals; • 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, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; • Any unused chemicals or those with remaining functional capacity shall be recycled; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All work sites / during the construction period	√
Waste	Recommendations for good site practices during 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 waste handling procedures • Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials. • Provision of sufficient waste disposal points and regular collection of waste • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	All work sites / during the construction period	√
Waste	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All work sites / during the construction period	NA
Waste	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.	All work sites / during the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Waste	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.	All work sites / during the construction period	√
Waste	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.	All work sites / during the construction period	√
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, oxidising, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	All work sites / during the construction period	√
Waste	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.	All work sites / during the construction period	√
Construction Phase			

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	• Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction. • Trees unavoidably affected by the works should be transplanted where practical. • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting.	All the works areas, PTWs and SCISTW/ during the construction period	√
Operational Phase	•		
Landscape & Visual	• Aesthetic design of the façade of PTW and associated structures to harmonise with the surrounding settings. • Shrub and Climbing Plants to soften proposed structures / Roof Greening. • Buffer Tree and Shrub Planting to screen proposed associated structures. • Reinstated of disturbed area	All the works areas, PTWs and SCISTW/ during the construction period	NA. Measures not required until commencement of operational phase
Construction Phase			
Cultural Heritage	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	Monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme	Identified historical buildings/structures as mentioned in Tables 15.8 and 15.9. During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	√

Remark:

√ Compliance of Mitigation Measures
<> Compliance of Mitigation but need improvement
x Non-compliance of Mitigation Measures
Δ Deficiency of Mitigation Measures but rectified by Gammon Construction Limited
NA Not Applicable

Annex F5 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM5

Date	Start Time	Finish Time	Weather	TSP Concentration (μg/m3)	Action Level (μg/m3)	Limit Level (μg/m3)	Site Conditions / Observations / Remarks	Temperature (°C)	Wind Speed (m/s)	Sampler ID
05-Jan-16	8:00	9:00	Fine	54	332	500	Construction work in progress	21	<5	GMW GS-2310 (S/N 0143)
	9:02	10:02	Fine	73	332	500	Construction work in progress	21	<5	GMW GS-2310 (S/N 0143)
	15:15	16:15	Fine	67	332	500	Construction work in progress	21	<5	GMW GS-2310 (S/N 0143)
11-Jan-16	8:00	9:00	Cloudy	55	332	500	Construction work in progress	20	<5	GMW GS-2310 (S/N 0143)
	9:02	10:02	Cloudy	70	332	500	Construction work in progress	20	<5	GMW GS-2310 (S/N 0143)
	14:45	15:45	Cloudy	66	332	500	Construction work in progress	20	<5	GMW GS-2310 (S/N 0143)
15-Jan-16	8:00	9:00	Rainy	44	332	500	Construction work in progress	14	<5	GMW GS-2310 (S/N 0143)
	9:02	10:02	Rainy	55	332	500	Construction work in progress	14	<5	GMW GS-2310 (S/N 0143)
	10:04	11:04	Rainy	51	332	500	Construction work in progress	14	<5	GMW GS-2310 (S/N 0143)
21-Jan-16	8:00	9:00	Cloudy	91	332	500	Construction work in progress	16	<5	GMW GS-2310 (S/N 0143)
	9:02	10:02	Cloudy	82	332	500	Construction work in progress	16	<5	GMW GS-2310 (S/N 0143)
	12:00	13:00	Cloudy	75	332	500	Construction work in progress	16	<5	GMW GS-2310 (S/N 0143)
27-Jan-16	8:00	9:00	Cloudy	67	332	500	N.A.	14	<5	GMW GS-2310 (S/N 0143)
	9:02	10:02	Cloudy	78	332	500	N.A.	14	<5	GMW GS-2310 (S/N 0143)
	10:04	11:04	Cloudy	59	332	500	N.A.	14	<5	GMW GS-2310 (S/N 0143)
			Min.	**44**						
			Max.	**91**						
			Average	**66**						

* Wind Speed data is presented in the Meteorological Data table

Annex F5 24-hour and 1-hour TSP Monitoring Results

24-hour TSP Monitoring Results

Station AM5

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
05-Jan-16	16:17	06-Jan-16	16:17	Fine	2.8002	2.9006	19570.51	19594.51	24.00	1.24	1.24	1.24	56	189	260	construction work in progress	GMW GS-2310 (S/N 0143)	7400
11-Jan-16	15:47	12-Jan-16	15:47	Cloudy	2.7962	2.8917	19597.51	19621.51	24.00	1.24	1.24	1.24	53	189	260	construction work in progress	GMW GS-2310 (S/N 0143)	7577
15-Jan-16	11:06	16-Jan-16	11:06	Rainy	2.8011	2.8904	19624.51	19648.51	24.00	1.24	1.24	1.24	50	189	260	construction work in progress	GMW GS-2310 (S/N 0143)	7581
21-Jan-16	13:02	22-Jan-16	13:02	Cloudy	2.8012	2.9071	19651.51	19675.51	24.00	1.24	1.24	1.24	59	189	260	construction work in progress	GMW GS-2310 (S/N 0143)	7585
27-Jan-16	11:08	28-Jan-16	11:08	Cloudy	2.7866	2.8571	19678.51	19702.51	24.00	1.24	1.24	1.24	39	189	260	N.A.	GMW GS-2310 (S/N 0143)	7589
												Min.	**39**					
												Max.	**59**					
												Average	**52**					

Meteorological Data Extracted from the Hong Kong Observatory

Date	Weather	King's Park Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	0-17	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	E
2016-01-08	Sunny	19	64-87	0.0	0-10	E
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-19	SE
2016-01-15	Cloudy	15	93-98	38.8	0-16	E/SE
2016-01-20	Cloudy	15	80-96	3.3	9-24	SE
2016-01-21	Cloudy	16	93-97	0.1	0-17	E/SE
2016-01-26	Cloudy	11	42-80	Trace	0-9	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

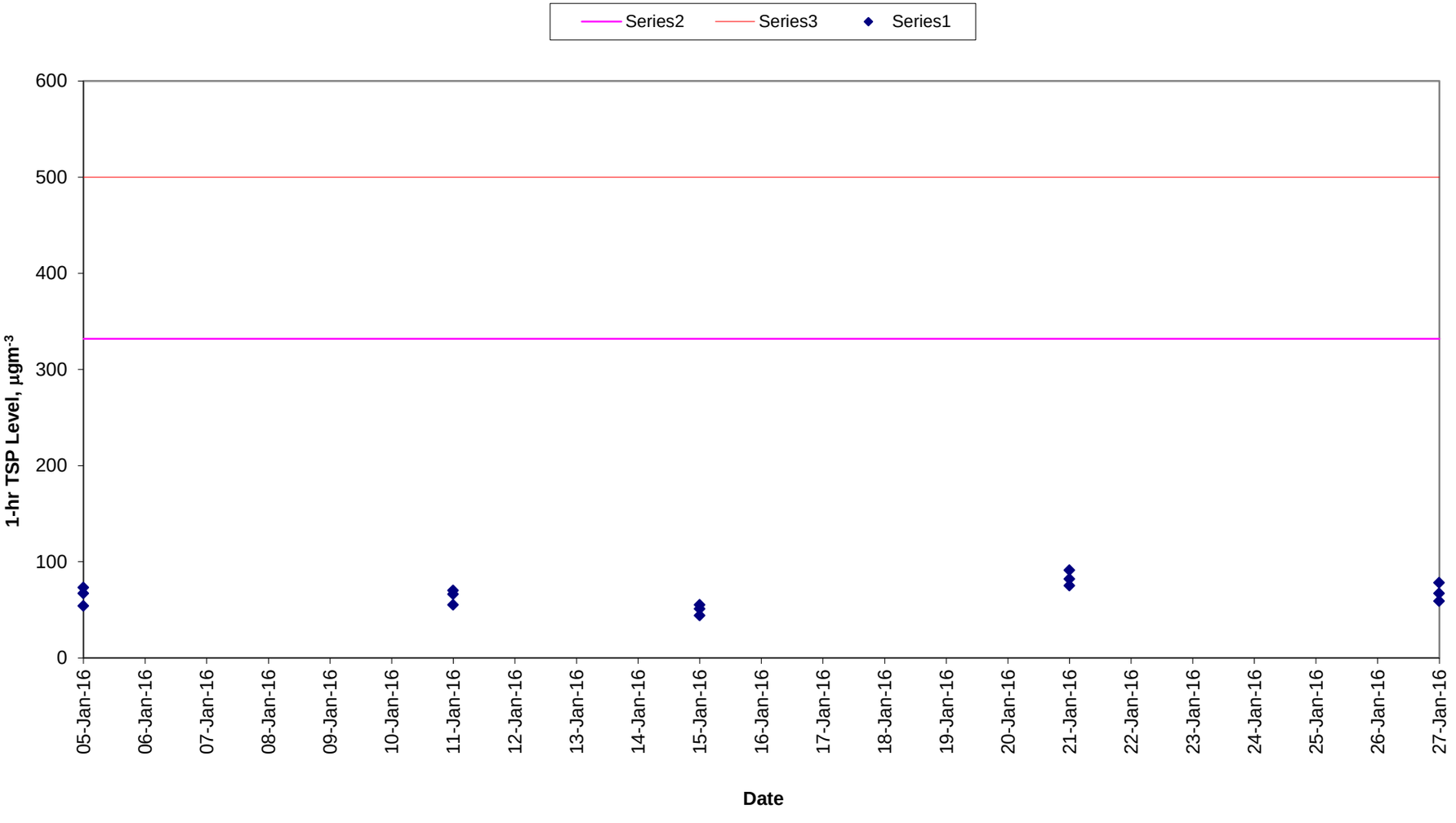
Date	Weather	Tsing Yi Station				
		Average Air Temperature (°C)	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-17	E/SE
2016-01-05	Rainy	21	92-98	46.7	0-28	E/SE
2016-01-08	Sunny	19	64-87	0.0	0-17	E/SE
2016-01-11	Cloudy	19	78-99	30.7	0-15	E/SE
2016-01-14	Cloudy	17	73-94	1.1	0-20	E/SE
2016-01-15	Cloudy	15	93-98	38.8	0-18	SE
2016-01-20	Cloudy	16	80-96	3.3	6-24	E/SE
2016-01-21	Cloudy	17	93-97	0.1	0-11	SE
2016-01-26	Cloudy	10	68-95	Trace	0-18	E/SE
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

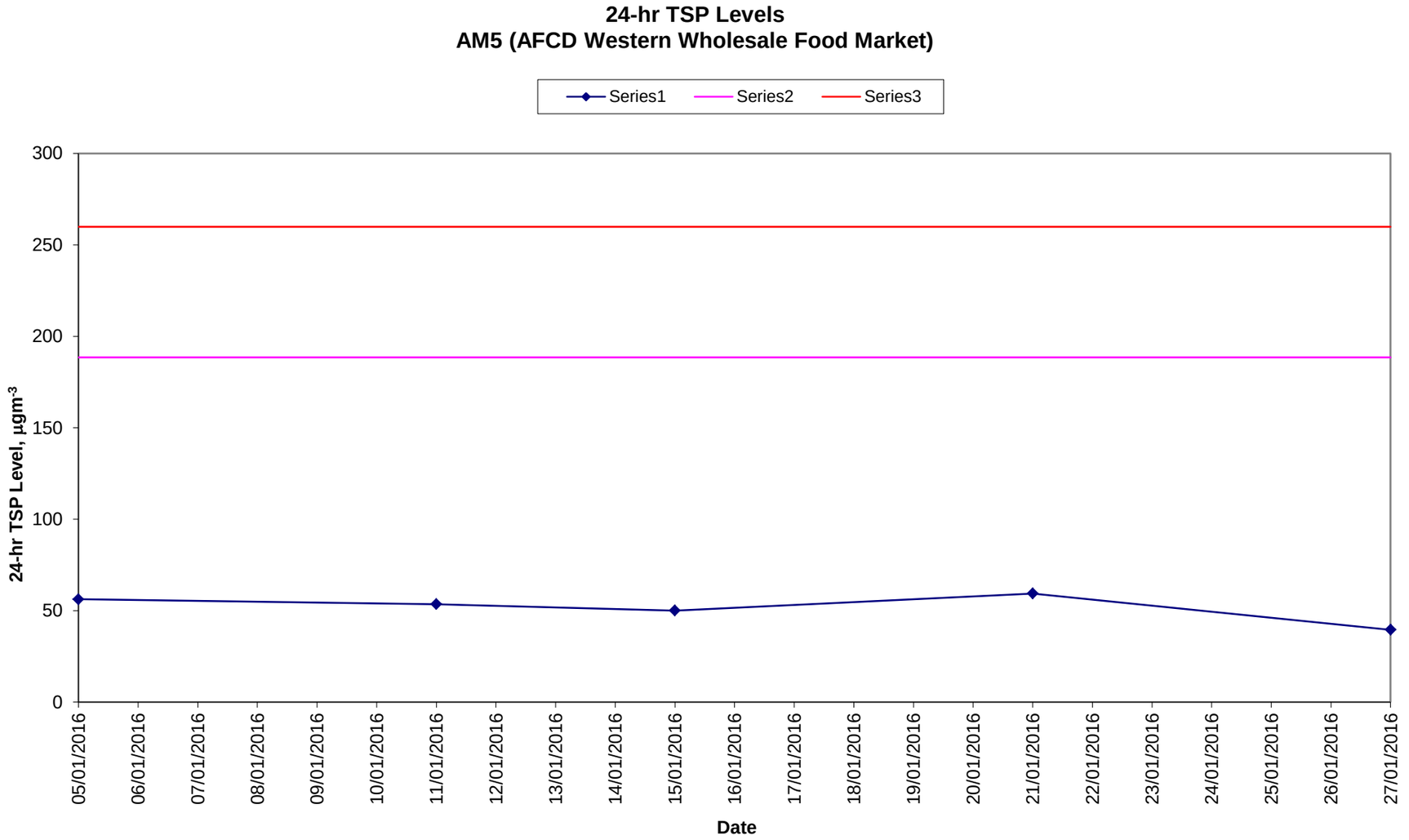
Date	Weather	Kai Tak Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	21	83-96	Trace	5-18	SE
2016-01-05	Rainy	20	92-98	46.7	0-19	SW
2016-01-08	Sunny	19	64-87	0.0	0-18	S
2016-01-11	Cloudy	19	78-99	30.7	0-20	SE
2016-01-14	Cloudy	17	73-94	1.1	4-25	E
2016-01-15	Cloudy	15	93-98	38.8	3-24	SW
2016-01-20	Cloudy	15	80-96	3.3	13-34	SW
2016-01-21	Cloudy	16	93-97	0.1	1-20	SW
2016-01-26	Cloudy	11	42-80	Trace	0-17	E
2016-01-27	Cloudy	13	81-96	3.5	0-20	SE

Date	Weather	Green Island Station				
		Average Air Temperature (°C) *	Average Relative Humidity (%) *	Total Rainfall (mm) *	Average Wind Speed (km/h)	Wind Direction
2016-01-04	Cloudy	22	83-96	Trace	0-30	NE
2016-01-05	Rainy	21	92-98	46.7	0-32	SE/E
2016-01-08	Sunny	19	64-87	0.0	0-30	NE
2016-01-11	Cloudy	19	78-99	30.7	0-45	E
2016-01-14	Cloudy	17	73-94	1.1	4-45	NE
2016-01-15	Cloudy	15	93-98	38.8	10-55	NE
2016-01-20	Cloudy	16	80-96	3.3	37-64	NE
2016-01-21	Cloudy	17	93-97	0.1	0-48	E
2016-01-26	Cloudy	10	68-95	Trace	8-45	SE/E
2016-01-27	Cloudy	13	81-96	3.5	15-50	NE

* King's Park's data
\- Data was not available
\# less than 24 hourly observations per day

1-hr TSP Levels
AM5 (AFCD Western Wholesale Food Market)




24-hr TSP Levels
AM5 (AFCD Western Wholesale Food Market)
Series1
Series2
Series3
300
250
200
150
100
50
0
24-hr TSP Level, µgm-3
05/01/2016
06/01/2016
07/01/2016
08/01/2016
09/01/2016
10/01/2016
11/01/2016
12/01/2016
13/01/2016
14/01/2016
15/01/2016
16/01/2016
17/01/2016
18/01/2016
19/01/2016
20/01/2016
21/01/2016
22/01/2016
23/01/2016
24/01/2016
25/01/2016
26/01/2016
27/01/2016
Date

Annex F6 Noise Monitoring Results

Daytime Noise Monitoring Results

Station NM4

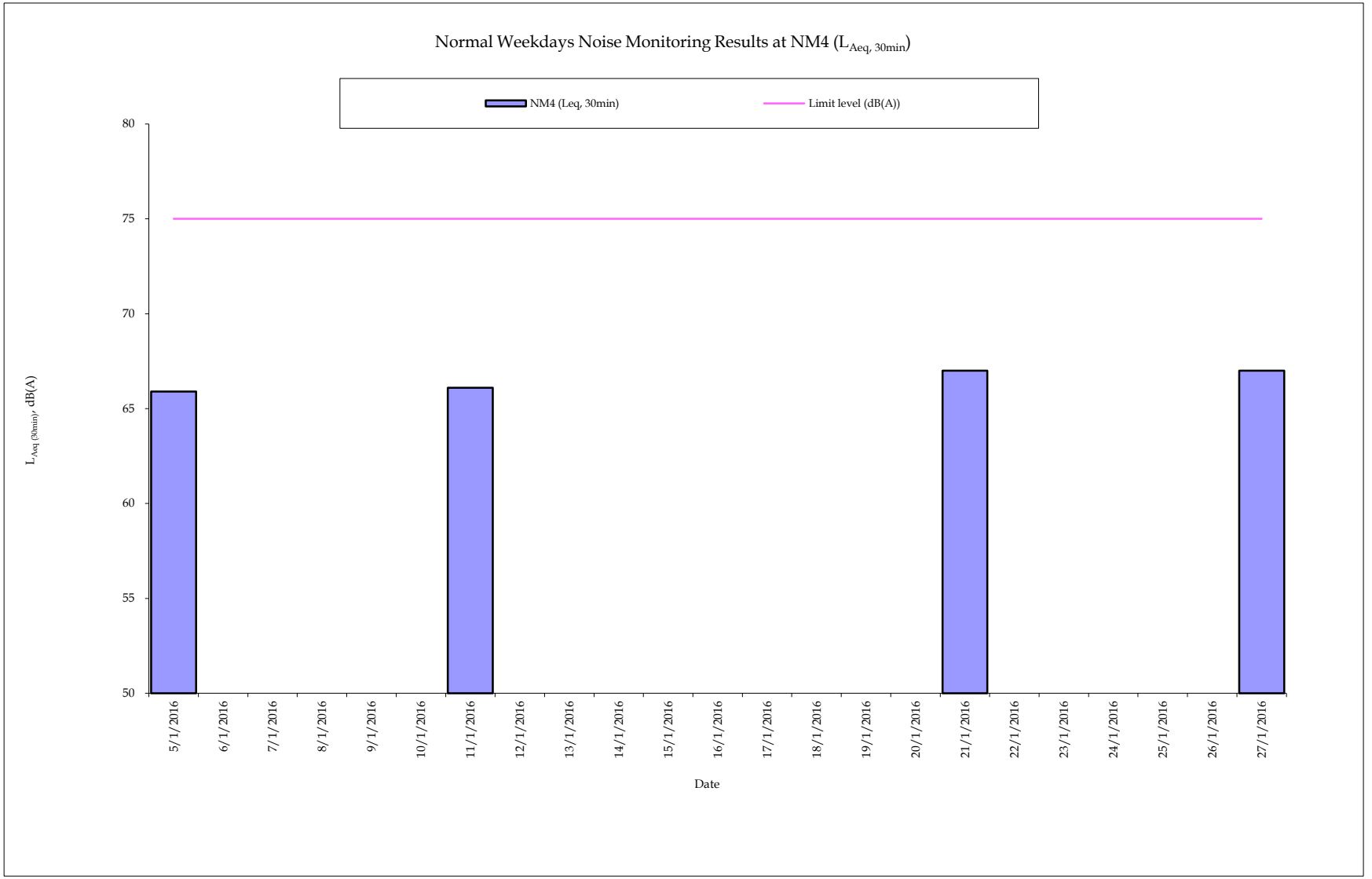
Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
05-Jan-16	15:30	16:00	Fine	66	67	65	Excavation work	Traffic Noise	-	21	0.5	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
11-Jan-16	15:00	15:30	Cloudy	66	62	65	N.A	Traffic Noise	-	20	1.0	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
21-Jan-16	9:17	9:47	Cloudy	67	69	66	Excavation work	Traffic Noise	-	16	0.5	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
27-Jan-16	13:10	13:40	Cloudy	67	69	66	Excavation work	Traffic Noise	-	15	0.5	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
			Min.	**66**									
			Max.	**67**									

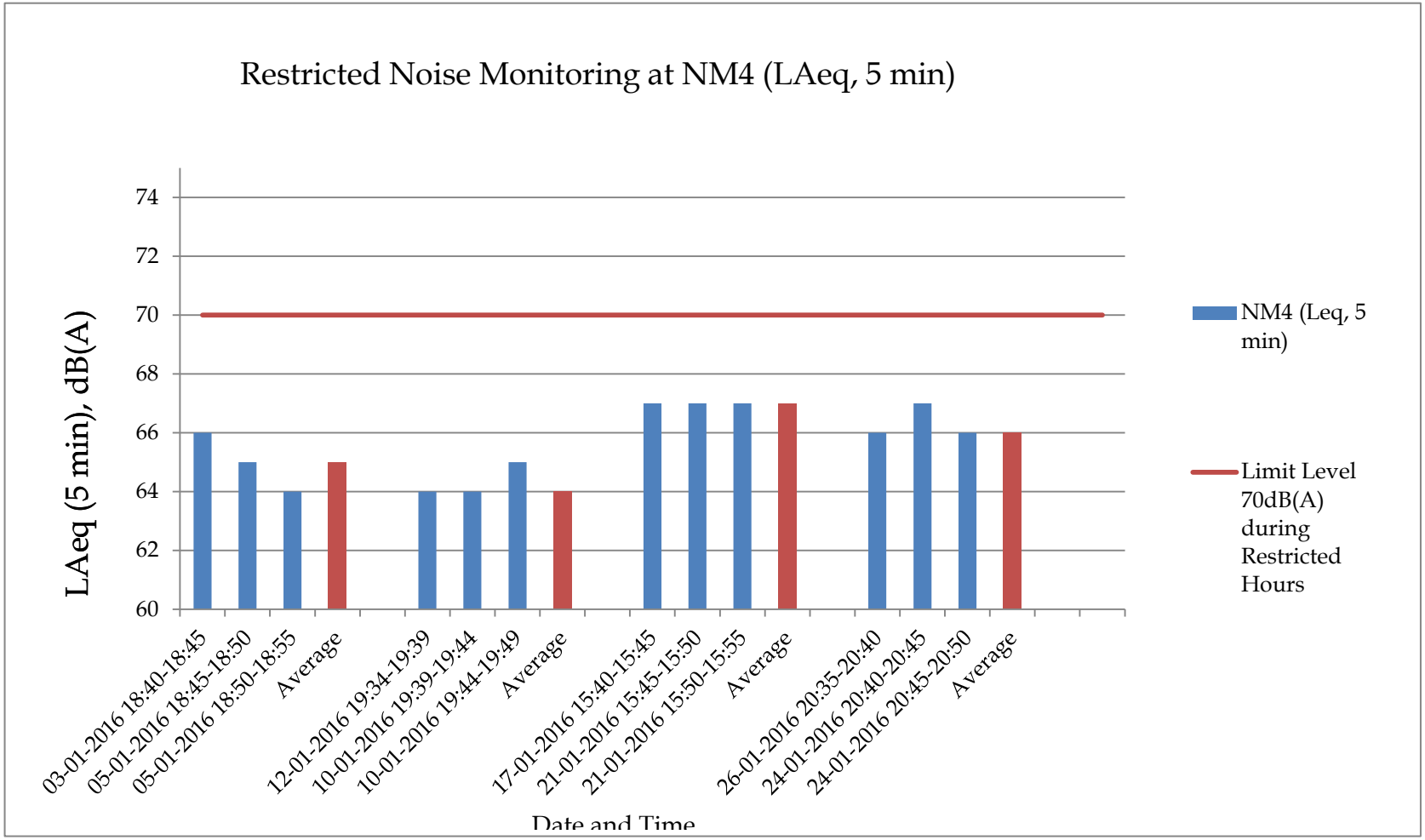
Annex F6 Noise Monitoring Results

Restricted Hours Noise Monitoring Results

Station NM4

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
03-Jan-16	18:40	18:45	Cloudy	66	68	64	-	Traffic noise	-	18	1.0	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
	18:45	18:50	Cloudy	65	67	63			-				
	18:50	18:55	Cloudy	64	66	63			-				
	18:40	18:55	Cloudy	65	-	-			-				
12-Jan-16	19:34	19:39	Fine	64	68	63	-	Traffic noise	-	20	0.8	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
	19:39	19:44	Fine	64	68	63			-				
	19:44	19:49	Fine	65	68	63			-				
	19:34	19:49	Fine	64	-	-			-				
17-Jan-16	15:40	15:45	Cloudy	67	69	65	-	Traffic noise	-	18	1.0	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
	15:45	15:50	Cloudy	67	69	66			-				
	15:50	15:55	Cloudy	67	69	65			-				
	15:40	15:55	Cloudy	67	-	-			-				
26-Jan-16	20:35	20:40	Cloudy	66	67	64	-	Traffic noise	-	14	0.8	Casella CEL-633A (S/N 3521757)	Casella CEL-120/1 (S/N 3421612)
	20:40	20:45	Cloudy	67	70	64			-				
	20:45	20:50	Cloudy	66	67	64			-				
	20:35	20:50	Cloudy	66	-	-			-				
			Min.	**64**									
			Max.	**67**									


Normal Weekdays Noise Monitoring Results at NM4 ($L_{Aeq, 30min}$)
NM4 (Leq, 30min)
Limit level (dB(A))
80
75
70
65
60
55
50
$L_{Aeq\ (30min)}$, dB(A)
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
13/1/2016
14/1/2016
15/1/2016
16/1/2016
17/1/2016
18/1/2016
19/1/2016
20/1/2016
21/1/2016
22/1/2016
23/1/2016
24/1/2016
25/1/2016
26/1/2016
27/1/2016
Date


Restricted Noise Monitoring at NM4 (LAeq, 5 min)
LAeq (5 min), dB(A)
74
72
70
68
66
64
62
60
03-01-2016 18:40-18:45
05-01-2016 18:45-18:50
05-01-2016 18:50-18:55
Average
12-01-2016 19:34-19:39
10-01-2016 19:39-19:44
10-01-2016 19:44-19:49
Average
17-01-2016 15:40-15:45
21-01-2016 15:45-15:50
21-01-2016 15:50-15:55
Average
26-01-2016 20:35-20:40
24-01-2016 20:40-20:45
24-01-2016 20:45-20:50
Average
Date and Time
NM4 (Leq, 5 min)
Limit Level 70dB(A) during Restricted Hours

Annex F7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2009	0	0
January 2010	0	0
February 2010	1	0
March 2010	0	0
April 2010	1	0
May 2010	2	0
June 2010	0	0
July 2010	1	0
August 2010	0	0
September 2010	0	0
October 2010	0	0
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

Annex F7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
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
April 2012	1	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

Annex F7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2012	1	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
June 2013	0	0
July 2013	0	0
August 2013	0	0
September 2013	0	0
October 2013	0	0
November 2013	0	0
December 2013	0	0
January 2014	0	0
February 2014	0	0
March 2014	0	0
April 2014	0	0
May 2014	0	0

Annex F7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
June 2014	0	0
July 2014	0	0
August 2014	0	0
September 2014	0	0
October 2014	0	0
November 2014	0	0
December 2014	0	0
January 2015	0	0
February 2015	0	0
March 2015	0	0
April 2015	0	0
May 2015	0	0
June 2015	0	0
July 2015	0	0
August 2015	0	0
September 2015	0	0
October 2015	0	0
November 2015	0	0

Annex F7 Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
December 2015	0	0
January 2016	0	0
Overall Total	7	0

Activity ID	Activity Name	Origina Dura..	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
CEDS0740	CDS: Tie Off Reamer,Derig Raisebore& Remove Ream	3	18-Mar-14 A	20-Mar-14 A	100%			-44
CEDS0750	CDS: Lower Rods,Drill 3m & install RVD's	2	16-Sep-13 A	18-Sep-13 A	100%			0
CEDS0760	CDS: Pilot Drill 124.2 mtrs RVDS @ 10m/day	13	18-Sep-13 A	04-Oct-13 A	100%			0
CEDS0770	CDS: Attach Reamer and collar same	2	31-Oct-13 A	01-Nov-13 A	100%			0
CEDS0780	CDS: Ream 124.2 metres	27	31-Dec-13 A	04-Feb-14 A	100%			-48
CEDS0790	CDS: Lower Ream	3	04-Feb-14 A	06-Feb-14 A	100%			0
Lower Shaft Construction								
No Significant Evnt								
CEDS0835	CDS: Prepare&Concrete Sump Pit Ctl1 & Ctl2	20	21-Mar-14 A	15-Apr-14 A	100%			-25
CEDS0840	CDS: Back shunt concreting	28	15-Apr-14 A	22-May-14 A	100%			-46
CEDS0875	CDS: Construct Vert Shaft to Tunnel Invert	5	22-May-14 A	27-May-14 A	100%			-70
CEDS0895	CDS: Install System Form for LS	4	27-May-14 A	30-May-14 A	100%			16
CEDS0935	CDS: Construct Transition & Vert Shaft	6	30-May-14 A	06-Jun-14 A	100%			0
CEDS0955	CDS: Construct lower-shaft -153.5 to -22mPD	56	06-Jun-14 A	15-Sep-14 A	100%			-29
CEDS0960	CDS: Remove system formwork and tidy up area	4	16-Sep-14 A	19-Sep-14 A	100%			0
Upper Shaft Construction								
No Significant Evnt								
CEDS1015	CDS: Blinding Layer & Base Slab for US	9	20-Sep-14 A	30-Sep-14 A	100%			0
CEDS1045	CDS: Temp Platform & Construct Conical Surface	6	03-Oct-14 A	09-Oct-14 A	100%			0
CEDS1050	CDS: Assembly of kicker formwork	12	24-Sep-14 A	09-Oct-14 A	100%			0
CEDS1085	CDS: Construct Kicker	8	10-Oct-14 A	18-Oct-14 A	100%			0
CEDS1090	CDS: Set up system formwork for upper shaft	12	10-Oct-14 A	18-Oct-14 A	100%			4
CEDS1145	CDS: Construct Upper Shaft	53	18-Oct-14 A	20-Jan-15	55%	94	94	-20
CEDS1265	CDS: Fabricate & Install S/S Vortex Drop Pipe	12	16-Jan-15	30-Jan-15	0%	94	94	-20
CEDS1305	CDS: Construct Overflow Weir	18	30-Jan-15	23-Feb-15	0%	94	94	-20
CEDS1315	CDS: Clear Area & Install Multi-Part Cover	14	23-Feb-15	11-Mar-15	0%	94	94	-20
Scum Removal Chamber								
No Significant Evnt								
CEDS1463	CDS: Sheet Piling, Excavation & ELS Works	24	03-Dec-14 A	20-Jan-15	90%	94	94	-20
CEDS1465	CDS: Excavation for Chamber & Channel	9	20-Jan-15	30-Jan-15	0%	94	94	-20
CEDS1505	CDS: Blinding Layer & Base Slab of SRC	9	30-Jan-15	10-Feb-15	0%	94	94	-20
CEDS1545	CDS: Construct Wall of SRC	14	10-Feb-15	28-Feb-15	0%	94	94	-20
CEDS1565	CDS: Waterproof & Install Multi-Part Cover	6	28-Feb-15	07-Mar-15	0%	94	94	-20
CEDS1570	CDS: Backfill to Scum Removal Chamber	3	07-Mar-15	11-Mar-15	0%	94	94	-20
Connection Channel								
No Significant Evnt								
CEDS1375	CDS: Blinding Layer & Base Slab of CC	9	30-Jan-15	10-Feb-15	0%	94	94	-20
CEDS1435	CDS: Construct Wall of CC	12	10-Feb-15	26-Feb-15	0%	94	94	-20
CEDS1455	CDS: Waterproof & Install Multi-Part Cover	6	28-Feb-15	07-Mar-15	0%	94	94	-20
CEDS1460	CDS: Backfill to Connection Channel	3	07-Mar-15	11-Mar-15	0%	94	94	-20
Miscellaneous Works								
No Significant Evnt								
CEDS2010	CDS: Install E&M Services	5	11-Mar-15	17-Mar-15	0%	94	94	-7
CEDS2020	CDS: Reinstatement & Clear DS Area	12	18-Mar-15	31-Mar-15	0%	94	94	-7
CEDS2025	CDS: Complete All Works at CTL DS (KD-09)	0		31-Mar-15	0%	541	541	-8
CEDS2030	CDS: Landscaping & Planting Works	60	01-Apr-15	30-May-15	0%	116	116	-8
CEDS2040	CDS: Period of Establishment Works	365	31-May-15	29-May-16	0%	116	116	-8
CEDS2050	CDS: End of Establishment Period	0		29-May-16	0%	116	116	-8
Sai Ying Pun Junction/Production Shaft								
Design Submissions								

Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66 **Sheet 33 of 60**

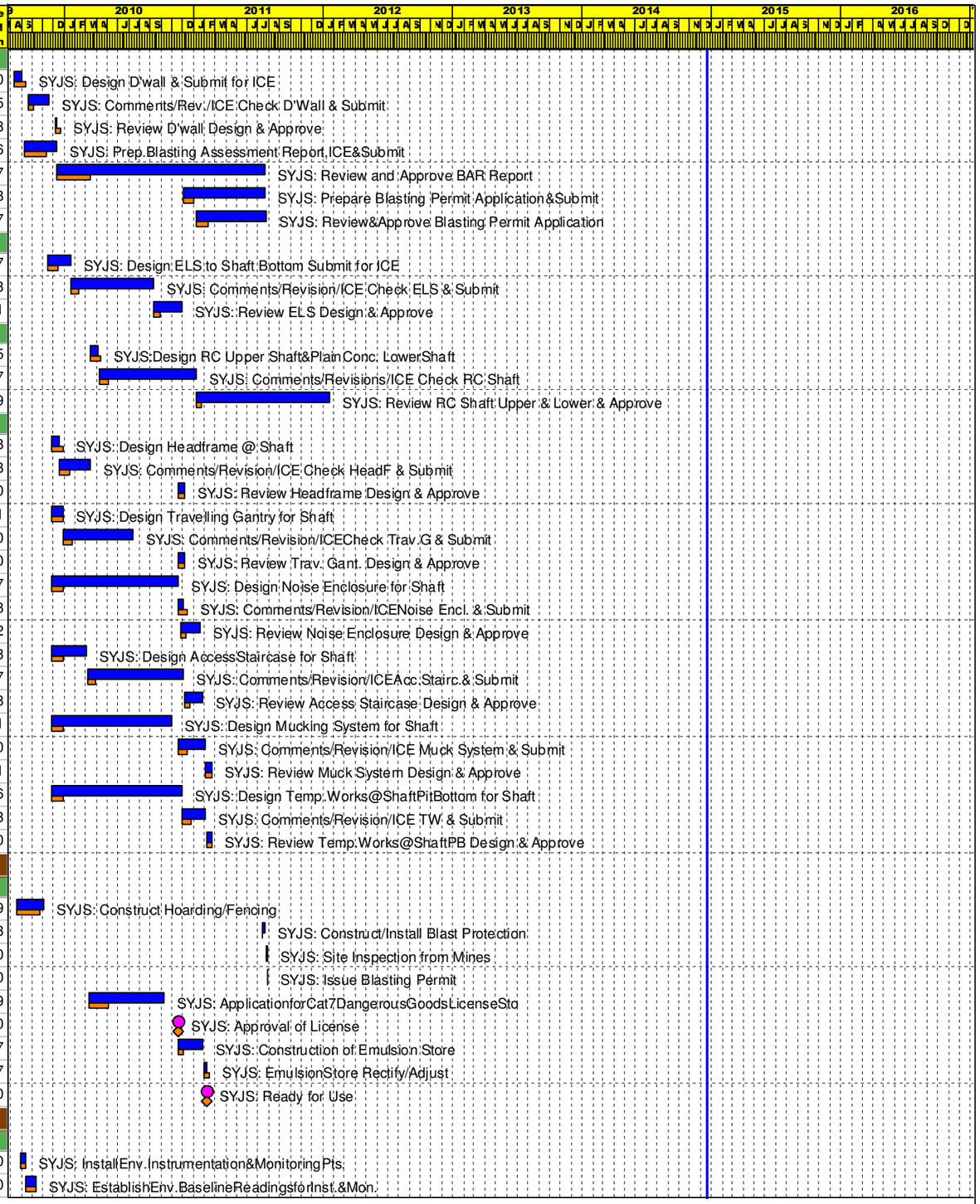
Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
Temporary Wall & ELS to Formation/Rockhead Level								
SYJS10010	SYJS: Design D'wall & Submit for ICE	28	12-Aug-09 A	01-Sep-09 A	100%			10
SYJS10012	SYJS: Comments/Rev./ICE Check D'Wall & Submit	11	22-Sep-09 A	17-Nov-09 A	100%			-35
SYJS10020	SYJS: Review D'wall Design & Approve	14	05-Dec-09 A	11-Dec-09 A	100%			8
SYJS10095	SYJS: Prep.Blasting Assessment Report,ICE&Submit	50	09-Sep-09 A	09-Dec-09 A	100%			-26
SYJS10100	SYJS: Review and Approve BAR Report	77	10-Dec-09 A	20-Jul-11 A	100%			-407
SYJS10105	SYJS: Prepare Blasting Permit Application&Submit	24	02-Dec-10 A	22-Jul-11 A	100%			-168
SYJS10110	SYJS: Review&Approve Blasting Permit Application	25	10-Jan-11 A	23-Jul-11 A	100%			-137
ELS in Rock to Shaft Bottom Level								
SYJS10200	SYJS: Design ELS to Shaft Bottom Submit for ICE	28	13-Nov-09 A	18-Jan-10 A	100%			-27
SYJS10202	SYJS: Comments/Revision/ICE Check ELS & Submit	21	19-Jan-10 A	09-Sep-10 A	100%			-173
SYJS10204	SYJS: Review ELS Design & Approve	14	10-Sep-10 A	27-Nov-10 A	100%			-51
Permanent Works								
SYJS10206	SYJS:Design RC Upper Shaft&PlainConc. LowerShaft	24	16-Mar-10 A	07-Apr-10 A	100%			5
SYJS10208	SYJS: Comments/Revisions/ICE Check RC Shaft	21	08-Apr-10 A	07-Jan-11 A	100%			-207
SYJS10210	SYJS: Review RC Shaft Upper & Lower & Approve	14	08-Jan-11 A	20-Jan-12 A	100%			-299
Temporary Works & Other Design								
SYJS10300	SYJS: Design Headframe @ Shaft	28	26-Nov-09 A	18-Dec-09 A	100%			8
SYJS10302	SYJS: Comments/Revision/ICE Check HeadF & Submit	21	19-Dec-09 A	15-Mar-10 A	100%			-48
SYJS10304	SYJS: Review Headframe Design & Approve	14	20-Nov-10 A	06-Dec-10 A	100%			0
SYJS10306	SYJS: Design Travelling Gantry for Shaft	28	26-Nov-09 A	28-Dec-09 A	100%			1
SYJS10308	SYJS: Comments/Revision/ICECheck Trav.G & Submit	21	29-Dec-09 A	13-Jul-10 A	100%			-140
SYJS10310	SYJS: Review Trav. Gant. Design & Approve	14	20-Nov-10 A	06-Dec-10 A	100%			0
SYJS10312	SYJS: Design Noise Enclosure for Shaft	28	26-Nov-09 A	18-Nov-10 A	100%			-267
SYJS10314	SYJS: Comments/Revision/ICENoise Encl. & Submit	21	19-Nov-10 A	03-Dec-10 A	100%			8
SYJS10316	SYJS: Review Noise Enclosure Design & Approve	14	26-Nov-10 A	20-Jan-11 A	100%			-32
SYJS10318	SYJS: Design AccessStaircase for Shaft	28	26-Nov-09 A	05-Mar-10 A	100%			-53
SYJS10320	SYJS: Comments/Revision/ICEAcc.Stairc.& Submit	21	06-Mar-10 A	04-Dec-10 A	100%			-207
SYJS10322	SYJS: Review Access Staircase Design & Approve	14	06-Dec-10 A	25-Jan-11 A	100%			-28
SYJS10324	SYJS: Design Mucking System for Shaft	28	26-Nov-09 A	30-Oct-10 A	100%			-251
SYJS10326	SYJS: Comments/Revision/ICE Muck System & Submit	21	20-Nov-10 A	01-Feb-11 A	100%			-40
SYJS10328	SYJS: Review Muck System Design & Approve	14	02-Feb-11 A	21-Feb-11 A	100%			-1
SYJS10330	SYJS: Design Temp.Works@ShaftPitBottom for Shaft	28	26-Nov-09 A	29-Nov-10 A	100%			-276
SYJS10332	SYJS: Comments/Revision/ICE TW & Submit	21	30-Nov-10 A	02-Feb-11 A	100%			-33
SYJS10334	SYJS: Review Temp.Works@ShaftPB Design & Approve	14	07-Feb-11 A	22-Feb-11 A	100%			0
Preliminaries Works								
No Significant Evnt								
SYJS0160	SYJS: Construct Hoarding/Fencing	55	18-Aug-09 A	03-Nov-09 A	100%			-9
SYJS10115	SYJS: Construct/Install Blast Protection	2	12-Jul-11 A	22-Jul-11 A	100%			-8
SYJS10120	SYJS: Site Inspection from Mines	4	25-Jul-11 A	28-Jul-11 A	100%			0
SYJS10125	SYJS: Issue Blasting Permit	1	29-Jul-11 A	29-Jul-11 A	100%			0
SYJS10130	SYJS: ApplicationforCat7DangerousGoodsLicenseSto	45	12-Mar-10 A	07-Oct-10 A	100%			-129
SYJS10132	SYJS: Approval of License	0		17-Nov-10 A	100%			0
SYJS10134	SYJS: Construction of Emulsion Store	14	17-Nov-10 A	28-Jan-11 A	100%			-47
SYJS10135	SYJS: EmulsionStore Rectify/Adjust	12	31-Jan-11 A	07-Feb-11 A	100%			7
SYJS10136	SYJS: Ready for Use	0	08-Feb-11 A		100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
SYJS0174	SYJS: InstallEnv.Instrumentation&MonitoringPts.	14	28-Aug-09 A	12-Sep-09 A	100%			0
SYJS0177	SYJS: EstablishEnv.BaselineReadingsforInst.&Mon.	24	14-Sep-09 A	13-Oct-09 A	100%			0



Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66 **Sheet 34 of 60**

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014 © Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
EBS Works								
SYJS0362	SYJS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	09-Nov-09 A	100%			-7
Markers/UMP's/Others(Same note as Piez.)								
SYJS0611	SYJS: Install GS Markers (9 Nos.)	50	01-Sep-09 A	23-Oct-09 A	100%			6
SYJS0613	SYJS: JointSurvey&EstablishBaseline Readings GSM	14	23-Oct-09 A	17-Nov-09 A	100%			-7
SYJS0613A	SYJS: Install GS Markers Addt'l VO10,19 (6 Nos.)	30	22-Feb-10 A	20-Mar-10 A	100%			6
SYJS0613C	SYJS: JointSurvey&EstablishBaseline Readings GSM	14	20-Mar-10 A	15-Apr-10 A	100%			-8
SYJS0615	SYJS: Approval/Consent frm. Bldg./StructureOwner	14	20-Oct-09 A	23-Oct-09 A	100%			10
SYJS0617	SYJS: Install SS Markers (42 Nos.)	50	24-Oct-09 A	27-Apr-10 A	100%			-102
SYJS0619	SYJS: JointSurvey&EstablishBaseline Readings SSM	14	28-Apr-10 A	14-May-10 A	100%			0
SYJS0619A	SYJS: Install SS MarkersAddt'l VO8,21 (34 Nos.)	50	11-Jan-10 A	12-May-10 A	100%			-50
SYJS0619C	SYJS: JointSurvey&EstablishBaseline Readings SSM	14	13-May-10 A	26-May-10 A	100%			2
SYJS0621	SYJS: Install UMP (4 Nos.)	75	01-Sep-09 A	09-Apr-10 A	100%			-106
SYJS0623	SYJS: JointSurvey&EstablishBaseline Readings UMP	14	20-Apr-10 A	06-May-10 A	100%			0
Piezometers(NearbyPTWorPScovered inthisInstalln)								
SYJS0391	SYJS: Excav.Permit/TTA/TTM ApplicationforBH855PW	24	31-Jul-09 A	26-Aug-09 A	100%			1
SYJS0396	SYJS: Installation Works of BH855 Piezometer	21	01-Sep-09 A	28-Sep-09 A	100%			-3
SYJS0399	SYJS: BH855 Piezometer Baseline Establishment	26	29-Sep-09 A	03-Nov-09 A	100%			-2
SYJS0403	SYJS: Excav.Permit/TTA/TTM ApplicationforBH851PW	24	28-Sep-09 A	06-Nov-09 A	100%			-8
SYJS0407	SYJS: Installation Works of BH851 Piezometer	21	14-Jan-10 A	28-Jan-10 A	100%			8
SYJS0409	SYJS: BH851 Piezometer Baseline Establishment	26	29-Jan-10 A	19-Feb-10 A	100%			10
SYJS0501	SYJS: Excav.Permit/TTA/TTM ApplicationforBH850PW	24	29-Oct-09 A	06-Nov-09 A	100%			16
SYJS0503	SYJS: Installation Works of BH850 Piezometer	21	07-Dec-09 A	11-Jan-10 A	100%			-8
SYJS0507	SYJS: BH850 Piezometer Baseline Establishment	26	12-Jan-10 A	03-Feb-10 A	100%			6
SYJS0601	SYJS: Excav.Permit/TTA/TTM ApplicationforBH84PW	24	29-Oct-09 A	06-Nov-09 A	100%			16
SYJS0603	SYJS: Installation Works of BH849 Piezometer	21	20-Feb-10 A	19-Apr-10 A	100%			-28
SYJS0603A	SYJS: Reinstallation Works of BH849 Piezometer	13	24-May-10 A	10-Aug-10 A	100%			-53
SYJS0607	SYJS: BH849 Piezometer Baseline Establishment	26	11-Aug-10 A	09-Sep-10 A	100%			0
Electrical & Mechanical Installations								
Power Supply Application								
SYJS0700	SYJS: LV Application to HKEC	6	17-Jul-09 A	17-Jul-09 A	100%			5
SYJS0715	SYJS: 11KV Application to HKEC	6	28-Aug-09 A	28-Aug-09 A	100%			5
SYJS0726	SYJS: Drawpits & Ducts Installation	16	21-Jun-10 A	05-Aug-10 A	100%			-23
SYJS0728	SYJS: 11 KV Cable Pulling In	14	20-Nov-10 A	10-Dec-10 A	100%			-4
SYJS0730	SYJS: Construct HVDP Foundation	9	21-Jun-10 A	30-Jun-10 A	100%			0
SYJS0733	SYJS: Install HVDP	2	03-Aug-10 A	04-Aug-10 A	100%			0
SYJS0736	SYJS: Construct Switchroom Foundation	6	10-Sep-10 A	14-Sep-10 A	100%			2
SYJS0739	SYJS: Deliver and Install Switchroom	2	20-Oct-10 A	21-Oct-10 A	100%			0
SYJS0742	SYJS: HVDP to Switchroom cable to fit	7	20-Nov-10 A	27-Nov-10 A	100%			0
SYJS0745	SYJS: Install Main Earthing	16	27-Nov-10 A	29-Nov-10 A	100%			14
SYJS0748	SYJS: Testing & Commissioning 11kV Supply	2	09-Dec-10 A	14-Mar-11 A	100%			-76
SYJS0751	SYJS: HKEC Handover	1	11-Dec-10 A	11-Dec-10 A	100%			0
SYJS0752	SYJS: Clear Out D-Wall Construction Equipment	0		20-Nov-10 A	100%			0
SYJS0754	SYJS: Install Containment	25	20-Dec-10 A	23-Apr-11 A	100%			-78
SYJS0757	SYJS: Construct Substation Footings	18	10-Nov-10 A	15-Nov-10 A	100%			13
SYJS0760	SYJS: Install Lower Substation (Containers)	2	13-Dec-10 A	14-Dec-10 A	100%			0
SYJS0763	SYJS: Install Spacer Units	2	15-Dec-10 A	15-Dec-10 A	100%			1
SYJS0766	SYJS: Install Upper Substation (Containers)	2	16-Dec-10 A	17-Dec-10 A	100%			0
SYJS0769	SYJS: Install Containment	2	30-Dec-10 A	31-Dec-10 A	100%			1
SYJS0772	SYJS: Install 11kV Cable	4	03-Jan-11 A	18-Jan-11 A	100%			-10

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MP66

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

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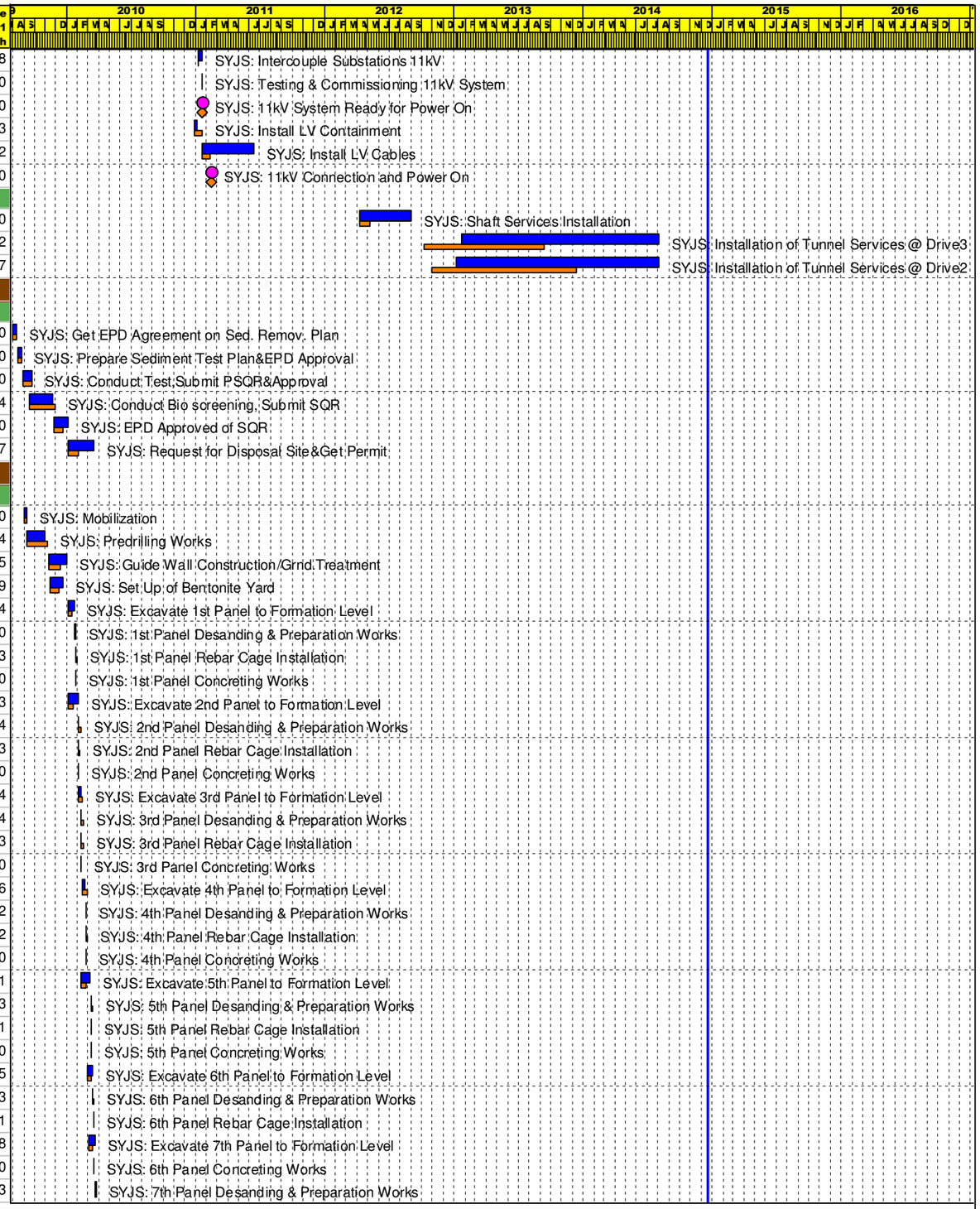
Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
SYJS0775	SYJS: Intercouple Substations 11kV	2	07-Jan-11 A	18-Jan-11 A	100%			-8
SYJS0778	SYJS: Testing & Commissioning 11kV System	2	18-Jan-11 A	19-Jan-11 A	100%			0
SYJS0781	SYJS: 11kV System Ready for Power On	0		20-Jan-11 A	100%			0
SYJS0784	SYJS: Install LV Containment	21	27-Dec-10 A	05-Jan-11 A	100%			13
SYJS0787	SYJS: Install LV Cables	17	20-Jan-11 A	13-Jun-11 A	100%			-102
SYJS0790	SYJS: 11kV Connection and Power On	0		12-Feb-11 A	100%			0
Unit Installations & Cablings								
SYJS01100	SYJS: Shaft Services Installation	24	09-Apr-12 A	03-Sep-12 A	100%			-100
SYJS01111	SYJS: Installation of Tunnel Services @ Drive3	278	21-Jan-13 A	02-Aug-14 A	100%			-262
SYJS01310	SYJS: Installation of Tunnel Services @ Drive2	334	08-Jan-13 A	02-Aug-14 A	100%			-187
Marine Dumping Permit								
No Significant Evnt								
SYJS0320	SYJS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0
SYJS0330	SYJS: Prepare Sediment Test Plan&EPD Approval	12	14-Aug-09 A	27-Aug-09 A	100%			0
SYJS0340	SYJS: Conduct Test,Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0
SYJS0350	SYJS: Conduct Bio screening, Submit SQR	60	16-Sep-09 A	23-Nov-09 A	100%			4
SYJS0360	SYJS: EPD Approved of SQR	24	24-Nov-09 A	04-Jan-10 A	100%			-10
SYJS0370	SYJS: Request for Disposal Site&Get Permit	24	05-Jan-10 A	19-Mar-10 A	100%			-37
Diaphragm Wall								
No Significant Evnt								
SYJS0200	SYJS: Mobilization	6	03-Sep-09 A	09-Sep-09 A	100%			0
SYJS0205	SYJS: Predrilling Works	46	10-Sep-09 A	31-Oct-09 A	100%			4
SYJS0207	SYJS: Guide Wall Construction/Grnd.Treatment	28	12-Nov-09 A	02-Jan-10 A	100%			-15
SYJS0230	SYJS: Set Up of Bentonite Yard	21	16-Nov-09 A	20-Dec-09 A	100%			-9
SYJS0263	SYJS: Excavate 1st Panel to Formation Level	12	04-Jan-10 A	21-Jan-10 A	100%			-4
SYJS0265	SYJS: 1st Panel Desanding & Preparation Works	5	22-Jan-10 A	27-Jan-10 A	100%			0
SYJS0267	SYJS: 1st Panel Rebar Cage Installation	4	27-Jan-10 A	27-Jan-10 A	100%			3
SYJS0269	SYJS: 1st Panel Concreting Works	1	27-Jan-10 A	27-Jan-10 A	100%			0
SYJS0271	SYJS: Excavate 2nd Panel to Formation Level	12	06-Jan-10 A	03-Feb-10 A	100%			-13
SYJS0273	SYJS: 2nd Panel Desanding & Preparation Works	5	03-Feb-10 A	03-Feb-10 A	100%			4
SYJS0275	SYJS: 2nd Panel Rebar Cage Installation	4	03-Feb-10 A	03-Feb-10 A	100%			3
SYJS0277	SYJS: 2nd Panel Concreting Works	1	04-Feb-10 A	04-Feb-10 A	100%			0
SYJS0279	SYJS: Excavate 3rd Panel to Formation Level	12	01-Feb-10 A	09-Feb-10 A	100%			4
SYJS0281	SYJS: 3rd Panel Desanding & Preparation Works	5	10-Feb-10 A	10-Feb-10 A	100%			4
SYJS0283	SYJS: 3rd Panel Rebar Cage Installation	4	11-Feb-10 A	11-Feb-10 A	100%			3
SYJS0285	SYJS: 3rd Panel Concreting Works	1	11-Feb-10 A	11-Feb-10 A	100%			0
SYJS0287	SYJS: Excavate 4th Panel to Formation Level	12	12-Feb-10 A	22-Feb-10 A	100%			6
SYJS0289	SYJS: 4th Panel Desanding & Preparation Works	4	23-Feb-10 A	24-Feb-10 A	100%			2
SYJS0291	SYJS: 4th Panel Rebar Cage Installation	3	25-Feb-10 A	25-Feb-10 A	100%			2
SYJS0293	SYJS: 4th Panel Concreting Works	1	26-Feb-10 A	26-Feb-10 A	100%			0
SYJS0296	SYJS: Excavate 5th Panel to Formation Level	10	10-Feb-10 A	09-Mar-10 A	100%			-11
SYJS0298	SYJS: 5th Panel Desanding & Preparation Works	4	10-Mar-10 A	10-Mar-10 A	100%			3
SYJS0301	SYJS: 5th Panel Rebar Cage Installation	2	11-Mar-10 A	11-Mar-10 A	100%			1
SYJS0302	SYJS: 5th Panel Concreting Works	1	11-Mar-10 A	11-Mar-10 A	100%			0
SYJS0304	SYJS: Excavate 6th Panel to Formation Level	10	27-Feb-10 A	16-Mar-10 A	100%			-5
SYJS0306	SYJS: 6th Panel Desanding & Preparation Works	4	16-Mar-10 A	16-Mar-10 A	100%			3
SYJS0308	SYJS: 6th Panel Rebar Cage Installation	2	17-Mar-10 A	17-Mar-10 A	100%			1
SYJS0312	SYJS: Excavate 7th Panel to Formation Level	10	03-Mar-10 A	23-Mar-10 A	100%			-8
SYJS0313	SYJS: 6th Panel Concreting Works	1	18-Mar-10 A	18-Mar-10 A	100%			0
SYJS0314	SYJS: 7th Panel Desanding & Preparation Works	4	24-Mar-10 A	24-Mar-10 A	100%			3



Start Date	15-Jul-09
Finish Date	22-Sep-16
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Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

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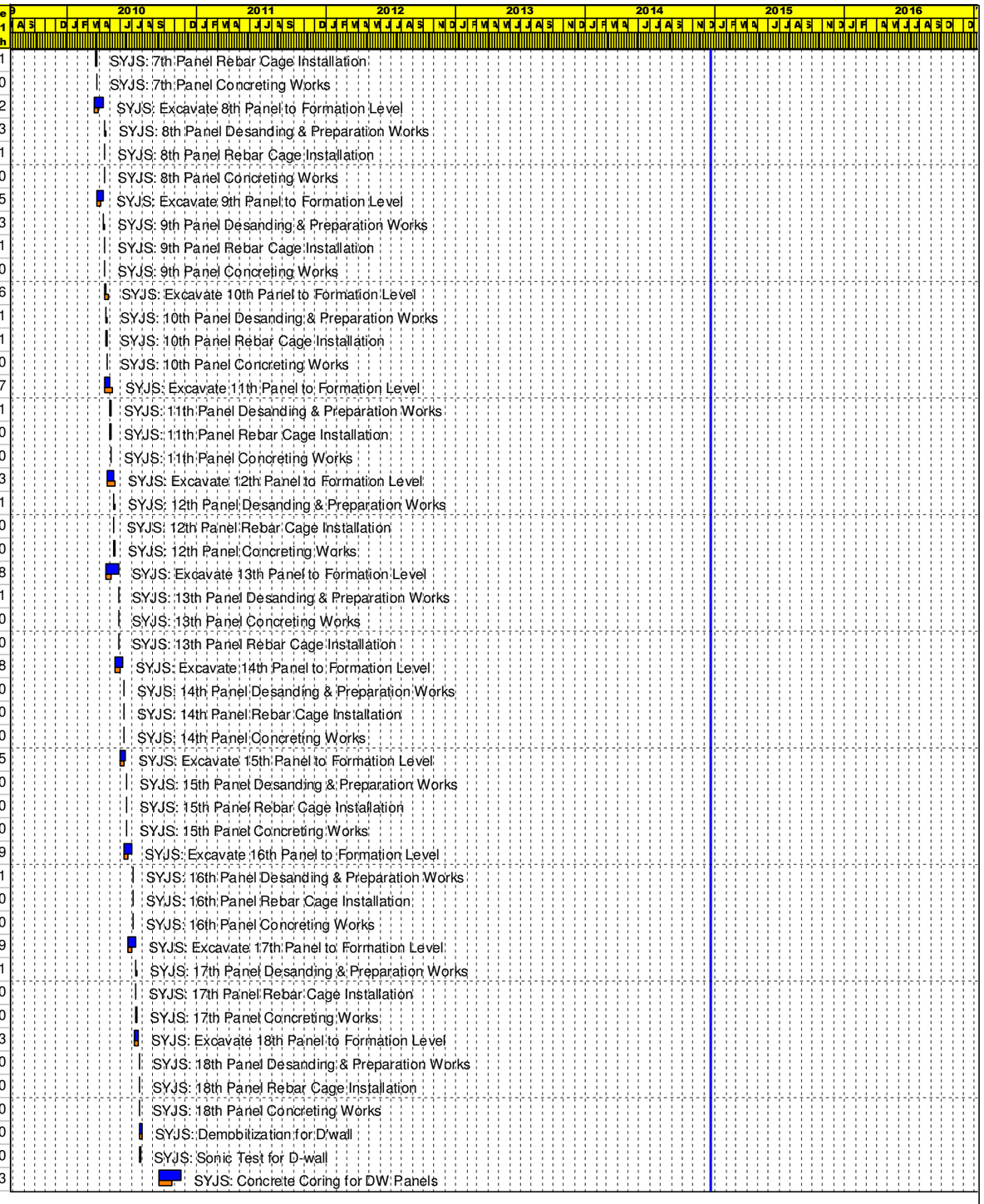
Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014 © Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura..	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SYJS0316	SYJS: 7th Panel Rebar Cage Installation	2	24-Mar-10 A	24-Mar-10 A	100%			1
SYJS0318	SYJS: 7th Panel Concreting Works	1	25-Mar-10 A	25-Mar-10 A	100%			0
SYJS0321	SYJS: Excavate 8th Panel to Formation Level	10	19-Mar-10 A	14-Apr-10 A	100%			-12
SYJS0322	SYJS: 8th Panel Desanding & Preparation Works	4	15-Apr-10 A	15-Apr-10 A	100%			3
SYJS0324	SYJS: 8th Panel Rebar Cage Installation	2	15-Apr-10 A	15-Apr-10 A	100%			1
SYJS0326	SYJS: 8th Panel Concreting Works	1	16-Apr-10 A	16-Apr-10 A	100%			0
SYJS0327	SYJS: Excavate 9th Panel to Formation Level	10	26-Mar-10 A	13-Apr-10 A	100%			-5
SYJS0329	SYJS: 9th Panel Desanding & Preparation Works	4	14-Apr-10 A	14-Apr-10 A	100%			3
SYJS0331	SYJS: 9th Panel Rebar Cage Installation	2	15-Apr-10 A	15-Apr-10 A	100%			1
SYJS0333	SYJS: 9th Panel Concreting Works	1	16-Apr-10 A	16-Apr-10 A	100%			0
SYJS0335	SYJS: Excavate 10th Panel to Formation Level	10	17-Apr-10 A	21-Apr-10 A	100%			6
SYJS0337	SYJS: 10th Panel Desanding & Preparation Works	2	21-Apr-10 A	21-Apr-10 A	100%			1
SYJS0339	SYJS: 10th Panel Rebar Cage Installation	2	22-Apr-10 A	22-Apr-10 A	100%			1
SYJS0341	SYJS: 10th Panel Concreting Works	1	23-Apr-10 A	23-Apr-10 A	100%			0
SYJS0343	SYJS: Excavate 11th Panel to Formation Level	18	17-Apr-10 A	30-Apr-10 A	100%			7
SYJS0345	SYJS: 11th Panel Desanding & Preparation Works	2	03-May-10 A	03-May-10 A	100%			1
SYJS0347	SYJS: 11th Panel Rebar Cage Installation	1	03-May-10 A	03-May-10 A	100%			0
SYJS0349	SYJS: 11th Panel Concreting Works	1	04-May-10 A	04-May-10 A	100%			0
SYJS0351	SYJS: Excavate 12th Panel to Formation Level	18	24-Apr-10 A	12-May-10 A	100%			3
SYJS0353	SYJS: 12th Panel Desanding & Preparation Works	2	13-May-10 A	13-May-10 A	100%			1
SYJS0355	SYJS: 12th Panel Rebar Cage Installation	1	13-May-10 A	13-May-10 A	100%			0
SYJS0357	SYJS: 12th Panel Concreting Works	1	14-May-10 A	14-May-10 A	100%			0
SYJS0359	SYJS: Excavate 13th Panel to Formation Level	12	20-Apr-10 A	25-May-10 A	100%			-18
SYJS0361	SYJS: 13th Panel Desanding & Preparation Works	2	26-May-10 A	26-May-10 A	100%			1
SYJS0365	SYJS: 13th Panel Concreting Works	1	27-May-10 A	27-May-10 A	100%			0
SYJS0367	SYJS: 13th Panel Rebar Cage Installation	1	26-May-10 A	26-May-10 A	100%			0
SYJS0368	SYJS: Excavate 14th Panel to Formation Level	12	17-May-10 A	08-Jun-10 A	100%			-8
SYJS0369	SYJS: 14th Panel Desanding & Preparation Works	2	09-Jun-10 A	10-Jun-10 A	100%			0
SYJS0371	SYJS: 14th Panel Rebar Cage Installation	1	11-Jun-10 A	11-Jun-10 A	100%			0
SYJS0373	SYJS: 14th Panel Concreting Works	1	12-Jun-10 A	12-Jun-10 A	100%			0
SYJS0375	SYJS: Excavate 15th Panel to Formation Level	10	29-May-10 A	15-Jun-10 A	100%			-5
SYJS0377	SYJS: 15th Panel Desanding & Preparation Works	2	17-Jun-10 A	18-Jun-10 A	100%			0
SYJS0379	SYJS: 15th Panel Rebar Cage Installation	1	19-Jun-10 A	19-Jun-10 A	100%			0
SYJS0381	SYJS: 15th Panel Concreting Works	1	19-Jun-10 A	19-Jun-10 A	100%			0
SYJS0383	SYJS: Excavate 16th Panel to Formation Level	10	10-Jun-10 A	03-Jul-10 A	100%			-9
SYJS0385	SYJS: 16th Panel Desanding & Preparation Works	2	05-Jul-10 A	05-Jul-10 A	100%			1
SYJS0387	SYJS: 16th Panel Rebar Cage Installation	1	05-Jul-10 A	05-Jul-10 A	100%			0
SYJS0389	SYJS: 16th Panel Concreting Works	1	06-Jul-10 A	06-Jul-10 A	100%			0
SYJS0389A	SYJS: Excavate 17th Panel to Formation Level	10	21-Jun-10 A	13-Jul-10 A	100%			-9
SYJS0389C	SYJS: 17th Panel Desanding & Preparation Works	2	14-Jul-10 A	14-Jul-10 A	100%			1
SYJS0389E	SYJS: 17th Panel Rebar Cage Installation	1	14-Jul-10 A	14-Jul-10 A	100%			0
SYJS0389G	SYJS: 17th Panel Concreting Works	1	15-Jul-10 A	15-Jul-10 A	100%			0
SYJS0389I	SYJS: Excavate 18th Panel to Formation Level	10	08-Jul-10 A	22-Jul-10 A	100%			-3
SYJS0389K	SYJS: 18th Panel Desanding & Preparation Works	2	23-Jul-10 A	24-Jul-10 A	100%			0
SYJS0389M	SYJS: 18th Panel Rebar Cage Installation	1	24-Jul-10 A	24-Jul-10 A	100%			0
SYJS0389O	SYJS: 18th Panel Concreting Works	1	24-Jul-10 A	24-Jul-10 A	100%			0
SYJS0389Q	SYJS: Demobilization for D'wall	6	26-Jul-10 A	31-Jul-10 A	100%			0
SYJS0390	SYJS: Sonic Test for D-wall	4	26-Jul-10 A	29-Jul-10 A	100%			0
SYJS0390A	SYJS: Concrete Coring for DW Panels	28	18-Sep-10 A	19-Nov-10 A	100%			-23



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Harbour Area Treatment Scheme Stage 2A

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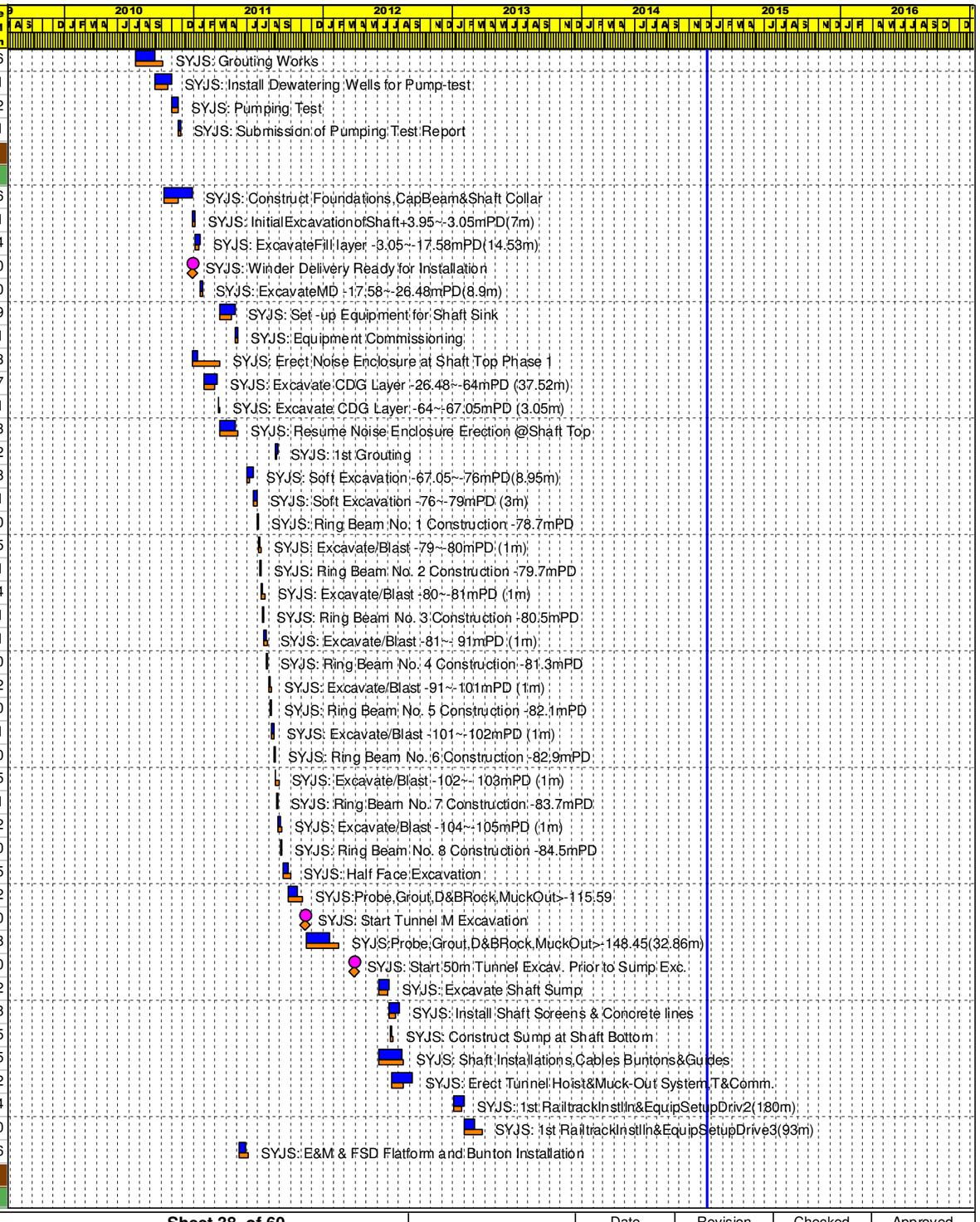
Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SYJS0390C	SYJS: Grouting Works	66	19-Jul-10 A	14-Sep-10 A	100%			16
SYJS0392	SYJS: Install Dewatering Wells for Pump-test	28	12-Sep-10 A	30-Oct-10 A	100%			-11
SYJS0394	SYJS: Pumping Test	14	01-Nov-10 A	18-Nov-10 A	100%			-2
SYJS0397	SYJS: Submission of Pumping Test Report	6	19-Nov-10 A	26-Nov-10 A	100%			-1
Shaft Excavation								
General Works								
SYJS0500	SYJS: Construct Foundations,CapBeam&Shaft Collar	32	09-Oct-10 A	29-Dec-10 A	100%			-36
SYJS0510	SYJS: InitialExcavationofShaft+3.95~-3.05mPD(7m)	4	30-Dec-10 A	03-Jan-11 A	100%			1
SYJS0512	SYJS: ExcavateFill layer -3.05~-17.58mPD(14.53m)	10	04-Jan-11 A	19-Jan-11 A	100%			-4
SYJS0513	SYJS: Winder Delivery Ready for Installation	0	28-Dec-10 A		100%			0
SYJS0514	SYJS: ExcavateMD -17.58~-26.48mPD(8.9m)	8	20-Jan-11 A	28-Jan-11 A	100%			0
SYJS0520	SYJS: Set -up Equipment for Shaft Sink	28	14-Mar-11 A	26-Apr-11 A	100%			-9
SYJS0521	SYJS: Equipment Commissioning	7	27-Apr-11 A	06-May-11 A	100%			-1
SYJS0522	SYJS: Erect Noise Enclosure at Shaft Top Phase 1	64	28-Dec-10 A	10-Jan-11 A	100%			53
SYJS0525	SYJS: Excavate CDG Layer -26.48~-64mPD (37.52m)	25	29-Jan-11 A	09-Mar-11 A	100%			-7
SYJS0525B	SYJS: Excavate CDG Layer -64~-67.05mPD (3.05m)	4	10-Mar-11 A	12-Mar-11 A	100%			1
SYJS0527	SYJS: Resume Noise Enclosure Erection @Shaft Top	42	14-Mar-11 A	28-Apr-11 A	100%			3
SYJS0542	SYJS: 1st Grouting	4	20-Aug-11 A	26-Aug-11 A	100%			-2
SYJS0543	SYJS: Soft Excavation -67.05~-76mPD(8.95m)	8	30-May-11 A	17-Jun-11 A	100%			-8
SYJS0543B	SYJS: Soft Excavation -76~-79mPD (3m)	9	18-Jun-11 A	27-Jun-11 A	100%			1
SYJS0543E	SYJS: Ring Beam No. 1 Construction -78.7mPD	4	28-Jun-11 A	03-Jul-11 A	100%			0
SYJS0543G	SYJS: Excavate/Blast -79~-80mPD (1m)	6	04-Jul-11 A	04-Jul-11 A	100%			5
SYJS0543I	SYJS: Ring Beam No. 2 Construction -79.7mPD	4	05-Jul-11 A	09-Jul-11 A	100%			-1
SYJS0543K	SYJS: Excavate/Blast -80~-81mPD (1m)	6	11-Jul-11 A	13-Jul-11 A	100%			4
SYJS0543M	SYJS: Ring Beam No. 3 Construction -80.5mPD	4	14-Jul-11 A	16-Jul-11 A	100%			1
SYJS0543O	SYJS: Excavate/Blast -81~- 91mPD (1m)	6	18-Jul-11 A	25-Jul-11 A	100%			1
SYJS0543Q	SYJS: Ring Beam No. 4 Construction -81.3mPD	4	26-Jul-11 A	29-Jul-11 A	100%			0
SYJS0543S	SYJS: Excavate/Blast -91~-101mPD (1m)	6	30-Jul-11 A	04-Aug-11 A	100%			2
SYJS0543U	SYJS: Ring Beam No. 5 Construction -82.1mPD	4	05-Aug-11 A	09-Aug-11 A	100%			0
SYJS0543W	SYJS: Excavate/Blast -101~-102mPD (1m)	6	09-Aug-11 A	15-Aug-11 A	100%			1
SYJS0543Y	SYJS: Ring Beam No. 6 Construction -82.9mPD	4	16-Aug-11 A	19-Aug-11 A	100%			0
SYJS0544A	SYJS: Excavate/Blast -102~- 103mPD (1m)	6	20-Aug-11 A	20-Aug-11 A	100%			5
SYJS0544C	SYJS: Ring Beam No. 7 Construction -83.7mPD	4	22-Aug-11 A	26-Aug-11 A	100%			-1
SYJS0544E	SYJS: Excavate/Blast -104~-105mPD (1m)	6	27-Aug-11 A	02-Sep-11 A	100%			2
SYJS0544G	SYJS: Ring Beam No. 8 Construction -84.5mPD	4	03-Sep-11 A	07-Sep-11 A	100%			0
SYJS0544I	SYJS: Half Face Excavation	13	09-Sep-11 A	23-Sep-11 A	100%			5
SYJS0575	SYJS:Probe,Grout,D&BRock,MuckOut>-115.59	31	26-Sep-11 A	20-Oct-11 A	100%			12
SYJS0575A	SYJS: Start Tunnel M Excavation	0	12-Nov-11 A		100%			0
SYJS0577	SYJS:Probe,Grout,D&BRock,MuckOut>-148.45(32.86m)	74	14-Nov-11 A	19-Jan-12 A	100%			18
SYJS0577A	SYJS: Start 50m Tunnel Excav. Prior to Sump Exc.	0	27-Mar-12 A		100%			0
SYJS0585	SYJS: Excavate Shaft Sump	21	07-Jun-12 A	05-Jul-12 A	100%			-2
SYJS0589	SYJS: Install Shaft Screens & Concrete lines	16	06-Jul-12 A	02-Aug-12 A	100%			-8
SYJS0635	SYJS: Construct Sump at Shaft Bottom	7	10-Jul-12 A	11-Jul-12 A	100%			5
SYJS0642	SYJS: Shaft Installations,Cables Buntons&Guides	60	05-Jun-12 A	09-Aug-12 A	100%			5
SYJS0665	SYJS: Erect Tunnel Hoist&Muck-Out System,T&Comm.	30	12-Jul-12 A	10-Sep-12 A	100%			-22
SYJS0670	SYJS: 1st RailtrackInstlln&EquipSetupDriv2(180m)	21	03-Jan-13 A	31-Jan-13 A	100%			-4
SYJS0673	SYJS: 1st RailtrackInstlln&EquipSetupDrive3(93m)	43	01-Feb-13 A	03-Mar-13 A	100%			20
SYS0521B	SYJS: E&M & FSD Flatform and Bunton Installation	25	07-May-11 A	28-May-11 A	100%			6
Shaft Sinking Equipments & Installations								
Shaft Sinking Line Assembly								



Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

MP66 **Sheet 38 of 60**

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SYJS3550	SYJS: Install Shaft Bunton @ 6m Intervals	100	16-Apr-11 A	20-Jul-12 A	100%			-281
SYJS3555	SYJS: Install Double Deck Sinking Stage	4	10-May-11 A	13-May-11 A	100%			0
SYJS3560	SYJS: Install Fixed Guides for Crosshead &Kibble	114	18-May-11 A	20-Jul-12 A	100%			-241
SYJS3565	SYJS: Install Crosshead & Kibble	2	21-May-11 A	23-May-11 A	100%			0
SYJS3570	SYJS: Erect FSD Ladder Way & landings	102	24-May-11 A	20-Jul-12 A	100%			-248
SYJS3575	SYJS:Kibble Modification& Vert.Haulage Fit Works	4	12-Jul-12 A	16-Jul-12 A	100%			0
SYJS3700	SYJS:DismantleShaftBottomInstallations&Equipts.	12	10-Jan-15	24-Jan-15	0%	372	372	-8
SYJS3710	SYJS:DismantleNoiseEnclosure&SSEquipts.	14	24-Jan-15	10-Feb-15	0%	482	482	-8
Shaft Construction								
No Significant Evnt								
SYJS0835	SYJS: Blinding Layer & Base Slab for Shaft	8	30-Jan-15*	07-Feb-15	0%	368	368	0
SYJS0840	SYJS: Bank shunt concreting	9	09-Feb-15	18-Feb-15	0%	368	368	0
SYJS0865	SYJS: Construct Vert Shft to Tun Invert -148mPD	20	21-Feb-15	16-Mar-15	0%	368	368	0
SYJS0925	SYJS: Construct Transition & Vert Shft -148m PD	7	17-Mar-15	24-Mar-15	0%	368	368	0
SYJS0927	SYJS: Construct Shaft to -117.59mPD(30.41m)	11	25-Mar-15	08-Apr-15	0%	368	368	0
SYJS0927B	SYJS: Construct Shaft to -115.61mPD(2m)	4	09-Apr-15	13-Apr-15	0%	368	368	0
SYJS0927C	SYJS: Start Tunnel M Lining	0	14-Apr-15		0%	423	423	0
SYJS0930	SYJS: Construct Shaft to -28mPD (87.61m)	22	14-Apr-15	09-May-15	0%	368	368	0
SYJS0932	SYJS: Construct Shaft 2mDia Pipe End	9	11-May-15	20-May-15	0%	368	368	0
SYJS0935	SYJS: Construct Shaft to -5mPD	8	21-May-15	30-May-15	0%	368	368	0
SYJS0938	SYJS: Construct 2m Dia Pipe End	12	01-Jun-15	13-Jun-15	0%	368	368	0
SYJS0940	SYJS: Construct Shaft to top incldg.ScumChamber	14	13-Jun-15	30-Jun-15	0%	368	368	0
SYJS1055	SYJS: Clear Area & Install Multi-Part Cover	1	01-Jul-15	01-Jul-15	0%	449	449	0
Deodourization Chamber								
No Significant Evnt								
SYJS1700	SYJS:Confirmation to conduct AMA	60	20-Aug-12 A	24-Oct-12 A	100%			-6
SYJS1800	SYJS:Conduct Air Modelling Assessment & Approval	60	25-Oct-12 A	25-Oct-12 A	100%			59
SYJS1802	SYJS: Air Modelling Submission	15	26-Oct-12 A	27-Oct-12 A	100%			13
SYJS1804	SYJS: Review of Assessment and Approval	180	28-Oct-12 A	31-Oct-12 A	100%			176
SYJS1806	SYJS: Design Deodourization System	60	20-Mar-13 A	07-May-13 A	100%			11
SYJS1808	SYJS: ICE Review and Certification	30	08-May-13 A	06-Jun-13 A	100%			0
SYJS1810	SYJS: Deodourization System Submission	15	25-Jan-14 A	08-Feb-14 A	100%			-231
SYJS1812	SYJS: Deodourization System - Review Requirement	60	01-Jan-14 A	01-Mar-14 A	100%			0
SYJS1814	SYJS: Review of Deodourization System & Approval	35	31-May-14 A	29-Aug-14 A	100%			-56
SYJS1816	SYJS:FSD Submission /DG Licence	90	02-Mar-14 A	30-May-14 A	100%			-207
SYJS1818	SYJS: FSD Submission Approval	56	05-Sep-14 A	31-Oct-14 A	100%			0
SYJS1820	SYJS: Procurement - Material Equipments	63	30-Aug-14 A	26-Oct-14 A	100%			6
SYJS1824	SYJS: RC Chamber Temp. Works Des & ELS Works	69	30-Aug-14 A	09-Nov-14 A	100%			-3
SYJS1824B	SYJS: Complete Tunnel Excavation	0		30-Aug-14 A	100%			0
SYJS1825	SYJS: Start Shaft Bottom Construction	0	30-Jan-15		0%	602	602	0
SYJS1826	SYJS: Complete Shaft Construction to top	0		30-Jun-15	0%	450	450	0
SYJS1828	SYJS: RC Chamber Excavation	85	03-Dec-14 A	17-Mar-15	18%	14	14	-22
SYJS1830	SYJS: RC Chamber Excav. Complete & Blinding	2	17-Mar-15	19-Mar-15	0%	16	16	-28
SYJS1832	SYJS: RC Chamb. Construction & Waterproofing	80	19-Mar-15	07-Jun-15	0%	16	16	-28
SYJS1834	SYJS: RC Chamber Backfilling	14	07-Jun-15	21-Jun-15	0%	459	459	-28
SYJS1835	SYJS: Procurement - Factory Testing	60	04-Mar-14 A	02-May-14 A	100%			0
SYJS1836	SYJS: Material & Equipment & Delivery	110	01-Jan-15*	20-Apr-15	0%	106	106	0
SYJS1838	SYJS: Utilities Application & Connection	42	07-Jun-15	19-Jul-15	0%	16	16	-28
SYJS1840	SYJS: DO System Installation	41	08-Jun-15*	19-Jul-15	0%	16	16	-28
SYJS1842	SYJS: Testing & Commissioning	9	19-Jul-15	28-Jul-15	0%	16	16	-28

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Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

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Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SYJS1845	SYJS: FSD/EMSD Inspections	1	28-Jul-15	29-Jul-15	0%	421	421	-28
Miscellaneous Works								
No Significant Evnt								
SYJS2010	SYJS: Install E&M Services	4	23-Jul-15	28-Jul-15	0%	14	14	-23
SYJS2020	SYJS: Reinstatement & Clear DS Area	8	28-Jul-15	05-Aug-15	0%	16	16	-28
SYJS2025	SYJS:Complete All Works at SYPJS (KD-10)	0		05-Aug-15	0%	414	414	-28
SYJS2030	SYJS: Landscaping & Planting Works	32	05-Aug-15*	06-Sep-15	0%	16	16	-28
SYJS2040	SYJS: Period of Establishment Works	365	07-Sep-15	06-Sep-16	0%	16	16	-28
SYJS2050	SYJS: End of Establishment Period	0		06-Sep-16	0%	16	16	-28
Stonecutters Island STW Production Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
SCPS10010	SCPS: Design D'wall & Submit for ICE	28	12-Aug-09 A	05-Sep-09 A	100%			6
SCPS10015	SCPS: Comments/Rev./ICE Check D'Wall & Submit	12	22-Sep-09 A	23-Oct-09 A	100%			-14
SCPS10020	SCPS: Review D'wall Design & Approve	14	28-Oct-09 A	17-Dec-09 A	100%			-30
SCPS10050	SCPS:Prep.Blasting Assessment Report, ICE&Submit	50	09-Sep-09 A	09-Dec-09 A	100%			-26
SCPS10055	SCPS: Review and Approve BAR Report	77	10-Dec-09 A	20-Jul-11 A	100%			-407
SCPS10060	SCPS: Prepare Blasting Permit Application&Submit	24	10-Nov-10 A	20-Jul-11 A	100%			-185
SCPS10065	SCPS:Review & Approve Blasting PermitApplication	75	24-Nov-10 A	10-Aug-11 A	100%			-140
ELS in Rock to Shaft Bottom Level								
SCPS10200	SCPS: Design ELS to Shaft Bottom Submit for ICE	28	02-Nov-09 A	18-Jan-10 A	100%			-37
SCPS10202	SCPS: Comments/Revision/ICE Check ELS & Submit	21	19-Jan-10 A	09-Sep-10 A	100%			-173
SCPS10204	SCPS: Review ELS Design & Approve	14	10-Sep-10 A	24-Nov-10 A	100%			-48
Temporary Works & Other Design								
SCPS10300	SCPS: Design Headframe @ Shaft	28	28-Nov-09 A	18-Dec-09 A	100%			10
SCPS10302	SCPS: Comments/Revision/ICE Check HeadF & Submit	21	19-Dec-09 A	15-Mar-10 A	100%			-48
SCPS10304	SCPS: Review Headframe Design & Approve	14	17-Mar-10 A	01-Dec-10 A	100%			-202
SCPS10306	SCPS: Design Travelling Gantry for Shaft	28	28-Nov-09 A	28-Dec-09 A	100%			3
SCPS10308	SCPS: Comments/Revision/ICECheck Trav.G & Submit	21	29-Dec-09 A	13-Jul-10 A	100%			-140
SCPS10310	SCPS: Review Trav. Gant. Design & Approve	14	14-Jul-10 A	29-Nov-10 A	100%			-102
SCPS10312	SCPS: Design Noise Enclosure for Shaft	28	28-Nov-09 A	20-Sep-10 A	100%			-217
SCPS10314	SCPS: Comments/Revision/ICENoise Encl. & Submit	21	21-Sep-10 A	24-Nov-10 A	100%			-32
SCPS10316	SCPS: Review Noise Enclosure Design & Approve	14	25-Nov-10 A	26-Jan-11 A	100%			-38
SCPS10318	SCPS: Design AccessStaircase for Shaft	28	28-Nov-09 A	05-Mar-10 A	100%			-51
SCPS10320	SCPS: Comments/Revision/ICEAcc.Stairc.& Submit	21	06-Mar-10 A	24-Nov-10 A	100%			-198
SCPS10322	SCPS: Review Access Staircase Design & Approve	14	25-Nov-10 A	26-Jan-11 A	100%			-38
SCPS10324	SCPS: Design Mucking System for Shaft	28	28-Nov-09 A	05-Mar-10 A	100%			-51
SCPS10326	SCPS: Comments/Revision/ICE Muck System & Submit	21	06-Mar-10 A	24-Nov-10 A	100%			-198
SCPS10328	SCPS: Review Muck System Design & Approve	14	25-Nov-10 A	18-Mar-11 A	100%			-80
SCPS10330	SCPS: Design Temp.Works@ShaftPitBottom for Shaft	28	20-Apr-10 A	10-Dec-10 A	100%			-168
SCPS10332	SCPS: Comments/Revision/ICE TW & Submit	21	20-Jan-11 A	21-Oct-11 A	100%			-206
SCPS10334	SCPS: Review Temp.Works@ShaftPB Design & Approve	14	22-Oct-11 A	03-Feb-12 A	100%			-71
Preliminaries Works								
No Significant Evnt								
SCPS0160	SCPS: Construct Hoarding/Fencing	45	18-Aug-09 A	10-Oct-09 A	100%			0
SCPS0180	SCPS: Provide 2M Access to DG Store	3	01-Sep-09 A	03-Sep-09 A	100%			0
SCPS10070	SCPS: Construct/Install Blast Protection	2	28-Jul-11 A	29-Jul-11 A	100%			0
SCPS10075	SCPS: Site Inspection from Mines	4	28-Jul-11 A	10-Aug-11 A	100%			-8
SCPS10080	SCPS: Issue Blasting Permit	1	11-Aug-11 A	11-Aug-11 A	100%			0
SCPS10090	SCPS: ApplicationforCat7DangerousGoodsLicenseSto	45	12-Mar-10 A	10-May-11 A	100%			-306

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MP66

Harbour Area Treatment Scheme Stage 2A

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Annex H

Calibration Reports for HVSs and Sound Level Meters for All Sites

TSP Monitoring Equipment

Monitoring Station ID	Location	Monitoring Equipment		Last Calibration Date	Next Calibration Date
24-hr and 1-hr TSP		**HVS**	**Calibrator**		
AM1	Chan's Creative School (formerly known as Madam Chan Wai Chow Memorial School)	TE-5170 A-01-46	ORIFICE A-04-06	30 November 2015	29 January 2016
AM2	Rooftop of Hong Kong & Islands Regional Office, WSD	TE-5170 A-01-44	ORIFICE A-04-06	30 November 2015	29 January 2016
AM3	Rooftop of Wan Chai East PTW	TE-5170 A-01-48	ORIFICE A-04-06	8 December 2015	7 February 2016
AM4_2	A location next to Sheung Wan Fire Station	TE-5170 A-01-15	ORIFICE A-04-06	30 November 2015	29 January 2016
AM5	Western Wholesale Food Market	GMW GS-2310 (S/N 0143)	CM-AIR-43 (S/N 0438320)	2 November 2015	2 January 2016
AM5	Western Wholesale Food Market	GMW GS-2310 (S/N 0143)	CM-AIR-43 (S/N 0438320)	2 January 2015	2 March 2016
1-hr TSP					
		LD-3B (A-02-04)		9 November 2015	8 January 2016
		LD-3B (A-02-04)		11 January 2016	10 March 2016
		LD-3B (A-02-08)		28 December 2015	27 February 2016
		LD-3B (A-02-10)		28 December 2015	27 February 2016
		LD-5C (A.25.01)		9 November 2015	8 January 2016
		LD-5C (A.25.02)		9 November 2015	8 January 2016

Monitoring Equipment

Monitoring Equipment	Model & Serial No.	Last Calibration Date	Next Calibration Date
Calibrator	SV30A (N.09.02)	2 November 2015	1 November 2016
	SV30A (N.09.03)	4 October 2015	3 October 2016
	SV30A (N.09.05)	4 October 2015	3 October 2016
	B&K4231 (N.02.03)	24 August 2015	23 August 2015
	Casella CEL-120/1 (S/N 3421612)	15 December 2015	15 December 2016
Sound Level Meter	SVAN957 (N.08.08)	24 August 2015	23 August 2016
	SVAN957 (N.08.09)	24 August 2015	23 August 2016
	SVAN957 (N.08.10)	30 November 2015	29 November 2016
	SVAN957 (N.08.12)	30 November 2015	29 November 2016
	Casella CEL-633A (S/N 3521757)	15 December 2015	15 December 2016

Remarks

Monitoring Station ID	Location
NM1	Rooftop of Chan's Creative School (formerly known as Madam Chan Wai Chow Memorial School)
NM2	Rooftop of Hyde Building
NM3	Rooftop of Goldfield Building
NM4	Rooftop of Block A, Kwan Yick Building Phase III

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11003/46/0002

Station: AM1 - Chan's Creative School Operator: WK

Date: 30-Nov-15 Next Due Date: 29-Jan-16

Equipment No.: A-01-46 Serial No. 1315

Ambient Condition			
Temperature, Ta (K)	293.4	Pressure, Pa (mmHg)	768.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	3-Feb-16	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	11.4	3.42	58.11	8.6	2.97
2	9.5	3.12	53.08	6.9	2.66
3	6.9	2.66	45.29	5.1	2.29
4	4.8	2.22	37.84	3.4	1.87
5	3.2	1.81	30.96	2.2	1.50

By Linear Regression of Y on X

Slope , mw = 0.0536 **Intercept, bw :** -0.1552

Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.50**

Remarks:

Conducted by: WK Tang Signature: Date: 30/11/15

Checked by: Signature: Date: 30 November 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11003/44/0002

Station: AM2 - Hong Kong & Islands Regional Office, WSD Operator: WK

Date: 30-Nov-15 Next Due Date: 29-Jan-15

Equipment No.: A-01-44 Serial No. 1316

Ambient Condition			
Temperature, Ta (K)	293.6	Pressure, Pa (mmHg)	768.9

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.6	3.45	58.61	8.4	2.94
2	9.8	3.17	53.90	6.7	2.62
3	7.5	2.78	47.20	5.2	2.31
4	5.0	2.27	38.61	3.4	1.87
5	3.3	1.84	31.43	2.1	1.47

By Linear Regression of Y on X

Slope , mw = 0.0529 **Intercept, bw :** -0.1873

Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.24**

Remarks:

Conducted by: wk. Tang Signature: Kwai Date: 30/11/15

Checked by: [illegible] Signature: [illegible] Date: 30 November 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11003/48/0002

Station: AM3 - Wan Chai East PTW Operator: WK

Date: 8-Dec-15 Next Due Date: 7-Feb-16

Equipment No.: A-01-48 Serial No. 1792

Ambient Condition			
Temperature, Ta (K)	288.6	Pressure, Pa (mmHg)	771.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Feb-16	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.5	3.47	58.96	8.1	2.91
2	9.8	3.21	54.46	6.8	2.67
3	7.4	2.79	47.37	5.2	2.33
4	5.2	2.33	39.77	3.4	1.89
5	3.1	1.80	30.79	2.0	1.45

By Linear Regression of Y on X

Slope , mw = 0.0523 **Intercept, bw :** -0.1683

Correlation coefficient* = 0.9995

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.13**

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 8/12/15

Checked by: [illegible] Signature: [illegible] Date: 8 December 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11003/15/0002

Station: AM4_2 - A location within the DSD Central PTW Operator: WK

Date: 30-Nov-15 Next Due Date: 29-Jan-16

Equipment No.: A-01-15 Serial No. 10576

Ambient Condition			
Temperature, Ta (K)	293.8	Pressure, Pa (mmHg)	768.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.6	3.45	58.56	7.9	2.85
2	9.8	3.17	53.86	6.4	2.56
3	7.6	2.79	47.47	5.2	2.31
4	5.2	2.31	39.33	3.3	1.84
5	3.3	1.84	31.41	2.1	1.47

By Linear Regression of Y on X

Slope , mw = 0.0505 **Intercept, bw =** -0.1265

Correlation coefficient* = 0.9987

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.09**

Remarks:

Conducted by: WK Tang Signature: Date: 30/11/15

Checked by: LA Signature: Date: 30 November 2015

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

TISCH Environmental

Equipment No A-04-06

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 04, 2015 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 756.92

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4590	3.2	2.00
2	NA	NA	1.00	1.0330	6.4	4.00
3	NA	NA	1.00	0.9250	7.9	5.00
4	NA	NA	1.00	0.8800	8.8	5.50
5	NA	NA	1.00	0.7260	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0086	0.6913	1.4233		0.9958	0.6825	0.8799
1.0044	0.9723	2.0129		0.9916	0.9599	1.2443
1.0023	1.0835	2.2505		0.9895	1.0697	1.3912
1.0011	1.1377	2.3603		0.9884	1.1231	1.4591
0.9959	1.3718	2.8467		0.9832	1.3542	1.7598
Qstd slope (m) =		2.09317		Qa slope (m) =		1.31071
intercept (b) =		-0.02195		intercept (b) =		-0.01357
coefficient (r) =		0.99997		coefficient (r) =		0.99997
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160108/2
Date of Issue:	2016-01-11
Date Received:	2016-01-08
Date Tested:	2016-01-08
Date Completed:	2016-01-11
Next Due Date:	2016-03-10
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 853944
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 59 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0033

****

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For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/151224/1
Date of Issue:	2015-12-28
Date Received:	2015-12-24
Date Tested:	2015-12-24
Date Completed:	2015-12-28
Next Due Date:	2016-02-27
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095039
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 764 CPM
Equipment No.	: A-02-08

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 59 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031

****

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/151224/3
Date of Issue:	2015-12-28
Date Received:	2015-12-24
Date Tested:	2015-12-24
Date Completed:	2015-12-28
Next Due Date:	2016-02-27
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 59 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0030

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/151106/5
Date of Issue:	2015-11-09
Date Received:	2015-11-06
Date Tested:	2015-11-06
Date Completed:	2015-11-09
Next Due Date:	2016-01-08
Page:	1 of 1

ATTN: **Mr. WK Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: JDHS
Model No.	: LD-5C
Serial No.	: 5L210035
Mass concentration conversion factor	: 0.001 mg/m^3
Equipment No.	: A-25-01

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 64 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.006

****

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APPLICANT: **Cinotech Consultants Limited**
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Test Report No.:	C/151106/6
Date of Issue:	2015-11-09
Date Received:	2015-11-06
Date Tested:	2015-11-06
Date Completed:	2015-11-09
Next Due Date:	2016-01-08

ATTN: **Mr. WK Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: JDHS
Model No.	: LD-5C
Serial No.	: 5L210007
Mass concentration conversion factor	: 0.001 mg/m^3
Equipment No.	: A-25-02

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 64 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.005

****

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APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/150821/3
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 54%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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Laboratory Manager

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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/150821/1
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 54%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/151127/1
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/151127/3
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23851
Microphone No.	: 48532
Equipment No.	: N-08-12

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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Shatin, NT, Hong Kong

Test Report No.:	C/N/151031/1
Date of Issue:	2015-11-02
Date Received:	2015-10-31
Date Tested:	2015-10-31
Date Completed:	2015-11-02
Next Due Date:	2016-11-01
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10965
Equipment No.	: N-09-02

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 56%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/N/151003/1
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 57%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/151003/2
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 57%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/150821/4
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 54%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM5
Calibrated by	:	K.T.Ho
Date	:	02/11/2015

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 0143

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	14 Mar 2015
Slope (m)	:	2.09532
Intercept (b)	:	-0.03812
Correlation Coefficient(r)	:	0.99994

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1020
Ta(K)	:	297

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.0	3.179	1.535	54	54.28
2	13 holes	8.5	2.930	1.417	49	49.25
3	10 holes	6.6	2.582	1.251	42	42.22
4	7 holes	4.6	2.156	1.047	35	35.18
5	5 holes	2.6	1.621	0.792	24	24.12

Sampler Calibration Relationship

Slope(m):40.201 Intercept(b): -7.372 Correlation Coefficient(r): 0.9993

Checked by: Magnum Fan Date: 10/11/2015

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM5
Calibrated by	:	K.T.Ho
Date	:	02/01/2016

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 0143

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	14 Mar 2015
Slope (m)	:	2.09532
Intercept (b)	:	-0.03812
Correlation Coefficient(r)	:	0.99994

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1022
Ta(K)	:	293

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.6	3.298	1.592	57	57.74
2	13 holes	8.5	2.953	1.428	50	50.65
3	10 holes	6.5	2.583	1.251	44	44.57
4	7 holes	4.4	2.125	1.032	36	36.47
5	5 holes	2.7	1.664	0.813	27	27.35

Sampler Calibration Relationship

Slope(m):38.354 Intercept(b): -3.555 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan Date: 08/01/2016

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C156917
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-2756) Date of Receipt / 收件日期 : 4 December 2015

Description / 儀器名稱	:	Acoustic Calibrator
Manufacturer / 製造商	:	Casella
Model No. / 型號	:	CEL-120/1
Serial No. / 編號	:	3421612
Supplied By / 委託者	:	Envirotech Services Co. Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun, New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 December 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Project Engineer

Date of Issue 簽發日期 : 15 December 2015

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C156917
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C153519
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.1	± 0.25	± 0.2
114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 5 Hz	± 0.1

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

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C156918
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-2756) Date of Receipt / 收件日期 : 4 December 2015

Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Casella
Model No. / 型號 : CEL-633A
Serial No. / 編號 : 3521757
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 December 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong
Technical Officer

Certified By 核證 : K C Lee
Project Engineer

Date of Issue 簽發日期 : 15 December 2015

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里 一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C156918
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the Casella Acoustic Calibrator CEL-120/1, S/N : 3421612 was performed before the test.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C150014
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting		Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)		
L_F	A	114.00	1	113.9	± 1.1

6.1.2 Linearity

UUT Setting		Applied Value		UUT Reading (dB)
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	
L_F	A	114.00	1	113.9 (Ref.)
		104.00		103.9
		94.00		93.9

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting		Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)		
L_F	A	114.00	1	113.9	Ref.
L_S				113.9	± 0.3

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

Certificate of Calibration
校正證書

Certificate No. : C156918
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting		Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Time Weighting	Frequency Weighting	Level (dB)	Freq.		
L_F	A	94.00	63 Hz	87.7	-26.2 ± 1.5
			125 Hz	97.7	-16.1 ± 1.5
			250 Hz	105.2	-8.6 ± 1.4
			500 Hz	110.6	-3.2 ± 1.4
			1 kHz	113.9	Ref.
			2 kHz	115.1	+1.2 ± 1.6
			4 kHz	114.8	+1.0 ± 1.6
			8 kHz	112.4	-1.1(+2.1 ; -3.1)
			12.5 kHz	108.3	-4.3(+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting		Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Time Weighting	Frequency Weighting	Level (dB)	Freq.		
L_F	C	94.00	63 Hz	113.0	-0.8 ± 1.5
			125 Hz	113.7	-0.2 ± 1.0
			250 Hz	113.9	0.0 ± 1.0
			500 Hz	113.9	0.0 ± 1.0
			1 kHz	113.9	Ref.
			2 kHz	113.7	-0.2 ± 1.0
			4 kHz	113.0	-0.8 ± 1.0
			8 kHz	110.6	-3.0 (+1.5 ; -3.0)
			12.5 kHz	106.4	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : CEL-251 & S/N : 1950

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

114 dB	: 63 Hz - 125 Hz	: ± 0.45 dB
	250 Hz - 500 Hz	: ± 0.40 dB
	1 kHz	: ± 0.30 dB
	2 kHz - 4 kHz	: ± 0.45 dB
	8 kHz	: ± 0.55 dB
	12.5 kHz	: ± 0.80 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 114 dB)
94 dB	: 1 kHz	: ± 0.10 dB (Ref. 114 dB)

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

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

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TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2015 Rootsmeter S/N 0438320 Ta (K) - 292
Operator Tisch Orifice I.D. - 2454 Pa (mm) - 756.92

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4460	3.2	2.00
2	NA	NA	1.00	1.0300	6.4	4.00
3	NA	NA	1.00	0.9180	7.9	5.00
4	NA	NA	1.00	0.8780	8.7	5.50
5	NA	NA	1.00	0.7240	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0121	0.6999	1.4258		0.9958	0.6886	0.8784
1.0078	0.9785	2.0163		0.9916	0.9627	1.2422
1.0057	1.0955	2.2543		0.9895	1.0779	1.3888
1.0047	1.1443	2.3644		0.9885	1.1258	1.4566
0.9994	1.3805	2.8515		0.9833	1.3582	1.7568
Qstd slope (m) =		2.09532		Qa slope (m) =		1.31205
intercept (b) =		-0.03812		intercept (b) =		-0.02349
coefficient (r) =		0.99994		coefficient (r) =		0.99994
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

Annex I

Event /Action Plans for Air Quality, Noise and Landscape and Visual Monitoring for All Sites

Table I1 Event Action Plan for Air Quality Monitoring

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Action Level				
Exceedance for one sample	• Identify source, investigate the causes of exceedance and propose remedial measures; • Inform IEC and ER; • Repeat measurement to confirm finding; and, • Increase monitoring frequency to daily.	• Check monitoring data submitted by ET; and, • Check Contractor's working method.	• Notify Contractor	• Rectify any unacceptable practice; and, • Amend working methods if appropriate.
Exceedance for two or more consecutive samples	• Identify source; • Inform IEC and ER; • Advise the ER on the effectiveness of the proposed remedial measures; • Repeat measurements to confirm findings; • Increase monitoring frequency to daily; and, • Discuss with IEC and Contractor on remedial actions required;	• 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; and, • Supervise Implementation of remedial measures.	• Confirm receipt of notification of failure in writing; • Notify Contractor, and, • Ensure remedial measures properly implemented.	• Submit proposals for remedial to ER within 3 working days of notification; • Implement the agreed proposals; • Amend proposal if appropriate.

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Limit Level				
Exceedance for one sample	• Identify source, investigate the causes of exceedance and propose remedial measures; • Inform ER, Contractor and EPD; • Repeat measurement to confirm finding; • Increase monitoring frequency to daily; and, • Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER 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 ER on the effectiveness of the proposed remedial measures; and, • Supervise implementation of remedial measures.	• Confirm receipt of notification of failure in writing; • Notify Contractor; and, • Ensure remedial measures properly implemented.	• Take immediate action to avoid further exceedance; • Submit proposals for remedial actions to IEC within 3 working days of notification; • Implement the agreed proposals; and, • Amend proposal if appropriate.
Exceedance for two or more consecutive samples	• Notify IEC, ER, Contractor 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 ER to discuss the remedial actions to be taken; • Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and, • If exceedance stops, cease additional monitoring.	• Check monitoring data submitted by ET; • Check Contractor's working method; • Discuss amongst ER, ET, and Contractor on the potential remedial actions; • Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and, • Supervise the implementation of remedial measures.	• Confirm receipt of notification of failure in writing; • Notify Contractor; • In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; • Ensure remedial measures properly implemented; and, • 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 3 working days of notification; • Implement the agreed proposals; • Resubmit proposals if problem still not under control; and, • Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Table I2 Event Action Plan for Noise Monitoring

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Action Level being exceeded	• Notify ER, IEC and Contractor; • Carry out investigation; • Report the results of investigation to the IEC, ER and Contractor; • Discuss with the IEC and Contractor on remedial measures required; and, • Increase monitoring frequency to check mitigation effectiveness.	• Review the investigation results submitted by the ET; • Review the proposed remedial measures by the Contractor and advise the ER accordingly; and, • Advise the ER on the effectiveness of the proposed remedial measures.	• Confirm receipt of notification of failure in writing; • Notify Contractor; • In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; and, • Supervise the implementation of remedial measures.	• Submit noise mitigation proposals to IEC and ER; and, • Implement noise mitigation proposals.

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Limit Level being exceeded	• Inform IEC, ER, Contractor and EPD; • Repeat measurements to confirm findings; • Increase monitoring frequency; • Identify source and investigate the cause of exceedance; • Carry out analysis of Contractor's working procedures; • Discuss with the IEC, Contractor and ER on remedial measures required; • Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and, • If exceedance stops, cease additional monitoring.	• Discuss amongst ER, ET, and Contractor on the potential remedial actions; and, • Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	• Confirm receipt of notification of failure in writing; • Notify Contractor; • In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; • Supervise the implementation of remedial measures; and, • If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	• Take immediate action to avoid further exceedance; • Submit proposals for remedial actions to IEC and ER within 3 working days of notification; • Implement the agreed proposals; • Submit further proposal if problem still not under control; and, • Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Table I3 Event and Action Plan for Landscape and Visual Impact - Construction Phase

Action Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Non-conformity on one occasion	Identify source Inform the IEC and the ER Discuss remedial actions with the IEC, the ER and the Contractor Monitor remedial action until rectification has been completed	Check report Check the Contractor's working method Discuss with the ER and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures	Notify the Contractor Ensure remedial measures are properly implemented	Amend working methods Rectify damage and undertake remedial measures or any necessary replacement
Repeated Non-conformity	Identify source Inform the IEC and the ER Increase monitoring (site audit) frequency Discuss remedial actions with the IEC, the ER and the Contractor Monitor remedial actions until rectification has been completed If exceedance stops, cease additional monitoring (site audit)	Check report Check the Contractor's working method Discuss with the ER and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures Supervise implementation of remedial measures	Notify the Contractor Ensure remedial measures are properly implemented	Amend working methods Rectify damage and undertake remedial measures or any necessary replacement

Annex J

Waste Flow Table

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island

Contract No. : DC/2007/23

Monthly Summary Waste Flow Table for 2009 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / '000L)	(in '000m³)
Jan											
Feb											
Mar											
Apr											
May											
June											
Sub-total											
July	0	0	0	0	0		0	0	0	0	0
Aug	0	0	0	0	0		0	0	0	0	0
Sept	0.016	0	0	0	Dry	Wet	0	0	0	0	0.068
					0.016	0					
Oct	0.523	0	0	0	0.523	0	0	0	0	0	0.086
Nov	2.331	0	0	0	2.275	0.056	99.2	0.036	0	0	0.129
Dec	3.803	0	0	0	3.004	0.799	1	0	0	0	0.120
Total	6.673	0	0	0	5.818	0.855	100.2	0.036	0	0	0.403

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L).

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island

Contract No. : DC/2007/23

Monthly Summary Waste Flow Table for 2010 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / '000L)	(in '000m³)
Jan	5.341	0	0	0	Dry	Wet	0	0.144	0	0.8	0.178
					3.066	2.275					
Feb	3.328	0	0	0	1.541	1.787	0	0	0	0	0.167
Mar	4.486	0	0	0	2.019	2.467	0	0.09	0	0	0.148
Apr	4.864	0	0	0	1.756	3.108	0	0.054	0	0	0.160
May	7.092	0	0	0	3.383	3.709	0	0.144	0	0.3	0.157
June	6.190	0	0	0	1.083	5.107	0	0.09	0	0.4	0.455
Sub-total	31.301	0	0	0	12.848	18.453	0	0.522	0	1.5	1.265
July	5.031	0	0	0	1.006	4.025	0	0.162	0	0	0.212
Aug	5.140	0	0	0.23	1.970	2.940	0	0.09	0	0.4	0.312
Sept	3.593	0.15	0	0.35	1.771	1.322	0	0.09	0	1	0.146
Oct	2.324	0	0	0	1.429	0.895	0	0.144	0	0	0.078
Nov	5.927	0	0	0	4.383	1.544	0	0	0	0.8	0.078
Dec	4.963	0	0	0	4.840	0.123	0	0.072	0	0	0.078
Total	58.279	0.15	0	0.58	28.247	29.302	0	1.080	0	3.7	2.169

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L).

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island

Contract No. : DC/2007/23

Monthly Summary Waste Flow Table for 2011 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / '000L)	(in '000m³)
Jan	8.423	0	0	0	Dry	Wet	0	0.09	0	1.2	0.124
					8.236	0.187					
Feb	7.794	0	0	0.799	6.814	0.181	0	0.09	0	0	0.138
Mar	9.641	0	0	0.576	9.007	0.058	0	0.19	0	0	0.059
Apr	8.841	0	0	2.014	6.730	0.097	0	0.09	0	0.2	0.069
May	5.416	0	0	0.887	4.280	0.249	0	0.09	0	0	0.077
June	7.507	0	0	0.665	6.245	0.597	0	0.337	0.028	1.0	0.072
Sub-total	47.622	0	0	4.941	41.312	1.369	0	0.887	0.028	2.4	0.539
July	5.31	0	0	2.372	2.795	0.143	0	0.162	0	0	0.109
Aug	5.381	0	0	2.553	2.530	0.298	0	0.248	0.035	0.4	0.097
Sept	6.963	0	0	2.814	3.974	0.175	0	0.289	0.032	0	0.155
Oct	5.330	0	0	0.794	4.385	0.151	0	0.254	0.015	0	0.128
Nov	5.009	0	0	0.995	3.760	0.254	0	0.270	0	0.6	0.116
Dec	5.429	0	0.159	1.430	3.522	0.318	0	0.216	0	0	0.117
Total	81.044	0	0.159	15.899	62.278	2.708	0	2.326	0.11	3.4	1.261

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L).

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island

Contract No. : DC/2007/23

Monthly Summary Waste Flow Table for 2012 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / "000L)	(in '000m³)
Jan	6.208	0	0	1.615	Dry	Wet	0	0.108	0	0.4	0.117
					4.277	0.316					
Feb	6.006	0	0	0.443	5.148	0.415	0	0.108	0	0	0.063
Mar	8.370	0	0	1.226	6.871	0.273	0	0.108	0	0	0.181
Apr	8.899	0	0	1.101	7.581	0.217	0	0.036	0	0	0.685
May	6.789	0	0	0.716	5.931	0.142	0	0.108	0	0.4	0.103
June	7.585	0	0.021	5.565	1.786	0.213	0.014	0.256	0	0.0	0.197
Sub-total	43.857	0	0.021	10.666	31.594	1.576	0.014	0.724	0	0.8	1.346
July	9.128	0	0	5.240	3.730	0.158	8.356	0.055	0	0.8	0.171
Aug	5.756	0	0	3.836	1.640	0.280	0.008	0.062	0	0.2	0.126
Sept	7.809	0	0.172	2.103	5.062	0.472	0.007	0.172	0	0.4	0.105
Oct	12.073	0	0	7.279	4.427	0.367	0.007	0.028	0	0	0.123
Nov	16.713	0	0	15.626	0.853	0.234	0.005	0.303	0	1.6	0.088
Dec	16.760	0	0	16.362	0.192	0.206	0.005	0.102	0	0.8	0.111
Total	112.096	0	0.193	61.112	47.498	3.293	8.402	1.446	0	4.6	2.070

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L) and will be collected by licensed collector.
(7) Inert C&D Materials shall be dumped at Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38 and General refuses shall be dumped at SENT.

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island

Contract No. : DC/2007/23

Monthly Summary Waste Flow Table for 2013 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / "000L)	(in '000m³)
Jan	13.689	0	0	12.331	Dry	Wet	0.005	0.030	0	0.4	0.129
					1.141	0.217					
Feb	15.098	0	0	5.320	9.521	0.257	0.005	0.181	0	0.4	0.078
Mar	17.449	0	0	9.229	8.005	0.215	0	0.111	0	0	0.110
Apr	17.440	0	0	9.884	7.097	0.459	0.003	0.155	0	0	0.142
May	15.293	0	0	7.911	7.006	0.376	0.001	0.101	0	1.8	0.120
June	19.809	0	0	9.620	9.872	0.317	0.001	0.100	0	0.4	0.198
Sub-total	98.778	0	0	54.295	42.642	1.841	0.015	0.678	0	3	0.777
July	19.977	0	0	14.009	5.613	0.355	0.004	0.145	0	0.4	0.178
Aug	18.468	0	0	12.644	5.365	0.459	0.002	0.074	0	0	0.206
Sept	21.668	0	0	14.693	6.690	0.285	0.005	0.155	0	0.2	0.224
Oct	18.939	0	0	13.895	4.623	0.421	0.003	0.108	0	0	0.182
Nov	19.797	0	0	17.751	1.688	0.358	0.004	0.072	0	1	0.150
Dec	15.749	0.016	0	14.306	1.034	0.393	0.005	0.144	0	0.4	0.129
Total	213.376	0.016	0	141.593	67.655	4.112	0.038	1.376	0	5	1.846

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L) and will be collected by licensed collector.
(7) Inert C&D Materials shall be dumped at Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38 and General refuses shall be dumped at SENT.

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island

Contract No. : DC/2007/23

Monthly Summary Waste Flow Table for 2014 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / "000L)	(in '000m³)
Jan	14.837	0	0	13.864	Dry	Wet	0.007	0.054	0	0.4	0.099
					0.324	0.649					
Feb	14.772	0	0	12.084	1.636	1.052	0.006	0	0	0	0.152
Mar	14.770	0	0	12.401	2.200	0.169	0.008	0.18	0	0	0.174
Apr	13.433	0	0	12.159	1.054	0.220	0.004	0	0	0	0.121
May	16.433	0	0	15.833	0.255	0.345	0.009	0	0	0	0.136
June	16.169	0	0	15.235	0.601	0.333	0.002	0.144	0	0	0.236
Sub-total	90.414	0	0	81.576	6.070	2.768	0.036	0.378	0	0.4	0.918
July	13.835	0	0	12.980	0.554	0.301	0.005	0	0	0	0.166
Aug	11.464	0	0	9.611	0.600	1.253	0.008	0	0	0	0.208
Sept	6.198	0	0	3.796	0.988	1.414	0.006	0	0	0.6	0.244
Oct	3.249	0	0	0	1.892	1.357	0.004	0.198	0	0	0.261
Nov	2.984	0	0	0	1.337	1.647	0.003	0.108	0	0.4	0.258
Dec	1.043	0	0	0	0.608	0.435	0.005	0.144	0	0	0.301
Total	129.187	0	0	107.963	12.049	9.175	0.067	0.936	0	1.6	2.356

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L) and will be collected by licensed collector.
(7) Inert C&D Materials shall be dumped at Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38 and General refuses shall be dumped at SENT.

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island
Contract No. : DC/2007/23
Monthly Summary Waste Flow Table for 2015 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / "000L)	(in '000m³)
Jan	0.795	0	0	0	Dry 0.460	Wet 0.335	7	0	0	1.6	0.235
Feb	1.352	0	0	0	1.019	0.333	7	0	0	0	0.283
Mar	2.510	0	0	0	2.199	0.311	0	0.27	0	0	0.328
Apr	0.403	0	0	0	0.132	0.271	0	0.36	0	4	0.420
May	0.834	0	0	0	0.551	0.283	0	0	0	0	0.175
June	1.084	0	0	0	1.019	0.065	0	0	0	0	0.288
Sub-total	6.978	0	0	0	5.380	1.598	14	0.63	0	5.6	1.729
July	0.847	0	0	0	0.829	0.018	0	0	0	0	0.253
Aug	0.847	0	0	0	0.829	0.018	0	0	0	0	0.253
Sept	1.892	0	0	0	1.892	0	0	0	0	0	0.210
Oct	1.436	0	0	0	1.432	0.004	0	0	0	0	0.118
Nov	0.888	0	0	0	0.879	0.009	0	0	0	0	0.118
Dec	0.980	0	0	0	0.980	0	0	0	0	0	0.131
Total	13.796	0	0	0	12.149	1.647	14	0.63	0	5.6	2.799

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L) and will be collected by licensed collector.
(7) Inert C&D Materials shall be dumped at Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38 and General refuses shall be dumped at SENT.

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island
Contract No. : DC/2007/23
Monthly Summary Waste Flow Table for 2016 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals (see Note 2)	Paper/ cardboard packaging (see Note 2)	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)		(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg / "000L)	(in '000m³)
Jan	1.009	0	0	0	Dry 1.009	Wet 0	0	0	0	0.0	0.0733
Feb											
Mar											
Apr											
May											
June											
Sub-total	1.009	0	0	0	1.009	0.000	0	0.00	0	0.0	0.073
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	1.009	0	0	0	1.009	0.000	0	0.00	0	0.0	0.073

Notes:
(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Metal and paper/cardboard packaging will be collected by recycler for recycling.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and the wastes are collected by recycler for recycling.
(4) Broken concrete for recycling into aggregates
(5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.
(6) For chemical waste, the actual quantities of empty paint cans will be in kilogram (kg) and spent lubrication oil will be in litre (L) and will be collected by licensed collector.
(7) Inert C&D Materials shall be dumped at Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38 and General refuses shall be dumped at SENT.

Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from North Point to Stonecutters Island

Contract No. : DC/2007/23

Yearly Summary Waste Flow Table

Year	Estimated (Est.) and Actual (Act.) Annual Quantities of Inert C&D Materials										Estimated (Est.) and Actual (Act.) Annual Quantities of C&D Wastes									
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated		(b) Broken Concrete (see Note 4)		(c) Reused in the Contract		(d) Reused in other Projects		(e) Disposed as Public Fill		(f) Metals		(g) Paper/ cardboard packaging		(h) Plastics (see Note 3)		(i) Chemical Waste		(j) Others, e.g. general refuse disposed at Landfill (See Note 5)	
	(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000 kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000m^3)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
2009 (3rd)	(Note 4)	0.016	(Note 4)	0	(Note 4)	0	(Note 4)	0	(Note 4)	0.016	(Note 4)	0	(Note 4)	0	(Note 4)	0	(Note 4)	0	(Note 4)	0.068
2009 (4th)		6.657		0		0		0		6.657		101.2		0.036		0		0		0.335
2010 (1st)		13.155		0		0		0		13.155		0		0.234		0		0.8		0.493
2010 (2nd)		18.146		0		0		0		18.146		0		0.288		0		0.7		0.772
2010 (3rd)		13.764		0.15		0		0.58	Dry / Wet	13.034		0		0.342		0		1.4		0.67
2010 (4th)		13.214		0		0		0		13.214		0		0.216		0		0.8		0.234
2011 (1st)		25.858		0		0		1.375		24.483		0		0.19		0		1.2		0.321
2011 (2nd)		21.764		0		0		3.556		18.198		0		0.517		0.028		1.2		0.218
2011 (3rd)		17.654		0		0		7.739		9.915		0		0.699		0.067		0.4		0.361
2011 (4th)	56.468	15.768	0.7	0	0	0.159	43.630	3.219	11.946	12.39	7	0	0.25	0.74	0.1	0.015	1.2	0.6	0.077	0.361
2012 (1st)	76.033	20.584	0.379	0	0	0	66.440	3.284	9.022	17.3	7	0	0.25	0.324	0.1	0	1.2	0.4	0.015	0.361
2012 (2nd)	76.249	23.273	0.266	0	0	0.021	66.455	7.382	9.336	15.87	7	0.014	0.25	0.4	0.1	0	1.2	0.4	0.017	0.985
2012 (3rd)	79.259	22.693	0.178	0	0	0.172	70.535	11.179	8.354	11.342	7	8.371	0.25	0.289	0.1	0	1.2	1.4	0.017	0.402

2012 (4th)	58.550	45.546	0	0	0	0	52.168	39.267	6.190	0.192	6.279	7	0.017	0.25	0.433	0.1	0	1.2	2.4	0.011	0.322
2013 (1st)	58.474	46.236	0.46	0	0	0	52.114	26.88	5.708	0.192	19.356	2	0.01	0.25	0.322	0.1	0	1.2	0.8	0.009	0.317
2013 (2nd)	45.516	52.542	0	0	0	0	39.963	27.415	5.361	0.192	25.127	2	0.005	0.25	0.356	0.1	0	1.2	2.2	0.063	0.460
2013 (3rd)	11.124	60.113	0	0	0	0	8.765	41.346	2.167	0.192	18.767	2	0.011	0.25	0.374	0.1	0	1.2	0.6	0.072	0.608
2013 (4th)	10.95	15.878	0	0.016	0	0	5.23	7.345	2.12	3.6	8.517	2	0.012	0.25	0.324	0.1	0	1.2	1.4	0.086	0.461
2014 (1st)	32.89	44.379	0	0	0	0	26.600	38.349	2.09	4.2	6.03	1	0.021	0.25	0.234	0	0	0.8	0	0.12	0.425
2014 (2nd)	32.1	46.035	0	0	0	0	24.700	43.227	2.1	5.3	2.808	1	0.015	0.25	0.144	0	0	0	0	0.48	0.236
2014 (3rd)	25.45	31.497	0	0	0	0	18.900	26.387	2.05	4.5	5.11	1	0.019	0.25	0.108	0	0	0	0.8	0.56	0.618
2014 (4th)	11.2	7.276	0	0	0	0	5.200	0	2.5	3.5	7.276	1	0.012	0.25	0.45	0	0	0.8	0.4	0.56	0.82
2015 (1st)	2	4.657	0	0	0	0	0	0	0.8	1.2	4.657	1	14	0.25	0.27	0	0	0	1.6	0.42	0.846
2015 (2nd)	1	2.321	0	0	0	0	0	0	0.5	0.5	2.321	1	0	0.2	0.36	0	0	0.5	4	0.42	0.883
2015 (3rd)	0.5	3.514	0	0	0	0	0	0	0.3	0.2	3.514	1	0	0.2	0	0	0	0	0	0.42	0.703
2015 (4th)	0.5	3.304	0	0	0	0	0	0	0.3	0.2	3.304	1	0	0.1	0	0	0	0.2	0	0.42	0.367
2016 (1st)	0.5	0	0	0	0	0	0	0	0.5	0.0	0	0	0	0	0	0	0	0	0	0.4	0
2016 (2nd)	0.5	0	0	0	0	0	0	0	0.5	0.0	0	0	0	0	0	0	0	0.1	0	0.4	0
2016 (3rd)	0.2	0	0	0	0	0	0	0	0.2	0.0	0	0	0	0	0	0	0	0	0	0.4	0
2016 (4th)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	701.935	575.844	1.983	0.166	0	0.352	488.418	288.540	209.551		286.786	109	122.707	4.25	7.83	1.7	0.11	20.8	23.9	7.235	12.647

Notes:

(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Plastic refer to plastic bottles/containers, plastic sheets/foam from packaging material
(3) Broken concrete for recycling into aggregates
(4) The Yearly Waste Flow Table shown above was updated in Jan 2015, and it will be further updated if there is any changed.

Annex K

Summary of Observations and Follow-up Actions of Environmental Site Inspections for All Sites

Annex K Summary of Site Inspections Observations and Follow-ups

Inspection date: 7 January 2016

Follow-up Actions Taken after Previous Site Audit

No major observations during site inspection.

Observations and Recommendations

Sai Ying Pun Production Shaft

- There were no major observations during site inspection.

Central Production Shaft

- There were no major observations during site inspection.

Wan Chai East Production Shaft

- The Contractor was reminded to remove stagnant water to prevent mosquito breeding.
- The Contractor was reminded to wash the vehicle wheel before the vehicle leaves the works area.

North Point Production Shaft

- There were no major observations during site inspection.

North Point Sewage By-Pass Structure from Sea Front

- There were no major observations during site inspection.

Inspection date: 14 January 2016

Follow-up Actions Taken after Previous Site Audit

Wan Chai East Production Shaft

- The Contractor had removed stagnant water to prevent mosquito breeding.
- The Contractor had washed the vehicle wheel before the vehicle leaves the works area.

Observations and Recommendations

Sai Ying Pun Production Shaft

- There were no major observations during site inspection.

Central Production Shaft

- There were no major observations during site inspection.

Wan Chai East Production Shaft

There were no major observations during site inspection.

North Point Production Shaft

- There were no major observations during site inspection.

North Point Sewage By-Pass Structure from Sea Front

- There were no major observations during site inspection.

Inspection date: 20 January 2016

Follow-up Actions Taken after Previous Site Audit

- There were no major observations during site inspection.

Observations and Recommendations

Sai Ying Pun Production Shaft

- There were no major observations during site inspection.

Wan Chai East Production Shaft

There were no major observations during site inspection.

North Point Production Shaft

- There were no major observations during site inspection.

North Point Sewage By-Pass Structure from Sea Front

- There were no major observations during site inspection.

Inspection date: 27 January 2016

Follow-up Actions Taken after Previous Site Audit

- There were no major observations during site inspection.

Observations and Recommendations

Wan Chai East Production Shaft

- There were no major observations during site inspection.

North Point Sewage By-Pass Structure from Sea Front

- The Contractor was reminded to provide drip tray for the air receiver.