



Maeda - CREC - SELI Joint Venture

Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

Monthly EM&A Report (January 2011)

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Report No

EB000364R0572

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Report No

EB000364R0572

Date

16 February 2011

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### **EXECUTIVE SUMMARY**

- 1. Drainage Services Department (DSD) has awarded the contract for the Design and Construction of Tsuen Wan Drainage Tunnel (hereafter referred to as the "Project") to Maeda-CREC-SELI Joint Venture (MCSJV). MCSJV has appointed Hyder Consulting Limited (HCL) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works in accordance with the Environmental Monitoring and Audit Manual (EM&A Manual) and Environmental Permit (EP). Commencement of the construction work had been notified to the Environmental Protection Department (EPD) in January 2008. This Monthly EM&A Report summarises the EM&A works undertaken in January 2011.
- 2. According to the EM&A Manual, there are four designated air quality monitoring locations, five designated noise monitoring locations and five water quality monitoring locations during the construction phase: (i) Sik Sik Yuen Ho Fung College (ASR 1, NSR 1 and Intake I-1); (ii) Hong Hoi Chee Hong Temple (ASR 3, NSR 3 and Intake I-2); (iii) Squatters (NSR 6 and Intake I-3); (iv) Beach Tower (Long Beach Gardens) (ASR 8, NSR 8 and Outfall O-1); and (v) Greenview Terrace (Block 1) (ASR 9, NSR 9 and Outfall O-1).
- 3. During the non restricted hours, major construction activities undertaken by the Contractor at Tsuen Wan Drainage Tunnel included site cleaning and tidying at I-1, I-2, I-3 and Outfall; drilling, excavation and rock splitting at spiral ramp at Outfall; pre-bored H-pile drilling and soil nailing for Castle Peak Road (CPR) box culvert construction at Outfall; tunnel boring machine (TBM) drilling of the tunnel and mucking out of tunnel spoil at Outfall; removal of sea wall and armour rock for basin scheme at Portion E; drilling and excavation of vortex shaft at I-3; temporary rock dowel drilling and installation at I-3; construction of footing for erecting the tower crane at I-3; construction of PB wall at I-3; drilling, excavation and rock splitting of man access shaft and vortex drop shaft at I-2; pipe jacking at Portion G at I-2; construction of approach channel structure at I-2; construction of 750 step channel and catchpit at Portion G at I-2; erection of temporary steel platform and mobilization for construction of skin wall at Portion G at I-2; cascade and channel modification concrete structure works at I-1; horizontal drilling at I-1; and back filling of spiral ramp centre void at I-1 within the reporting month.
- 4. No exceedances have been recorded for air quality monitoring during the reporting month.
- 5. No exceedance of limit level was recorded for noise monitoring. However, one environmental complaint on noise triggered the exceedance of action level during the reporting month.
- 6. Exceedances for river water quality monitoring are summarised in the following table:

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	One record at I-1 on 3 Jan 2011	One record at I-1 on 19 Jan 2011 and one record at I-3 on 14 Jan 2011
SS	One record at I-1 on 3 Jan 2011 and one record at I-2 on 3 Jan 2011	Three records at I-1 on 10, 19 and 28 on Jan 2011

7. Exceedances for marine water quality monitoring are summarized in the following table:

Parameter	Action Level Exceedance	Limit Level Exceedance	
DO	Nil	Nil	



Turbidity	One record at O-1(FT) on 21 Jan 2011	Nil
SS	Three records at O-1(FT) on 5, 17 and 19 Jan 2011	One record at O-1(FT) on 21 Jan 2011 and three records at O-1(ET) on 14, 24 and 26 Jan 2011

- 8. The status of waste generation in the reporting month are:
  - A total of 9,631.7 m<sup>3</sup> C&D material was disposed of to public fill at Tuen Mun. A
    quantity of 1,210.9 m<sup>3</sup> and 10,389.8 m<sup>3</sup> inert C&D materials were reused in the
    Contract and other Contracts respectively. Detail information could be referred to
    Section 5.1.1 of this report.
  - About 41.9 m³ general waste was disposed of to NENT Landfill;
  - About 300.0 kg paper/cardboard was recycled in the reporting month;
  - No metal was generated in the reporting month;
  - · No plastic waste was disposed of in the reporting month; and
  - About 588.8 kg chemical waste was disposed of in the reporting month.
- 9. In this reporting month, two site inspections and one monthly site audit were carried out by ET and Independent Environmental Checker (IEC) respectively, to ensure proper implementation of environmental mitigation measures specified in the EM&A Manual and compliance with environmental legislation. All observations, which were recorded on the site inspection checklists, were passed to the Contractor together with the ET's recommendations.
- 10. As advised by the Contractor and verified by ET:
  - No non-compliance regarding the site inspection was received in the reporting month;
  - One environmental complaint was received during the reporting month; and
  - No summons and prosecution was received in the reporting month.
- 11. The major construction works for the upcoming three months will be:
  - Site cleaning and tidying at I-1, I-2, I-3 and Outfall;
  - TBM drilling of the tunnel and mucking out of tunnel spoil at Outfall;
  - Drilling, excavation and rock splitting at spiral ramp at Outfall;
  - Excavation and soil nailing for CPR box culvert construction at Outfall;
  - Removal of sea wall and armour rocks for basin scheme at Portion E;
  - Installation of marine sea wall block and rock armour for basin scheme at Portion E;
  - Drilling and excavation of vortex shaft at I-3:
  - Construction of PB wall structure at I-3;
  - Construction of approach channel at I-3;
  - Pipe jacking at Portion G at I-2;
  - Pre-bored H-pile construction for skin wall at Portion G at I-2;
  - Drilling, excavation and rock splitting of man access shaft and vortex drop shaft at I 2;



- Construction of approach channel structure at I-2;
- Construction of 750 step channel and catchpit at I-2;
- Cascade and channel modification concrete structure works at I-1;
- Horizontal drilling at I-1; and
- Back filling of spiral ramp centre void at I-1.



## 1 INTRODUCTION

- 1.1.1 The Drainage Services Department (DSD) proposed to construct a tunnel with an internal diameter of 6.5m and a length of 5.13km, with the purpose to alleviate the flooding risk in Tsuen Wan and Kwai Chung.
- 1.1.2 This project is a Designated Project under Schedule 2 Part I Category Q, of the Environmental Impact Assessment Ordinance (EIAO) as part of the proposed Tsuen Wan Drainage Tunnel (TWDT) passes underneath the existing Tai Mo Shan Country Park. An Environmental Impact Assessment (EIA) Study has therefore been undertaken to provide information on the nature and extent of environmental impacts arising from the construction and operation of the proposed designed project and related activities taking place concurrently. From the EIA, the recommendations for monitoring contained herein are made.
- 1.1.3 The Maeda-CREC-SELI Joint Venture (MCSJV) was awarded by DSD with the Contract Design and Construction of Tsuen Wan Drainage Tunnel.
- 1.1.4 Hyder was commissioned by the MCSJV as the Environmental Team (ET) to implement an EM&A programme in accordance with the EM&A Manual. The proposed tunnel section flows from the junction of Shing Mun Road and Wo Yi Hop Road and discharges to south of Yau Kom Tau underneath Castle Peak Road as shown in Appendix A.
- 1.1.5 The construction works of the Project was commenced in January 2008. This is the thirty-fourth monthly EM&A report summarising the impact monitoring results and audit findings of the EM&A program in January 2011.



## 2 PROJECT INFORMATION

## 2.1 Project Organization and Management Structure

2.1.1 The organization chart and lines of communication with respect to the on-site environmental management are shown in Appendix B.

## 2.2 Construction Progress

- 2.2.1 The overall project programme from the detail design to completion of all civil works shall take approximately 54 months. The construction programme is presented in Appendix C.
- 2.2.2 The major construction activities undertaken in the reporting month were:
  - Site cleaning and tidying at I-1, I-2, I-3 and Outfall;
  - Drilling, excavation and rock splitting at spiral ramp at Outfall;
  - Pre-bored H-pile drilling and soil nailing for CPR box culvert construction at Outfall;
  - Tunnel boring machine (TBM) drilling of the tunnel and mucking out of tunnel spoil at Outfall;
  - Removal of sea wall and armour rock for basin scheme at Portion E;
  - Drilling and excavation of vortex shaft at I-3;
  - Temporary rock dowel drilling and installation at I-3;
  - Construction of footing for erecting the tower crane at I-3;
  - Construction of PB wall at I-3;
  - Drilling, excavation and rock splitting of man access shaft and vortex drop shaft at I-2;
  - Pipe jacking at Portion G at I-2;
  - Construction of approach channel structure at I-2;
  - Construction of 750 step channel and catchpit at Portion G at I-2;
  - Erection of temporary steel platform and mobilization for construction of skin wall at Portion G at I-2;
  - Cascade and channel modification concrete structure works at I-1;
  - Horizontal drilling at I-1; and
  - Back filling of spiral ramp centre void at I-1.



- 2.2.3 As confirmed by the contractors, only removal of seawall and armour rock was conducted in January 2011. No marine dredging works for basin scheme at Portion E was conducted in the reporting month.
- 2.2.4 No open construction activities were undertaken for TWDT during the restricted hours.

## 2.3 Mitigation Measures

2.3.1 The implemented environmental mitigation measures and their statuses are given in Appendix D.

### 2.4 Status of License and Permit

2.4.1 A summary of relevant permits and licences for the Project is given in Appendix E.



## 3 SUMMARY OF EM&A REQUIREMENT

## 3.1 Air Quality

## Air Quality Parameters

3.1.1 One-hour total suspended particulates (TSP) levels were measured at the designated air monitoring locations in accordance with the EM&A Manual. Information such as date of monitoring, duration, weather condition, equipment used and monitoring results were recorded on the field data sheet developed for the Project. The monitoring results are presented in Section 4.

## Monitoring Methodology

- 3.1.2 One-hour TSP monitoring was carried out under typical weather conditions (with no adverse weather such as typhoon signal or rain storm warning) three times every six days using High Volume Air Samplers (HVASs). Monitoring was conducted in accordance with the standard sampling method as set out in High Volume Method for Total Suspended Particulates, Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA.
- 3.1.3 After each sampling, the filter paper loaded with dust was kept in a clean and tightly sealed plastic bag. The filter paper was then re-conditioned in desiccators for 24 hours before obtaining the weight under laboratory conditions.
- 3.1.4 The average concentrations of the TSP were calculated based on the following information obtained from monitoring:
  - Flow rate;
  - Weight of the filter paper before and after sampling; and
  - Sampling period indicated by the elapsed-time meter.
- 3.1.5 All samples were kept in good condition (i.e. stored in sealed plastic bags, with brief description of the monitoring dates and locations) for a period of 6 months before disposal. Sample analysis was carried out by ALS Technichem (HK) Pty Limited (HOKLAS Registration Number 066).

## Monitoring Equipment and Calibration

- 3.1.6 High Volume Air Samplers (HVASs) were used for 1-hour TSP monitoring to comply with the USEPA specifications in Appendix B Part 5 Reference Method for the Determination of Suspended Particulate matter in the Atmosphere (High-Volume Method) of the Code of Federal Regulation dated June 1, 1991.
- 3.1.7 All HVASs were calibrated before commencement of monitoring using standard orifice 5-points calibration method with orifice calibrator to determine the actual flow rate of each HVAS. This was used for the calculation of the TSP level. Calibration Kit Model TE5025A was used for calibration of the HVAS. Recalibration of the HVAS was carried out after motor maintenance, at least once every six months, which was about the expected life of carbon brush. The air quality monitoring equipment used during the



reporting month is shown in Table 3-1 below. The calibration certificates are included in Appendix F.

Equipment Type	Model	Serial Number	Calibration Orifice Number	Location
HVAS	BM2000HX	4994	1785	ASR 1
HVAS	BM2000HX	5875	1785	ASR 3
HVAS	TE5005X	1059	1785	ASR 8
HVAS	TE5005X	1713	1785	ASR 9

Table 3-1 Air Quality Monitoring Equipment

## **Monitoring Location**

3.1.8 Four designated air quality-monitoring locations were identified in the contract specific EM&A manual. They are listed in Table 3-2 below and shown in Appendix G.

Monitoring Station ID	Name of Premises	Floor Level
ASR1	Sik Sik Yuen Ho Fung College	G/F
ASR3	Hong Hoi Chee Hong Temple	Podium
ASR8	Beach Tower (Long Beach Gardens)	G/F
ASR9	Greenview Terrace (Block 1)	G/F

Table 3-2 Air Quality Monitoring Locations

#### Action and Limit Levels

3.1.9 The Action and Limit Levels for the 1-hour TSP monitoring are shown in Table 3-3. In case exceedances of Action and/or Limit levels for air quality occur, Event Contingency Plans (ECPs) would be implemented. The ECPs for Action and Limit levels exceedances are shown in Table 3-4.

Station	1-hour TSP Level in μg/m <sup>3</sup>		
Station	Action Level	Limit Level	
ASR 1	307	500	
ASR 3	327	500	
ASR 8	337	500	
ASR 9	329	500	

Table 3-3 Action & Limit Levels for Air Quality



EVENT	ACTION			
	ET	IEC	SOR	CONTRACTOR
ACTION LEVEL				
Exceedance for one sample	investigate the causes of	<ul> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method.</li> </ul>	Notify Contractor.	<ul> <li>Rectify any unacceptable practice;</li> <li>Amend working methods if appropriate.</li> </ul>
Exceedance for two or more consecutive samples	<ul> <li>Inform IEC and SOR;</li> <li>Advise SOR on the effectiveness of the proposed remedial measures;</li> <li>Repeat measurements to confirm findings;</li> <li>Increase monitoring frequency to daily;</li> <li>Discuss with IEC and Contractor on</li> </ul>	<ul> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ET on the effectiveness of the proposed remedial measures;</li> <li>Supervise Implementation of remedial measures.</li> </ul>	measures properly implemented.	<ul> <li>Submit proposals for remedial to SOR within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ul>
Exceedance for c sample	one • Identify source, investigate the causes of exceedance and propose remedial measures;	<ul> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and</li> </ul>	Confirm receipt of notification of exceedance in writing;     Notify Contractor;      Figure remedial	<ul> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC within 3 working</li> </ul>



EVENT	ACTION				
EVENT	ET	IEC	SOR	CONTRACTOR	
	<ul> <li>Inform IEC, SOR, Contractor and EPD;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SOR informed of the results.</li> </ul>	Contractor on possible remedial measures;  • Advise SOR on the effectiveness of the proposed remedial measures;  • Supervise implementation of remedial measures.	measures properly implemented.	<ul> <li>days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ul>	
	<ul> <li>Notify IEC, SOR,</li> <li>Contractor and EPD;</li> <li>Identify source;</li> <li>Repeat measurement to confirm findings;</li> <li>Increase monitoring frequency to daily;</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>Arrange meeting with IEC and SOR to discuss the remedial actions to be taken;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SOR informed of the results;</li> <li>If exceedance stops, cease additional monitoring.</li> </ul>		the IEC, agree with	agreed proposals;  Resubmit proposals if problem still not under control;  Stop the relevant portion of works as determined by SOR until the exceedance is abated.	

Table 3-4 Event/Action Plan for Air Quality



### 3.2 Noise

#### Noise Parameters

- 3.2.1 The construction noise level was measured in terms of equivalent A-weighted sound pressure level ( $L_{eq}$ ) measured in decibels (dB(A)). Monitoring of  $L_{eq(30 \text{ min})}$  was carried out at the noise monitoring locations on a weekly basis during normal construction working hours (0700-1900 hours from Monday to Saturday except public holidays). For all other time periods (i.e. restricted hours),  $L_{eq(5 \text{ min})}$  would be employed for comparison with the Noise Control Ordinance (NCO) criteria if necessary.
- 3.2.2 The two statistical sound levels  $L_{10}$  and  $L_{90}$ , the level exceeded for 10 and 90 percent of the time respectively, were also recorded during monitoring. Major noise sources observed, both on-site and off-site, were recorded on the field data sheet. All measurements were recorded and presented to the nearest 0.1 dB(A) in this report. Results are presented in Section 4.

## Monitoring Methodology

- 3.2.3 Sound level meters, which comply with the International Electrotechnical Commission Publication 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to the Technical Memorandum (TM) issued under the Noise Control Ordinance, were used. Noise levels for the A-weighted levels L<sub>eq(30min)</sub>, L<sub>10</sub> and L<sub>90</sub> were measured throughout the impact monitoring. An average, by sound power, of six consecutive 5 minutes readings was used to provide L<sub>eq(30 min)</sub> for non-restricted hours (07:00-19:00 hours from Monday to Saturday except public holidays). A facade correction of 3 dB(A) was applied to the measurements that were carried out under free field conditions.
- 3.2.4 During the impact monitoring, parameters such as dates, weather condition, equipment used, measurement results and major noise sources were recorded on the field data record sheet. Monitoring would not be carried out in the presence of fog, rain or strong wind with a steady speed exceeding 5 m/s. In relation to the monitored noise levels, other noise sources such as road traffic might make a significant contribution to the overall noise environment. Therefore, noise monitoring activities would take into account such influencing factors, which were not present during the baseline monitoring period.

## Monitoring Equipment and Calibration

- 3.2.5 Rion Precision Sound Level Meters of Type NL-31 and B&K Integrating Sound Level Meter of Type 2238 in compliance with the International Electrotechnical Commission Publication specifications (Paragraph 3.2.3) were used for noise monitoring in this reporting month.
- 3.2.6 Prior to and following each noise measurement, the accuracy of the sound level meters was checked using an acoustic calibrator (B&K 4231) generating a known sound pressure level at a known frequency. Measurements were considered as valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB(A). Sound level meters and calibrators were calibrated annually to ensure they performed to the same level of accuracy as stated in the manufacturer's specifications.



The noise monitoring equipments used during the reporting month are shown in Table 3-5 below. The calibration certificates are included in Appendix F.

Equipment Type	Manufacturer	Type Number	Serial Number	Location
Sound Level Meter	Rion	NL-31	00410224	NSR1, NSR3,
Sound Level Meter	B&K	2238	2562782	NSR6, NSR8 and _NSR9
Sound Level Meter	B&K	2238	2448529	
Sound Level Calibrator	B&K	4231	2699361	

Table 3-5 Noise Monitoring Equipment

## **Monitoring Location**

3.2.7 Five designated noise monitoring locations were identified in the contract specific EM&A manual. They are listed in Table 3-6 below and shown in Appendix G. All the locations below are in facade measurement.

Monitoring Station ID	Name of Premises	Floor Level
NSR1	Sik Sik Yuen Ho Fung College	G/F
NSR3	Hong Hoi Chee Hong Temple	Podium
NSR6	Squatters	G/F
NSR8	Beach Tower (Long Beach Gardens)	G/F
NSR9	Croonview Terrope (Plack 1)	Podium (up to 6 July2009)
	Greenview Terrace (Block 1)	Roof* (since 16 July 2009)

<sup>\*</sup> The noise monitoring location of NSR9 had been adjusted to rooftop since 16 July 2009.

Table 3-6 Noise Monitoring Locations

#### Construction Ground Borne Noise

- 3.2.8 Prediction of construction ground borne noise indicates the criteria will be achieved at most NSRs except exceedances are predicted at Hong Hoi Chee Hong Temple (NSR3) and Squatters (NSR6). It is recommended to restrict the TBM operation in non-restricted period (i.e. 0700 1900 hours) at these NSRs. In order to ensure proper control of ground borne noise is executed by the contractor, a monitoring requirement is recommended at the Hong Hoi Chee Hong Temple at Intake 2 and Squatters at Intake 3 for compliance checking. Ground borne noise impact monitoring will be carried out only when operation of TBM is conducted within area under monitoring requirement. Detail of the monitoring area and period can be referred to a stand-alone document of *Ground Borne Noise Monitoring Methodology*.
- 3.2.9 Ground borne noise impact monitoring will be carried out once per week during the monitoring period at NSR 3 and NSR 6, respectively. Parameters such as date, weather condition, equipment used, measurement results and major noise sources will be



recorded on the field data record sheet. Monitoring should be carried out at the ground floor inside the building with all windows, doors and openings being closed. Electrical appliances, such as air conditioners and television, and any other that may emit sound during operation will be switched off or removed to minimise disturbance to the monitoring. If ground borne noise criterion is exceeded, the monitoring shall continue daily until acceptance has been restored against the criterion. Otherwise the monitoring can be discontinued.

- 3.2.10 The criteria including Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (TM-Places) under the NCO stipulates that noise transmitted primarily through the structural elements of building, or buildings, shall be 10 dB(A) less than the relevant ANLs. Daytime ground borne construction noise criterion of 60 dB(A) therefore applies with reference to Technical Memorandum on Environmental Impact Assessment Process (TM-EIAO) 70 dB(A) criterion for schools and taking account of the minus 10 dB(A) requirement under the NCO TM-Places. Following the same principle for ground borne noise criteria, ground borne construction noise levels inside domestic premises relying on opened window for ventilation will be limited to 65 dB(A), with reference to the daytime airborne noise criterion of 75 dB(A) in accordance with the TM-EIAO.
- 3.2.11 In the evening (1900 2300 hours) and during night time (2300 0700 hours), ground borne noise level will be limited to 10 dB(A) below the respective ANLs for the Area Sensitivity Rating categories of "A", "B" and "C" at the NSRs along the proposed project. Determination of the Area Sensitivity Ratings for the NSRs in this study has been made with reference to TM-Places. According to the approved EIA Report of the Project (Register No.: AEIAR-088/2005), NSR 3 and NSR 6 were assigned as Area Sensitivity Rating of "A", the areas were classified as 'low density areas' and not influenced by road traffic noise from main roads.

#### **Action and Limit Levels**

3.2.12 The Action and Limit levels for construction noise are defined in Table 3-7. If non-compliance of the criteria occurs, actions in accordance with the Action Plan in Table 3-8 would be carried out.

Time Period	Action	Limit
0700 – 1900 hours on normal weekdays	When one documented complaint is received	75 dB(A)*

For educational establishments the limit level shall be 70 dB(A) and reduced to 65 dB(A) during examination periods between 0700-1900 hours on normal weekdays.

Table 3-7 Action & Limit Levels for Air Borne Noise

Event	Action				
Event	ET Leader	IEC	SOR	Contractor	
Action Level	Notify IEC and the Contractor.	<ul> <li>Review with analysed results submitted by</li> </ul>	Confirm receipt of notification of	Submit noise mitigation proposals to	
	Carry out	ET.	exceedance in writing.	IEC.	



Frant	Action			
Event	ET Leader	IEC	SOR	Contractor
	<ul> <li>investigation.</li> <li>Report the results of investigation to IEC and the Contractor.</li> <li>Discuss with the Contractor and formulate remedial measures.</li> <li>Increase monitoring frequency to check mitigation measures.</li> </ul>	<ul> <li>Review the proposed remedial measures by the Contractor and advise SOR accordingly.</li> <li>Supervise the implement of remedial measures.</li> </ul>	to propose remedial measures for the analysed noise problem.	
Limit Level	<ul> <li>Identify the source.</li> <li>Notify IEC, SOR, EPD and the Contractor.</li> <li>Repeat measurement to confirm findings.</li> <li>Increase monitoring frequency.</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>Inform IEC, SOR, and EPD the causes and actions taken for the exceedances.</li> <li>Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and SOR informed of the results.</li> <li>If exceedance stops, cease additional monitoring.</li> </ul>	the Contractor on the potential remedial actions.  Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise SOR accordingly.  Supervise the implementation of	Confirm receipt of notification of exceedance in writing. Notify the Contractor. Require the Contractor to propose remedial measures for the analysed noise problem.  Ensure remedial measures are properly implemented. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	<ul> <li>Submit proposals for remedial actions to IEC within 3 working days of notification.</li> <li>Implement the agreed proposals.</li> <li>Resubmit proposals if problem still not under control.</li> <li>Stop the relevant activity of works as determined by the SOR until the exceedance is abated.</li> </ul>

#### Table 3-8 Event/Action Plan for Airborne Noise

3.2.13 The Action and Limit levels for construction ground borne noise are defined in Table 3-9. If non-compliance of the criteria occurs, actions in accordance with the Action Plan in Table 3-10 would be carried out.



Monitoring Station ID		NSR 3	NSR 6
Name of Premises		Hong Hoi Chee Hong Temple	Squatters
Action Level		When one documented comp	plaint is received
	Working days during daytime (0700-1900 hours) (L <sub>eq(30min)</sub> )	65 dB(A)	65 dB(A)
Limit Level	All days during the evening (1900-2300 hours) and general holidays (including Sundays) during the day and evening (0700-2300 hours) (Leq(5 min))	50 dB(A) (Area Sensitivity Rating "A")	50 dB(A) (Area Sensitivity Rating "A")
	All days during the night-time	35 dB(A)	35 dB(A)
	(2300-0700 hours) (L <sub>eq(5 min)</sub> )	(Area Sensitivity Rating "A")	(Area Sensitivity Rating "A")

Table 3-9 **Action & Limit Levels for Ground Borne Noise** 

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Event	Action			
Event	ET Leader	IEC	SOR	Contractor
Action Level	<ul> <li>Notify IEC and the Contractor.</li> <li>Carry out investigation.</li> <li>Report the results of investigation to IEC and the Contractor.</li> <li>Discuss with the Contractor and formulate remedial measures.</li> <li>Increase monitoring frequency to daily until exceedance is abated</li> </ul>		notification of exceedance in writing • Notify the Contractor.	mitigation proposals. r
Limit Level	<ul> <li>Identify the source.</li> <li>Notify IEC, SOR, EPD and the Contractor.</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>Inform IEC, SOR, and EPD the causes &amp; actions taken for the exceedances.</li> </ul>	<ul> <li>Discuss amongst SOR, ET Leader and the Contractor on the potential remedial actions.</li> <li>Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise SOR accordingly.</li> <li>Supervise the implementation of</li> </ul>	Confirm receipt of notification of exceedance in writing.     Notify the Contractor.     Require the Contractor to propose remedial measures for the analysed noise problem.     Ensure remedial measures are properly	• Implement the agreed



Frant	Action			
Event	ET Leader	IEC	SOR	Contractor
	<ul> <li>Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and SOR informed of the results.</li> <li>Increase monitoring frequency to daily unt exceedance is abated</li> </ul>		implemented.  If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	activity of works as determined by the SOR until the exceedance is abated.

Table 3-10 Event/Action Plan for Ground Borne Noise

## 3.3 Water Quality

3.3.1 The water quality impact would be insignificant with the protection measures recommended in Section 5.6 of the EIA report. However, in view of the sensitive nature of the rivers/streams and bathing beaches in the Study Area, it is suggested that a programme of monitoring should be established to confirm the effectiveness of these mitigation measures in protecting these water bodies.

## Water Quality Parameters

- 3.3.2 Monitoring for Dissolved Oxygen (DO), temperature, turbidity, pH and suspended solids (SS) should be undertaken at designated monitoring locations. It should be noted that DO, temperature, turbidity and pH should be measured in-situ whereas SS is assayed in a laboratory.
- 3.3.3 In association with the water quality parameters, other relevant data should also be measured, such as monitoring location/position, time, weather conditions, and any special phenomena and description of work underway at the construction site etc.

## Monitoring Methodology

- 3.3.4 In accordance with the EM&A Manual, the water quality monitoring for all specified parameters were measured at all designated monitoring locations including control points at an interval of 3 days per week. DO, temperature, turbidity, pH and SS measurements were undertaken at designated monitoring locations.
- 3.3.5 It should be noted that water samples for all monitoring parameters were collected, stored, preserved and analysed according to Standard Methods, APHA 17 ed. and/or methods agreed by the Director of Environmental Protection.
- 3.3.6 Each sample was analysed in accordance with the APHA Standard Methods for the Examination of Water and Wastewater, 18th edition, or an equivalent method approved by the EPD. In any circumstance, the sample testing should comply with a



comprehensive quality assurance and quality control programme. The laboratory should be prepared to demonstrate the quality programmes to the EPD when requested.

## Monitoring Equipment and Calibration

3.3.7 All the water samples collected were transferred to clearly labelled and pre-cleaned sample containers with necessary preservatives immediately after collection. The sample containers were provided by a HOKLAS accredited laboratory. About 1 L of samples was collected for all laboratory analysis. Following sampling, samples should be stored in a cool box at temperature between 0 and 4 °C, and transported to the laboratory within the sample retention time as advised by the laboratory under proper chain-of-custody system. The water quality monitoring equipment used during the reporting month is shown in Table 3-11 below.

Equipment Type	Manufacturer	Model	Quantity
pH Meter / DO / Temperature Meter	WTW	PH/Oxi 340i	1
Turbidimeter	EUTECH	TN-100	1

Table 3-11 Water Quality Monitoring Equipment

3.3.8 All pH meters, DO meters and turbidimeters were checked and calibrated prior to use. DO meters and turbidimeters were calibrated by a laboratory accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibrations for all DO meters were carried out before measurement at each monitoring location. For the on-site calibration of field equipment, BS 127:1993, "Guide to field and on-site test methods for the analysis of waters" was observed. The calibration certificates are included in Appendix F.

### Monitoring Location

3.3.9 Five designated impact monitoring locations (three river stations and two marine stations) and five control locations (three river control stations and two marine stations) were identified in the contract specific EM&A Manual for river and marine water quality monitoring. These monitoring stations are listed in Table 3-12 below and shown in Appendix G.

Monitoring Station ID	Name of Premises	
River		
I-1	Intake I-1	
I-1-C	Control of Intake I-1	
I-2	Intake I-2	
I-2-C	Control of Intake I-2	

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I-3	Intake I-3
I-3-C*	Control of Intake I-3
Marine	
O-1 (FT) and (ET)	Outfall 1During Flood Tide and Ebb Tide
O-1-C (FT)	Control of Outfall O-1 During Flood Tide
O-1-C (ET)	Control of Outfall O-1 During Ebb Tide

<sup>\*</sup>The upper stream location (I-3-C\*) had been relocated from end of February 2009 due to coarse stone blockage.

#### Table 3-12 Water Quality Monitoring Locations

3.3.10 Note that there were two control stations for Outfall O-1, one for sampling during flood tide and one for sampling during ebb tide. Only one of those control stations for Outfall O-1 was sampled during each sampling. Control station to be sampled was determined based on the tidal information provided by the Hong Kong Observatory.

#### **Action and Limit Levels**

3.3.11 The Action and Limit levels for water quality monitoring parameters are defined in Table 3-13. In case of any exceedance, appropriate actions would be undertaken in accordance with the Event and Action Plan as described in Table 3-14.



Parameters	Action	Limit
DO in mg/l	Surface and Middle	Surface and Middle
(Surface, Middle and	5%-ile of baseline data for surface	4mg/l except 5mg/l for FCZ or
Bottom)	and middle layer.	1%-ile of baseline data for surface and middle layer
	<u>Bottom</u>	<u>Bottom</u>
	5%-ile of baseline data for bottom layer.	2mg/l or 1%-ile of baseline data for bottom layer
SS in mg/l (depth-averaged)	95%-ile of baseline data or 120% of upstream control station's SS at the same tide of the same day	99%-ile of baseline or 130% of upstream control station's SS at the same tide of the same day and
		specific sensitive receiver water quality requirements (e.g. required suspended solids levels for concerned sea water intakes)
Turbidity (Tby) in NTU (depth-averaged)	J 95%-ile of baseline data or 120% of upstream control station's Tby at the same tide of the same day	99%-ile of baseline or 130% of upstream control station's Tby at the same tide of the same day

#### Notes:

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than
  the limit
- For SS and Tby, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.

Table 3-13 Action/Limit Levels for Water Quality



Event	ET Leader	IEC	SOR	Contractor
Action Level being exceeded by one sampling day	<ul> <li>Repeat in-situ measurement to confirm finding;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC and Contractor;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC and Contractor; and</li> <li>Repeat measurement on next day of exceedance.</li> </ul>	Contractor on the mitigation measures  Review proposals on mitigation measures submitted by Contractor and advise the SOR accordingly; and  Assess the	<ul> <li>Make agreement on the mitigation measures to be implemented.</li> </ul>	confirm notification ; of the non- compliance in
Action Level being exceeded by more than one consecutive sampling day	<ul> <li>Repeat in-situ measurement to confirm finding;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC and Contractor;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC and Contractor;</li> <li>Ensure mitigation measures are implemented;</li> <li>Prepare to increase the monitoring frequency to daily; and</li> <li>Repeat</li> </ul>	Discuss with ET and Contractor on the mitigation measures;     Review proposals on mitigation measures submitted by Contractor and advise the SOR accordingly; and     Assess the effectiveness of the implemented mitigation measures.	<ul> <li>Discuss with IEC on the proposed mitigation measures;</li> <li>Make agreement on the mitigation measures to be implemented; and</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ul>	<ul> <li>Inform the         Engineer and         confirm notification         of the non-         compliance in         writing;</li> <li>Rectify         unacceptable         practice;</li> <li>Check all plant and         equipment;</li> <li>Consider changes         of working         methods;</li> <li>Discuss with ET         and IEC and         propose mitigation         measures to IEC         and SOR within 3         working days; and</li> <li>Implement the         agreed mitigation         measures.</li> </ul>



Event	ET Leader	IEC	SOR	Contractor
	measurement on next day of exceedance.			
Limit Level being exceeded by one sampling day	<ul> <li>Repeat in-situ measurement to confirm finding;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC, Contractor and EPD;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC, SOR and Contractor;</li> <li>Ensure mitigation measures are implemented; and</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit level.</li> </ul>	Discuss with ET and Contractor on the mitigation measures;     Review proposals on mitigation measures submitted by Contractor and advise the SOR accordingly; and     Assess the effectiveness of the implemented mitigation measures.	Discuss with IEC, ET and Contractor on the proposed mitigation measures; and     Request Contractor to critically review the working methods;     Make agreement on the mitigation measures to be implemented; and     Assess the effectiveness of the implemented mitigation measures.	<ul> <li>Inform the         Engineer and         confirm notification         of the non-         compliance in         writing;</li> <li>Rectify         unacceptable         practice;</li> <li>Check all plant and         equipment;</li> <li>Consider changes         of working         methods;</li> <li>Discuss with ET         and IEC and SOR         and propose         mitigation         measures to IEC         and SOR within 3         working days; and</li> <li>Implement the         agreed mitigation         measures.</li> </ul>
Limit Level being exceeded by more than one consecutive sampling day	<ul> <li>Repeat in-situ measurement to confirm finding;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC, Contractor and EPD;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with</li> </ul>	Discuss with ET and Contractor on the mitigation measures;     Review proposals on mitigation measures submitted by Contractor and advise the SOR accordingly; and     Assess the effectiveness of the implemented mitigation	<ul> <li>Discuss with IEC, ET and Contractor on the proposed mitigation measures; and</li> <li>Request Contractor to critically review the working methods;</li> <li>Make agreement on the mitigation measures to be implemented;</li> <li>Assess the effectiveness of</li> </ul>	<ul> <li>Inform the SOR and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with ET and IEC and SOR</li> </ul>



Event	ET Leader	IEC	SOR	Contractor
	IEC, SOR and Contractor;  • Ensure mitigation measures are implemented; and  • Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	measures.	the implemented mitigation measures; and  • Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	and propose mitigation measures to IEC and SOR within 3 working days; • Implement the agreed mitigation measures; and • As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.

Table 3-14 Event/Action Plan for Water Quality



## 4 MONITORING RESULT

## 4.1 Air Quality

4.1.1 The air quality monitoring schedule of the reporting period is given in Appendix H.

## 1-hour TSP Monitoring

4.1.2 Results of 1-hours TSP level are shown in Table 4-1. All measurements were recorded and presented to the nearest 0.1  $\mu$ g/m³ in this report. Detail results including weather conditions, and graphical presentations are presented in Appendix I.

Station	Monitoring Date	Monitoring Result (μg/m³)	Action/Limit Levels (μg/m³)	
		83.8	_	
	04-Jan-11	19.0	_	
		47.0		
		224.6	_	
	10-Jan-11	96.5	_	
		101.5	_	
		214.5	_	
ASR 1	14-Jan-11	26.7	307/500	
		44.4	_	
		142.1	_	
	20-Jan-11	114.2	_	
		154.8		
		177.5		
	26-Jan-11	79.1		
		128.3		
		91.4		
	04-Jan-11	12.0		
		38.5	_	
		176.8		
	10-Jan-11	79.4		
		95.0		
ASR 3		123.9	327/500	
	14-Jan-11	28.9	_	
		51.7	_	
		154.0		
	20-Jan-11	104.6		
		123.9		
	26-Jan-11	157.3		



Station	Monitoring Date	Monitoring Result (μg/m³)	Action/Limit Levels (μg/m³)
		99.2	_
		78.6	
		82.0	_
	04-Jan-11	68.8	_
		21.2	_
		271.1	_
	10-Jan-11	334.6	_
		228.8	_
		300.2	_
ASR 8	14-Jan-11	96.5	337/500
		74.1	_
		222.2	_
	20-Jan-11	148.1	_
		108.4	_
		213.1	_
	26-Jan-11	160.2	_
		84.2	
		90.9	_
	04-Jan-11	99.1	_
		104.5	_
		244.3	_
	10-Jan-11	137.1	_
		172.4	_
		290.4	_
ASR 9	14-Jan-11	54.3	329/500
		115.4	_
		316.2	_
	20-Jan-11	122.1	_
		95.0	_
		134.4	_
	26-Jan-11	169.7	_
		100.5	

Note: Italic indicates the occurrence of exceedance of Action level

Bold indicates the occurrence of exceedance of Limit Level

Table 4-1 Air Quality Monitoring Results

4.1.3 No project related air quality exceedance was recorded in the reporting month.



#### 4.2 Noise

4.2.1 The noise monitoring schedule of the reporting period is given in Appendix H. In response to the complaint on construction noise received on 6 January 2011, additional noise measurements were conducted at NSR 9 on 14, 17 and 28 January 2011. Results of measured noise level, in terms of  $L_{eq~(30min)}$ , during the construction are shown in Table 4-2. All measurements including  $L_{10}$  and  $L_{90}$  are recorded to the nearest 0.1 dB(A) and presented in round numbers in this report. Detailed results including weather conditions and graphical presentation are presented in Appendix I.

Station	<b>Monitoring Date</b>	L <sub>eq (30 min)</sub> dB(A)	Limit Levels dB(A)
	04-Jan-11	64.1	_
NSR 1	10-Jan-11	64.1	70
Non I	20-Jan-11	63.5	- 70
	26-Jan-11	64.3	_
	04-Jan-11	56.5	
NSR 3	10-Jan-11	68.6	_
Nons	20-Jan-11	62.3	_
	26-Jan-11	71.1	_
	04-Jan-11	67.0	_
NCD 6	10-Jan-11	65.4	_
NSR 6	20-Jan-11	70.1	_
	26-Jan-11	67.3	_
	04-Jan-11	72.8	_
NSR 8	10-Jan-11	70.7	
Non o	20-Jan-11	71.3	_
	26-Jan-11	70.8	_
	04-Jan-11	71.0	_
	10-Jan-11	73.1	_
NSR 9	14-Jan-11*	73.5	_
	17-Jan-11*	71.9	_
	20-Jan-11	72.3	_
	26-Jan-11	71.3	_
	28-Jan-11*	72.7	

Note: \* means additional noise monitoring

Table 4-2 Noise Monitoring Results

4.2.2 No exceedances of Limit Levels were recorded in our noise monitoring during the reporting month.



# 4.3 Water Quality Monitoring

4.3.1 The water quality monitoring schedule of the reporting period is given in Appendix H. Summaries of exceedances for water quality monitoring are provided in Table 4-3 to Table 4-7.

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	One record on 3 Jan 2011	One record on 19 Jan 2011
SS	One record on 3 Jan 2011	Three records on 10, 19 and 28 Jan 2011
Total	2	4

Table 4-3 Summary of Exceedances for I-1

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	Nil	Nil
SS	One record on 3 Jan 2011	Nil
Total	1	Nil

Table 4-4 Summary of Exceedances for I-2

Parameter	rameter Action Level Exceedance Limit Level Exc	
DO	Nil	Nil
Turbidity	Nil	One record on 14 Jan 2011
SS	Nil	Nil
Total	Nil	1

Table 4-5 Summary of Exceedances for I-3

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	One record on 21 Jan 2011	Nil
SS	Three records on 5, 17 and 19 Jan 2011	One record on 21 Jan 2011
Total	4	1

Table 4-6 Summary of Exceedances for O-1(FT)



Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	Nil	Nil
SS	Nil	Three records on 14, 24 and 26 Jan 2011
Total	Nil	3

Table 4-7 Summary of Exceedances for O-1(ET)

4.3.2 Results of measured water quality parameters during the reporting month are shown in Table 4-8. Detailed results including weather conditions and graphical presentations are enclosed in Appendix I.

#### River Water Quality Monitoring

4.3.3 Eight non-project related exceedances were recorded for the river water quality monitoring within the reporting month.

#### **Exceedances of Turbidity Level**

#### Action Level at I-1 on 3 January 2011

An exceedance of Turbidity Action Level was recorded at I-1 on 3 January 2011. The measured turbidity level (11.31 NTU) was above the baseline action Level, but lower than the turbidity level of the control station (I-1-C)(11.44 NTU). General site cleaning and housekeeping, filling TBM spoil into centre void, spatterdashing on spiral ramp, horizontal drilling and grouting, and geotechnical instrumentation monitoring were undertaken during the measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.

#### Limit Level at I-3 on 14 January 2011

4.3.5 An exceedance of Turbidity Limit Level was recorded at I-3 on 14 January 2011. The measured turbidity level (10.62 NTU) was higher than baseline limit level, but lower than the turbidity level of the control station (I-3-C)(10.97 NTU). General site cleaning and housekeeping, monitoring of deformation monitoring point (DMP), shotcreting at shaft, approach channel excavation — rock removal, rock breaking, pre-drilling, mesh installation, rock dowel drilling and grouting and peeling cement grout outside H-pile for PB wall were undertaken during measurement. No direct disturbance was observed from the site. Milky green coloured water was found coming from upstream of the Intake I-3 works area, so the exceedance was considered to be contributed by pollution from upstream and not project related. As a result, no action was required.

#### Limit Level at I-1 on 19 January 2011

4.3.6 An exceedance of Turbidity Limit Level was recorded at I-1 on 19 January 2011. The measured turbidity level (13.70 NTU) was above the baseline limit level, but lower than the turbidity level of the control station (I-1-C)(13.88 NTU). General site cleaning and tidy



up works, filling the spoil of the tunnel boring machine (TBM) into spiral ramp, dismantling of steel working platform and geotechnical monitoring were undertaken during the measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by high turbidity level of upstream location and natural variation. Since the exceedance was not project related, no action was required.

#### Exceedances of Suspended Solids Level

#### Action Level at I-1 on 3 January 2011

4.3.7 An exceedance of SS Action Level was recorded at I-1 on 3 January 2011. The measured SS level (10.10 mg/L) was above the baseline Action Level, but lower than the SS level of the control station (I-1-C) (11.00mg/L). General site cleaning and housekeeping, filling tunnel boring machine (TBM) spoil into centre void, spatter-dashing on spiral ramp, horizontal drilling and grouting, and geotechnical instrumentation monitoring were undertaken during the measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.

#### Action Level at I-2 on 3 January 2011

An exceedance of SS Limit Level was recorded at I-2 on 3 January 2011. The measured SS level (2.45 mg/L) was below the baseline Action / Limit Level and within the range of baseline SS concentration (1 - 8.5 mg/L) but was more than 120% of the SS level measured (2.00 mg/L) at the upstream control station (I-2-C). General site cleaning, housekeeping and temporary traffic arrangement (TTA), excavation (drilling holes) at vortex drop shaft, excavation (shotcreting and mucking) at man access shaft, closed formwork for dry flow channel, rock breaking for 16th jacking pipe at Portion G; erection of 60 ton temporary steel platform at Portion G and excavation for 750 step channel (SC) and catchpit were undertaken during measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.

#### Limit Level at I-1 on 10, 19 and 28 January 2011

- 4.3.9 Three exceedances of SS Limit Level were recorded at I-1 on 10, 19 and 28 January 2011. For exceedance on 10 January 2011. The measured SS level (3.50 mg/L) was below the baseline action level, but higher than 130% of the SS level of the control station (I-1-C) (2.45 mg/L) and within the range of baseline SS concentration (1 10.5 mg/L). General site cleaning and housekeeping, dismantling of facade platform, horizontal drilling and grouting, and geotechnical instrumentation monitoring were undertaken during measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.
- 4.3.10 For exceedances on 19 and 28 January 2011, the measured SS level (14.50 and 10.25 mg/L respectively) was above the baseline limit level, but lower than the SS level of the control station (I-1-C) (15.30 and 10.90 mg/L respectively). General site cleaning and tidy up works, filling the spoil of the tunnel boring machine (TBM) into spiral ramp, dismantling of steel working platform and geotechnical monitoring were undertaken during the measurement on 19 January 2011 and general site cleaning, filling the spoil of



the tunnel boring machine into spiral ramp, breaking shear key for cascade construction and geotechnical instrumentation monitoring were undertaken during the measurement on 28 January 2011. No direct disturbance was observed from the site. Thus, the exceedances were considered to be contributed by high SS levels of upstream location and not project related, so no action was required.

#### Marine Water Quality Monitoring

4.3.11 Eight non-project related exceedances were recorded for the marine water quality monitoring within the reporting month.

#### **Exceedances of Turbidity Level**

Action Level at O-1(FT) on 21 January 2011

4.3.12 One exceedance of Turbidity Action Level was recorded on 21 January 2011 at O-1(FT). The measured turbidity level (depth-averaged) (12.61 NTU) at O-1(FT) was above the baseline action level but was lower than the control station's turbidity level (O-1-C (FT)) (14.57 NTU) at the same tide of the same day. No marine works was undertaken on that morning. Silt curtain was deployed along the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.

#### Exceedances of Suspended Solids Level

#### Action Level at O-1(FT) on 5, 17 and 19 January 2011

4.3.13 Three exceedances of SS Action Level were recorded on 5, 17 and 19 January 2011 at O-1(FT). The measured SS levels (10.55, 5.10 and 7.52 mg/L respectively) were below the baseline Action/Limit Level but was higher than 120% of the control station's SS level (O-1-C(FT)) (8.72, 4.18 and 6.20 respectively) at the same tide of the same day. The works conducted during monitoring included armour rock removal from the sea wall to the derrick barge at Portion E only on 5 January 2011, relocation of rock armour to another derrick barge for transportation to storage area only on 17 January and armour rock removal from seawall only on 19 January. During monitorings, silt curtain was deployed along the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedances were considered to be contributed by natural variation and no further action was required.

#### Limit Level at O-1(FT) on 21 January 2011

4.3.14 One exceedance of SS Limit Level was recorded on 21 January 2011 at O-1(FT). The measured SS level (depth-averaged) (19.27 mg/L) at O-1(FT) was above the baseline limit level and the control station's SS level (O-1-C(FT)) (16.85 mg/L) at the same tide of the same day. No marine works was undertaken on that morning. During monitoring, silt curtain was deployed along the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.



#### Limit Level at O-1(ET) on 14, 24 and 26 January 2011

4.3.15 Three exceedances of SS Limit Level were recorded on 14, 24 and 26 January 2011 at O-1(ET). The measured SS levels (5.10, 5.68 and 6.68 respectively) were below the baseline Action / Limit Level but higher than 130% of the control station's SS level (O-1-C (FT)) (3.63, 3.75 and 4.65 respectively) at the same tide of the same day. Works conducted during measurement included removal of armour rock from seawall and placing them into derrick barge on 14 and 24 January, and transfer of excavated materials from derrick barge to split barge on 26 January. During monitorings, silt curtains had been deployed along the dredging boundary line and extended from the seawater level to the seabed. Floating type silt curtain had been employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	pH	Turbidity (NTU	I) Action/Limit Level for Turbidity (NTL	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-1	03-Jan-11	16.80	7.13	3.42 / 3.34	8.06	11.31	9.75 / 12.47	10.10	8.85 / 10.17
	05-Jan-11	17.80	8.19	<del></del>	8.04	3.82	_	2.30	_
	07-Jan-11	16.80	7.22	<del></del>	8.03	5.72	_	3.05	_
	10-Jan-11	17.00	7.53	<del></del>	8.02	5.74	_	3.50	<del></del>
	12-Jan-11	14.80	7.94	_	8.02	3.51		3.45	
	14-Jan-11	18.20	7.83		7.96	4.93		6.85	
	17-Jan-11 16.70 8.46	<del></del>	7.98	8.77	8.70	_			
	19-Jan-11	16.90	8.02	<del></del>	7.84	13.70		14.50	
	21-Jan-11	17.10	8.15	<del></del>	7.76	5.74		7.10	
	24-Jan-11	15.30	8.73	<del></del>	7.97	6.88	_	8.05	
	26-Jan-11	19.20	7.74	<del></del>	8.08	4.08	_	6.25	
	28-Jan-11	16.30	7.97		8.07	5.35	_	10.25	
	31-Jan-11	17.40	8.05		8.47	9.05	_	8.65	_

**Note:** *Italic* indicates the occurrence of exceedance of *Action level*. **Bold** indicates the occurrence of exceedance of **Limit level**.



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTL	I)Action/Limit Level for Turbidity (NTI	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-1-C	03-Jan-11	17.00	7.08	-/-	8.05	11.44	-/-	11.00	- / -
	05-Jan-11	17.50	8.28		8.04	3.91	_	2.25	
	07-Jan-11	17.00	7.62		8.05	5.83	_	3.20	
	10-Jan-11	17.10	7.31		8.03	5.93	_	2.45	
	12-Jan-11	14.90	8.33		8.01	3.56	_	3.60	
	14-Jan-11	18.40	7.63		7.98	5.09	_	6.70	
	17-Jan-11	16.50	8.63		7.95	8.95	_	11.85	
	19-Jan-11	16.80	8.27		7.82	13.88	_	15.30	
	21-Jan-11	17.00	8.22		7.75	5.89	_	7.25	
	24-Jan-11	15.30	8.54		7.98	6.95	_	7.50	
	26-Jan-11	19.70	7.79		8.10	4.23	_	6.35	
	28-Jan-11	16.25	8.06		8.10	5.48	_	10.90	
	31-Jan-11	17.30	7.72		8.50	9.46	_	8.70	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NT	U)Action/Limit Level for Turbidity (NTI	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-2	03-Jan-11	16.30	7.11	3.66 / 3.63	8.05	1.50	6.63 / 6.99	2.45	7.68 / 8.34
	05-Jan-11	17.60	8.29		8.03	1.95		2.05	
	07-Jan-11	16.90	7.38		8.05	2.24		2.00	
	10-Jan-11	17.15	7.40		8.06	1.44		2.00	
	12-Jan-11	14.50	7.93		7.99	2.23		2.00	
	14-Jan-11	18.20	7.58		7.91	2.40		2.00	
	17-Jan-11	16.80	8.49		7.98	1.53		2.00	
	19-Jan-11	17.10	7.90		7.86	2.07	2.00		
	21-Jan-11	17.10	8.05		7.72	2.34		2.00	
	24-Jan-11	16.00	8.71		7.98	1.89		2.00	
	26-Jan-11	19.10	7.94		8.02	2.28		2.00	
	28-Jan-11	16.70	7.99		8.05	2.19		2.00	
	31-Jan-11	17.20	8.19		8.35	5.14	_	2.10	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NT	U)Action/Limit Level for Turbidity (NT	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-2-C	03-Jan-11	16.50	7.21	-/-	8.06	1.59	-/-	2.00	-/-
	05-Jan-11	17.85	8.10		8.04	2.00		2.00	<del></del>
	07-Jan-11	16.90	7.08		8.06	2.31		2.00	<del></del>
	10-Jan-11	17.20	7.21		8.05	1.52		2.00	
	12-Jan-11	14.60	7.95		8.00	2.88		2.05	
	14-Jan-11	18.50	7.79		7.92	2.56		2.00	<del></del>
	17-Jan-11	16.70	8.39		7.96	1.59		2.00	<del></del>
	19-Jan-11	17.00	8.11	_	7.85	2.07	_	2.00	
	21-Jan-11	17.00	8.09		7.71	2.49		2.00	<del></del>
	24-Jan-11	15.80	8.63		7.96	1.97		5.15	<del></del>
	26-Jan-11	19.25	7.84		8.00	4.21		5.50	<del></del>
	28-Jan-11	16.50	7.89		8.06	2.70		2.05	<del></del>
	31-Jan-11	17.00	8.38		8.31	5.11		2.00	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTL	J)Action/Limit Level for Turbidity (NTI	SS (mg/L) J)	Action/Limit Level for SS (mg/L)
I-3	03-Jan-11	16.50	7.08	3.65 / 3.51	8.06	1.80	3.99 / 4.18	2.00	6.13 / 7.23
	05-Jan-11	17.85	8.18		8.06	1.61	_	2.00	
	07-Jan-11	16.80	7.58		8.02	1.89	_	2.00	
	10-Jan-11	17.50	7.24		8.09	1.46	_	2.00	
	12-Jan-11	14.90	7.75		7.98	1.79	_	2.00	
	14-Jan-11	18.05	7.57		7.96	10.62	_	2.80	
	17-Jan-11	16.65	8.23		7.98	3.58	_	2.00	
	19-Jan-11	16.90	8.15		7.87	1.89	_	2.00	
	21-Jan-11	17.10	8.10		7.75	1.98	_	2.00	
	24-Jan-11	16.00	8.74		8.02	1.64	_	2.00	
	26-Jan-11	19.10	7.81		8.22	2.06	_	2.00	
	28-Jan-11	16.40	7.89		8.04	1.91	_	2.00	
	31-Jan-11	17.30	7.99		8.13	1.81	_	2.00	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTU)	Action/Limit Level for Turbidity (NTU)	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-3-C	03-Jan-11	16.55	7.12	-/-	8.03	1.83	-/-	2.00	-/-
	05-Jan-11	17.80	8.06		8.05	1.71	_	2.00	_
	07-Jan-11	16.90	7.49		8.02	1.94	_	2.00	<del></del>
	10-Jan-11	17.40	7.51		8.08	1.49	_	2.00	<del></del>
	12-Jan-11	14.80	7.83		7.99	1.78	_	2.00	<del></del>
	14-Jan-11	18.00	7.52		7.96	10.97	_	2.55	<u> </u>
	17-Jan-11	16.50	8.21		7.99	3.70	_	2.00	<del></del>
	19-Jan-11	16.85	8.22		7.80	1.94	_	2.00	<del></del>
	21-Jan-11	17.20	8.11		7.77	2.11	_	2.00	<del></del>
	24-Jan-11	16.00	8.56		8.00	1.73	_	2.00	<del></del>
	26-Jan-11	19.10	7.52		8.03	2.09	_	2.00	<u> </u>
	28-Jan-11	16.50	7.96		8.02	1.96	_	2.00	<del></del>
	31-Jan-11	17.20	8.14		8.12	1.82	_	2.00	



Station	Date	Depth	Temperature (°C) (depthaveraged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth averaged)	Action / Limit - Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1(FT)	03-Jan-11	Surface		7.47	0.04 / 0.04			10.35 / 13.15		14.1 / 18.08
		Middle		7.29	6.84 / 6.81	8.27	4.74		6.05	
		Bottom	_	7.34	6.99 / 6.96	_				
	05-Jan-11	Surface		8.24	0.04/0.04					_
		Middle	 17.70	8.01	6.84 / 6.81	8.21	7.62		10.55	
		Bottom	_	7.95	6.99 / 6.96	_				
	07-Jan-11	Surface		7.47	0.04/0.04					_
		Middle		7.55	6.84 / 6.81	8.22	6.26		7.73	
		Bottom	_	7.67	6.99 / 6.96	_				
	10-Jan-11	Surface		7.22	0.04/0.04					
		Middle	17.20	7.49	6.84 / 6.81	8.22	8.92		12.13	
		Bottom		7.52	6.99 / 6.96				12.10	
	12-Jan-11	Surface		8.51	0.04 / 0.04					
		Middle	14.38	8.26	6.84 / 6.81	8.19	5.24		5.12	
		Bottom		8.29	6.99 / 6.96	_				
	14-Jan-11	Surface		7.77	0.04 / 0.04			_		_
		Middle	18.12	7.86	6.84 / 6.81	8.22	2.74		3.70	
		Bottom		7.70	6.99 / 6.96	_				
	17-Jan-11	Surface		8.19	6.94 / 6.94					
		Middle	16.80	8.02	6.84 / 6.81	1 8.12	8.12 3.17	5.10		
		Bottom		8.29	6.99 / 6.96	_				



Station	Date	Depth	Temperature (°C) (depthaveraged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth- averaged)	Action / Limit Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1(FT)	19-Jan-11	Surface		8.24	6.04 / 6.01			10.35 / 13.15		14.1 / 18.08
		Middle	16.90	8.23	6.84 / 6.81	8.24	4.66		7.52	
		Bottom	_	8.10	6.99 / 6.96	_				
	21-Jan-11	Surface		7.89	6.04 / 6.01					
		Middle	17.42	7.83	6.84 / 6.81	8.19	12.61		19.27	
		Bottom		7.84	6.99 / 6.96	_				
	24-Jan-11	Surface		8.31	0.04 / 0.04	8.22		_		_
		Middle		8.09	6.84 / 6.81		8.34		8.72	
	26-Jan-11	Bottom		8.14	6.99 / 6.96			_ <b>_</b>		_
		Surface		7.73	0.04 / 0.04					
		Middle	18.90	7.71	6.84 / 6.81	8.20	3.36		3.28	
		Bottom		7.93	6.99 / 6.96	=				
	28-Jan-11	Surface		7.75	0.04 / 0.04					
		Middle	16.20	7.75	6.84 / 6.81	8.21	2.49		2.00	
		Bottom	_	7.68	6.99 / 6.96	_				
•	31-Jan-11	Surface		7.83	0.04 / 0.04					_
		Middle	16.78	7.86	6.84 / 6.81	8.23	3.66		3.18	
		Bottom	_	7.77	6.99 / 6.96	_				



Station	Date	Depth	Temperature (°C) (depthaveraged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth averaged)	Action / Limit Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1-C(FT)	03-Jan-11	Surface		7.43	,			-/-		-/-
		Middle	 17.50	7.48	- / -	8.27	4.84		5.55	
		Bottom	_	7.38	-/-					
-	05-Jan-11	Surface		7.99	,					_
		Middle	 17.67	8.15	- / -	8.22	8.05		8.72	
		Bottom	_	8.23	-/-	_				
_	07-Jan-11	Surface		7.42						
		Middle	 17.18	7.68	- / -	8.22	7.07		10.17	
		Bottom		7.59	-/-	_				
_	10-Jan-11	Surface		7.56						
		Middle	17.13	7.51	- / -	8.22	9.05		11.78	
		Bottom		7.47	-/-					
=	12-Jan-11	Surface		8.45						_
		Middle	14.40	8.08	- / -	8.19	6.20		7.78	
		Bottom		7.80	-/-	_				
_	14-Jan-11	Surface		7.75				_		_
		Middle	18.13	7.81	- / -	8.23	2.87		4.37	
		Bottom		7.70	-/-	<del></del>				
=	17-Jan-11	Surface		8.08	1					_
		Middle	16.73	8.21	- / -	8.13	3.77		4.18	
		Bottom		8.11	-/-	_				



Station	Date	Depth	Temperature (°C) (depth- averaged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth- averaged)	Action / Limit Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1-C(FT)	19-Jan-11	Surface		8.05	-/-			- / -		-/-
		Middle	16.83	8.00	- / -	8.25	4.80		6.20	
		Bottom	_	8.01	-/-	_				
	21-Jan-11	Surface		7.89	,					_
		Middle	17.53	7.77	- / -	8.19	14.57		16.85	
		Bottom	_	7.64	- / -					
	24-Jan-11	Surface		7.92	-/-					_
	26-Jan-11	Middle	16.28	8.00	- / -	8.22	8.71		10.18	
		Bottom		8.01	- / -	_				
_		Surface		7.60	,					_
		Middle	19.00	7.78	- / -	8.19	3.92		6.58	
		Bottom		7.61	-/-	_				
_	28-Jan-11	Surface		7.98	1					_
		Middle	16.17	7.73	- / -	8.21	2.50		2.43	
		Bottom		7.69	-/-	_				
_	31-Jan-11	Surface		7.82	1					_
		Middle	17.67	7.63	-/-	8.23 3.52		3.37		
		Bottom	_	7.87	- / -	_				



Station	Date	Depth	Temperature (°C) (depthaveraged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth averaged)	Action / Limit - Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1(ET)	03-Jan-11	Surface		7.19	7.00 / 0.04			11.87/13.44		13.25/14.39
		Middle	 17.40	7.12	7.02 / 6.94	8.26	5.55		7.18	
		Bottom	_	7.26	6.7 / 6.48	_				
	05-Jan-11	Surface		8.27	7.00 / 0.04					_
		Middle	 17.98	8.53	7.02 / 6.94	8.22	4.04		4.77	
		Bottom	_	8.35	6.7 / 6.48	_				
	07-Jan-11	Surface		7.62	7.00 / 0.04					_
		Middle	 17.37	7.57	7.02 / 6.94	8.23	4.89		6.37	
		Bottom	_	7.49	6.7 / 6.48	_				
	10-Jan-11	Surface	17.40	7.40	7.00 / 0.04		3 5.56	_		_
		Middle		7.49	7.02 / 6.94	8.23		6.25		
		Bottom		7.69	6.7 / 6.48				0.20	
	12-Jan-11	Surface		8.25	7.00 / 0.04			- <u>-</u>		
		Middle	14.72	8.01	7.02 / 6.94	8.20	4.14	4.97	4.97	
		Bottom	_	8.19	6.7 / 6.48	_				
	14-Jan-11	Surface		7.91	7.00 / 0.04			_		_
		Middle	18.22	7.70	7.02 / 6.94	8.22	3.11		5.10	
		Bottom		7.75	6.7 / 6.48	=				
	17-Jan-11	Surface		8.20	7.00 / 0.04			_		_
		Middle	16.63	8.24	7.02 / 6.94	8.12	8.12 3.55		4.63	
		Bottom	_	8.31	6.7 / 6.48					



Station	Date	Depth	Temperature (°C) (depthaveraged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth- averaged)	Action / Limit Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1(ET)	19-Jan-11	Surface		8.09	7.00 / 6.04			11.87/13.44		13.25/14.39
		Middle	16.82	8.27	7.02 / 6.94	8.27	3.91		4.43	
		Bottom	_	8.22	6.7 / 6.48	_				
•	21-Jan-11	Surface		7.97	7.00 / 0.04			_		_
		Middle	17.55	7.83	7.02 / 6.94	8.20	7.57		8.63	
		Bottom		7.82	6.7 / 6.48	_				
•	24-Jan-11	Surface	16.50	8.21	7.00 / 0.04					
		Middle		8.09	7.02 / 6.94	8.23	6.33	5.68		
		Bottom	_	8.32	6.7 / 6.48	_				
•	26-Jan-11	Surface		7.86	7.00 / 0.04					_
		Middle	19.20	7.82	7.02 / 6.94	8.20	3.49		6.68	
		Bottom		7.73	6.7 / 6.48	=				
•	28-Jan-11	Surface		7.73	7.00 / 0.04					_
		Middle	16.03	7.80	7.02 / 6.94	8.20	2.39		2.53	
		Bottom		7.88	6.7 / 6.48	=				
•	31-Jan-11	Surface		7.90	7.00 / 0.04			- <u>-</u>		_
		Middle	18.38	7.68	7.02 / 6.94	8.22	3.40		3.17	
		Bottom	_	7.78	6.7 / 6.48					



Station	Date	Depth	Temperature (°C) (depthaveraged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth averaged)	Action / Limit Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1-C(ET)	03-Jan-11	Surface		7.52	,			-/-		-/-
		Middle	 17.40	7.37	- / -	8.27	5.61		7.35	
		Bottom	_	7.32	-/-	_				
-	05-Jan-11	Surface		8.36	,					_
		Middle	 17.85	8.18	- / -	8.22	4.26		5.12	
		Bottom	_	8.31	-/-	_				
-	07-Jan-11	Surface		7.78	,					_
		Middle	 17.37	7.64	- / -	8.23	5.02		5.92	
		Bottom	_	7.42	-/-	_				
-	10-Jan-11	Surface		7.39	,					_
		Middle	17.40	7.44	- / -	8.23	5.68		6.75	
		Bottom	_	7.51	-/-	_				
-	12-Jan-11	Surface		8.08	,			- <b>-</b>		_
		Middle	14.65	8.01	- / -	8.20	3.87		5.15	
		Bottom	_	8.06	-/-	_				
-	14-Jan-11	Surface		7.62	,			- <b>-</b>		_
		Middle	18.27	7.73	- / -	8.22	3.20		3.63	
		Bottom	_	7.58	-/-	_				
-	17-Jan-11	Surface		8.17	,			- <u>-</u>		_
		Middle	16.63	8.13	- / -	8.12	8.12 3.87		4.42	
		Bottom	_	8.10	-/-	_				



Station	Date	Depth	Temperature (°C) (depthaveraged)	DO (mg/L)	Action / Limit Level for DO (mg/L)	pH (depth- averaged)	Turbidity (NTU) (depth- averaged)	Action / Limit Level for Turbidity (NTU)	SS (mg/L) (depth- averaged)	Action / Limit Level for SS (mg/L)
O-1-C(ET)	19-Jan-11	Surface		8.07	/			- / -		-/-
		Middle	16.80	8.18	- / -	8.27	4.01		3.83	
		Bottom	_	8.11	-/-	_				
_	21-Jan-11	Surface		7.79	,					_
		Middle	 17.52	7.68	-/-	8.20	7.64		9.60	
		Bottom	_	7.89	-/-	_				
_	24-Jan-11	Surface		8.23	/					_
		Middle	16.35	8.08	- / -	8.23	6.50		3.75	
		Bottom	_	8.14	-/-	_				
_	26-Jan-11	Surface		7.56	,					_
		Middle	19.18	7.91	- / -	3.97	3.59		4.65	
		Bottom	_	7.83	-/-	_				
_	28-Jan-11	Surface		7.82	/					_
		Middle	15.97	7.93	- / -	8.20	2.41		2.60	
		Bottom	_	7.64	-/-	_				
_	31-Jan-11	Surface		7.65	/					_
		Middle	18.37	7.58	- / -	8.22	3.37		3.72	
		Bottom		7.71	-/-					

Table 4-8 Water Quality Monitoring Results



## 4.4 Summary of Project-Related Exceedances

4.4.1 Table 4-9 summarises the project-related exceedance results recorded in January 2011.

Note that exceedances that are considered not related to the construction activities are not included in this table.

Environmental Monitoring	Total No. of Measurement	Action Level Exceedance	% of Action Level Exceedance	Limit Level Exceedance	% of Limit Level Exceedance
Air Quality	60	0	0	0	0
Noise	23	1(complaint)	4.3	0	0
Water	130	0	0	0	0

Note: Exceedances that are considered not related to the construction activities are not included in this table.

Table 4-9 Summary of Project-Related Exceedances



### 5 WASTE MANAGEMENT

#### 5.1.1 The status of waste management is summarised in Table 5-1.

Status of waste management	Quantity
Inert C&D Material Disposed of to Public Fill at Tuen Mun (m³)	9631.7
Inert C&D Material Reused in this Contracts (m <sup>3</sup> )	1210.9
Inert C&D Material Reused in other Contracts* (m³)	10389.8
Metals Generated (kg)	Nil
Paper / Cardboard Packaging (kg)	300.0
Plastics (kg)	Nil
Chemical Waste (kg)	588.8
General Waste Disposed of to NENT Landfill (m <sup>3</sup> )	41.9

<sup>\*</sup> Other Contract includes DC/2007/08, YL/2009/01, HY/2007/10, Wo Shang Wai, DC/2007/17, CV/2009/14 and Tailor Recycle Aggregate (Lung Kwu Tan).

Table 5-1 Waste Generated in January 2011



#### 6 NON-COMPLIANCE AND DEFICIENCY

### 6.1 Site Audit by ET

6.1.1 ET has carried out two site inspections in the reporting month. All observations together with the appropriate recommended mitigation measures where necessary were recorded in the audit checklists that were passed to the Contractor. Major environmental deficiencies observed during site inspection/audits and recommendation, which were made by the ET, are summarised in Table 6-1 below. No non-compliance was observed.

Inspection Date	Observation	Recommendation	Status
Classian	No drip trays were observed for the chemical containers at Outfall and Intake I-3.	The Contractor was reminded to provide drip trays for chemical containers.	<ol> <li>Drip trays were provided for the chemical containers on 7 January 2011. (Closed)</li> </ol>
6 January 2011	2. Noise insulation wrapping for breaking tips of the breakers was not installed properly at Intake I-3.	<ol> <li>The Contractor was reminded to install the noise insulation wrapping properly.</li> </ol>	<ol> <li>Noise Insulation         wrapping was installed         properly for the breaking         tips of the breakers on         11 January 2011.         (Closed)</li> </ol>
21 January 2011	<ol> <li>Control on dusty activity (rock breaking) was not adequate at Intake I- 3.</li> </ol>	<ol> <li>The Contractor was reminded to provide water spray to minimize any fugitive dust dispersed from dusty activities.</li> </ol>	Water spray was provided on 22 January 2011. (Closed)

Table 6-1 Site Inspection by ET



#### 7 COMPLAINT

- 7.1.1 A complaint hotline at <u>9850 3241</u> of the Contractor has been established for the Project.
- 7.1.2 One environmental complaint was received during the reporting month.
- 7.1.3 EPD had informed ET on 10 January 2011 that one public complaint regarding dark smoke emission from derrick barge and construction noise and dust at outfall construction site was received. The ET have conducted site inspection at the Outfall construction site and the Greenview Terrace (NSR 9) on 21 January 2011 to review and audit the site setting, mitigation measures implemented on-site and the environmental performance of the contractor. Enhanced on-site mitigation measures have been implemented by the contractor. An investigation report will be submitted to the EPD in February 2011. Details of the past complaint investigation and observations can be referred to Appendix K.
- 7.1.4 Cumulative statistics of environmental complaints are shown in Table 7-1.



Table 7-1 Cumulative Statistics of Environmental Complaints



# 8 SUMMARY OF NOTIFICATION OF SUMMONS, SUCCESSFUL PROSECUTIONS AND CORRECTIVE ACTIONS

- 8.1.1 No summons and successful prosecution was received during the reporting month.
- 8.1.2 Cumulative statistics of notification of summons, successful prosecutions and convictions are shown in Table 8-1.

Notification	of Summons	Successful Prosec	ution and conviction
January 2011	Cumulative	January 2011	Cumulative
0	0	0	0

Table 8-1 Cumulative Statistics of Notification of Summons and Successful Prosecutions and Convictions



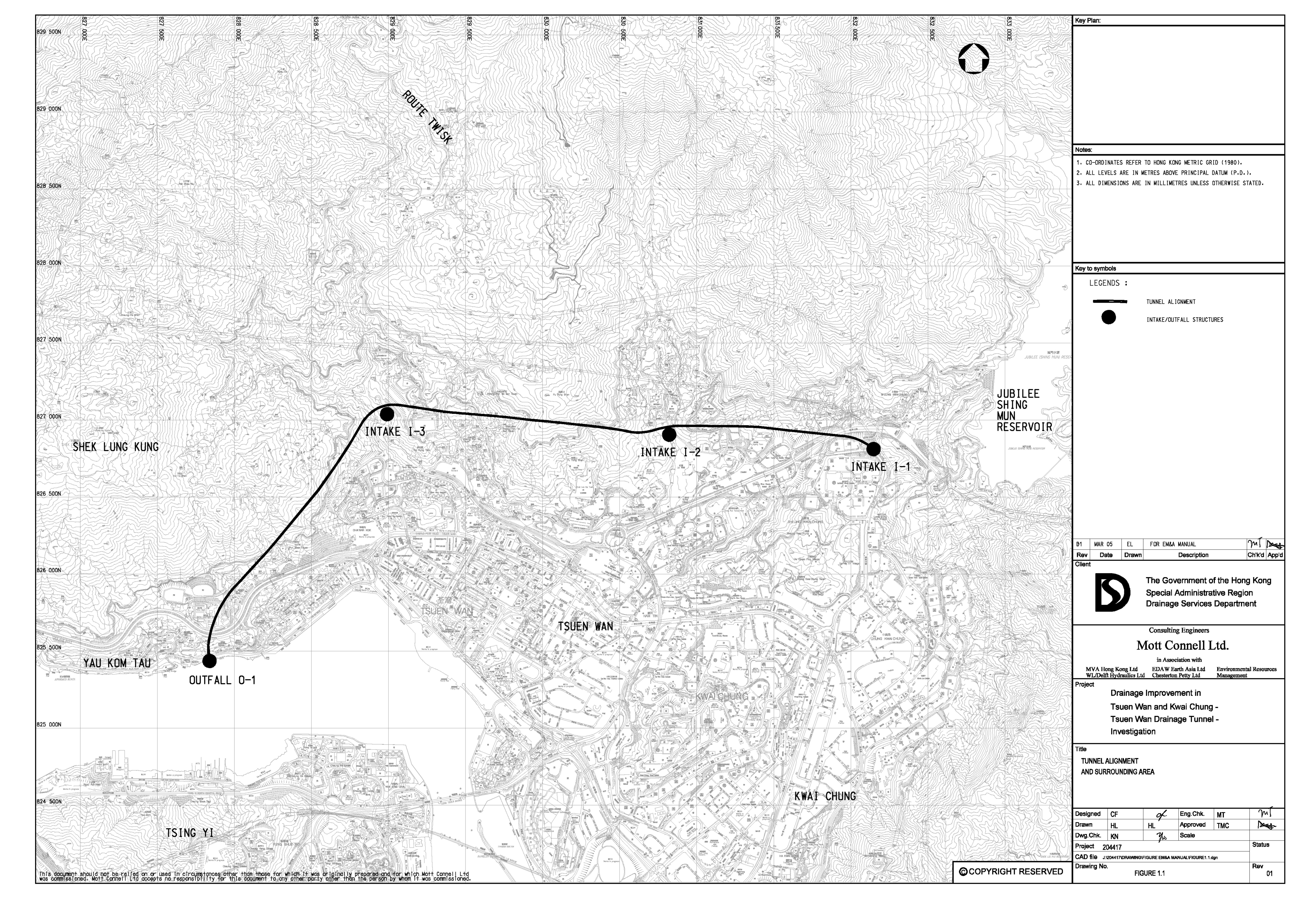
#### 9 FUTURE KEY ISSUE

- 9.1.1 The forecast of construction works for the upcoming three months are:
  - Site cleaning and tidying at I-1, I-2, I-3 and Outfall;
  - TBM drilling of the tunnel and mucking out of tunnel spoil at Outfall;
  - Drilling, excavation and rock splitting at spiral ramp at Outfall;
  - Excavation and soil nailing for CPR box culvert construction at Outfall;
  - Removal of sea wall and armour rocks for basin scheme at Portion E;
  - Installation of marine sea wall block and rock armour for basin scheme at Portion E;
  - Drilling and excavation of vortex shaft at I-3;
  - Construction of PB wall structure at I-3;
  - Construction of approach channel at I-3;
  - Pipe jacking at Portion G at I-2;
  - Pre-bored H-pile construction for skin wall at Portion G at I-2;
  - Drilling, excavation and rock splitting of man access shaft and vortex drop shaft at I-2;
  - Construction of approach channel structure at I-2;
  - Construction of 750 step channel and catchpit at I-2;
  - Cascade and channel modification concrete structure works at I-1;
  - Horizontal drilling at I-1; and
  - Back filling of spiral ramp centre void at I-1.



## Appendix A

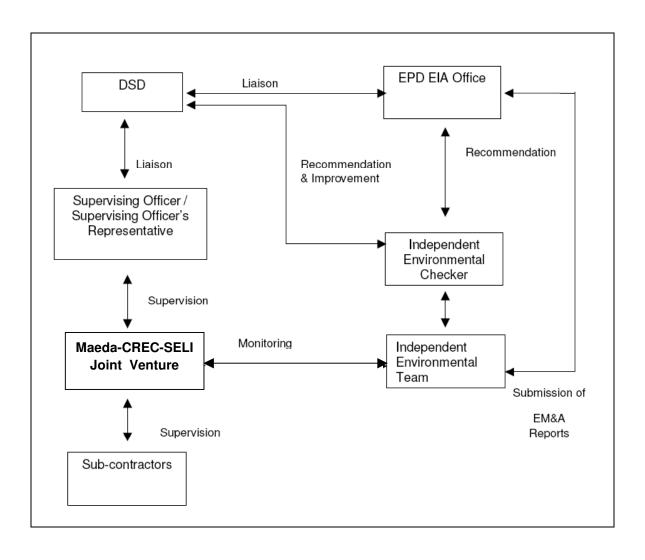
## Site Map and Works Area





Appendix B

## **Organization Chart**





## Appendix C

## **Construction Programme**

QI .		Activity. Description	D04 WP3D Dur Dur	MP3D AD04 Dur Start	AD04 Finish	WP3D	WP3D	Ō	Total	2908	2010 2011 2012	2013
Preliminaries	S							E				
Project Dates			Ť					H				
0180000000	Tender less to Date		c	ATOM II AC O	6	ATUNI 190		c				
01R0000004	Tender Closing Date	a)	0	98	1 0	050CT07A		2 61	T	-		
01R0000006	Letter of Acceptance Issued Date	se Issued Date	0	0 14DEC07A		14DEC07A		2	•			
01R0000008	Contract Commencement Date	sement Date	0	0 28DEC07A	8	28DEC07A		2	•	14 days after LC	er L@A	
01R0000010	Completion of Section 1 of the Works	ion 1 of the Works	0	0	07DEC12		18JAN13		-462		Contract completion date on 02/09/11	414
01R0000012	Completion of Section 2 of the Works	ion 2 of the Works	0	0	22MAR12		22MAR12	2	-239		Con ract completion date on 27/07/11 ◆	
01R0000014	Completion of Section 3 of the Works	ion 3 of the Works	0	0	23MAR12		23MAR12	2	-240		Concract completion date on 27/07/11◆	
01R0000016	Completion of Section 4 of the Works	ion 4 of the Works	0	0	04FEB12		04FEB12	2	-192	0	Contract completion date on 27/07/11	
01R0000018	Completion of Section 5 of the Works	ion 5 of the Works	0	0	07DEC12		18JAN13	2	-485		Contract completion date on 10/08/11	41
01R0000020	Completion of Section 6 of the Works	ion 6 of the Works	0	0	27JUL11		27JUL11	23	0	Contract cor	ct completion date on 27/07/11	
01R0000022	Completion of Section 7 of the Works	ion 7 of the Works	0	0	07DEC13		18JAN14	7	-462		Contract completion date on 01/09/12◆	ite on 01/09/12.
Possession of	of Airea											
01R00A0102	Possession Portion A - 90d of DOC	A-90d of DOC	0	0 27FEB08A	2	27FEB08A		2	Ť	Permane	Permanent land allocation area was possessed on 19/03/08	03/08
01R00A0104	Handover of Section	Handover of Section 1 of Works at Portion A	0		22MAR12		22MAR12		-239		•	
01R00B0102	Possession of Portion B - 90d of DOC	on B - 90d of DOC	0	0 07MAR08A	0	07MAR08A		N		٥		100
01R00B0104	Handover of Portion B	8 -	0	0	23MAR12		23MAR12	7	-240		•	
01R00C0102	Possession of Portion C - 90d of DOC	on C - 90d of DOC	0	0 26MAR08A	Š	26MAR08A		7		•		
01R00C0104	Handover of Portion C	0 -	0	0	04FEB12		04FEB12	7	-192		•	3072
01R00D0102	Possession of Portion D on DOC	on D on DOC	0	0 28DEC07A	2	28DEC07A		2	•			
01R00D0104	Handover of Portion D	O L	0	0	07DEC12		18JAN13	2	-485			<b>*</b>
01R00E0102	Possession of Portion E - 650d of DOC	on E - 650d of DOC	0	0 07OCT09	0	07OCT09		2	0		•	
01R00E0104	Handover of Portion E	J-E	0	0	07DEC12		18JAN13	2	-462			•
01R00F0102	Possession of Portion F on DOC	on F on DOC	0	0 28DEC07A	2	28DEC07A		2	•			
01R00F0104	Handover of Portion F	nF	0	0	07DEC12		18JAN13	2	-462			•
01R00G0102	Possession of Portion G	on G - 700d of DOC	0	0 26NOV09	8	26NOV09		2	0		•	
01R00G0104	Handover of Portion G	94	0	0	11MAR11		11MAR11	2	175		•	
01R00I0102	Possession of Portion I on DOC	on I on DOC	0	0 28DEC07A	[2]	28DEC07A		2	•			55
01R00l0104	Handover of Portion I	le le	0	0	07DEC12		18JAN13	5	-462			•
01R00J0102	Possession of Portion J	L no	0	0: 15MAR10	**	15MAR10		2	-268		•	
01R00J0104	Handover of Portion J	71	0	0	03SEP10		03SEP10	2	0		•	(03)
01R0H10102	Possession of Portion H1 on DOC	on H1 on DOC	0	0 28DEC07A	8	28DEC07A		2	•	1000		
01R0H10104	Handover of Portion H1	H	0	0	30DEC13		10FEB14	2	0			•
01R0H20102	Possession of Portic	Possession of Portion H2 - 300d of DOC	0	0 04NOV08A	8	04NOV08A		7		•		000
Start Date	70NLIL.92		AD04		Maeda-CREC-SELI JV	\ \ \ \	Sheet 1 of 58	58			Addendum to Works Programme "WP04"	
Finish Date	30DEC13				CONTRACT NO. DC/2007/12	3/2007/12					Revision	ed Approved
Data Date	28MAY09			Design	Design and Construction of	action of		22JUN09		forks Program forks Program	Works Program Revision "WP02"  Morks Program Revision "WP35"	
Run Date	22OCT09 10:37			Tsuen Addendum t	Isuen Wan Drainage Tunnel ndum to Works Programme "WP04"	je Tunnel ramme "W	/P04"	04SEP09	П	P3D-TBM Ha	WP3D-TBM Halft Speed at WSD Turnel#3	
© Primavera	© Primavera Systems, Inc.	Critical Activity			•			220CT09		WP04		

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Section of Works a Dordrow of Ponton HZ	Q	Activity	AD04	AD04 WP3D	AD04	ADD4	WP3D	WP3D	E Co	Total	2006 2009 2010 2011 2012 2013
St-Morte an DOF 100 Completion   1308 1308 26 ECECTA   1908 1308 1308 1308   1308 1308 1308   1308   1308 1308			and	amo o	Start	Parish		40EEB44		C	
Period	01R0H20104	Handover of Portion Hz	0	0		SUDECTS			4		
Secretary   1,308   1,308   20ECCT2   07DECT3   23MAN13   2 -482   238	Section of V	Vorks - DOP to Completion								Ì	
Sec Service   Sec	0181000202	S1-Works in Portions A to F except works in S2-7	1,308	100	28DEC07A			18JAN13	2	462	
tes within Portion A         1,247 1,247 27FEB08A         22NART12         27FEB08A         22MART12         23MART12         2.202           S85 6 stays)         385 385 385 386 38 38 38 38 38 38 38 38 38 38 38 38 38	01R1000204	S1-Maintenance Period (365 days)	365		08DEC12	-		18JAN14	2	-462	
365 64ye   365 365 365 367 367 367 367 367 367 367 367 367 367	01R20A0206	S2-Slope Stabilization works within Portion A	1,247	1,247	27FEB08A	1		22MAR12		-239	
ks within Portion B         1,238         1,238         07MAROBA         23MARRIZ	01R20A0208	S2-Maintenance Period (365 days)	365	4	23MAR12			22MAR13		-202	
365 6496   365 240ARTi	01R30B0210	S3-Slope Stabilization works within Portion B	1,238	1,238	07MAR08A			23MAR12	200	-240	
ks within Perion C         1,219         2,219         26MAROBA         OHEBIZ 26MAROBA         GAFEBIZ 26MAROBA         GAFEBIZ 36FBIZ 36FBIZ 37         2-192           355 days)         358         356         357         357         370	01R30B0212	S3-Maintenance Period (365 days)	365	365	24MAR12		MAR12	23MAR13	0011	-203	
365 days)         365 DeFEB12         GNFEB13         GNFEB13         GNFEB13         GNFEB13         2 -155           585 days)         1,308 1,308 22DECOTA         1,008 1,008 22DECOTA         1,008 22DEC	01R40C0214	S4-Slope Stabilization works within Portion C	1,219		26MAR08A		MAROSA	04FEB12		-192	
ks within Portion D         1,308   1,308   2,90E CoTA         OTDEC12   28DECOTA         13AN143   2 485           (385 days)         365   385   08DEC012   07DEC13   19AN13   12 ANU 12   2 462         2 462           (385 days)         609   609   609   609   27JUL11   26NUV09   27JUL11   2 5JUL12   2 3JUL11   2 5JUL12   2 3JUL12	01R40C0216	S4-Maintenance Period (365 days)	365	365	05FEB12		FEB12	03FEB13	-20	-155	
365 days    365   385	01R50D0218	S5-Slope Stabilization works within Portion D	1,308		28DEC07A	_	DEC07A	18JAN13		-485	
Size days    Size   S	01R50D0220	S5-Maintenance Period (365 days)	365	365	08DEC12		JAN13	18JAN14	200	-462	
365   28-JUL-11   28-JUL-12   28-JUL-12   28-JUL-12   28-JUL-13   28-JUL-14   28-JUL-12   28-JUL-15   28-JUL-14   28-JUL-15   28-JUL-14   28-JUL-15   28-JUL-14   28-JUL-14   28-JUL-15   28-JUL-14	01R60G0222	S6-Works within Portion G	609	609	26NOV09		60AON:	27JUL11	2	0	
1,673   1,673   29DEC07A   30NEC13   12JAN14   10FEB14   2 455	01R60G0224	S6-Maintenance Period (365 days)	365	365	28JUL11		3UL11	26JUL12	2	37	
30 days   30   30   10 DEC13   30 DEC13   12JAN14   10 FEB14   2 455   455	01R7000226	S7-Ladscape softworks & establishment works	1,673	_	28DEC07A		DEC07A	11JAN14		-455	
modation 7 7 28DECOTA 15JAN08A 28DECOTA 15JAN08A 2 1 10 the satisfaction office 35 28DECOTA 15JAN08A 1 15JAN08A 2 1 10 10 19MAY08A 18MAR09A 1 15JAN08A 2 15MAR09A 1 10 19MAY08A 13SEPO8A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	01R7000228	S7-Maintenance Period (30 days)	30		01DEC13		JAN14	10FEB14		-455	
12   12   12   12   12   12   12   13   14   15   14   15   15   15   15   15	Facilities for	r the SO as per ER 12	1					İ			
17   7   7   2815ECOTA   132ANUSA   280ECOTA   190ECOTA   280ECOTA   190ECOTA   130ECOTA   130ECO		The second secon		1			410010	a coltain	c		00 00
95 95 28DECOTA 28AUGOBA 28AUGOBA 2 2 4 141ULOBA 16MARO9A 1 16MARO9A 1 16MARO9A 16MARO9A 16MARO9A 16MARO9A 16MARO9A 16MARO9A 13LONO9 1 100 19MAYOBA 13SEPOBA 13JUNO9 1 13SEPOBA 13JUNO9 2 276	01R0000302	Provide temporary accommodation	7	7	28DEC07A		SDEC0/A	15JAN08A	7		n or me so Er
100   19MAYOBA   16MAROBA   16MAROBA   16MAROBA   1   1   1   1   1   1   1   1   1	01R0000304	Design the SO's principle office	92	92	28DEC07A		SDEC07A	28AUG08A	2		
100	01R0000305	Erect Hoarding/Signboard/Gate/Fencing	35	35	28MAR08A	-	MAR08A	16MAR09A	-		
SO 64 64 14SEP08A 13JUNO9 14SEP08A 13JUNO9 2 276  90 90 28DEC07A 02MAY08A 28DEC07A 02MAY08A 2 CER 12.4; 3 n 2.8DEC07A 19AUG08A 28DEC07A 19AUG08A 2 within 11   1,539 1,539 1,539 14SEP08A 30NOV13 14SEP08A 11JAN14 2 0	01R0000306	Erect SO's principle office in Portion H1/H2	100	100	19MAY08A	_	MAY08A	13SEP08A	-		***
P. ER,M 30 90 28DEC07A 02NAY08A 28DEC07A 02NAY08A 2 CERT 12.4; 3 no. 30 28DEC07A 19AUG08A 28DEC07A 19AUG08A 2 CERT 12.4; 3 no. 30 28DEC07A 19AUG08A 1JAN14 2 CERT 1.495 1.495 28OCT08A 30NOV13 14SEP08A 1JJAN14 2 CERT 1.785 1.785 1.2JAN08A 30NOV13 18FEB08A 1JJAN14 2 CERT 1.785 1.785 1.2JAN08A 30NOV13 18FEB08A 1JJAN14 2 CERT 1.785 1.785 1.2JAN08A 30NOV13 18FEB08A 1JJAN14 2 CERT 1.788 1.748 1.878 1.2JAN14 1.748 1.748 1.748 1.748 1.878 1.2JAN14 1.7488 1.74888 1.74888 1	01R0000308	Provide secondary offices, directed by SO	94	9	14SEP08A	13JUN09 14	SEP08A	13JUN09	2		
s. ER,M         30         30         28DEC07A         19AUG08A         28DEC07A         19AUG08A         28DEC07A         19AUG08A         28DEC07A         19AUG08A         28DEC07A         19AUG08A         11JAN14         2         0           ce         1,495         1,495         280CT08A         30NOV13         12JAN08A         11JAN14         2         0           ents         1,748         1,748         1,748         18FEB08A         30NOV13         18FEB08A         11JAN14         2         0           ents         1,748         1,748         18FEB08A         30NOV13         18FEB08A         11JAN14         2         0           ents         30         30         01DEC13         30DEC13         12JAN14         1         0         1           ain office         30         30         01DEC13         30DEC13         12JAN14         2         0         1           an H1         50°         50°         13MAY08A         17JUL08A         1	01R0000310	Provide transport for the SO as per App. ER,M	06	90	28DEC07A		3DEC07A	OZMAYOBA	2	Ų	ER 12.4; 3 n
ce 1,539 1,539 14SEP08A 30NOV13 14SEP08A 11JAN14 2 0 0  ents 1,785 1,785 12JAN08A 30NOV13 12JAN08A 11JAN14 2 0 0  ents 1,748 1,748 18FEB08A 30NOV13 12JAN08A 11JAN14 2 0 0  30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  ents 30 30 01FEB08A 19MAY08A 11JAN14 2 0 0  ents 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  ents 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  ents 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  ents 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  ents 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  ents 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  ents 50 19MAY08A 13MAY08A 11JUL08A 11JUL08A 1 1	01R0000311	Provide survey equipments as per App. ER,M	30	30	28DEC07A		3DEC07A	19AUG08A	2		-
ce 1,495 1,495 28OCT08A 30NOV13 28OCT08A 11JAN14 2 0 0  1,785 1,785 12JAN08A 30NOV13 12JAN14 10FEB14 2 0 0  ents 1,748 1,748 18FEB08A 30NOV13 18FEB08A 11JAN14 2 0 0  30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  1,597 1,597 1,597 18JUL08A 19MAY08A 11JAN14 2 0 0  ain office 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  1,597 1,597 1,597 18JUL08A 19MAY08A 11JAN14 2 0 0  1,507 1,597 1,597 30DEC13 12JAN14 10FEB14 2 0 0  1,597 1,597 1,597 30DEC13 30DEC13 12JAN14 10FEB14 2 0 0  1,597 1,597 1,597 30DEC13 30DEC13 12JAN14 10FEB14 2 0 0  1,597 1,597 1,597 30DEC13 30DEC13 12JAN14 10FEB14 2 0 0  1,597	01R0000314	Maintain & Service the Principle Office	1,539	1,539	14SEP08A		SEPOSA	11JAN14	2	0	
ents 1,785 1,785 12JAN08A 30NOV13 12JAN08A 11JAN14 2 0 0  30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0  30 30 01FEB08A 30NOV13 18FEB08A 13MAY08A 2 0  1,597 1,597 18JUL08A 30NOV13 18JUL08A 11JAN14 2 0 0  1,597 1,597 13MAY08A 17JUL08A 13MAY08A 1 0  10 10 19MAY08A 17JUL08A 31MAY08A 1 0  12 12 31MAY08A 21JUN08A 31MAY08A 1 1  12 12 31MAY08A 21JUN08A 31MAY08A 1 1  13 1 14JUL08A 12JUL08A 11JUL08A 11JUL08A 1 1  1 1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 14JUL08A 17JUL08A 17JUL08A 17JUL08A 1 1  1 1 14JUL08A 17JUL08A 17JUL08A 1 1	01R0000316	Maintain & Service the Secondary Office	1,495	1,495	280CT08A	30NOV13	3OCT08A	11JAN14	7	0	
ents 1,748 1,748 18FEB08A 30NOV13 18FEB08A 11JAN14 2 0 0 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 0 30 01FEB08A 19MAY08A 19MAY08A 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	01R0000318	Maintain & Service the transportation	1,785	1,785	12JAN08A		JANDSA	11JAN14	2	0	
30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0 et the scale of	01R0000319	Maintain & Service the survey equipments	1,748		18FEB08A		3FEB08A	11JAN14	2	0	
30 30 01FEB08A 19MAY08A 01FEB08A 19MAY08A 2  1,597 1,597 18JUL08A 30NOY13 18JUL08A 11JAN14 2 0  ain office 30 30 01DEC13 30DEC13 12JAN14 10FEB14 2 0  nn H1 50* 50* 19MAY08A 17JUL08A 17JUL08A 1  12 12 31MAY08A 21JUN08A 31MAY08A 1  12 12 31MAY08A 21JUN08A 31MAY08A 1  6 6 23JUN08A 30JUN08A 30JUN08A 1  1 1 14JUL08A 17JUL08A 17JUL08A 1  1 1 14JUL08A 17JUL08A 17JUL08A 1	01R0000372	Demolish & removal of Principle Office	30	30	01DEC13		2JAN14	10FEB14	2	0	
Design Contractor's main office         30         30         01FEB08A         19MAY08A         19MAY08A         2           Maintain & service Contractor's main office         1,597         1,597         18JUL08A         19MAY08A         11JAN14         2         0           Demolish & removal of Contractor's main office in Portion H1         50°         50°         19MAY08A         17JUL08A         17JUL08A         17JUL08A         1           Construct base slab         Install steel frames         12         12 31MAY08A         2JUN08A         30MAY08A         1         Install wall/roof panels, windows etc         6         6         23JUN08A         2JUL08A         12JUL08A         1         1           Install & E& M/ceiling/floor panels         8         8         02JUL08A         12JUL08A         1         1           Site clearance         1         1 14JUL08A         17JUL08A         1         1         1	Contractor	s Accommodation as per ER.B				TO THE PERSON NAMED IN COLUMN			\$	i	
Design Contractor's main office         30         30         01FEB08A         19MAY08A         19MAY08A         2         — to the second of contractor's office           Maintain & service Contractor's office         1,597         1,597         18JUL08A         300/019E013         18JUL08A         11JAN14         2         0           Demolish & removal of Contractor's main office in Portion H1         50°         50°         19MAY08A         17JUL08A         17JUL08A         1         2         0           Construct base slab         Install steel frames         12         12         31MAY08A         21JUN08A         11         1         1         15MAY08A         21JUN08A         1				7.00	3) 500 500 100 500						
Maintain & service Contractor's office         1,597 1,597 1,597 18JUL08A         300 10DEC13         300 10DEC13         300 10DEC13         15JUL08A         11JAN14         2         0           Demolish & removal of Contractor's main office in Portion H1         50° 50° 19MAY08A         17JUL08A         17JUL08A         17JUL08A         1         2         0           Construct base slab         Install steel frames         12         12 31MAY08A         21JUN08A         31MAY08A         1         1         1           Install wall/roof panels, windows etc         6         6         23JUN08A         30JUN08A         1         1         1           Install & E& M/ceiling/floor panels         8         8         02JUL08A         12JUL08A         1         1         1           Site clearance         1         1         14JUL08A         17JUL08A         1         1         1         1	01R0001402	Design Contractor's main office	30	30	01FEB08A	19MAY08A 0	FEB08A	19MAY08A	N	T	to the sausiaction of 50
Demolish & removal of Contractor's main office in Portion H1         30         30         01DEC13         30DEC13         12JAN14         10FEB14         2         0           Erect Contractor's main office in Portion H1         50°         50°         19MAY08A         17JUL08A         17JUL08A         1         1         17JUL08A         17JUL08A         1         1         10 <t< td=""><td>01R0001406</td><td>Maintain &amp; service Contractor's office</td><td>1,597</td><td>1,597</td><td>18JUL08A</td><td>30NOV13 18</td><td>33UL08A</td><td>11JAN14</td><td>6</td><td>0</td><td></td></t<>	01R0001406	Maintain & service Contractor's office	1,597	1,597	18JUL08A	30NOV13 18	33UL08A	11JAN14	6	0	
Erect Contractor's main office in Portion H1         50*         50*         19MAY08A         17JUL08A         17JUL08A         1         III           Construct base slab         10         10         19MAY08A         30MAY08A         19MAY08A         1	01R0001408	Demolish & removal of Contractor's main office	30	30	01DEC13	30DEC13 12	SJAN14	10FEB14	7	0	
Construct base slab         10         10         19MAY08A         30MAY08A         30MAY08A         1           Install steel frames         12         31MAY08A         21JUN08A         21JUN08A         1           Install wall/roof panels, windows etc         6         23JUN08A         30JUN08A         30JUN08A         1           Install & E& Micelling/floor panels         8         8         02JUL08A         12JUL08A         1           Site clearance         1         1         14JUL08A         17JUL08A         1         1	01R000141	Erect Contractor's main office in Portion H1	-05	-09	19MAY08A		3MAY08A	17JUL08A	•		to the satisfaction of the SO
Install steel frames         12         12         31MAY08A         21JUN08A         31JUN08A         21JUN08A         21JUN08A         21JUN08A         21JUN08A         21JUN08A         21JUL08A         21JUL08A         21JUL08A         21JUL08A         12JUL08A         12JUL08A         12JUL08A         17JUL08A	01R0001412	Construct base slab	10	10	19MAY08A	-	3MAY08A	30MAY08A	-		
Install wall/roof panels, windows etc         6         6         23JUN08A         23JUN08A         23JUN08A         30JUN08A           Install & E& M/ceiling/floor panels         8         8         02JUL08A         12JUL08A         12JUL08A           Site clearance         1         1         14JUL08A         14JUL08A         17JUL08A	01R0001413	Install steel frames	12		31MAY08A		1MAY08A	21JUN08A	•		
Install & E& M/ceiling/floor panels         8         8         02JUL08A         12JUL08A         12JUL08A         12JUL08A         17JUL08A           Site clearance         1         1         14JUL08A         17JUL08A         17JUL08A         17JUL08A	01R0001414	Install wall/roof panels, windows etc	G	9	23JUN08A	=	3JUN08A	30JUN08A	•		
Site clearance 17JUL08A 17JUL08A 14JUL08A 17JUL08A 17JUL08A	01R0001415	Install & E& M/ceiling/floor panels	60	80		12JUL08A 0.	SJULOBA	12JUL08A			
	01R0001416	Site clearance	-	٢			4JUL08A	17JUL08A	-		

e & Million fundamental fundam	Install furnitures/internet & move in	2	7	V 00 11 11 7 7								
are/S bare/S bare/S bare/S s apprimit Re				14JULUSA	17JUL08A 14JUL08A		17JUL08A	<u>-</u>				
are/S are/S are/S appr appr Appr Re	Works Programme & Monthly Report as per SCC 27			O CO	į							
revie are/S appr appr nit Re	Prepare/Submit draft Works Programme	7	7	14DEC07A	21DEC07A 14DEC07A	4DEC07A	21DEC07A	7	-			
are/S appr appr nit Re	SO's review/comment on draft Works Programme	41	4	22DEC07A	23JAN08A 2	22DEC07A	23JAN08A	7	-			
apprapprage Report Re	Prepare/Submit draft Works Programme Rev. 1	28	28	24JAN08A	15FEB08A 24JAN08A	43AN08A	15FEB08A	7	0			
appr iit Re Appr	Prepare/Submit 1st 3-Month Rolling Programme	41	4	14DEC07A	03JAN08A 14DEC07A	4DEC07A	03JAN08A	7	128			
hit Re Appr	SO's approval on draft Works Programme	14	4	16FEB08A	28MAR08A 16FEB08A	6FEB08A	28MAR08A	2	41-	11		
Appr	Submit Revised Works Programme	41	44	28AUG08A	30SEP08A 28AUG08A	28AUG08A	30SEP08A	2		D		
	SO's Approval of Revised Works Programme	4	14 (	020CT08A	28FEB09A 02OCT08A	120CT08A	28FEB09A	2		1		
hly U	Monthly Update for all Programme	1,779 1	1,779	18JAN08A	31DEC12 1	18JAN08A	18JAN13	2	364			
ractor	Contractor's Monthly Progress Report	1,775 1,775		22JAN08A	31DEC12 2	22JAN08A	18JAN13	2	364			
S	Safety Plan as per SCC 35											
									h			
nit dra	Submit draft Safety Plan	14	4	14DEC07A	29DEC07A 14DEC07A	4DEC07A	29DEC07A	2	.5	within 14 days of LOA	A	
an ac	Hold an ad hoc meeting with RE on Safety Plan	7	2	31DEC07A	09JAN08A 31DEC07A	31DEC07A	09JAN08A	2	3	within 7 days from the	within 7 days from the submission of DSP	
mit 6	Submit 6 copies of the Safety Plan	35	35	14DEC07A	26FEB08A 14DEC07A	4DEC07A	26FEB08A	2		within 35 days of LOA	OA	210
mit up	Submit updated safety orgainiza. chart monthly	1,747 1	1,747	20MAR08A	31DEC12 2	20MAR08A	18JAN13	7	364			
alle	Fulfill all relevant safety obligation	1,830 1,830		28DEC07A	31DEC12 2	28DEC07A	18JAN13	2	364			H
sur	Contractor's All Insurances		j	1		i						
nit do	Submit documents for all insurances are effected	21	21	14DEC07A	02SEP08A   14DEC07A		02SEP08A	2	_" 	as per SDC9	as per SCC9, SCC10 & SCC45.	
De	Quality System as per ER 9.3											
			۱					l	ī			
int a	Appoint a Quality Manager	14	4	28DEC07A	02JAN08A 28DEC07A	28DEC07A	02JAN08A	2		as per SCC 74 within 14 days of DOC	14 days of DOC	
nit pr	Submit proposed Quality System for SO's consent	28	78	14DEC07A	22JAN08A 14DEC07A	4DEC07A	22JAN08A	2	11	=within 28 days of LOA	AG.	
nit Q	Submit QSSP for approval of the SO	28	28	28DEC07A	14MAR08A 28DEC07A		14MAR08A	2		within 28 days of DOC	2000	
tain 8	Maintain & update Quality System	1,802 1	1,802	25JAN08A	31DEC12 25JAN08A		18JAN13	2	364			
				j								
inate	Nominate Environmental Officer	14	4	14DEC07A	21DEC07A 14DEC07A	14DEC07A	21DEC07A	2	a	as per ER B.1 Clause	e 1.74A1(2)	5 2
helish	Establish a billing account for disposal	21	21	14DEC07A	02JAN08A 14DEC07A	14DEC07A	02JAN08A	2	-	per Notes to Tendere	Jerer (AA)	
mit dr	Submit draft EMP	12	21	14DEC07A	02JAN08A 14DEC07A	4DEC07A	02JAN08A	2		SCC69, within 21 day	days of LOA	
ise dra	Revise draft EMP within 7 days of SO's notice	41	4	04JAN08A	21FEB08A 04JAN08A	94JAN08A	21FEB08A	2		as per SCC69		
mit fin	Submit final version of EMP	45	45	14DEC07A	21FEB08A 14DEC07A	14DEC07A	21FEB08A	2	.,	as per SCC69, with	within 45 days of LOA	
iew/up	Review/update/submit EMP monthly	1,769 1	1,769	28JAN08A	31DEC12 2	28JAN08A	18JAN13	2	364			
Employ IET		21	21.	14DEC07A	02JAN08A 14DEC07A	14DEC07A	02JAN08A	2	**	to the approval of the SO	os e	
mit Ba	Submit Baseline Monitoring Plan	21	21	28DEC07A	18JAN08A 28DEC07A	28DEC07A	18JAN08A	2		for approval of the S	e SO & EPD	
k for E	Seek for EPD's Agreement on WQML & schedule	21	21:	18JAN08A	31JAN08A 18JAN08A	18JAN08A	31JAN08A	2				
y out	Carry out baseline monitoring	37	37	11FEB08A	20MAR08A 11FEB08A	11FEB08A	20MAR08A	2		1		
pare/s	Prepare/submit reports for baseline monitoring	20	20 3	21MAR08A	28MAR08A 21MAR08A		28MAR08A	2		for approval o the	the SO	
act mo	Impact monitoring & reporting	1,705 1	1,705 (	01APR08A	31DEC12 01APR08A	01APR08A	18JAN13	2	364			

March   Description   Description   Description   Description   Description   Description   Description   Description   Description   Table   Start
ADOR WP3D   ADOR   ADOR   WP3D   WP3D   WP3D   Cal
AD04         WP3D         AD04         MP3D         AD04         WP3D         Start         Finish         Start         Star
AD04 WP3D AD04 Dur Start 1,800 1,800 28DEC07A 14 14 16JAN08A 7 7 7 28DEC07A 21 21 29FEB08A 20 20 10MAR08A 7 7 7 21JAN08A 7 7 21JAN08A 7 7 7 22APR08A 30 30 23APR08A 30 30 23APR08A 30 30 23APR08A 60 60 24APR08A 60 60 31MAY08A
AD04 WP3D AD04 Dur Dur Start 1,800 1,800 28DEC07A 14 14 16JAN08A 7 7 7 28DEC07A 21 21 29FEB08A 20 20 10MAR08A 0 0 0 1 1 1 22APR08A 30 30 23APR08A 0
ADD4 WP Dar D0 1,800 1,8
About WP 1,800 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8
TR00000902 Fulfill all relevant environmental on Excavation Permit/Utilities per SCC 54  O1R0001002 Nominate IIUMS co-ordinator o1R0001004 SO approve IIUMS co-ordinator o1R0001010 Utilities detection & report to the \$100001010 Utilities detection & report to the \$101R0001010 Utilities detection & report to the affect of \$101R000102 Utilities & Prediminaries

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		n n	A.B	500 500 500 500 500 500 500 500 500 500	7	100		5.0				01					,S					â					-16		8.0	0	A.A.	'n	65			with	364			(6)	
Total Float		2	2	2		2	2	2		2	2	2		2	2		2	2		2	2		2	7		7	2		2	01	7	2	N	2	1	2	2 36				
WP3D Finish		07JUN08A	12JUN08A	09FEB09A		13JUN08A	18JUN08A	09FEB09A		06JUN08A	16JUN08A	09FEB09A		10JAN09A	24MAR09A		15JAN09A	10JUN09		03JAN08A	28FEB08A	31JAN08A	01APR08A	19APR08A	19APR08A	i	12JAN08A	18JAN13			16AUG08A										
WP3D			2MAY08A					1				7JUN08A		SAUGOSA	2JAN09A		SAUG08A	2JAN09A		SAUGOSA	2JAN09A		8AUG08A	2JAN09A		SAUGOSA	SJAN09A	ł	4DEC07A	8DEC07A	4JAN08A	1FEB08A	2APR08A	2APR08A	i	4DEC07A	03JUL08A				
AD04 Finish		07JUN08A 30APR08A	02MAY08A 12JUN08A 02MAY08A	09FEB09A 13JUN08A		13JUN08A 09MAY08A	18JUN08A 04JUN08A	09FEB09A 19JUN08A		01APR08A 06JUN08A 01APR08A	16JUN08A 02JUN08A	09FEB09A 17JUN08A		10JAN09A 28AUG08A	24MAR09A 12JAN09A		15JAN09A 28AUG08A	10JUN09 16JAN09A	1	03JAN08A 14DEC07A	28FEB08A 28DEC07A	31JAN08A 04JAN08A	01APR08A 01FEB08A	19APR08A 02APR08A	19APR08A 02APR08A	Ì	4DEC07A 12JAN08A 14DEC07A 12JAN08A	31DEC12 0	j		16AUG08A	0.70									
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Do4 WP3D Dur Dur		ഹ	09	90		2	09	09		12	09	09		28	28		28	28		28	28		28	28		28	28	1	4	7	14	21	14	14	İ	30	1,642 1,642			0	
Activity Description	PCS Stage 2 between H2 & H3	Carry out stg 2 PCS between I-2 & I-3	Prepare/submit reports for stg 2 PCS bet I-2&I-3	Review/accept reports for stg 2 PCS bet I-2&I-3	PCS Stage 2 between I-3 & O-1	Carry out stg 2 PCS between I-3 & O-1	Prepare/submit reports for stg 2 PCS bet I-3&O-1	Review/accept reports for stg 2 PCS bet I-3&O-1	at Vicinity of 0-1	Carry out stg 2 PCS at vicinity of 0-1	Prepare/submit reports for stg 2 PCS at 0-1	Review/accept reports for stg 2 PCS at 0-1	Pre-const. condition structural survey; I-1	Prepare/submit reports for EBS at I-1	Review/accept reports for EBS at I-1	Pre-const. condition structural survey; I-2	Prepare/submit reports for EBS at I-2	Review/accept reports for EBS at I-2	Pre-const. condition structural survey; I-3	Prepare/submit reports for EBS at I-3	Review/accept reports for EBS at I-3	Pre-const. condition structural survey; 0-1	Prepare/submit reports for EBS at 0-1	Review/accept reports for EBS at O-1	Pre-const. condition structural survey; Tunnel	Prepare/submit reports for EBS along Tunnel alig	Review/accept reports for EBS along Tunnel align	The second secon	Appoint Traffic Consultant/Traffic Engineer	Eng's Approval of Traffic Consultant	Prepare/submit TTA Schemes (ingress & egress)	Obtain endorsement of TTA schemes from TMLG	Approval of TTA schemes by the Authorities	Approval of TTA schemes by the Authorities	Management of Sub-contractors as per SCC 44	Submit a Sub-contractor Management Plan	Submit Quarterly the Updated SMP		Sin Ho Wan as a New Tree Transplanting Area	Receive VO28 for new tree transplanting area	
O)	PCS Stage 2 b	01R0001136	01R0001138	01R0001140	PCS Stage 2 b	01R0001148	01R0001150	01R0001152	PCS Stage 2 a	01R0001112	01R0001114	01R0001116	Pre-const. col	01R0001154	01R0001156	Pre-const. cor	01R0001158	01R0001160	Pre-const. col	01R0001162	01R0001164	Pre-const. col	01R0001166	01R0001168	Pre-const. col	01R0001170	01R0001172	Traffic	01R0001202	01R0001204	01R0001206	01R0001216	01R0001234	01R0001236	Managemer	01R0001302	01R0001304	Trope	Sin Ho Wan	VO028-02	

2013										200			1			3/08	3)																								
2008 2009 2010 2011				0	ERB 26.02A; within 45 dyas of LOA	=ER 1.5.3 (2); within 3 mths from DOC	◆ER 1.5.3(2) within 3 months from DOC					11				"As per ER. B30 30.06(2) SOR.s approval obtained on 13/02/08					awarded to Kin Lee	awarded to VSC Steel Co. Ltd by PR	Geotech Eng Ltd	awarded to Kin Wing			awarded to Long Faith		awarded to Soldata		11	awaded to Seli			awarded to Intelibuild	■awarded to Ch Yau	awarded to Ming Kee	awarded to Pilot Electronic	Anderson	awarded to Soldata	=awarded to Lam
I Total													0					0	1									356		356	501	-		=1							
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WP3D	20 18AUG08A 07SEP08A 18AUG08A 07SEP08A		14JAN08A	28FEB08A	29JAN08A	06MAR08A				10JAN08A	16APR08A	10MAR08A	18JAN13			15JAN08A	23FEB08A	11JAN14	į	27MAR09A	05JUN08A	30MAY08A	02APR08A	09MAY08A	05JAN09A	03NOV08A	25APR08A	26JUN09	01AUG08A	03JUN10	07FEB10	21DEC07A	02JAN08A	22JAN08A	14FEB08A	03MAR08A	03MAR08A	03MAR08A	11MAR08A	14MAR08A	15MAR08A
WP3D	UG08A			1			08SEP08A			-	- 53	- 2			- 1						0	EC07A	EC07A		UNOSA		EC07A	28JUN08A	53	06DEC09	110CT09	EC07A		EC07A	EC07A	ANOBA			EC07A	ANOSA	AN08A
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	20 18	2	14 14D	7 15	45: 14	90 28	0 08			14 28	7 11	28 18	_			7 28DI	60 28			60 28	60 14	90 14	60 28	90 14	80 02	80 09	90 14	344 28	78 14	180 06	120 1	7 14	17 17	25 29	48 14	60 04	67 28	60 04	45 14	60 15	60 16
AD04 WP3D		3	44	2	45	06	0	į.		4	7	28	1,378 1,378			7	09	1,771 1,771		09	09	90	09	06	80	90	90	344	78	180	120	2	17	25	48	90	29	9	45	90	09
Activity	Prenaration works for new T T area	I reparation works for how allog	Appoint Landscape Specialist Contractor	SO's Approval of Landscape Contractor	Nominate competent person to oversee tree works	Obtain Tree Removal Permit by Others	Remove / Transplant Trees start			Appoint Surveyors	SO's Approval of Surveyor	Initial Survey	Maintain & carry out survey works	Smart Card System as per ER B.30		Submit Smart Card Sys for SO's Approval	Install & start Operating Smart-Card System	Operate & Maintain Smart-Card System	Procurement of Sub-contractor	Spoil Disposal	Earthwork for Outfall O-1	Re-bar Supply	Soil Nailing	H-piling Works	Fabrication of Pre-cast Lining	Drainage/Road Works for Access Road at I-3	Temp. steel decking over Shing Mun Nullah at I-1	Design/Install Communication System	Design/install Flow Monitoring Devices	Procurement & delivery of Communication System	Procurement/delivery of Flow Measurement Devices	Supply TBM/Main Tunnel Construction	Security	Progress Photo/Vedio	Webpage/Physical Model/3D Animation	Hoarding/Fencing Erection	Erection of Contractor's Office	Remote Control CCTV	Concrete Supply	Geotechnical Instrumentation	Drilling/Grouting for Geotchnical Instrumentat.
q	VO028-04	400200A	01R0001502	01R0001504	01R0001506	01R0001510	01R0001512	Survey		01R0001602	01R0001604	01R0001608	01R0001610	Smart Card		01R0001802	01R0001804	01R0001806	Procuremen	01R0001904	01R0001906	01R0001910	01R0001912	01R0001914	01R0001916	01R0001920	01R0001922	01R0001924	01R0001925	01R0001936	01R0001938	01R0018A02	01R0018A04	01R0018A06	01R0018A08	01R0018A10	01R0018A12	01R0018A14	01R0018A16	01R0018A18	01R0018A20

Excitation de Contraction of Service Management Leanur Schrieben Acceptant 2 (2007 AND 1995)  Exercitation de Contraction of Service Management Leanur Schrieben Courter Schri	Site Clearance         60         60         26JAN08A           Erection of SOR's Office         95         95         02JAN08A           Carry out Grout Trial at Fault F1         90         90         23APR08A           Design/Fabricate Segmental Lining Mould         90         90         23APR08A           Construction of Skin Walls         90         91         14JUL08A           Supply of Locomordive         90         14JUL08A         90         14JUL08A           Supply of Locomordive         90         14JUL08A         90         14JUL08A           Excavation Works at L1         60         28AUG08A         90         14JUL08A           Excavation Vormative         60         60         28AUG08A         90         14JUL08A           Construction of Steel Platform at L2         50         28AUG08A         28AUG08A         90         14JUL08A           Pre-excavation/Construction of Steel Platform at L2         50         28AUG08A         28AUG08A           Construction of Steel Platform at L2         50         28AUG08A           Shaff Excavation by RCD at L2         50         28AUG08A           Construction of Steel Platform at L3         30         23         28AUG08A           Suttening Formworks for Undergr	25MAR08A 05APR08A 30JUN08A 21JUL08A 05JAN09A 10OCT08A 21JAN09A 14MAR09A 27DEC08A 27DEC08A 26JUL09 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 26JUL09 16SEP09 16OCT09 16OCT09		ng Shing ng Faith Dril Tech On Construction	e (ii) 6
95   95   0.24/NOGA   0.54/PRGBA   0.214/NOGA   2   2   3   3   3   3   3   3   3   3	Erection of SOR's Office         95         95         22AN08A           Carry out Grout Trial at Fault F1         90         90         23APR08A           Carry out Grout Trial at Fault F1         90         90         23APR08A           Construction of Skin Walls         90         90         23APR08A           Construction of Skin Walls         90         90         1JUL08A           Supply of Locomorive         90         90         1JUL08A           Excavation Works at I-1         60         60         2AUG08A           Construction of Steel Platform at O-1         50         28AUG08A           Pre-excavation Morks at I-1         90         28AUG08A           Construction of Subgrade Structure at I-1         90         28AUG08A           Shaft Excavation by RCD at I-2         90         28AUG08A           Shaft Excavation of Subgrade Structure at I-1         90         28AUG08A           Onstruction of Hopper at O-1         90         28AUG08A           Open Cut Excavation & Construction at I-3         90         90         28AUG08A           Unining Formworks for Underground Structures         233         233         28AUG08A           Supply of Rail Track         Supply of Rail Track         90         20         28AUG0	05APR08A 30JUN08A 21JUL08A 05JAN09A 10OCT08A 110AR09A 14MAR09A 27DEC08A 27DEC08A 26JUL09 26MAR09A 31JAN09A 26JUL09 26MAR09A 31JAN09A 26JUL09 16SEP09 16SEP09 16OCT09 16OCT09		Long Faith to Dril Tech Ispn Constr i Yau i Yau oer Rich oer Rich warded to IV	e (ii) &
90 90 10 224FR08A 30JUNOBA 02APR08A 30JUNOBA 2   Canadroda 1	Carry out Grout Trial at Fault F1         90         90         23APR08A           Design/Fabricate Segmental Lining Mould         90         90         23APR08A           Construction of Skin Walls         90         90         23APR08A           Construction of Skin Walls         90         90         21JUL08A           Supply of Locomorbive         90         90         14JUL08A           Excavation Works at 1-1         60         80         14JUL08A           Construction of Steel Platform at 0-1         50         50         28AUG08A           Pre-excavation Grouting for Shaft Excavation         60         80         28AUG08A           Construction of Steel Platform at 1-1         30         28AUG08A           Shaft Excavation Por ROD at 1-2         50         28AUG08A           Shaft Excavation of Shafts/Adits/Chambers         90         28AUG08A           Shaft Excavation of Spiral Ramp         233         233         28AUG08A           Open Cut Excavation & Construction at 1-3         90         90         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Supply of Rail Track         Supply of Aggregate         120         26         28EB09A           Subm	30JUN08A 21JUL08A 03JAN09A 10OCT08A 14MAR09A 14MAR09A 17DEC08A 11MAR09A 26JUL09 26MAR09A 26JUL09 02MAY09A 05AUG09 03APR09A 26JUL09 16SEP09 16OCT09 16OCT09		Dril Tech o Korea M on Constr au au rRich Plling	e 6
90 90 23APR08A 21JUL08A 03JAN09A 2 0	Design/Fabricate Segmental Lining Mould         90         90         23APR08A           Construction of Skin Walls         90         90         21JUL08A           Design/Fabricate/Supply/Install Conveyor Belt         90         90         21JUL08A           Supply of Locomotive         90         90         14JUL08A           Excavation Works at I-1         50         50         28AUG08A           Construction of Steel Platform at I-2         50         52AUG08A           Pre-excavation Morks at I-1         50         50         28AUG08A           Construction of Steel Platform at I-2         50         52AUG08A           Pre-excavation/Construction of Table Launching Chamber         70         7         28AUG08A           Construction of Subgrade Structure at I-1         333         333         28AUG08A           Shaft Excavation Nontruction of Shafts/Adits/Chambers         90         90         28AUG08A           Construction of Hopper at O-1         90         90         28AUG08A           Suttering of Spiral Ramp         Construction at L-3         90         90         28AUG08A           Supply of Rail Track         Supply of Rail Track         50         20         20         20           Supply of Aggregate         Construct Cascade/S	21JUL08A 03JAN09A 05JAN09A 10OCT08A 21JAN09A 14MAR09A 27DEC08A 11MAR09A 26JUL09 26JUL09 26JUL09 26JUL09 26JUL09 26JUL09 16SEP09 16SEP09 16OCT09 16OCT09		Son Construction of Pilling of Pilling	e 6
90 90 21JULO8A 03JANO9A 21JANO9A 2 90 0 14JULO8A 05JANO9A 14JULO8A 05JANO9A 2 10AJANO9A 2 90 0 14JULO8A 05JANO9A 14JULO8A 05JANO9A 2 10AJANO9A 2 90 0 14JULO8A 05JANO9A 21JANO9A 2 10AJANO9A 2 10AJANO9A 2 90 0 14JULO8A 05JANO9A 21JANO9A 2 10AJANO9A	Construction of Skin Walls         90         90         21JUL08A           Design/Fabricate/SupplyInstall Conveyor Belt         90         90         14JUL08A           Supply of Locomodive         90         90         14JUL08A           Excavation Works at I-1         60         60         28AUG08A           Construction of Steel Platform at I-2         50         26AUG08A           Construction of Steel Platform at I-2         50         28AUG08A           Excavation/Construction of TBM Launching Chamber         70         70         28AUG08A           Excavation/Construction of Subgrade Structure at I-1         333         333         28AUG08A           Construction of Hopper at O-1         30         90         28AUG08A           Shaft Excavation/Construction of Shafts/Adits/Chambers         90         92AUG08A           Construction of Hopper at O-1         333         333         28AUG08A           Suttering of Spiral Ramp         233         233         28AUG08A           Ining Formworks for Underground Structures         233         233         28AUG08A           Supply of Rail Track         Supply of Aggregate         120         20         28FEB09A           Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         20         28F	03JAN09A 05JAN09A 100CT08A 21JAN09A 14MAR09A 11MAR09A 11MAR09A 26JUL09 26JUL09 26JUL09 26JUL09 26JUL09 26JUL09 16SEP09 16SEP09 16OCT09 16OCT09		aded to C	
90 90 14JUL08A 105CTORA 14JUL08A 05JAN09A 2 2	Supply of Locomotive         90         90         14JUL0BA           Supply of Locomotive         90         90         14JUL0BA           Excavation Works at I-1         60         60         28AUG08A           Construction of Steel Platform at I-2         50         50         28AUG08A           Construction of Steel Platform at I-2         50         50         28AUG08A           Pre-excavation Grouting for Shaff Excavation         70         70         28AUG08A           Excavation/Construction of TBM Launching Chamber         70         70         28AUG08A           Construction of Shafts/Adits/Chambers         90         90         28AUG08A           Shaff Excavation of Hopper at O-1         333         333         28AUG08A           Construction of Hopper at O-1         333         233         28AUG08A           Suttening of Spiral Ramp         233         233         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Supply of Rail Track         90         90         90         28AUG08A           Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         20         28EB09A           Retail Works         250         250         28EB09A     <	05JAN09A 100CT08A 21JAN09A 11MAR09A 11MAR09A 11MAR09A 18DEC08A 26JUL09 26JUL09 26JUL09 26JUL09 26JUL09 26JUL09 16JAN09A 26JUL09 16JAN09A 26JUL09 16SEP09 16SEP09 16OCT09 16OCT09		anded to C	
90   90   14JUL08A   10OCTO8A   14JUL08A   10OCTO8A   2   14JUL08A   10OCTO8A   2   14JN09A   2   14JUL08A   10OCTO8A   2   14JN09A   2   2   2   2   2   2   2   2   2	Supply of Locomotive         90         90         14JUL08A           Excavation Works at I-1         60         60         28AUG08A           Construction of Steel Platform at I-2         50         50         28AUG08A           Construction of Steel Platform at I-2         50         50         28AUG08A           Pre-excavation Grouting for Shaft Excavation         60         28AUG08A           Excavation/Construction of Subgrade Structure at I-1         333         333         28AUG08A           Construction of Subgrade Structure at I-1         333         333         28AUG08A           Shaft Excavation/Construction of Shafts/Adits/Chambers         90         28AUG08A           Construction of Hopper at O-1         333         233         28AUG08A           Suttering of Spiral Ramp         1-3         90         90         28AUG08A           Construction of Hopper at O-1         233         233         28AUG08A           Uning Formworks for Underground Structures         233         28AUG08A           Supply of Rail Track         Supply of Rail Track         90         90         28AUG08A           Supply of Aggregate         Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         200         28FEB09A           Pipe Jacking Works <t< td=""><td>100CT08A 21JAN09A 14MAR09A 27DEC08A 11MAR09A 18DEC08A 26JUL09 26JUL09 02MAY09A 26JUL09 03APR09A 26JUL09 16SEP09 16OCT09 16OCT09</td><td></td><td>au (Piling</td><td>ci)</td></t<>	100CT08A 21JAN09A 14MAR09A 27DEC08A 11MAR09A 18DEC08A 26JUL09 26JUL09 02MAY09A 26JUL09 03APR09A 26JUL09 16SEP09 16OCT09 16OCT09		au (Piling	ci)
60 60 28AUGGGB 21JAN09A 28AUGGBA 21JAN09A 2   Continue of the continue of the	Excavation Works at I-1         60         60         28AUG08A           Construction of Steel Platform at 0-1         50         50         28AUG08A           Construction of Steel Platform at I-2         50         50         28AUG08A           Pre-excavation Grouting for Shaft Excavation         60         60         28AUG08A           Excavation/Construction of TBM Launching Chamber         70         70         28AUG08A           Construction of Subgrade Structure at I-1         333         333         28AUG08A           Shaft Excavation by RCD at I-2         90         90         28AUG08A           Excavation/Construction of Shafts/Adits/Chambers         90         90         28AUG08A           Construction of Hopper at O-1         333         233         28AUG08A           Suttering of Spiral Ramp         Construction at I-3         90         90         28AUG08A           Open Cut Excavation & Construction at I-3         90         90         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Supply of Aggresate         Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         200         28FEB09A           Pipe Jacking Works         Enrishing Works         250         28FEB09A     <	21JAN09A 14MAR09A 27DEC08A 11MAR09A 18DEC08A 26JUL09 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 16SEP09 16OCT09 16OCT09		ded to N	Ö.
50         50         28AUG08A         14MAR08A         28AUG08A         14MAR08A         2           50         60         28AUG08A         11MAR08A         2         2           70         60         28AUG08A         11MAR08A         2         3           70         70         28AUG08A         11MAR08A         2         188           80         90         28AUG08A         28AUG08A         28AUG08A         28AUG08A         2           18         90         90         28AUG08A         28AUG08A         28AUG08A         28AUG08A         2           233         23AUG08A         28AUG08A         28AUG08A         2         2         2           24         23AUG08A         28AUG08A         28AUG08A         2         2         2           250         28AUG08A         28AUG08A         28AUG08A         2         2         <	Construction of Steel Platform at 0-1         50         28 AUG08A           Construction of Steel Platform at 1-2         50         28 AUG08A           Pre-excavation Grouting for Shaft Excavation         60         28 AUG08A           Excavation/Construction of TBM Launching Chamber         70         70         28 AUG08A           Construction of Subgrade Structure at 1-1         333         333         28 AUG08A           Shaft Excavation by RCD at 1-2         90         90         28 AUG08A           Construction of Hopper at 0-1         90         90         28 AUG08A           Construction of Hopper at 0-1         333         233         28 AUG08A           Suttening of Spiral Ramp         Construction at 1-3         90         90         28 AUG08A           Lining Formworks for Underground Structures         233         233         28 AUG08A           Lining Formworks for Underground Structures         233         233         28 AUG08A           Supply of Rail Track         120         120         20         28 EB09A           Supply of Rail Track         200         200         28 EB09A           Metal Works         Pipe Jacking Works at Lo Wai         250         250         250         28 EB09A           Finishing Works         Fin	14MAR09A 27DEC08A 11MAR09A 18DEC08A 26JUL09 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 16SEP09 16SEP09 16OCT09 16OCT09		Chi Yau Super Rich awarded to Multi	itech
50   28 AUGORA   27 DECORA   28 AUGORA   11 MARGA   2	Construction of Steel Platform at I-2         50         58 AUG08A           Pre-excavation Grouting for Shaft Excavation         60         60         28AUG08A           Excavation/Construction of TBM Launching Chamber         70         70         28AUG08A           Construction of Subgrade Structure at I-1         333         333         28AUG08A           Shaft Excavation by RCD at I-2         90         90         28AUG08A           Excavation/Construction of Shafts/Adits/Chambers         90         90         28AUG08A           Construction of Hopper at O-1         90         90         28AUG08A           Suttering of Spiral Ramp         233         233         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Supply of Rail Track         120         90         90         28AUG08A           Supply of Rail Track         120         20         28EBB09A           Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         20         28FEB09A           Pipe Jacking Works         Pipe Jacking Works at Lo Wai         250         250         250         250         250         250         28JEB09A           Submit Contractor's Management Team         0         0         0	27DEC08A 11MAR09A 18DEC08A 26JUL09 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 16SEP09 16SEP09 16OCT09 16OCT09		Super Rich	itech
10   10   10   10   10   10   10   10	Pre-excavation Grouting for Shaft Excavation         60         60         28AUG08A           Excavation/Construction of TBM Launching Chamber         70         28AUG08A           Construction of Subgrade Structure at I-1         333         333         28AUG08A           Shaft Excavation by RCD at I-2         90         90         28AUG08A           Excavation/Construction of Hopper at O-1         90         90         28AUG08A           Construction of Hopper at O-1         233         233         28AUG08A           Suttering of Spiral Ramp         233         233         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Supply of Rail Track         90         90         28AUG08A           Supply of Aggregate         120         20         28FEB09A           Pipe Jacking Works         Lo Wai         250         250         28FEB09A           Fipe Jacking Works         Lo Wai         250         250         28JAN08A           Rubmit Photographer for Monthly Progress Photo         0         0         28JAN08A           Install Project Signboards at Potions A,B,C & D         30	11MAR09A 18DEC08A 26JUL09 26JUL09 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 26JUL09 16SEP09 16SEP09 16OCT09 16OCT09		Super Rich Longo Piling	itech
The color   To   To   28AUGO8A   18DECO8A   2   186   180	Excavation/Construction of TBM Launching Chamber         70         70         28AUG08A           Construction of Subgrade Structure at I-1         333         333         28AUG08A           Shaft Excavation by RCD at I-2         90         90         28AUG08A           Excavation/Construction of Shafts/Adits/Chambers         90         90         28AUG08A           Construction of Hopper at O-1         90         90         28AUG08A           Suttering of Spiral Ramp         233         233         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Supply of Rail Track         90         90         28AUG08A           Supply of Aggregate         120         20         28AUG08A           Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         20         28FEB09A           Pipe Jacking Works         Lo Wai         250         250         28FEB09A           Finishing Works         Submit Protect Signboards at Potions A,B,C & D         30         28JAN08A           Install Project Signboards at Potions A,B,C & D         30         28AUG08A	18DECOBA 26JUL09 26NOV08A 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 26JUL09 16SEP09 16OCT09 16OCT09		Super Rich  Longo Piling	itech
333 333 28AUG08A   26JUL08   28AUG08A   26JUL08   2   186	Construction of Subgrade Structure at I-1         333         333         28AUG08A         26JUL09           Shaft Excavation by RCD at I-2         90         28AUG08A         26NUV08A           Excavation/Construction of Shafts/Adits/Chambers         90         90         28AUG08A         26MAR09A           Construction of Hopper at O-1         233         233         28AUG08A         31JAN09A           Suttering of Spiral Ramp         233         233         28AUG08A         26JUL09           Open Cut Excavation & Construction at I-3         90         90         28AUG08A         26JUL09           Lining Formworks for Underground Structures         233         233         28AUG08A         26JUL09           Lining Formworks for Underground Structures         233         28AUG08A         32HUG09           Supply of Rail Track         Supply of Rail Track         90         90         28AUG08A         28JUL09           Supply of Aggregate         Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         201         28FEB09A         16OCT09           Pipe Jacking Works         Finishing Works         250         250         28FEB09A         16OCT09           Submit Contractor's Management Team         0         0         28JAN08A           Submit Pro	26JUL09 26MAR09A 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 26MAR09A 26MAR09A 16SEP09 16OCT09 16OCT09		Longo Piling	itech
10   20   28AUG08A   22   23   23   23   23   23   23   2	Shaft Excavation by RCD at I-2         90         90         28AUG08A           Excavation/Construction of Shafts/Adits/Chambers         90         90         28AUG08A           Construction of Hopper at O-1         90         90         28AUG08A           Suttering of Spiral Ramp         233         233         28AUG08A           Open Cut Excavation & Construction at I-3         90         90         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Lining Formworks for Underground Structures         233         28AUG08A           Supply of Rail Track         90         90         28AUG08A           Supply of Rail Track         90         90         28AUG08A           Supply of Aggregate         120         20         20         28FEB09A           Metal Works         Pipe Jacking Works at Lo Wai         250         250         28FEB09A           Finishing Works         Finishing Works         250         250         28FEB09A           Submit Photographer for Monthly Progress Photo         0         0         28JAN08A           Install Project Signboards at Potions A,B,C & D         30         30         28FEB09A	26MAR09A 26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 26MAR09A 26MAR09A 16SEP09 16OCT09 16OCT09		Longo Piling	itech
10   10   10   10   10   10   10   10	Excavation/Construction of Shafts/Adits/Chambers         90         90         28AUG08A           Construction of Hopper at O-1         90         90         28AUG08A           Suttering of Spiral Ramp         233         233         28AUG08A           Open Cut Excavation & Construction at I-3         90         90         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Lining Formworks for Underground Structures         90         90         28AUG08A           Supply of Rail Track         90         90         28AUG08A           Supply of Ragregate         120         20         28EB09A           Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         20         28FEB09A           Metal Works         Pipe Jacking Works at Lo Wai         250         250         28FEB09A           Finishing Works         Enishing Works         250         250         26FEB09A           Submit Contractor's Management Team         0         0         28JAN08A           Install Project Signboards at Potions A,B,C & D         30         30         28FEB09A	26MAR09A 31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 26MAR09A 26JUL09 16SEP09 16OCT09 16OCT09		awarded to Multi	itech
90   90   28AUGG8A   31JAN09A   28AUGG8A   31JAN09A   2   200     233   233   234   28AUGG8A   26JUL09   28AUGG8A   26JUL09   2   200     90   90   28AUGG8A   05AUGG8A   05AUGG8A   02MAY09A   2   137     90   90   28AUGG8A   03APR09A   28AUGG8A   03APR09A   2   137     90   90   28AUGG8A   03APR09A   28AUGG8A   03APR09A   2   137     120   120   28FEB09A   28FEB09A   28FEB09A   15GCT09   2   549     250   250   28FEB09A   16OCT09   28FEB09A   15OCT09   2   549     250   250   28FEB09A   16OCT09   28FEB09A   15OCT09   2   549     250   250   28FEB09A   16OCT09   28FEB09A   15OCT09   2   549     250   250   28FEB09A   28MAY09   28FEB09A   15OCT09   2   549     250   250   28FEB09A   28MAY09   28FEB09A   15OCT09   2   549     250   250   28FEB09A   29MAY09   28FEB09A   25MAY09A   2   2     250   250   28FEB09A   29MAY09   28FEB09A   25MAY09A   2   2     250   250   28FEB09A   29MAY09A   27MAR09A   2   2     250   250   28FEB09A   29MAY09   28FEB09A   29MAY09A   2   2     250   250   28FEB09A   29MAY09A   27MAR09A   2   2     250   250   28FEB09A   29MAY09A   2   2     250   250   250   250   250   250   250     250   250   250   250   250   250   250     250   250   250   250   250	Construction of Hopper at O-1         90         90         28AUG08A           Suttering of Spiral Ramp         233         233         28AUG08A           Open Cut Excavation & Construction at I-3         90         90         28AUG08A           Lining Formworks for Underground Structures         233         233         28AUG08A           Lunnel Data Management System (TDMS)         90         90         28AUG08A           Supply of Rail Track         90         90         28AUG08A           Supply of Aggregate         120         20         28EB09A           Construct Box Culvert/Cascade/Spiral Ramp at O-1         200         20         28FEB09A           Pipe Jacking Works         Lo Wai         250         250         28FEB09A           Finishing Works         250         250         256         28FEB09A           Finishing Works         0         0         0         28JAN08A           Install Project Signboards at Potions A,B,C & D         30         30         28JAN08A	31JAN09A 26JUL09 02MAY09A 05AUG09 03APR09A 26MAR09A 28JUL09 16SEP09 16OCT09 16OCT09		awa rded to Multi	itech
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30   30   08DEC12   06JAN13   19JAN13   17FEB13   2   358	Prepare/submit As-built Drawings 90 08DEC12	18APR13			as per ER4.4.12
21       21       07APR08A       20AUG08A       07APR08A       20AUG08A       2       Tale AIP Submission         60       60       22MAY08A       13OCT08A       13OCT08A       13OCT08A       2       Tale AIR Submission         60       60       12MAY08A       25SEP08A       12MAY08A       25SEP08A       2       Tale AIR C, 7.6,4         28       28       31OCT08A       09DEC08A       31OCT08A       31OCT08A       2       Tale AIR C, 7.6,4	Produce 2 documentary video for tunnel 30 08DEC12 06JAN13	17FEB13	-		<b>ER</b> 4.4.13
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FRA for works at I-1         21         21         07APR08A         20AUG08A         20AUG08A         2         Table subnission           PCRA for works at I-1         60         60         22MAY08A         13OCT08A         22MAY08A         13OCT08A         2         3           PCRA for works at I-1         60         60         12MAY08A         25SEP08A         25SEP08A         2         3           PCRA         28         28         31OCT08A         09DEC08A         2         3         3	A for Works at Portion A (I-1)				
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Paycacoa   Incompact   Paycacoa   <u>Q</u>	Activity Description	D04	DO4 WP3D Dur Dur	AD04 Start	AD04 W	WP3D WP3D Start Finish		Float	2008 2009 2010 2041 2012 2018	
Prepare Sub-fine	Physical Mo	dels & Other Material Display								
Progressive as part   ER 4.4.7     Progressive as part   ER 4.4.2     Progressive as part   Progressive as part   ER 4.4.2     Progressive as part   ER 4.4.4     Progressive as part   Progressiv										
Prepare Junit a 2-D arimation model   308   19F EBD8A   27F EBD8A   27F EBD8A   27F EBD8A   2   2   2   2   2   2   2   2   2	01R0002302	Prepare/submit a physical models	255		15FEB08A	27NOV08A 15FE		200		the
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18   19   19   19   19   19   19   19	Internet Web	osite as per ER 4.4.7							Ì	
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18 c) On acceptance of 3-D Animation Model	01R0002508	1R 8; On acceptance of Physical Model by the SO	0	0		27NOV08A	27NOV08	24		physical model completed as per ER 4.4.8
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CC         0         0         26SEP08A         2         ◆of all safety & env           DC         0         0         27MAR09A         27MAR09A         2         ♦of all safety & env           DC         0         0         27MAR09A         27MAR09A         2         1,646           DC         0         0         28SEP09         15JUL09         2         1,656           DC         0         0         28DEC10         13JAN10         2         1,282           DC         0         0         28MAR1         14OCT10         2         1,282           DC         0         0         28DEC10         14OCT10         2         1,282           C         0         0         28DEC10         14OCT11         2         1,131           C         0         0         28DEC10         14OCT10         2         1,132           C         0         0         28DEC11         15JUL11         2         1708           C         0         0         27JUN11         15JUL11         2         1736           C         0         0         27JUN11         15JAN12         2         235	17R0003102	17R 2; On complet of all wks for 6 mth frm DOC	0	0		27JUN08A	27JUN08			♦of all safely & env. obligations 6 mths frm DOC
OCC         0         0         27DEC03A         2         Of all safety δ           OCC         0         0         27MAR09A         27MAR09A         2         (445)           OCC         0         0         27JUN09         15JUL09         2 1,456         (461) safety δ           OC         0         0         28MAR10         2 1,465         (465)         (465)           OC         0         0         28MAR10         2 1,282         (465)         (401)           CC         0         0         28MAR10         2 1,131         (465)         (465)           CC         0         0         28DEC10         140CT10         2 1,131         (465)           CC         0         0         28DEC10         140CT11         2 1,282         (465)           C         0         0         27JUN11         15JUL11         2 1,100         (465)           C         0         0         27JUN11         15JUL11         2 397         (461)           C         0         0         27JUN11         15JUL11         2 397         (466)           C         0         0         0         0         0         0	17R0003103	17R 3; On complet of all wks for 9 mth frm DOC	0	0		26SEP08A	26SEP0			♦of all safey & env. obligations 9 mths frm DOC
OC         0         0         27JuAR09A         2 ZIMAR09A         2 ZIMAR09A         2 ZIMAR09A         2 ZIMAR09A         2 ZIMAR09         3 ZIMAR09	17R0003104	17R 4; On complet of all wks for 12 mth frm DOC	0	0		27DEC08A	27DEC0	_		Ø
OC         0         0         27JUN09         15JUL09         2 1,647         ◆ofall sample           OC         0         0         26SEP09         14OCT09         2 1,556         ◆ofall sample           OC         0         0         26BEC09         13JAN10         2 1,856         ♦ofall safety & ev. obligation           OC         0         0         26SEP10         15JUL10         2 1,282         ♦ofall safety & ev. obligation           C         0         0         26SEP10         14OCT10         2 1,100         ♦ofall safety & ev. obligation           C         0         0         26SEP10         15JUL11         2 975         ofall safety & ev. obligation           C         0         0         26SEP11         15JUL13         2 297         ofall safety & ev. obligation           MP         0         0         0         0         0         0         0         0           MP         0 <t< td=""><td>17R0003105</td><td>17R 5; On complet of all wks for 15 mth fm DOC</td><td>0</td><td>0</td><td></td><td>27MAR09A</td><td>27MAR0</td><td></td><td></td><td>of all safety &amp; env. obligations 15 mths frm DOC</td></t<>	17R0003105	17R 5; On complet of all wks for 15 mth fm DOC	0	0		27MAR09A	27MAR0			of all safety & env. obligations 15 mths frm DOC
OC         0         0         26SEP09         14OCT09         2 1,556         ◆ofall           OC         0         0         26DEC09         13JAN10         2 1,455         ◆ofall           OC         0         0         28MAR10         15APR10         2 1,373         ♦ofall           C         0         0         27JUN10         15JUL10         2 1,191         ♦ofall           C         0         0         26SEP10         14OCT10         2 1,191         ♦ofall           C         0         0         26SEP10         13JAN11         2 1,108         ♦ofall           C         0         0         27JUN11         15JUL11         2 1,108         ♦ofall           C         0         0         27JUN11         15JUL11         2 1,108         ♦ofall           C         0         0         26SEP11         14OCT11         2 82         ♦ofall           C         0         0         27JUN11         13JAN12         2 735         ofall           C         0         0         0         0         0         0         0           MP         0         0         0         0         0	17R0003106	17R 6; On complet of all wks for 18 mth frm DOC	0	0		27JUN09	15JUL09		1,647	of all safety & env. obligations 18 mths frm DOC
OC         0         0         26DEC09         13JAN10         2         1,465         ♦ • • • • • • • • • • • • • • • • • • •	17R0003107	17R 7; On complet of all wks for 21 mth frm DOC	0	0		26SEP09	140CT0		1,556	◆of all safety & env. obligations 21 mths fm DOC
OC         0         0         28MAR10         15APR10         2         1,373           CC         0         0         27JUN10         15JUL10         2         1,282           CC         0         0         26SEP10         14OCT10         2         1,190           CC         0         0         26DEC10         13JAN11         2         1,100           C         0         0         28MAR11         15APR11         2         1,100           C         0         0         27JUN11         15APR11         2         1,100           C         0         0         25BEC11         14OCT11         2         275         6 all safety & env. obligation           MP         0         0         0         28MAR13         19APR13         2         207         6 all safety & env. obligation           MP         0         0         0         0         0         0         19APR13         2         206         6 all safety & env. obligation           MP         0         0         0         0         0         0         0         0         0         0         0         0           A         0	17R0003108	17R 8; On complet of all wks for 24 mth frm DOC	0	0		26DEC09	13JAN10		1,465	♦of all safety & env. obligations 24 mths frm DOC
CC         0         0         27JUN10         15JUL10         2         1,282         ◆ of all safety & • of all safety &	17R0003109	17R 9; On complet of all wks for 27 mth fm DOC	0	0		28MAR10	15APR1		1,373	◆of all safety & env. obligations 27 mths frm DO
CC         0         0         26SEP10         14OCT10         2 1,190         Pofall safety           CC         0         0         26DEC10         13JAN11         2 1,100         Acfall safety           CC         0         0         28MAR11         15APR11         2 1,008         Acfall safety           CC         0         0         27JUN11         15JUL11         2 917         Acfall safety         Acfall safety           CC         0         0         26SEP11         14OCT11         2 826         Acfall safety         Acfall safety<	17R0003110	17R 10; On complet all wks for 30 mth frm DOC	0	0		27JUN10	15JUL10		1,282	♦of all satety & env. obligations 30 mths frm
CC         0         0         26DEC10         13JAN11         2 1,100           CC         0         0         28MAR11         15APR11         2 1,008           CC         0         0         27JUN11         15JUL11         2 917           CC         0         0         26SEP11         14OCT11         2 826           CC         0         0         26SEP11         14OCT11         2 826           CC         0         0         26DEC11         13JAN12         2 735         of all safety & env. obligations 48 mths frm DON           MP         0         0         0         07JUN13         19JUL13         2 297         of all safety & env. obligations 9 mths frm DON           MP         0         0         0         07JUN13         19OCT13         2 14         of all safety & env. obligations 9 mths frm DON           MP         0         0         0         07JUN13         10FEB14         2 0         0         all safety & env. obligations 9 mths frm DON           MP         0         0         0         07SEP13         10FEB14         2 0         of all safety & env. obligations 9 mths frm DON           Re         2         0         0         0         0	17R0003111	17R 11; On complet all wks for 33 mth frm DOC	0	0		26SEP10	140CT1		1,191	of all safety & env. obligations 33 mths fr
CC         0         0         28MAR11         15APR11         2         1.008           CC         0         0         27JUN11         15JUL11         2         917           CC         0         0         26SEP11         14OCT11         2         826           CC         0         0         26SEP11         13JAN12         2         735         of all safety & en. Obligations 48 mths frm DC           MP         0         0         0         03MAR13         19APR13         2         297         of all safety & en. Obligations 3 mths frm DC           MP         0         0         0         07JUN13         19APR13         2         206         of all safety & en. Obligations 3 mths frm DC           MP         0         0         0         07JUN13         19OFE113         2         206         of all safety & en. Obligations 3 mths frm DC           MP         0         0         0         07JUN13         19OFE114         2         0         of all safety & en. Obligations 3 mths frm DC           Re         0         0         0         07SEP13         10FEB14         2         0         of all safety & en. Obligations 3 mths frm DC           1         1         1	17R0003112	17R 12; On complet all wks for 36 mth frm DOC	0	0		26DEC10	13JAN1		1,100	◆of all safety & env. obligations 36 mth
CC         0         0         27JUN11         15JUL11         2         917           CC         0         0         26SEP11         14OCT11         2         826           CC         0         0         26DEC11         13JAN12         2         735         of all safety & env. obligations 48 mths frm DC           MP         0         0         0         07SEP13         19APR13         2         297         of all safety & env. obligations 3 mths frm DC           MP         0         0         07SEP13         19OCT13         2         206         of all safety & env. obligations 3 mths frm DC           MP         0         0         0         07SEP13         19OCT13         2         206         of all safety & env. obligations 3 mths frm DC           Re         0         0         0         07SEP13         10FEB14         2         0         of all safety & env. obligations 9 mths frm DC           Re         0         0         0         0         0         0         0         of all safety & env. obligations 9 mths frm DC           Re         0         0         0         0         0         0         0         of all safety & env. obligations 9 mths frm DC           Re <td>17R0003113</td> <td>17R 13; On complet all wks for 39 mth frm DOC</td> <td>0</td> <td>0</td> <td></td> <td>28MAR11</td> <td>15APR1</td> <td></td> <td>1,008</td> <td>♦of all safety &amp; env. obligations 39 r</td>	17R0003113	17R 13; On complet all wks for 39 mth frm DOC	0	0		28MAR11	15APR1		1,008	♦of all safety & env. obligations 39 r
IC         0         0         26SEP11         14OCT11         2         826           IC         0         26DEC11         13JAN12         2         735         of all safety & env. obligations 48 mths frm DCM           MP         0         0         08MAR13         2         297         of all safety & env. obligations 3 mths frm DCM           MP         0         0         07JUN13         19JUL13         2         206         of all safety & env. obligations 3 mths frm DCM           MP         0         0         07SEP13         19OCT13         19OCT13         2         14         of all safety & env. obligations 5 mths frm DCM           Real         0         0         07SEP13         19OCT13         10FEB14         2         0         all safety & env. obligations 9 mths frm DCM           Real         0         0         0         07SEP13         10FEB14         2         0         all safety & env. obligations 9 mths frm DCM           Real         1         1         1         1         0         all safety & env. obligations 9 mths frm DCM         all safety & env. obligations 9 mths frm DCM           1         1         1         1         1         all safety & env. obligations 9 mths frm DCM         all safety & env. obligation	17R0003114	17R 14; On complet all wks for 42 mth frm DOC	0	0		27JUN11	15JUL11		917	♦of all safety & env. obligations 4
IC         0         0         26DEC11         13JAN12         2         735         of all safety & env. obligations 48 mths frm DOMexcluding Section 7           MP         0         0         0 8MAR13         19APR13         2         297         of all safety & env. obligations 3 mths frm DOMexcluding Section 7           MP         0         0         0 7/JUN13         19JUL13         2         206         of all safety & env. obligations 3 mths frm DOMexcluding Section 7           MP         0         0         0 7/JUN13         19DCT13         2         114         of all safety & env. obligations 9 mths frm DOMexcluding Section 7           MP         0         0         0         07/JUN13         10FEB14         2         0         0 all safety & env. obligations 9 mths frm DOMexcluding Section 7           Real         10         10/FEB14         2         0         114         0 of all safety & env. obligations 9 mths frm DOMexcluding Section 7           Real         10         10/FEB14         2         0         10/FEB14         2         0           10         10         10/FEB14         10/FEB14         2         0         10/FEB14         10/FEB14         2         0           10         10         10         10/FEB16 <t< td=""><td>17R0003115</td><td>17R 15; On complet all wks for 45 mth frm DOC</td><td>0</td><td>0</td><td></td><td>26SEP11</td><td>140CT1</td><td></td><td>826</td><td>◆of all safety &amp; env. obligation</td></t<>	17R0003115	17R 15; On complet all wks for 45 mth frm DOC	0	0		26SEP11	140CT1		826	◆of all safety & env. obligation
MP         0         0         08MAR13         19APR13         2         297         of all safety & env. obligations 3 mths frm DOMexcluding Section 7           MP         0         0         07JUN13         19JUL13         2         206         of all safety & env. obligations 6 mths frm DOMexcluding Section 7           MP         0         0         07JUN13         19DC713         2         114         of all safety & env. obligations 9 mths frm DOMexcluding Section 7           Representation of the control of the con	17R0003116	17R 16; On complet all wks for 48 mth frm DOC	0	0		26DEC11	13JAN12		735	of all safety & env. obligations 48 mths frm DOC.
MP         0         0         07JUN13         2         206 of all safety & env. obligations 6 mths frm DOMexcluding Section           MP         0         0         0 TSEP13         19JUL13         2         206 of all safety & env. obligations 9 mths frm DOMexcluding Section           Re         0         0         0 TSEP13         10FEB14         2         0         0 all safety & env. obligations 9 mths frm DOMexcluding Section           Re         0         0         0 TSEP13         10FEB14         2         0         0 all safety & env. obligations 9 mths frm DOMexcluding Section           1	17R0003117	17R 17; On complet of all wks for 3 mth fm CMP	0	0		08MAR13	19APR1		297	
MP         0         0         0         07SEP13         19OCT13         2         114         of all safety & ehv. obligations 9 mths frm DOMexcluding Selections 9 m	17R0003118	17R 18; On complet of all wks for 6 mth fm CMP	0	0		07JUN13	19JUL13		206	all safety & env.
10   10   10   10   10   10   10   10	17R0003119	17R 19; On complet of all wks for 9 mth frm CMP	0	0		07SEP13	190CT1	531	114	all safety & ehv. obligations 9 mths frm DOMexcluding Se
7       7       7       14DEC07A       20DEC07A       14DEC07A       20DEC07A       2       1         28       28       14DEC07A       26FEB08A       14DEC07A       26FEB08A       2       2         28       28       27FEB08A       18MAR08A       27FEB08A       18MAR08A       2       2         28       28       19MAR08A       21AUG08A       19MAR08A       2       2	17R0003120	17R 20; On issuance of maintenance certificate	0	0		30DEC13	10FEB1	-	0	◆ etrificate
7       7       14DEC07A       20DEC07A       14DEC07A       20DEC07A       20DEC07A       2       20DEC07A       2       2       4       1. within 28       28       28       28       27FEB08A       18MAR08A       2       2       2       2       4       1. within 28       3       3       3       3       4       3       4       3       4	Design/Des	ign Check for Permanent Works								
spendent Designer         7         7         14DEC07A         20DEC07A         14DEC07A         20DEC07A	Project -wid	e Packades								
Idependent Designer         7         7         14DEC07A         20DEC07A         14DEC07A         20DEC07A         20DEC07A <t< td=""><td>Project Design</td><td>n Plan (PDP)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Project Design	n Plan (PDP)								
Prepare & submit Project Design Plan (PDP)         28         28         14DEC07A         26FEB08A         26FEB08A         2         Eper ER 5.4.1 within 28           SO's review & comment on PDP         28         28         27FEB08A         18MAR08A         2         21AUG08A         2           Provide further information of (PDP)         28         28         19MAR08A         21AUG08A         2         21AUG08A         2	021 1000102	Employ Independent Designer	7		4DEC07A	20DEC07A 14DF	CO7A 20DECO			
SO's review & comment on PDP         28         27 FEB08A         18MAR08A         27 FEB08A         18MAR08A         2           Provide further information of (PDP)         28         28         19MAR08A         21AUG08A         21AUG08A         2	02L10D0104	Prepare & submit Project Design Plan (PDP)	28		4DEC07A	26FEB08A 14DE	†	_		within 28
Provide further information of (PDP) 28 28 19MAR08A 21AUG08A 19MAR08A 21AUG08A	02L10D0106	SO's review & comment on PDP	28		7FEB08A	18MAR08A 27FE	-			
	021 1000108	Provide further information of (PDP)	28		9MAR08A	21AUG08A 19M	AR08A 21AUG0	_		

<u>o</u>	Activity Description	Dur Dur	Dur	Start	Finish Start	Finish	)	Float							
02L10D0110	SO approves PDP	41	14	14MAY08A	04SEP08A 14MAY08A 04SEP08A	3A 04SEP08	3A 2		1						
02L10D0112	Employ Independent Design Checker	4	14 2	8DEC07A	01FEB08A 28DEC07A	7A 01FEB08A	A 2		n						
02L10D0114	Approval of Design Checker by the SO	28	28 (	02FEB08A	28FEB08A 02FEB08A	A 28FEB08A	2		n						
sign for Com	Design for Communication System										-				
02L1FE0102	Design preparation for the AIP submission	15	15	27JUN09	11JUL09 27JUN09	11JUL09	2	356		a					
02L1FE0103	Design (AIP) submission for the DC's approval	-	-	13JUL09	13JUL09 13JUL09	13JUL09	·	288	R I	-			5		
02L1FE0104	Design (AIP) certification by the Design Checker	28	28	14JUL09	10AUG09 14JUL09	10AUG09	9 2	356					1		
02L1FE0106	Design (AIP) submission for the SO's approval	-	-	13JUL09	13JUL09 13JUL09	13JUL09	*	294	101	-					
02L1FE0108	Design (AIP) review by the SO	09	9	21JUL09	18SEP09 21JUL09	18SEP09	3 2	356			10		1.8		
02L1FE0110	AIP submission for rel. authorities' approval	-	-	13JUL09	13JUL09 13JUL09	13JUL09	***	321		-			5-6		
02L1FE0112	Design (AIP) review by the rel. authorities	28	28	21JUL09	17AUG09 21JUL09	17AUG09	9 2	387		9					
02L1FE0114	Obtain rel. authorities's approval for AIP	-	-	18AUG09	18AUG09 18AUG09	9 18AUG09		315							
02L1FE0116	Obtain SO's consent for design (AIP)	0	0		19SEP09	19SEP09	3	356			•				
02L1FE0118	Design preparation for the DDA submission	8	30	28AUG09	26SEP09 28AUG09	9 26SEP09	3	356							
02L1FE0119	Design (DDA) submission for the DC's approval	-	₹-	28SEP09	28SEP09 28SEP09	3 28SEP09	1	288						200	
02L1FE0120	Design (DDA) certification by the Design Checker	78	28	29SEP09	26OCT09 29SEP09	3 26OCT09	2	356			10				
02L1FE0122	Design (DDA) submission for the SO's approval	<b>3</b>	-	28SEP09	28SEP09 28SEP09	3 28SEP09	1	293	0 2						
02L1FE0124	Design (DDA) review by the SO	09	09	06OCT09	04DEC09 06OCT09	9 04DEC09	2	356			1				
02L1FE0126	DDA submission for rel. authorities' approval	*	-	28SEP09	28SEP09 28SEP09	3 28SEP09	-	319							
02L1FE0128	Design (DDA) review by the rel. authorities	28	28	060CT09	02NOV09 06OCT09	9 02NOV09	9	388	X = 1		831				
02L1FE0130	Obtain rel. authorities's approval for DDA		-	03NOV09	03NOV09 03NOV09	9 03NOV09	0	316	1.8						
02L1FE0132	Obtain SO's consent for design (DDA)	0	0		05DEC09	05DEC09	22	356			•			28	
ign for Flow	Design for Flow Measurement System												-	200	
02L1FE0202	Design preparation for the AIP submission	0	0		11MAY09A	11MAY09A	9A 2		23					28	
02L1FE0203	Design (AIP) submission for the DC's approval	-		29MAY09	29MAY09 29MAY09	9 29MAY09	6	410					×		
02L1FE0204	Design (AIP) certification by the Design Checker	28	28		26JUN09 30MAY09	9 26JUN09	2	502		91			200		
02L1FE0206	Design (AIP) submission for the SO's approval	1		12MAY09A	12MAY09A 12MAY09A	9A 12MAY09A	9A 1								
02L1FE0208	Design (AIP) review by the SO	09	. 09	13MAY09A	24JUL09 13MAY09A		24	205	c d	1		4			
02L1FE0210	AIP submission for rel. authorities' approval	-	•	29MAY09	Ves II		9	432		- 1					
02L1FE0212	Design (AIP) review by the ref. authorities	28	28	90NUC90	60NUL09 06JUL09		2	522	200				-12		
02L1FE0214	Obtain rel. authorities's approval for AIP	<del>-</del>	-	04JUL09	04JUL09 04JUL09		_	427				17.			
02L1FE0216	Obtain SO's consent for design (AIP)	0	0		25JUL09	25JUL09	2	502		•					
02L1FE0218	Design preparation for the DDA submission	30	30	03JUL09	01AUG09 03JUL09	01AUG09	9	502							
02L1FE0219	Design (DDA) submission for the DC's approval	-	۳	03AUG09	03AUG09 03AUG09	9 03AUG09	9	410				- 171			
02L1FE0220	Design (DDA) certification by the Design Checker	28	28	04AUG09	31AUG09 04AUG09	9 31AUG09	9 2	501			111				
02L1FE0222	Design (DDA) submission for the SO's approval	-	r	03AUG09	03AUG09 03AUG09	9 03AUG09	1	416						X.	
02L1FE0224	Design (DDA) review by the SO	09	09	11AUG09	09OCT09 11AUG09	9 09OCT09	9 2	501			D				
02L1FE0226	DDA submission for rel. authorities' approval	-	T	03AUG09	03AUG09 03AUG09	9 03AUG09	9	440						2	
02L1FE0228	Design (DDA) review by the rel. authorities	28	28	11AUG09	07SEP09 11AUG09	9 07SEP09	2	533						5)	
02L1FE0230	Obtain rel. authorities's approval for DDA	-	-	08SEP09	08SEP09 08SEP09	9 08SEP09	1	431							
4 1 1 0000	Ohtain design (DDA) approval from the SO	0	C		COLOCO	000					4		-		

Q	Activity		WP3D	ADO4	ADD4 W	WP3D	WP3D (	Cal To	Total	2008 2009	2010	3011	2013	2013
1	Describrion			) lair										
Temp Shall Do	Design Packages for Works in Portion A		1										W.	
02L1AA0102	Design preparation by the Designer	4	4	22FEB08A	15MAY08A   22FEB08A		15MAY08A	2	Ē	1				383
02L1AA0104	Design certification by the Design Checker	14	4	16MAY08A	26MAY08A 16MAY08A		26MAY08A	2						~
02L1AA0106	Design submission for the SO's approval	-	-	26MAY08A	26MAY08A 26MAY08A		26MAY08A			=				
02L1AA0108	Design review by the SO	21	21	27MAY08A	30JUN08A 27MAY08A		30JUN08A	2		11				821
02L1AA0110	Obtain design approval from the SO	0	0		30JUN08A	30,	30JUN08A	2		<b>•</b>				333
ELS Design for	ELS Design for Spiral Ramp/Cascade/Box Culvert													5 3
02L1AA0202	Design preparation for the DDA submission	158	158	02MAY08A	16FEB09A 02MAY08A		16FEB09A	2						
02L1AA0203	Design submission for the DC's approval	23	7	10JUL08A	17FEB09A 10JUL08A		17FEB09A	-						
02L1AA0204	Design (DDA) certification by the Design Checker	30	30	11JUL08A	17FEB09A 11JUL08A		17FEB09A	2	Ť					
02L1AA0206	Design (DDA) submission for the SO's approval	2	2	12AUG08A	17FEB09A 12AUG08A		17FEB09A			1			30)	33
02L1AA0208	Design (DDA) review by the SO	89	89	13AUG08A	14MAR09A 13AUG08A		14MAR09A	2		I		Del d		H157
02L1AA0216	SO submit design (DDA) for approval of GEO	-	۳	03FEB09A	03MAR09A 03FEB09A		03MAR09A	+		<b>□</b> 7 cay	ays after ICE certification	certification		
02L1AA0218	Design (DDA) review/approval by the GEO	28	28	04MAR09A	31MAY09 04MAR09A	-	31MAY09	2	0	T				
02L1AA0238	Obtain SO's consent for design (DDA)	0	0		24MAR09A	24	24MAR09A	2		Φ	0 1			
Temp. Platform	Temp. Platform Design for H-Piling													33
02L1AA0302	Design preparation by the Designer	15	15	04JAN10*	18JAN10 04JAN10*		18JAN10	2	330		**		5 1	
02L1AA0303	Design submission for the DC's approval	-	7	19JAN10	19JAN10 19JAN10		19JAN10	-	569		-		3	
02L1AA0304	Design certification by the Design Checker	28	28	20JAN10	16FEB10 20JAN10		16FEB10	2	330		<b>13</b>		5	
02L1AA0306	Design submission for the SO's approval	-	-	19JAN10	19JAN10 19JAN10		19JAN10	•	569		-			
02L1AA030B	Design review by the SO	42	42	20JAN10	02MAR10 20JAN10		02MAR10	2	330		13			
02L1AA0310	Obtain design approval from the SO	0	0		02MAR10	02	02MAR10	2	330		<b>\$</b>			
Cascade & Bo.	Cascade & Box Culver Design for Portion A													
02L1AA0402	Design preparation for the AIP submission	30	30	02JUN08A	28FEB09A 02JUN08A	mort and have	28FEB09A	2		I			Ę	
02L1AA0403	Design (AIP) submission for the DC's approval	e	8	12JUL08A	02MAR09A 12JUL08A	-	02MAR09A	•		I				
02L1AA0404	Design (AIP) certification by the Design Checker	243	243	14JUL08A	18MAR09A 14JUL08A	-31	18MAR09A	2		14-	CE on 17/09	ICE on 17/09/092nd ICE cert	sert on 02/12/08	
02L1AA0406	Design (AIP) submission for the SO's approval	2	2	15JUL08A	19MAR09A 15JUL08A		19MAR09A	-		ļ	L3-15			
02L1AA0408	Design (AIP) review by the SO	99	99	16JUL08A	20MAR09A 16JUL08A		20MAR09A	2						
02L1AA0410	AIP submission for rel. authorities' approval	- <del></del>	+	14JUL08A	19AUG08A 14JUL08A		19AUG08A			o				
02L1AA0412	Design (AIP) review by the rel. authorities	28	28	15JUL08A	12NOV08A 15JUL08A		12NOV08A	2	T	1		15		
02L1AA0414	Obtain rel. authorities's approval for AIP	ST-	۳	03NOV08A	12NOV08A 03NOV08A	100	12NOV08A	-					501	
02L1AA0420	Obtain SO's consent for design (AIP)	0	0		20MAR09A	20	20MAR09A	2		<b>•</b>				7.65
02L1AA0422	Design preparation for the DDA submission	30	30	21MAR09A	12JUN09 21MA	21MAR09A 12.	12JUN09	7	124	H T	- 1 - 14			
02L1AA0423	Design (DDA) submission for the DC's approval		+	13JUN09	13JUN09 13JUN09		13JUN09	-	105		_			-3
02L1AA0424	Design (DDA) certification by the Design Checker	28	28	14JUN09	11JUL09 14JUN09		11JUL09	2	126				33	
02L1AA0426	Design (DDA) submission for the SO's approval	-	۳	13JUN09	13JUN09 13JUN09		13JUN09	-	103		- 7			
02L1AA0428	Design (DDA) review by the SO	99	99	14JUN09	18AUG09 14JUN09		18AUG09	2	124		FI II			
02L1AA0430	DDA submission for rel. authorities' approval	·-	-	20JUN09	20JUN09 20JUN09		20JUN09		128				× 1	
02L1AA0432	Design (DDA) review by the rel, authorities	28	28	21JUN09			18JUL09	2	155					
02L1AA0434	Obtain rel. authorities's approval for DDA		-	20JUL09	20JUL09 20JUL09		20JUL09	-	129					
02L1AA0440	Obtain SO's consent for design (DDA)	0	0		19AUG09	19.	19AUG09	2	124		•	8		

Impact Assess	Impact Assessment on WSD Wo YIp Hop V. S. P. H.									
02L1AA0502	Design preparation for the DDA submission	30	30 02MAY08A	3A 26FEB09A 02MAY08A	A 26FEB09A	2				
02L1AA0503	Design (DDA) submission for the DC's approval	-	1 26JUN08A	A 27FEB09A 26JUN08A	A 27FEB09A	-				
02L1AA0504	Design (DDA) certification by the Design Checker	9	60 27JUN08A	3A 11MAR09A 27JUN08A	A 11MAR09A	2	1st ICE cer	ICE cert on 02/12/08		
02L1AA0506	Design (DDA) submission for the SO's approval	2	2 14JUL08A	3A 24MAR09A 14JUL08A	A Z4MAR09A					
02L1AA0508	Design (DDA) review by the SO	99	66 15JUL08A	34 31MAR09A 15JUL08A	A 31MAR09A	2				
02L1AA0510	DDA submission for rel, authorities' approval	2	2 10JUL08A	3A 14MAR09A 10JUL08A	14MAR09A		I			
02L1AA0512	Design (DDA) review by the rel. authorities	28	28 14JUL08A	31MAY09 14JUL08A	31MAY09	2 0				
02L1AA0514	Obtain rel. authorities's approval for DDA	-	1 01JUN09	9 01JUN09 01JUN09	90NUL10	0				
02L1AA0520	Obtain SO's consent for design (DDA)	0	0	31MAR09A	31MAR09A	2	•			
Temporary Pla	Temporary Platform for Pipe Pilling						- 7			
02L1AA0602	Design preparation by the Designer	11	11 21JUL08A	3A 23AUG08A 21JUL08A	1 23AUG08A	2				
02L1AA0603	Design submission for the DC's approval	-	1 01AUG08A	8A 25AUG08A 01AUG08A	A 25AUG08A		•			
02L1AA0604	Design certification by the Design Checker	21	21 02AUG08A	8A 26SEP08A 02AUG08A	A 26SEP08A	2	11			
02L1AA0606	Design submission for the SO's approval	*	1 08AUG08A	8A 27SEP08A 08AUG08A	A 27SEP08A	-	11			
02L1AA0608	Design review by the SO	28	28 09AUG08A	BA 170CT08A 09AUG08A	A 170CT08A	7	10			
02L1AA0610	Obtain design approval from the SO	0	0	17OCT08A	17OCT08A	23	•			
Temporary We	Temporary Works Design for Retrieval of TBM									1
02L1AA0702	Design preparation by the Designer	8	30 28FEB09A	3A 22JUN09 28FEB09A	4 22JUN09	2 139	I			
021 1AA0703	Design submission for the DC's approval	-	1 23JUN09	9 23JUN09 23JUN09	23JUN09	1 115				
02L1AA0704	Design certification by the Design Checker	28	28 24JUND9	9 21JUL09 24JUN09	21JUL09	2 139			V IN	
02L1AA0706	Design submission for the SO's approval	*	1 23JUN09	9 23JUN09 23JUN09	23JUN09	1 115			400 402 402	
02L1AA0708	Design review by the SO	42	42 24JUN09	9 04AUG09 24JUN09	04AUG09	2 139	11			WA F
02L1AA0710	Obtain design approval from the SO	0	0	04AUG09	04AUG09	2 139	<b>*</b>			
Temporary Dr.	Temporary Drainage Management Plan for Portion A									
02L1AA0802	TDMP preparation by the Designer	208	208 18AUG08A	8A 23MAY09A 18AUG08A	A 23MAY09A	0				
02L1AA0804	TDMP submission for the DC's approval	2	2 24SEP08A	8A 25MAY09A 24SEP08A	A 25MAY09A					
02L1AA0806	TDMP certification by the Design Checker	28	28 240CT08A	-		2 142				
02L1AA0808	TDMP submission for the SO's approval	2	2 05NOV08A	8A 04JUN09 05NOV08A	A 04JUN09	1 165				
02L1AA0810	TDMP review by the SO	90	90 05NOV08A	8A 16JUL09 05NOV08A	A 16JUL09	2 192				112
02L1AA0812	TDMP submission for DSD's approval	-	1 04JUN09	04JUN09		1 119				-
02L1AA0814	TDMP review by the DSD	8	90 05JUN09	02SEP09		2 144				
02L1AA0816	Obtain DSD's approval for DDA	*	1 03SEP09	39 03SEP09 03SEP09		117				
02L1AA0818	Obtain SO's consent for TDMP	0	0	03SEP09	03SEP09	2 144	•			
Geotechnical	Geotechnical Instrumentation Stg 1 for GL Works									3210
3DL1AAG102	Design preparation by the Designer	14	14 22FEB08A	8A 28APR08A 22FEB08A		2				
3DL1AAG104	Design certification by the Design Checker	7	7 29APR08A	8A 16JUN08A 29APR08A	A 16JUN08A	2				
3DL1AAG106	Design submission for the SO's approval	٠	1 10MAY08A			-				
3DL1AAG108	Design review by the SO	14	14 12MAY08A	8A 28AUG08A 12MAY08A	A 28AUG08A	2				
3DL1AAG110	Obtain design approval from the SO	0	0	28AUG08A	-	2	•		00	
3DL1AAG112	Install Geotechnical Instruments	9	6 26MAY08A	8A 26MAY08A 26MAY08A	A 26MAY08A	-				
3DI 1AAG114	Constitution Contract	42	AN OZNANORA	SA 31MAYORA 27MAYORA	A 31MAY08A	·				

OI	Activity	100	P3D	AD04			1	Total	2008	2010	100	2002	2013
	Description	Dur	Dur	Start	Finish Start	t Finish	9	Float					
Geotechnical I	Geotechnical Instrumentation Stg 2 for Deep Exc.												
3DL1AAG202	Design preparation by the Designer	4	14 0	01DEC08A 2	24FEB09A 01DEC08A	38A 24FEB09A	2		0				
3DL1AAG204	Design certification by the Design Checker	7	7 1	7 15DEC08A 2	25FEB09A 15DEC08A	38A 25FEB09A	2		U				
3DL1AAG206	Design submission for the SO's approval	-	-	07JAN09A	25FEB09A 07JAN09A	9A 25FEB09A			0				18
3DL1AAG208	Design review by the SO	28	28 (	08JAN09A 2	24MAR09A 08JAN09A	1033	2		11				8=3
3DL1AAG210	Obtain design approval from the SO	0	0	2	24MAR09A	24MAR09A	2		•				
3DL1AAG212	Install Geotechnical Instruments	28	28 (	09FEB09A	04JUN09 09FEB09A	9A 04JUN09	-	0	1				553
3DL1AAG214	Baseline Monitoring	9	9	18FEB09A 2	25MAR09A 18FEB09A	BA 25MAR09A	2		111			~ {	
3DL1AAG216	Monitor/report Geotechnical Instrumentation	1,643   1,643	-	02JUN08A	04FEB13 02JUN08A	ISA 04FEB13	2	0			l	İ	1
Design Pack	Design Packages for Works in Portion B												
Piling Platform	Piling Platform to Construct H-pile Wall			E									
02L1BB0202	Design preparation by the Designer	15	15 2	4MAR08A 0	24MAR08A 09MAY08A 24MAR08A 09MAY08A	28A 09MAY08A	2		п			100	(18)
02L1BB0204	Design certification by the Design Checker	4	14	10MAY08A 0	08AUG08A 10MAY08A	38A 08AUG08A	2						0.
02L1BB0206	Design submission for the SO's approval	-	1	1 21MAY08A 0	08AUG08A 21MAY08A	D8A D8AUG08A	-		8				
02L1BB0208	Design review by the SO	21	21 2	22MAY08A	25SEP08A 22MAY08A	38A 25SEP08A	2		1			200	
02L1BB0210	Obtain design approval from the SO	0	0		25SEP08A	25SEP08A	2		•				
Temp. Platform	Temp. Platform to Construct Drop Shafts												
02L1BB0302	Design preparation by the Designer	22	22 0	4AUG08A 1	04AUG08A 11DEC08A 04AUG08A	38A 11DEC08A	2	90	I			5	
02L1BB0303	Design submission for the DC's approval	2	2	2 11DEC08A 1	12FEB09A 11DEC08A	38A 12FEB09A	٠		IJ				
02L1BB0304	Design certification by the Design Checker	41	4	12DEC08A 2	25FEB09A 12DEC08A	38A 25FEB09A	2	7.0	0				8
02L1BB0306	Design submission for the SO's approval	2	2	2 12DEC08A 2	25FEB09A 12DEC08A	38A 25FEB09A	-		ij		a		
02L1BB0308	Design review by the SO	21	21	21 13DEC08A 1	11MAR09A 13DEC08A	38A 11MAR09A	2		1)				(82)
02L1BB0310	Obtain design approval from the SO	0	0	_	11MAR09A	11MAR09A	350		•				188
Temporary Dra	Temporary Drainage Management Plan												
02L1BB0402	TDMP preparation by the Designer	313	313 0	313 05MAY08A 2	21MAR09A 05MAY08A	08A 21MAR09A	1 2						
02L1BB0403	TDMP submission for the DC's approval	2	2 0	2 05AUG08A 2	23MAR09A 05AUG08A	38A 23MAR09A	-		1				
02L1BB0404	TDMP certification by the Design Checker	213	213 0	213 06AUG08A 1	13APR09A 06AUG08A	38A 13APR09A	7	-	I				10
02L1BB0406	TDMP submission for the SO's approval	2	2	2 24SEP08A 1	14APR09A 24SEP08A	38A 14APR09A	τ		1			58	
02L1BB0408	TDMP review by the SO	90	90 25	SEP08A	03JUN09 25SEP08A	98A 03JUN09	8	-210					25
02L1BB0410	TDMP submission for DSD's approval	-	1 23	SEP08A	23SEP08A 23SEP08A	18A 23SEP08A	,						
02L1BB0412	TDMP review by the DSD	06	90	24SEP08A	04JUN09 24SEP08A	98A 04JUN09	2	-211	1				
02L1BB0414	Obtain DSD's approval for DDA		٠-	60NUC90	esuucso esuucso		•	-168					
02L1BB0416	Obtain SO's consent for TDMP	0	0		60NUC50	60NUL20	2	-211	•				
Temp. Suppor	Temp. Support Design for MAA/MAS/VDS/DC					I							
02L1BB0502	Design preparation for the AIP submission	272	272 (	23UN08A	02JUN08A 19MAR09A 02JUN08A	19MAR09A	1 2						000
02L1BB0503	Design (AIP) submission for the DC's approval	2	2	11JUL08A 2	20MAR09A 11JUL08A	8A 20MAR09A	-						33
02L1BB0504	Design (AIP) certification by the Design Checker	90	09	12JUL08A (	04APR09A 12JUL08A	8A 04APR09A	2						
02L1BB0506	Design (AIP) submission for the SO's approval	23	2	24JUL08A (	06APR09A 24JUL08A	8A 06APR09A	-						
02L1BB0508	Design (AIP) review by the SO	99	99	25JUL08A 1	11MAY09A 25JUL08A	8A 11MAY09A	2						
02L1BB0510	AIP submission for rel. authorities' approval	-	~	12JUL08A	12JUL08A 12JUL08A	8A 12JUL08A	٠						(SS
02L1BB0512	Design (AIP) review by the rel. authorities	28	28	14JUL08A 1	10NOV08A 14JUL08A	8A 10NOV08A	2		1			i i	e 97 i
02L1BB0514	Obtain rel. authorities's approval for AIP	-	-	11NOV08A 1	11NOV08A 11NOV08A	38A 11NOV08A	1						
02L1BB0516	SO submit design (AIP) for approval of GEO	-	-	29MAY09	29MAY09 29MAY09	39 29MAY09		0				8	àya
					Shoot 44 of E0		¥						

1	Description	pur	Dur	Start	Finish 51	Start	Finish	)	Float				
02L1BB0518	Design (AIP) review/approval by the GEO	28	28	30MAY09	26JUN09 30MAY09		26JUN09	2	0	.991			
02L1BB0520	Obtain SO's consent for design (AIP)	0	0		11MAY09A	-	11MAY09A	5		•			
02L1BB0522	Design preparation for the DDA submission	30	30	28MAY09	26JUN09 28MAY09		26JUN09	2	0	.10			
02L1BB0523	Design (DDA) submission for the DC's approval		-	27JUN09	27JUN09 27JUN09		27JUN09		0				
02L1BB0524	Design (DDA) certification by the Design Checker	28	28	28JUN09	25JUL09 28JUN09		25JUL09	2	•	1181			
02L1BB0526	Design (DDA) submission for the SO's approval	-	Ψ-	27JUN09	27JUN09 27JUN09		27JUN09	+	0				
02L1BB0528	Design (DDA) review by the SO	99	99	28JUN09	01SEP09 28JUN09		01SEP09	2	0	1			
02L1BB0530	DDA submission for rel. authorities' approval	-	٠	04JUL09	04JUL09 04JUL09		04JUL09	•	26				
02L1BB0532	Design (DDA) review by the rel. authorities	28	28	05JUL09	01AUG09 05JUL09		01AUG09	2	£	11			
02L1BB0534	Obtain rel. authorities's approval for DDA	-	•	03AUG09	03AUG09 03AUG09		03AUG09	-	56				
02L1BB0536	SO submit design (DDA) for approval of GEO	-	-	03AUG09	03AUG09 03AUG09		03AUG09	-	0				
02L1BB0538	Design (DDA) review/approval by the GEO	28	28	04AUG09	31AUG09 04AUG09		31AUG09	2	0				
02L1BB0540	Obtain SO's consent for design (DDA)	0	0		02SEP09	J	02SEP09	2	0	•			
emp. Suppor	Temp. Support Design for MA and MA/MT Connection											0 0	
02L1BB0602	Design preparation for the AIP submission	110	110	09JUN08A	OZJUNO9 09JUN08A		60NNC30	2	0				
02L1BB0603	Design (AIP) submission for the DC's approval	) <del>5</del> 77	*	18MAY09A	29MAY09 18MAY09A		29MAY09	-	m				
02L1BB0604	Design (AIP) certification by the Design Checker	28	28	19MAY09A	14JUN09 19MA	19MAY09A	14JUN09	2	0	*			
02L1BB0606	Design (AIP) submission for the SO's approval	•	*	93JUN09	60NULEO 60NULEO		60NDC80		0				
02L1BB0608	Design (AIP) review by the SO	99	99	04JUN09	08AUG09 04JUN09		08AUG09	2	0	1			
02L1BB0610	AIP submission for rel. authorities' approval	·-	-	93JUN09	BONULEO BONULEO		93JUN09	4	30				
02L1BB0612	Design (AIP) review by the rel. authorities	28	28	04JUN09	01JUL09 04JUN09	-20	01JUL09	7	36	n			
02L1BB0614	Obtain rel. authorities's approval for AIP	-	-	05JUL09	02JUL09 02JUL09		02JUL09	-	31				- CO
02L1BB0616	SO submit design (AIP) for approval of GEO		۳	22JUN09	22JUN09 22JUN09	5-50	22JUN09	-	0				100
02L1BB0618	Design (AIP) review/approval by the GEO	28	28	23JUN09	20JUL09 23JUN09		20JUL09	7	0				88
02L1BB0620	Obtain SO's consent for design (AIP)	0	0		09AUG09	7	09AUG09	2	0	•			
02L1BB0622	Design preparation for the DDA submission	30	30	18JUL09	16AUG09 18JUL09		16AUG09	7	0				
02L1BB0623	Design (DDA) submission for the DC's approval	-	-	17AUG09	17AUG09 17AUG09		17AUG09	4-	0	- /			
02L1BB0624	Design (DDA) certification by the Design Checker	28	28	18AUG09	14SEP09 18AUG09		14SEP09	7	0	•			200
02L1BB0626	Design (DDA) submission for the SO's approval	-	7	17AUG09	17AUG09 17AUG09		17AUG09	-	0			1111	
02L1BB0628	Design (DDA) review by the SO	99	99	18AUG09			22OCT09	7	0		1		
02L1BB0630	DDA submission for rel. authorities' approval	-	_	24AUG09	24AUG09 24AUG09		24AUG09		27				122
02L1BB0632	Design (DDA) review by the rel. authorities	28	28	25AUG09	21SEP09 25AUG09		21SEP09	01	3				
02L1BB0634	Obtain rel, authorities's approval for DDA	<del>.</del>	-	22SEP09	22SEP09 22SEP09		22SEP09		52			7	700
02L1BB0636	SO submit design (DDA) for approval of GEO	F	٠	22SEP09			22SEP09		0				
02L1BB0638	Design (DDA) review/approval by the GEO	28	28	23SEP09	200CT09 23SEP09		200CT09	7	0				
02L1BB0640	Obtain SO's consent for design (DDA)	0	0		23OCT09		23OCT09	2	0		•		NAV.
ermanent De	Permanent Design for MAA/MAS/VDS/DC												
02L1BB0702	Design preparation for the AIP submission	285	285	02JUN08A	OZJUNO9 OZJUNO8A		90NUCZ0	01	0				
02L1BB0703	Design submission for the DC's approval	2	2	23JUL08A	03JUN09 23JU	23JUL08A (	93JUN09	-	0				
02L1BB0704	Design (AIP) certification by the Design Checker	9	9	24JUL08A	19JUN09 24JU	24JUL08A	19JUN09	2	0				
02L1BB0706	Design (AIP) submission for the SO's approval	2	2	04JUL08A	03JUN09 04JU	04JUL08A (	93JUN09		-				
02L1BB0708	Design (AIP) review by the SO	99	99	05JUL08A	19JUN09 05JU	05JUL08A	19JUN09	7	·				12
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Q	Activity	D04 1	D04 WP3D	AD04 Slart	ADD4 WP3D Finish Start	WP3D Finish	Total	8002 8002	2010	11.00	2012	2013
02L1BB0906	Design submission for the SO's approval	-		9	9 154	15AUG09	1 70					
02L1BB0908	Design review by the SO	42	42	16AUG09	26SEP09 16AUG09	26SEP09	2 86	D			i e	
02L1BB0910	Obtain design approval from the SO	0	0		26SEP09	26SEP09	2 86	<b>*</b>				
Platform for R	Platform for RCD Operation (Air Vent Shaft)											
02L1BB1602	Prepare design/method statement	9	6 2	22NOV08A	01DEC08A 22NOV08A	01DEC08A						
02L1BB1604	Submit design/method statement to Design Checker	T	1 0.	1 02DEC08A	23DEC08A 02DEC08A	23DEC08A	-					
02L1BB1606	Certify design/m.s. by Design Checker	7	7 0;	03DEC08A	24DEC08A 03DEC08A	A 24DEC08A	2	•				
02L1BB1608	Submit design/m.s. to SO	-	1 2	24DEC08A 3	24DEC08A 24DEC08A	24DEC08A	•					
02L1BB1610	Design/m.s. review by SO	14	14 25	DEC08A	11MAR09A 25DEC08A		2	11				
02L1BB1612	Obtain design/m.s. approval from the SO	0	0		11MAR09A	11MAR09A	-	•				
Temporary Wo	Temporary Works for Air Vent Shaft Construction											
02L1BB1702	Prepare design/method statement	21	21 00	3NOV08A	03NOV08A 16DEC08A 03NOV08A	16DEC08A	-	n				
02L1BB1704	Submit design/method statement to Design Checker	-	1 17	DEC08A	17DEC08A 17DEC08A	17DEC08A	-			550		
02L1BB1706	Certify design/m.s. by Design Checker	41	14 1	18DEC08A	23JAN09A 18DEC08A	ASJAN09A	2	B				
02L1BB1708	Submit design/m.s. to SO	-	1 2	23JAN09A	23JAN09A 23JAN09A	23JAN09A	r					
02L1BB1710	Design/m.s. review by SO	7	7 2	24JAN09A	23MAR09A 24JAN09A	23MAR09A	2	n				
02L1BB1712	Obtain design/m.s. approval from the SO	0	0	. 1	23MAR09A	23MAR09A	7,400	•				
Permanet Desi	Permanet Design for Air Vent Shaft					3						
02L1BB1802	Prepare design/method statement	56	26 0	5NOV08A	26 05NOV08A 11DEC08A 05NOV08A 11DEC08A	11DEC08A		13		B		
02L1BB1804	Submit design/method statement to Design Checker	-	11	1 12DEC08A	12DEC08A 12DEC08A	12DEC08A						
02L1BB1806	Certify design/m.s. by Design Checker	21	21 1		24MAR09A 13DEC08A		2	II			101	
02L1BB1808	Submit design/m.s. to SO	-	1	17DEC08A 3	24MAR09A 17DEC08A	A 24MAR09A	-	II				
02L1BB1810	Design/m.s. review by SO	42	42 1	18DEC08A	31MAY09 18DEC08A	31MAY09	2 150					
02L1BB1812	Submit design to rel. authorities	÷	1 2	1 25MAR09A	25MAR09A 25MAR09A	A 25MAR09A	ν-					
02L1BB1814	Obtain design approval from rel. authorities	28	28 01	MAR09A	28MAY09   01MAR09A	A 28MAY09	2 153				tine	
02L1BB1816	Obtain design/m.s. approval from the SO	0	0		30MAY09	30MAY09	1 125	*				
ELS Design fo	ELS Design for Construction of Vortex Shaft											
02L1BB1902	Design preparation by the Designer	25	25 2	23FEB09A	02JUN09 23FEB09A	02JUN09	2 -205	1			551	-17.5
02L1BB1904	Design submission for the DC's approval		·	93JUN09		GONNIEO	1 -163			-V		
02L1BB1906	Design certification by the Design Checker	28	28	04JUN09		01JUL09	2 -205					
02L1BB1908	Design submission for the SO's approval	-		60NULE0		93JUN09					201	
02L1BB1910	Design review by the SO	42	42	11JUN09	15JUL09 11JUN09	15JUL09						
02L1BB1912	Obtain design approval from the SO	0	٥		15JUL09	15JUL09	2 -205	•				
Geotechnical	Geotechnical Instrumentation Stg 1 for GL Works	3										
3DL1BBG102	Design preparation by the Designer	4	14 2		05MAY08A 22FEB08A		2	11				
3DL1BBG104	Design certification by the Design Checker	7	7 0		29AUG08A 06MAY08A	A 29AUG08A	0					
3DL1BBG106	Design submission for the SO's approval	*	<u></u>	10MAY08A	10MAY08A 10MAY08A 10MAY08A	10MAY08A						
3DL1BBG108	Design review by the SO	14	14	12MAY08A	14JUL08A 12MAY08A	4 14 JUL08A	63	n				
3DL1BBG110	Obtain design approval from the SO	0	0		14JUL08A	14JUL08A	61	•				
3DL1BBG112	Install Geotechnical Instruments	9	6 1	11JUN08A	19JUL08A 11JUN08A	19JUL08A	**:	8				
3DL1BBG114	Baseline Monitoring	14	14 2	1JUL08A	26JUL08A 21JUL08A	26JUL08A	21	-			13)	
Geotechnical	Geotechnical Instrumentation Stg 2 for Deep Exc.										200	
3DL1BBG202	Design preparation by the Designer	40	40 31	1AUG08A	AUG08A 240CT08A 31AUG08A 240CT08A	3 240CT08A	2					

Design centrication by the Design Checker   14   14 240CT064   COCCT064   CODECO64   CODECO64   CODECO64   CODECO64   CODECO664   CODECO64   CODECO664   CODECO	9	Activity	Dur Dur	Dur	Start	Finish Start	Finish		Float					
1   1   1   1   1   1   1   1   1   1	3DL1BBG204	Design certification by the Design Checker	41	**	_	02DEC08A 24OCT08/		2		Ш			353	
12   28   28   CRNOVORA   10JUNO9   CRNOVORA   10JUNO9   2   -114	3DL1BBG206	Design submission for the SO's approval	,		2.5	O2DEC08A 05NOV08/		•	_53	13				
10   10   10   10   10   10   10   10	3DL1BBG208	Design review by the SO	28		D6NOV08A	10JUN09 06NOV08/			14					
12   12   14   14   14   14   14   14	3DL1BBG210	om the	0	0		10JUN09	10JUN09		14				\$\$ <del>1</del>	
14   14   11   11   11   11   12   13   11   11	3DL1BBG212	Install Geotechnical Instruments	12		- 52	27MAR09A 14MAR09,				••				
1.567   1.567   1.567   28.ULD06A   31DEC12   28.ULD08A   31DEC12   2 0 0	3DL1BBG214	Baseline Monitoring	14	14	11JUN09		-		4					Ī
15   15   12MAYOBA   12MOBA   12MAYOBA   11MBAYOBA   11MBAYOBA   11MBAYOBA   11MBAYOBA   11MBAYOBA   11MBAYOBA   11MBAYOBA   11MBAYOBA   11MBAYOBA   11MAYOBA   11MAYOBA   11MBAYOBA	3DL1BBG216	Monitor/report Geotechnical Instrumentation	1,587	1,587	28JUL08A			2	0				I	
15   15   12MAYOBA   27JUNOBA   12MAYOBA   27JUNOBA   2	Design Pack	cages for Works in Portion C							3					
Design preparation by the Designer   15   179M/YORA   2/1ULOBA   2/1UNOBA   2/1UNOBA   2   2   2	Piling Platform	n for H-pile Wall A												
Design certification by the Design Checker   14 14   14   20MA/708A   G3ULL0BA   G3ULL0BA   G3ULL0BA   C4ULL0BA   G3ULL0BA   G3ULL0BA   C4ULL0BA   G3ULL0BA   C4ULL0BA   G3ULL0BA   C4ULL0BA   C4UL	02L1CC0002	Design preparation by the Designer	15		10	27JUN08A 12MAY08,		2						
Design submission for the SO's approval         1         0.4JUL08A         0.4JUL08A         0.4JUL08A         0.4JUL08A         1         0.4JUL08A         0.4JUL08A         2.5JUL08A         2           Obtain design submission for the SO's approval from the SO         1         1         0.5JUL08A         2         2           Design submission for the DC's approval         4         1         0.2SEEP08A         0.2DEC08A         0.2DEC08A         2           Design reparation by the Designer         4         1         0.2DEC08A	02L1CC0004	Design certification by the Design Checker	14			03JUL08A 22MAY08,		7						
Works for Persign design perpending the SO         14         14         65UL06A         29JUL06A         29JUL06A         2         4           Works for Formation of Access Road         More activation of Access Road         Access Road         Road         29JUL06A         22 SULUGA         22 JUL06A         2         4           Design preparation by the Design of the DC's approval         1         1         02DEC08A         02DEC08A         02DEC08A         2         7           Design submission for the DC's approval         1         1         02DEC08A         02DEC08A         02DEC08A         2         7           Design submission for the DC's approval         1         1         02DEC08A         02DEC08A         02DEC08A         1         1           Design review by the SC         0besign review by the SC         0         0         0         1         17JUL09	02L1CC0006	Design submission for the SO's approval	5	-		04JUL08A 04JUL08A		+						
Works for Fundame design approval from the SO         0         0         28-ULIDBA         23-ULIDBA         2         •           Posign perparation by the Designer Designer of Design authorisation for the DC's approval         4         1 SSEEPOBA OIDECOBA	02L1CC0008	Design review by the SO	14	14	05JUL08A	29JUL08A 05JUL08A	aig-speak	2						
Works for Formation of Access Road         40         958EP08A         OTDECOBA         CIDECOBA         C	02L1CC0010	Obtain design approval from the SO	0	0		29JUL08A	29JUL08A	2		•				
Design preparation by the Designer 1 1 02DECO8A   01DECO8A   02DECO8A   01DECO8A   02DECO8A   02DEC	Temporary Wo	orks for Formation of Access Road												
Design submission for the DC's approval         1         1         CDECOBA         OZDECOBA         OZDEC	02L1CC0102	Design preparation by the Designer	40		-	01DEC08A 29SEP08/		2	1)-	11				
Design certification by the Design Checker   14   0.3DECO8A   0.5DECO8A   0.	02L1CC0103	Design submission for the DC's approval	-			02DEC08A 02DEC08/		-						
posign review by the SO         approval         1         1         oppEcOsA         23MAROSA         2           Obesign review by the SO         0         0         0         0         0         23MAROSA         23MAROSA         23MAROSA         2           Design preparation by the Design Checker         2         1         1         17JULOS         17JULOS         17JULOS         1           Design preparation by the Design Checker         2         2         2         13JULOS         17JULOS         17JULOS         1           Design review by the SO         0         1         1         17JULOS         17JULOS         17JULOS         1           Design review by the SO         0         1         1         17JULOS         17JULOS         1         1           Design review by the SO         0         0         0         2	02L1CC0104	Design certification by the Design Checker	4		3DEC08A	08DEC08A 03DEC08/		2		-		¥.		
Design review by the SO         28         28         10DECOBA         23MAR09A         22MAR09A         2           Design review by the SO         Obtain design approval from the SO         1         2 </td <td>02L1CC0106</td> <td>Design submission for the SO's approval</td> <td>+</td> <td></td> <td></td> <td>09DEC08A 09DEC08/</td> <td></td> <td>-</td> <td>1 3</td> <td>=</td> <td></td> <td></td> <td></td> <td></td>	02L1CC0106	Design submission for the SO's approval	+			09DEC08A 09DEC08/		-	1 3	=				
omm for H-pile Wall B         Columbia         Calubos         Calubos<	02L1CC0108	Design review by the SO	28	28		23MAR09A 10DEC08/		2		IJ				
metor H-pile Wall B         1         12JUL09         15         15         02JUL09*         15JUL09         15JUL09         2           Design submission for the DC's approval         1         1         17JUL09         17JUL09         17JUL09         1           Design submission for the DC's approval         1         1         17JUL09         17JUL09         17JUL09         1           Design submission for the SO's approval         42         2         18JUL09         17JUL09         1           Design submission for the SO's approval tom the SO         42         42         18JUL09         18JUL09         28AUG09         2           Obtain design approval from the SO         42         42         18JUL09         28AUG09         28AUG09         2           Design review by the SO         0         0         2         28AUG09         28AUG09         2           Design (AIP) certification by the Design Checker         2         2         2DEC08A         19MAY09A         23DIN09         24DEC08A         19MAY09A         23DIN09         23UN09         23UN09<	02L1CC0110	Obtain design approval from the SO	0	0		23MAR09A	23MAR09A	2	-37	•				
Design preparation by the Designer   15   15   15   17 JUL09   1	Piling Platform	n for H-pile Wall B												
besign submission for the DC's approval         1         17JUL09         17JUL09         17JUL09         17JUL09         1           Design certification by the Design Checker         28         28         18JUL09         18JUL09         18JUL09         14AUG09         2           Design submission for the SO's approval         42         42         18JUL09         17JUL09         17JUL09         1           Design review by the SO         42         42         18JUL09         18JUL09         17JUL09         1           Design review by the SO         42         42         18JUL09         17JUL09         1         1           Design for MAAIMAS/NDS/DC/AVS         42         18JUL09         18JUL09         18JUL09         17JUL09         1           Design fall submission for the AIP submission for the DC's approval         2         23DEC08A         15MAY09A         28AUG09         2           Design (AIP) review by the SO's approval         2         2 ADEC08A         15MAY09A         23UN09	02L1CC0202	Design preparation by the Designer	15	15	02JUL09*	16JUL09 02JUL09*	16JUL09		179					
oot Design review by the SO         approval         1         17JUL09         14JUL09         14JUL09         14JUL09         14JUL09         14JUL09         14JUL09         14JUL09         17JUL09         17JUL09<	02L1CC0203	Design submission for the DC's approval	-	-	17JUL09		17JUL09		147			×		
oot Design review by the SO         approval from the SO's approval         1         17JUL09         1JUL09         1JUL09	02L1CC0204	Design certification by the Design Checker	28	28	18JUL09		14AUG09		179		13		Ku j	
besign review by the SO         42         42         18 JUL09         28AUG09         2           bott Design review by the SO         0         28AUG09         1         28AUG09         2           bott Design for MAA/MAS/NDS/DC/AVS         2         22 JUN08A         103         26 JUN08A         09MAY09A         2         28AUG09         2           Design preparation for the AIP submission for the DC's approval         2         2 SADEC08A         15MAY09A         23DEC08A         15MAY09A         2           Design (AIP) submission for the DC's approval         2         2 SADEC08A         15MAY09A         2         2           Design (AIP) submission for the SO's approval         2         2 SADEC08A         19MAY09A         2 SADEC08A         19MAY09A         2           AIP submission for rel. authorities' approval         6         6         2 ADEC08A         19MAY09B         2 SADEC08A         19MAY09B         2 SADEC08A         19MAY09B         2 SADEC08A         19MAY09B         2 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         1 SADEC08A         2 SADEC08A         1 SADEC08A <t< td=""><td>02L1CC0206</td><td>Design submission for the SO's approval</td><td>-</td><td>٠</td><td>17JUL09</td><td></td><td>17JUL09</td><td>-</td><td>147</td><td></td><td></td><td></td><td>38</td><td></td></t<>	02L1CC0206	Design submission for the SO's approval	-	٠	17JUL09		17JUL09	-	147				38	
oort Design for MAA/MAS/NDS/DC/AVS         0         0         28AUG09         2           bosign for MAA/MAS/NDS/DC/AVS         103         26.UIN08A         09MAY09A         22BUG08A         28AUG09         2           Design preparation for the AIP submission for the DC's approval         2         2.23DEC08A         15MAY09A         2.2DEC08A         15MAY09A         2         2           Design (AIP) submission for the DC's approval         2         2.23DEC08A         19MAY09A         2.2DEC08A         19MAY09A         2         2           Design (AIP) review by the SO         2         2         2.2DEC08A         19MAY09A         2.2DEC08A         19MAY09A         2         2         2.2DEC08A         19MAY09A         2         2         2.2DEC08A         19MAY09A         2         2         2.2DEC08A         19MAY09A         2.2DEC08A         19MAY09A         2.2DEC08A         19MAY09A         2.2DEC08A         19MAY09A         2.2DEC08A         19MAY09A         2.2DEC08A	02L1CC0208	Design review by the SO	42	42	18JUL09	28AUG09 18JUL09	28AUG09		179					
besign for MAA/MAS/NDS/DDC/AVS         103         26JUN08A         09MAY09A         26JUN08A         09MAY09A         25JUN08A         25JUN08A         09MAY09A         25JUN08A         25JUN0BA         25JU	02L1CC0210	Obtain design approval from the SO	0	0		28AUG09	28AUG09		179		•			
Design (AIP) submission for the AIP submission for the AIP submission for the Design (AIP) submission for the Design (AIP) submission for the Design (AIP) submission for the Design Checker         2         2.3DEC08A         15MAY09A         2.3DEC08A         15MAY09A         2.4DEC08A	Temp. Suppor	t Design for MAA/MAS/VDS/DC/AVS												
Design (AIP) submission for the DC's approval         2         23DEC08A         15MAY09A         15MAY0A         15MAY0A         15MAY0A         15MAY0A         15MAY0A	02L1CC0302	Design preparation for the AIP submission	103	103	26JUN08A	09MAY09A 26JUN08A		2						Ī
Design (AIP) certification by the Design Checker         28         28         24DEC08A         19MAY09A         24DEC08A         19MAY09A         24DEC08A         19MAY09A         22DEC08A         19MAY09A         22DEC08A         19MAY09A         23JUN09         2         23JUN09         24DEC08A         19MAY09A         23JUN09         2         23JUN09         2         23JUN09         24DEC08A         23JUN09         2	02L1CC0303	Design (AIP) submission for the DC's approval	2		23DEC08A	15MAY09A 23DEC08,								
Design (AIP) review by the SO         approval         2         2 3DEC08A         19MAY09A         23DEC08A         19MAY09A         1           Design (AIP) review by the SO         66         24DEC08A         23JUN09         24DEC08A         23JUN09         2           AIP submission for rel. authorities' approval for AIP         1         1         29MAY09         29MAY09         29MAY09         2           Design (AIP) review by the rel. authorities's approval for AIP         1         1         27JUN09         27JUN09         2           SO submit design (AIP) review/approval by the GEO         1         1         29MAY09         29MAY09         29MAY09         1           SO submit design (AIP) review/approval by the GEO         28         28         30MAY09         25MAY09         29MAY09         1           Design (AIP) review/approval by the GEO         28         28         30MAY09         26JUN09         25JUN09	02L1CC0304	Design (AIP) certification by the Design Checker	28			19MAY09A 24DEC08,		2						
Design (AIP) review by the SO         66         66         24DEC08A         23JUN09         23JUN09         2           AIP submission for rel. authorities         1         1         29MAY09         29MAY09         29MAY09         1           Design (AIP) review by the rel. authorities         28         28         30MAY09         26JUN09         25JUN09         25JUN09         25JUN09         25JUN09         25JUN09         25JUN09         1           SO submit design (AIP) for approval for AIP         1         1         27JUN09         27JUN09         27JUN09         1           Design (AIP) review/approval by the GEO         28         28         30MAY09         29MAY09         29MAY09         29MAY09         25JUN09         2           Obtain SO's consent for design (AIP)         0         0         0         29JUN09         25JUN09         2         25JUN09         2           Design preparation for the DDA submission         30         07JUN09         07JUL09         07JULUDULULULULULULULULULULULULULULULULULU	02L1CC0306	Design (AIP) submission for the SO's approval	7	-		19MAY09A 23DEC08,	-						922	Ī
AIP submission for rel. authorities' approval         1         1         29MAY09         29MAY09         29MAY09         1           Design (AIP) review by the rel. authorities         28         28         30MAY09         26JUN09         30MAY09         25JUN09         27JUN09         27JUN09         27JUN09         27JUN09         27JUN09         1           SO submit design (AIP) for approval for AIP         1         28         28         30MAY09         29MAY09         28MAY09         28JUN09         2           Obtain SO's consent for design (AIP)         0         0         0         29JUN09         25JUN09         2           Design preparation for the DDA submission         30         07JUN09         06JUL09         07JUN09         07JUL09         07JUL09 </td <td>02L1CC0308</td> <td>Design (AIP) review by the SO</td> <td>99</td> <td>99</td> <td>24DEC08A</td> <td></td> <td></td> <td></td> <td>141</td> <td></td> <td></td> <td></td> <td></td> <td></td>	02L1CC0308	Design (AIP) review by the SO	99	99	24DEC08A				141					
Design (AIP) review by the rel. authorities         28         28         30MAY09         26JUN09         26JUN09         26JUN09         2           Obtain rel. authorities's approval for AIP         1         1         27JUN09         27JUN09         27JUN09         27JUN09         1           SO submit design (AIP) for approval of GEO         1         1         28MAY09         29MAY09         29MAY09         29MAY09         1           Design (AIP) review/approval by the GEO         28         28         30MAY09         26JUN09         28JUN09         2           Obtain SO's consent for design (AIP)         0         0         29JUN09         28JUN09         2           Design preparation for the DDA submission         30         30 07JUN09         06JUL09         07JUL09         07JUL09         07JUL09         1	02L1CC0310	AIP submission for rel. authorities' approval		5	29MAY09	29MAY09 29MAY09			115					
Obtain rel, authorities's approval for AIP         1         1         27JUN09         27JUN09         27JUN09         1           SO submit design (AIP) for approval of GEO         1         1         29MAY09         29MAY09         29MAY09         1           Design (AIP) review/approval by the GEO         28         28         30MAY09         26JUN09         26JUN09         2           Obtain SO's consent for design (AIP)         0         0         29JUN09         22JUN09         2           Design preparation for the DDA submission         30         30         07JUN09         06JUL09         07JUL09         07JUL09         07JUL09         07JUL09         1	02L1CC0312	Design (AIP) review by the rel. authorities	28	28	30MAY09	-			145					
SO submit design (AIP) for approval of GEO         1         1         29MAY09         29MAY09         29MAY09         1           Design (AIP) review/approval by the GEO         28         28         30MAY09         26JUN09         26JUN09         2           Obtain SO's consent for design (AIP)         0         0         29JUN09         2         29JUN09         2           Design preparation for the DDA submission         30         30         07JUN09         06JUL09         07JUL09         07JUL09         07JUL09         07JUL09         07JUL09         07JUL09         1	02L1CC0314	Obtain rel. authorities's approval for AIP	*	7	27JUN09	-	27JUN09		118				o o i	
Design (AIP) review/approval by the GEO         28         28         30MAY09         26JUN09         26JUN09         26JUN09         25JUN09         2	02L1CC0316	SO submit design (AIP) for approval of GEO	-	-	29MAY09	-		-	0			4		
Obtain SO's consent for design (AIP)         0         0         0         29JUN09         29JUN09         29JUN09         2           Design preparation for the DCA submission         30         30         07JUN09         06JUL09         07JUL09         07JUL09         2	02L1CC0318	Design (AIP) review/approval by the GEO	28	28	30MAY09	-		2	0					
Design (DDA) submission for the DC's approval         30         30         07JUL09         07JUL09         07JUL09         2	02L1CC0320	Obtain SO's consent for design (AIP)	0	0			29JUN09		146		•			
Design (DDA) submission for the DC's approval 1 1 07JUL09 07JUL09 07JUL09 1	02L1CC0322	Design preparation for the DDA submission	30	30	60NUL70		06JUL09		146					
	02L1CC0323	Design (DDA) submission for the DC's approval	-	-	07JUL09		07JUL09		114					
04AUG09 08JUL09 04AUG09	02L1CC0324	Design (DDA) certification by the Design Checker	28	28	08JUL09	04AUG09 08JUL09	04AUG09	2	143				\$55 	

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02L1CC0326	Design (DDA) submission for the SO's approval	-	7	07JUL09	9 07J	107.	07JUL09	1 -117	17					
02L1CC0328	Design (DDA) review by the SO	99	99	08JUL09			11SEP09	2 -146	16				2	
02L1CC0330	DDA submission for rel, authorities' approval	-	-	07JUL09			07JUL09	1 -85	32				9.6	
02L1CC0332	Design (DDA) review by the rel. authorities	28	28	15JUL09	11AUG09 15JUL09		11AUG09	2 -116	9	-		,		
02L1CC0334	Obtain rel. authorities's approval for DDA	-	-	12AUG09	12AUG09 12AUG09		12AUG09	1 -95	35					
02L1CC0336	SO submit design (DDA) for approval of GEO	·-	-	12AUG09	12AUG09 12AUG09		12AUG09		0				688	
02L1CC0338	Design (DDA) review/approval by the GEO	28	28	13AUG09	09SEP09 13AUG09		09SEP09	2	0	-		0	200	
02L1CC0340	Obtain SO's consent for design (DDA)	0	0		12SEP09	128	12SEP09	2 -146	16	•			100	
emp. Support	Temp. Support Design for MA and MAMIT Connection													
02L1CC0402	Design preparation for the AIP submission	110	110	18AUG08A	03JUN09 18AUG08A	- 144	03JUN09	2	0	ı				
02L1CC0403	Design (AIP) submission for the DC's approval	2	2	05MAY09A	30MAY09 05MAY09A	709 30N	SOMAYOS		0					
02L1CC0404	Design (AIP) certification by the Design Checker	28	28	28 06MAY09A	15JUN09 06MAY09A		15JUN09	N	0	1				
02L1CC0406	Design (AIP) submission for the SO's approval		-	04JUN09	04JUN09 04JUN09		04JUN09		0		8			
02L1CC0408	Design (AIP) review by the SO	99	99	60NUCS0	09AUG09 05JUN09		99AUG09	2	0					
02L1CC0410	AIP submission for rel, authorities' approval	*	-	04JUN09	04JUN09 04JUN09		04JUN09	1 0	30	10			100	
02L1CC0412	Design (AIP) review by the rel. authorities	28	28	60NUC30	02JUL09 05JUN09		02JUL09	2 3	36	n			533	
02L1CC0414	Obtain rel. authorities's approval for AIP	٠	-	03JUL09	6370L09 03JUL09		03JUL09	1 3	31	_				
02L1CC0416	SO submit design (AIP) for approval of GEO	٠	-	23JUN09	23JUN09 23JUN09		23JUN09		0	_				
02L1CC0418	Design (AIP) review/approval by the GEO	28	28	24JUN09	21JUL09 24JUN09		21JUL09	2	0			401		
02L1CC0420	Obtain SO's consent for design (AIP)	0	0		10AUG09	10A	10AUG09	2	0	•				
02L1CC0422	Design preparation for the DDA submission	30	30	19JUL09	17AUG09 19JUL09		17AUG09	2	0	-				
02L1CC0423	Design submission for the DC's approval	ŽĪ.		18AUG09	18AUG09 18AUG09		18AUG09		0	-				
02L1CC0424	Design (DDA) certification by the Design Checker	28	28	19AUG09	15SEP09 19AUG09		15SEP09	2	0	•				
02L1CC0426	Design (DDA) submission for the SO's approval	-	7	18AUG09	18AUG09 18AUG09		18AUG09	1 7	73	-		2 4		
02L1CC0428	Design (DDA) review by the SO	99	99	19AUG09	23OCT09 19AUG09	13.75	23OCT09	2 8	88	1				
02L1CC0430	DDA submission for rel. authorities' approval	1	-	25AUG09	25AUG09 25AUG09		25AUG09	9	98	-		200		
02L1CC0432	Design (DDA) review by the rel. authorities	28	28	26AUG09	22SEP09 26AUG09		22SEP09	2 118	89	n				
02L1CC0434	Obtain rel. authorities's approval for DDA	٠	Έ-	23SEP09	23SEP09 23SEP09		23SEP09	1 9	95					
02L1CC0436	SO submit design (DDA) for approval of GEO	-	-	23SEP09	23SEP09 23SEP09		23SEP09		0					
02L1CC0438	Design (DDA) review/approval by the GEO	28	28	24SEP09	210CT09 24SEP09		21OCT09	2	0	*			8/6	
02L1CC0440	Obtain SO's consent for design (DDA)	0	0		23OCT09	23C	23OCT09	2 8	88	<b>•</b>			22	
ermanent De	Permanent Design for MAA/MAS/VDS/DC/AVS													
02L1CC0502	Design preparation for the AIP submission	103	103	26JUN08A	04MAY09A 26JUN08A		04MAY09A	2	l	ı				
02L1CC0503	Design submission for the DC's approval	2	2	110CT08A	05MAY09A 110CT08A		05MAY09A	্জন	**	I				
02L1CC0504	Design (AIP) certification by the Design Checker	28	28	130CT08A	19MAY09A 13OCT08A		19MAY09A	2	11	I			-	
02L1CC0506	Design (AIP) submission for the SO's approval	4	4	05NOV08A	19MAY09A 05NOV08A		19MAY09A	-		I		4		
02L1CC0508	Design (AIP) review by the SO	99	99	06NOV08A	16JUN09 06NOV08A		16JUN09	2	0	1				
02L1CC0510	AIP submission for rel. authorities' approval	-	,	28FEB09A	28FEB09A 28FEB09A	63	28FEB09A							
02L1CC0512	Design (AIP) review by the rel. authorities	28	28	01MAR09A	28MAY09 01MAR09A		28MAY09	2 1	18	ı			200	
02L1CC0514	Obtain rel. authorities's approval for AIP	-		29MAY09	29MAY09 29MAY09		29MAY09	1	15					
02L1CC0516	SO submit design (AIP) for approval of GEO	*	•	28FEB09A	28FEB09A 28FEB09A	-	28FEB09A	-						
02L1CC0518	Design (AIP) review/approval by the GEO	28	28 (	01MAR09A	28MAY09 01MAR09A		28MAY09	2 1	19	11				
0010001			7											

Control   Cont	Q	Activity		P3D	AD04	-	WP3D	WP3D		Total	2008	2009	2010	2011	2012		2013
Design (DA) exterior by the Design Checker         29         20 GANNOR         25,01,009         25,01,009         25,01,009         25,01,009         25,01,009         25,01,009         25,01,009         25,01,009         25,01,009         25,01,009         27,01,009         1         20           Design (DA) relevier by the SOS         20 SEC,000         22,01,009         2,01,009         1         15,01,009         25,01,009         2,01,009         1         15,01,009         27,01,009         1         15,01,009         1         15,01,009         1         1,01,009         1         17,11         1         1         1,01,009         1         17,11         1         1         1,01,009         1         17,11         1         1         1,01,009         1         17,11         1         1         1,01,009         1         17,11         1         1         1,01,009         1         17,11         1         1         1         1,01,009         1         17,1         1         1,01,009         1         1,01,009         1         1,01,009         1         1,01,009         1         1,01,009         1,01,009         1         1,01,009         1,01,009         1,01,009         1,01,009         1,01,009         1         1,01,0		Description	7		Start			Finish		Float						ŀ	
Design (DOA) selection by the Design Checker         1         2.5.LUNNS         5.5.LUNNS         2.5.LUNNS	02L1CC0522	Design preparation for the DDA submission	30	30 0	9MAR09A			54JUN09	7	0						À	
Design (Dok) settlered by the Segial Checker 28 28 28, 100, 100, 100, 100, 100, 100, 100, 10	02L1CC0523	Design submission for the DC's approval	,-		25JUN09			55JUN09		0		-				21	
Design (DA) submission for the SO's approval         1         2.8.UNN9         5.8.UNN9         5.8.UNN9         7.8.UNN9	02L1CC0524	Design (DDA) certification by the Design Checker	28		26JUN09	-		23JUL09	2	0		30			= 3		
Doisy brinking to the view by the case of the case o	02L1CC0526	Design (DDA) submission for the SO's approval	•	1220	25JUN09			25JUN09	-	152							
Dobas binnesson for risk authorities approval of 100 coullules   20,000 coullules   20,	02L1CC0528	Design (DDA) review by the SO	99	9000	26JUN09			30AUG09	2	183		11					
Obesign (DDA) (evisiwe by the ref. authorities)         28         COAULUG         \$31,ULUG9         \$11,ULUG9         \$10,ULUG9         \$11,ULUG9         \$11,ULUG9         \$10,ULUG9         \$11,ULUG9	02L1CC0530	DDA submission for rel. authorities' approval	~	77	05JUL09			22JUL09	-	177		_			00)		
Outsin rela authorities a sproval of DDA   1 31,ULLOB   31,ULLOB   31,ULLOB   31,ULLOB   1 174	02L1CC0532	Design (DDA) review by the rel. authorities	28	28	03JUL09			30JUL09	2	214		113			y.		
SO submit design (DDA) for approval of GEO 1 1 1 3 JulULOs 9 3 JulULOs 9 1 JulULOs 9 1 JulULOs 0 Cotamin design (DDA) for approval of GEO 2 2 5 GAULOSA 13 JulUCOs 1 JulULOS 1 JulULOs 1 JulULOs 1 JulULOs 1 JulULOS 1 JulULOS 1 JulULOS 1 JulULOS 1 JulULOS 1 JulULOS 1 JulULOS 1 JulULOS 1 JulULOS 1 J	02L1CC0534	Obtain rel. authorities's approval for DDA	•	-	31JUL09			31JUL09	-	174							
Design (DA) review/approved by the GEO 29 29 01/ULGOS 17JULGOS 17JULGOS 27JULGOS 27J	02L1CC0536	SO submit design (DDA) for approval of GEO			31JUL09			31JUL09	-	0							
Obesign For NAME Connection         84         84         01JULOBA         17JULOBA	02L1CC0538	Design (DDA) review/approval by the GEO	28		01AUG09			28AUG09	2	0		186				168	
Design for NA and MANT Connection         84         0 1 JUL08A         17JUR0B         2         0           Design (AP) certification by the Design Checker         2         2         2 2.2JUL0BA         15JUL0BA         15JUR0B         17JUR0B         17JUR0B </td <td>02L1CC0540</td> <td>Obtain SO's consent for design (DDA)</td> <td>0</td> <td>0</td> <td></td> <td>31AUG09</td> <td></td> <td>31AUG09</td> <td>2</td> <td>183</td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td>8</td> <td></td>	02L1CC0540	Obtain SO's consent for design (DDA)	0	0		31AUG09		31AUG09	2	183		•				8	
Design preparation for the AP submission         24         64         01ULQBA         17UNNOB         2         0           Design (AP) cardication for the AP submission of the DCs approval         2         2.2,5ULLQBA         18JUNOB         5.1         0           Design (AP) cardication by the DCs approval         2         2.2,5ULLQBA         051ULQBA         051ULQBA <td>Permanent De</td> <td>sign for MA and MA/MT Connection</td> <td></td> <td>-05</td> <td></td> <td></td>	Permanent De	sign for MA and MA/MT Connection													-05		
Design (AIP) submission for the DC's approval  Design (AIP) evident by the Design Checker  Design (AIP) evident by the SO's approval  Design (AIP) evident by the SO's approval  Design (AIP) evident by the SO's approval  Design (AIP) review by the SO's approval  Design (AIP) review by the SO's approval  Design (AIP) review by the SO's approval  Design (AIP) review by the SO's approval  Design (AIP) review by the SO's approval  Design (AIP) review by the SO's approval  Design (AIP) review by the SO's approval of GEO  Design (AIP) review by the rel authorities approval of GEO  Design (AIP) review by the rel authorities approval of GEO  Design (AIP) review by the rel authorities approval of GEO  Design (DDA) submission for the DDA submission  Design (DDA) review by the Design (AIP) review by the Design (AIP) review by the CEO  Design (DDA) review by the	02L1CC0602	Design preparation for the AIP submission	25		AROJUL10	17JUN09 01JL		60NUL71	2	0		1			-		
Design (AIP) rectification by the Design Checker 28 22 23-UL03A 67-UL03A 77-UL03A 77	02L1CC0603	Design (AIP) submission for the DC's approval	2		25JUL08A			18JUN09	-	0	İ						
Design (AIP) submission for the SO's approval   2 2 2-30,ULG8A   07,UUCBA   04,UUCBA   07,UUCBA   04,UUCBA	02L1CC0604	Design (AIP) certification by the Design Checker	28		26JUL08A			SOULOS	2	0		1					
Design (AIP) review by the SO   66 6 22-UL08A   O8AUGG98   22-UL0BA   O8AUGG98   2   0	02L1CC0606	Design (AIP) submission for the SO's approval	2		26JUL08A			37JUL09	े पत	0		1					Ī
All submission for rel, authorities' approval of GEO Beautification by the rel, authorities approval of GEO Beagin (AlP) review by the rel, authorities approval of GEO 1 1 4JUL09 14JUL09 14JUL09 14JUL09 14JUL09 1 1 21 21 20 20 20 20 20 20 20 20 20 20 20 20 20	02L1CC0608	Design (AIP) review by the SO	99	_	28JUL08A			38AUG09	2	0	l	1					
Design (AIP) review by the rel. authorities         28         26         25JUL08A         13JUL08         43JUL09         29         24           SO submir design (AIP) review/by the rel. authorities is approval of GEO         1         14JUL08         14JUL09         14JUL09         1         21           SO submir design (AIP) review/by the GEO         28         28         14JUL09         14JUL09         14JUL09         1         0         0           Design (AIP) review/baproval by the GEO         28         28         15JUL09         14JUL09         14JUL09         14JUL09         2         0           Design (DA) submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DS approval         1         1         14JUL09         14JUL09         14JUL09         14JUL09         14JUL09         1         0	02L1CC0610	AIP submission for rel. authorities' approval	÷	_		08AUG08A 25JI		D8AUG08A	-	W.							
Obtain rel. authorities's approval for AIP  SO submit design (AIP) for approval of GEO  Design (AIP) review approval by the GEO  Obtain SO's conneant for design (AIP) for approval of GEO  Design (DA) submission for the DIC's approval  Design (DA) submission for the DIC's approval  Design (DDA) certification by the Bossign Consent for design (AIP)  Design (DDA) certification by the Design Checker  Design (DDA) certification by the SO's approval  Design (DDA) review by the SO's approval  Design (DDA) review by the SO's approval  Design (DDA) review by the SO's approval  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's approval  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's approval  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's approval  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's approval  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's approval  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's approval  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's connective the design (DDA) are approval of GEO  Design (DDA) review by the SO's connective design (DDA)  SO submit design (DDA) for approval of GEO  Design (DDA) review by the SO's connective design (DDA)  SO connective by the SO's connective design (DDA)  TOMP preparation by the DOS approval  TOMP preparation by the DOS approval  TOMP submission for the DC's approval  TOMP submission for the DC's approval  TOMP submission for the SO's approval  TOMP submission for the DC's approval  TOMP submission for the DC's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval  TOMP submission for the SO's approval	02L1CC0612	Design (AIP) review by the rel. authorities	28		26JUL08A			13JUL09	2	24		I					
So submit design (AIP) for approval of GEO 1 1 14JUL09 14JUL09 14JUL09 14JUL09 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	02L1CC0614	Obtain rel. authorities's approval for AIP	4	-	14JUL09			14JUL09		21							
Design (AIP) review/approval by the GEO  Design preparation for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the SO's approval  Design (DDA) review by the EG  DDA submission for the SO's approval  DA submission for the SO's approval  DA submission for the SO's approval  1 17AUG09 17AUG09 17AUG09 17AUG09 1 4SEP  DA submission for the SO's approval  1 17AUG09 17AUG09 17AUG09 1 4SEP  DA submission for the SO's approval  1 17AUG09 17AUG09 17AUG09 1 4SEP  DA submission for the SO's approval  1 17AUG09 17AUG09 17AUG09 1 4SEP  DA submission for the SO's approval  1 17AUG09 17AUG09 1 4SEP  DA submission for the SO's approval of GEO  1 1 17AUG09 12SEP09 1 4SEP  DA submission for the DC's approval  1 1 17AUG09 12SEP09 1 4SEP  SO submit design (DDA) for approval of GEO  1 1 12SEP09 12SEP09 12SEP09 1 4AZ  SO submit design (DDA) for approval of GEO  Design (DDA) review by the GEO  Design (DDA) review by the GEO  Design (DDA) review by the GEO  Design (DDA) review by the GEO  Design (DDA) review by the GEO  Design (DDA) review by the GEO  SO submit design (DDA) for approval of GEO  TOWN for approval of	02L1CC0616	SO submit design (AIP) for approval of GEO	-	•	14JUL09			14JUL09	-	0							
Design preparation for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DCS approval of EG 1 1 17AUG09 17	02L1CC0618	Design (AIP) review/approval by the GEO	28	28	15JUL09			11AUG09	2	0		DE .				ō.º	
Design (DDA) submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the DDA submission for the SOS approval  Design (DDA) submission for the SOS approval  Design (DDA) submission for the SOS approval  Design (DDA) review by the SOS approval  Design (DDA) review by the CBC DA  SO submit design (DDA) review by the CBC DA  SO	02L1CC0620	Obtain SO's consent for design (AIP)	0	0		09AUG09	J	39AUG09	2	0		•					
Design (DDA) submission for the DC's approval Design (DDA) certification by the Design Checker Design (DDA) certification by the Design Checker Design (DDA) certification by the Design Checker Design (DDA) review by the SO Design (DDA) review by the cSO approval Design (DDA) review by the cSO approval Design (DDA) review by the rel. authorities approval for DDA SO submit design (DDA) review by the CEO Design (DDA) review by the CEO SO submit design (DDA) review by the CEO Design (DDA) review by the CEO SO submit design (DDA) review by the CEO Design (DDA) review by the CEO SO submit design (DDA) review by the CEO Design (DDA) review by the CEO SO submit design (DDA) review by the CEO Design (DDA) review by the CEO SO submit design (DDA) review by the CEO Design (DDA) review by the CEO SO consent for design (DDA) SO consent for design (DDA) SO consent for design (DDA) SO consent to So consent for design (DDA) SO consent to So consent for design (DDA) SO coview boulder survey report SO review boulders survey report TDMP prepared survey report TDMP prepared submission for the DC's approval TDMP certification by the Design Checker SO corrigon (DDA) review design (Decker TDMP submission for the DC's approval TDMP submission for the SO's approval TDMP submission for the S	02L1CC0622	Design preparation for the DDA submission	30	30	18JUL09			16AUG09	2	0		100					
Design (DDA) certification by the Design Checker   28   18AUG09   14SEP09   14SEP09   14SEP09   2   0	02L1CC0623	Design (DDA) submission for the DC's approval	-	*	17AUG09	17AUG09 17A		17AUG09	-	0					-		
Design (DDA) submission for the SO's approval	02L1CC0624	Design (DDA) certification by the Design Checker	28	28	18AUG09			14SEP09	2	0		m				2/3	
Design (DDA) review by the SO   66   66   18AUG09   22OCT09   18AUG09   24AUG09   24	02L1CC0626	Design (DDA) submission for the SO's approval	-	-	17AUG09			17AUG09	-	419							
DDA submission for rel. authorities' approval   1   1   24AUG09   24AUG09   24AUG09   1   442	02L1CC0628	Design (DDA) review by the SO	99	99	18AUG09			22OCT09	5	515		11					
Design (DDA) review by the rel. authorities   28   25AUG09   21SEP09   21SEP09   21SEP09   2 SAUG09   2 SAEP09   02L1CC0630	DDA submission for rel. authorities' approval	-	518	24AUG09			24AUG09	-	442		=/				28		
SO submit design (DDA) review/approval for DDA         1         22SEP09         22SEP09         22SEP09         1         442           SO submit design (DDA) review/approval by the GEO         28         28         23SEP09         22SEP09         22SEP09         1         442           Sessment & Design (DDA) review/approval by the GEO         28         28         23SEP09         20OCT09         2         5         5           Sessment & Design (DDA) review/approval by the GEO         30         0         2         20OCT09         2         5         515           Boulder Surevey         30         0.0         1         4         30         0.0         1         4 <td< td=""><td>02L1CC0632</td><td>Design (DDA) review by the rel. authorities</td><td>28</td><td>503</td><td>25AUG09</td><td></td><td></td><td>21SEP09</td><td>2</td><td>546</td><td></td><td>13</td><td></td><td></td><td></td><td>S S I</td><td></td></td<>	02L1CC0632	Design (DDA) review by the rel. authorities	28	503	25AUG09			21SEP09	2	546		13				S S I	
SO submit design (DDA) for approval of GEO  Design (DDA) review/approval by the GEO  Design (DDA) review/approval by the GEO  Design (DDA) review/approval by the GEO  Design (DDA) review/approval by the GEO  Design (DDA) review/approval by the GEO  Sessment & Design (DDA)  Dotain SO's consent for design (DDA)  Boulder Surevey  Roulder Surevey  Prepare/submit boulder surevey report  Drainage Management Plan  TDMP preparation by the Designer  TDMP submission for the DC's approval  TDMP submission for the SO's approval  TD	02L1CC0634	Obtain rel. authorities's approval for DDA	-	-	22SEP09	-		22SEP09	-	442							
Sessment & Design (DDA) review/dapproval by the GEO         28         28         23 SEP09         200CT09         20CT09         2         0           Sessment & Design (DDA)         0         0         230CT09         230CT09         2         515           Sessment & Design for Stabili. Measure         30         30         230CT09         15AUG08A         15AUG08A         15AUG08A         1           Boulder Surevey report         25         25         14JUL08A         05SEP08A         14JUL08A         05SEP08A         1         1           SO review boulder survey report         14         14         06SEP08A         19SEP08A         19SEP08A         19SEP08A         2         1           SO review boulder survey report         14         14         04AUG08A         03SEP08A         19SEP08A         2         1           TDMP preparation by the Designer         1         1         04AUG08A         03SEP08A         04AUG08A         03SEP08A         1         1           TDMP submission for the DC's approval         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2	02L1CC0636	SO submit design (DDA) for approval of GEO	***	•	22SEP09			22SEP09	-	0		-			93		
Sessment & Design for Stabili. Measure         30         0         0         23OCT09         2         515         English           Boulder Surevey         30         30         02JUN08A         15AUG08A         15AUG08A         1	02L1CC0638	Design (DDA) review/approval by the GEO	28		23SEP09	-		200CT09	2	0		<b>38</b> 0				33	
Boulder Surevey         30         30 OZJUN08A         15AUG08A         15AUG08A         1         =           Prepare/submit boulder surevey report         25         25 14JUL08A         05SEP08A         14JUL08A         05SEP08A         1         =           SO review boulder survey report         14         14         06SEP08A         19SEP08A         19SEP08A         2         1           TDMP preparation by the Designer         14         14         04AUG08A         03SEP08A         04AUG08A         03SEP08A         2         1           TDMP certification by the Design Checker         28         28         09SEP08A         10DEC08A         1         1           TDMP submission for the SO's approval         2         2         200CT08A         11DEC08A         1         1	02L1CC0640	Obtain SO's consent for design (DDA)	0	0		230CT09		23OCT09	2	515		<b>•</b>					
Boulder Surevey         30         30         02JUN08A         15AUG08A         15AUG08A         1         1           Prepare/submit boulder surevey report         25         25         14JUL08A         05SEP08A         14JUL08A         05SEP08A         1         1         1           SO review boulder survey report         14         14         14         06SEP08A         19SEP08A         19SEP08A         2         1         1           TDMP preparation by the Designer         1         1         1         04AUG08A         03SEP08A         03SEP08A         2         1           TDMP certification by the Design Checker         28         28         28         09SEP08A         10DEC08A         10DEC08A         1         1           TDMP submission for the SO's approval         2         2         200CT08A         11DEC08A         11DEC08A         1         1         1	Boulder Asses	ssment & Design for Stabili. Measure														28	
Drainage Management Plan         Prepare/Submit boulder survey report         25         25         14JUL08A         05SEP08A         14JUL08A         05SEP08A         1         1           Drainage Management Plan         TDMP preparation by the Designer         14         14         04AUG08A         03SEP08A         04SEP08A         2         1           TDMP submission for the DC's approval         1         1         04SEP08A         04SEP08A         03SEP08A         2         8           TDMP submission for the SO's approval         2         2         200CT08A         10DEC08A         1         1           TDMP submission for the SO's approval         2         2         200CT08A         11DEC08A         1         1         1	02L1CC0702	Boulder Surevey	30		ASONUL20	15AUG08A 02JI		15AUG08A	-		ŀ						
Drainage Management Plan         14         14         06SEP08A         19SEP08A         19SEP08A         2         1           TDMP preparation by the Designer TDMP submission for the DC's approval         14         14         04AUG08A         03SEP08A         03SEP08A         2         8           TDMP certification by the Design Checker         28         28         09SEP08A         10DEC08A         1         1           TDMP submission for the SO's approval         2         2         200CT08A         11DEC08A         1         1	02L1CC0704	Prepare/submit boulder surevey report	25		-0.0	05SEP08A 14JI		05SEP08A	,-		i						
Drainage Management Plan         14         14         04AUG08A         03SEP08A         03SEP08A         2           TDMP preparation by the Designer         1         1         08SEP08A         08SEP08A         08SEP08A         1           TDMP certification by the Design Checker         28         28         09SEP08A         10DEC08A         2           TDMP submission for the SO's approval         2         2         200CT08A         11DEC08A         1	02L1CC0706	SO review boulder survey report	4			19SEP08A 06S		19SEP08A	2		•••				10.7		
TDMP preparation by the Designer         14         14         04AUG08A         03SEP08A         03SEP08A         2           TDMP submission for the DC's approval         1         1         08SEP08A         08SEP08A         08SEP08A         1           TDMP certification by the Design Checker         28         28         09SEP08A         10DEC08A         2           TDMP submission for the SO's approval         2         2 200CT08A         11DEC08A         1	Temporary Dra	ainage Management Plan															
TDMP submission for the DC's approval         1         1         08SEP08A         08SEP08A         08SEP08A         1           TDMP certification by the Design Checker         28         28         09SEP08A         10DEC08A         2         2           TDMP submission for the SO's approval         2         2 200CT08A         11DEC08A         1         1	02L1CC0802	TDMP preparation by the Designer	4			03SEP08A 04A		03SEP08A	2						e i		
TDMP certification by the Design Checker         28         28         09SEP08A         10DEC08A         10DEC08A         2           TDMP submission for the SO's approval         2         2         200CT08A         11DEC08A         11DEC08A         1	02L1CC0803	TDMP submission for the DC's approval	-			08SEP08A 08S		08SEP08A	-								
TDMP submission for the SO's approval 2 2 200CT08A 11DEC08A 200CT08A 11DEC08A 1	02L1CC0804	TDMP certification by the Design Checker	28		55.0	10DEC08A 09S		10DEC08A	2						v		
	02L1CC0806	TDMP submission for the SO's approval	2	_		11DEC08A 20C		11DEC08A	-		0					70	

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Finish	08JAN09A 2	21OCT08A 1	08JAN09A 2	08JAN09A 1	08JAN09A 2		17AUG09 2	18AUG09 1	15SEP09 2	18AUG09 1	29SEP09 2	29SEP09 2		29APR08A 2	26MAY08A 2	26MAY08A 1	14JUL08A 2	14JUL08A 2	09AUG08A 1	16AUG08A 2		04NOV08A 2	01DEC08A 2	02DEC08A 1	11JUN09 2	11JUN09 2	18JUN09 1	02JUL09 2	31DEC12 2					-0:1	04FEB09A 2	29NOV08A 2	04FEB09A 2		11APR08A 1	26MAY08A 1	IGJUN08A 2		16APR08A 2
Start	210CT08A	210CT08A 210CT08A 2	08JAN09A 220CT08A 0	08JAN09A 08JAN09A C	08JAN09A		17AUG09 03AUG09* 1	18AUG09 18AUG09 1	15SEP09 19AUG09 1	18AUG09 18AUG09 1	29SEP09 19AUG09 2	29SEP09		29APR08A 22FEB08A 2	26MAY08A 30APR08A 2	26MAY08A 10MAY08A 2	14JUL08A 12MAY08A 1		09AUG08A 24JUN08A C	26JUL08A 16AUG08A 26JUL08A 1			11NOV08A 01DEC08A 11NOV08A C	02DEC08A 04NOV08A C	11JUN09 05NOV08A 1	11JUN09	K	02JUL09 19JUN09 C	31DEC12   18AUG08A   3			1		24SEP08A 25APR08A 2	04FEB09A 26APR08A (	29NOV08A 23JUN08A 2	04FEB09A		03APR08A 11APR08A 03APR08A 11APR08A	26MAY08A 12APR08A 2	16JUN08A 27MAY08A 16JUN08A		16APPORA 17 IANORA
_	10CT08A 08JAN09A	10CT08A 210C	220CT08A 08JAI	OBJAN09A 08JA	08JAI		03AUG09* 17AL	8AUG09 18AL	19AUG09 15SE	8AUG09 18AL	9AUG09 29SE	-		2FEB08A 29AP	30APR08A Z6MA	10MAY08A 26MA	12MAY08A 14JU	14JUL08A	24JUN08A 09AU	JUL08A 16AU		AUG08A 04NO	NOV08A 01DE	04NOV08A 02DE	05NOV08A 11JL	113	-		18AUG08A 31DE				Own room		26APR08A 04FE	23JUN08A 29NO	04FE		APR08A 11AP	12APR08A 26MA	7MAY08A 16JU		47 IANIDAA 16AD
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Description	TDMP review by the SO	TDMP submission for DSD's approval	TDMP review by the DSD	Obtain DSD's approval for DDA	Obtain SO's consent for TDMP	ELS for Permanent Approach Channel Construction	Design preparation by the Designer	Design submission for the DC's approval	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Geotechnical Instrumentation Stg 1 for GL Works	Design preparation by the Designer	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Install Geotechnical Instruments	Baseline Monitoring	Geotechnical Instrumentation Stg 2 for Deep Exc.	Design preparation by the Designer	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Install Geotechnical Instruments	Baseline Monitoring	Monitor/report Geotechnical Instrumentation	Design Packages for Works in Portion D	Temp. Access Rd Design at P. D; +14mPD to +69mPD	Design preparation by the Designer	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Design review by GEO	Obtain design approval from the SO	Boulder Assessment & Design for Stabili. Measure	Boulder Surevey	Prepare/submit boulder surevey report	SO review boulder survey report	Site Formation Design; +69mPD to +40mPD	
	02L1CC0808	02L1CC0810	02L1CC0812	02L1CC0814	02L1CC0816	ELS for Perman	02L1CC0902	02L1CC0903	02L1CC0904	02L1CC0906	02L1CC0908	02L1CC0910	Geotechnical In	3DL1CCG102	3DL1CCG104	3DL1CCG106	3DL1CCG108	3DL1CCG110	3DL1CCG112	3DL1CCG114	Geotechnical In	3DL1CCG202	3DL1CCG204	3DL1CCG206	3DL1CCG210	3DL1CCG212	3DL1CCG214	3DL1CCG216	3DL1CCG218	Design Packs	Temp. Access I	02L1DD0102	02L1DD0104	02L1DD0106	02L1DD0108	02L1DD0110	02L1DD0112	Boulder Assess	02L1DD0302	02L1DD0304	02L1DD0306	Site Formation	

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Float									-201	-201						-213	0	-213											-176		-183	-142	-180	-144	-183	0	+	0	0	0	-183		-212
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WP3D	14NOV08A	14NOV08A	04DEC08A	04DEC08A		09MAY09A	15MAY09A	16MAY09A	60NULE0	60NULE0		23APR09A	24APR09A	15MAY09A	15MAY09A	18JUN09	24JUN09	18JUN09		11MAY09A	12MAY09A	13MAY09A	13MAY09A	19MAY09A	28AUG08A	27MAR09A	19MAY09A	28FEB09A	28MAY09	19MAY09A	60NUL20	60NUC90	04JUL09	60NN090	11AUG09	13JUN09	11JUL09	13JUL09	13JUL09	10AUG09	12AUG09		26JUN09
WP3D	17APR08A	25APR08A	26APR08A			14APR08A	15MAY09A 05MAY08A	16MAY09A 10MAY08A	12MAY08A			23APR09A 28AUG08A	16JAN09A	19JAN09A	02FEB09A	03FEB09A	28MAY09			21APR08A	28JUL08A	21AUG08A	28JUL08A	29JUL08A	28AUG08A 28AUG08A	28FEB09A		28FEB09A	01MAR09A		07MAR09A	90NUL30	90NUL70	06JUN09	90NUL70	13JUN09	14JUN09	13JUL09	13JUL09	14JUL09			26JUN09 28FEB09A
AD04 Finish	14NOV08A 17APR08A	14NOV08A 25APR08A	04DEC08A 26APR08A	04DEC08A		4APR08A 09MAY09A 14APR08A	15MAY09A	16MAY09A	93JUN09	93JUN09		23APR09A	24APR09A 16JAN09A	15MAY09A 19JAN09A	15MAY09A 02FEB09A	18JUN09	24JUN09	18JUN09		11MAY09A 21APR08A	12MAY09A 28JUL08A	13MAY09A 21AUG08A	13MAY09A 28JUL08A	19MAY09A 29JUL08A	28AUG08A	27MAR09A 28FEB09A	19MAY09A	28FEB09A	28MAY09	19MAY09A	90NUL30	90NUL90	04JUL09	90NUL90	11AUG09	13JUN09	11JUL09	13JUL09	13JUL09	10AUG09	12AUG09		
AD04 Start	17APR08A	25APR08A	26APR08A			14APR08A	05MAY08A	10MAY08A	12MAY08A			28AUG08A	16JAN09A	19JAN09A	02FEB09A	03FEB09A	28MAY09			21APR08A	28JUL08A	21AUG08A	28JUL08A	29JUL08A	28AUG08A	28FEB09A		28FEB09A	01MAR09A		07MAR09A	60NUL30	90NUL70	90NUL80	90NUL70	13JUN09	14JUN09	13JUL09	13JUL09	14JUL09			28FEB09A
WP3D	150	2	90	0		120	145	2	90	0		9	2	28	2	63	28	0		381	က	37	ო	280	7	28	0	5	28	0	30	-	28	•	99	7	28	-	-	28	0	8	119
AD04 Dur	150	2	90	0		120	145	2	06	0		09	2	28	2	63	28	0		381	m	37	ო	280	*	28	0	•	28	0	30	-	28	-	99	_	28	-	-	28	0		119
Activity Description	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Site Formation Design; +40mPD to +24mPD	Design preparation by the Designer	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Site Formation Design; +24mPD to 14mPD	Design preparation by the Designer	Design submission for the DC's approval	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Design review by GEO	Obtain design approval from the SO	ng Chamber Design	Design (AIP) preparation by the Designer	Design (AIP) submission for the DC's approval	Design (AIP) certification by the Design Checker	Design (AIP) submission for the SO's approval	Design (AIP) review by the SO	AIP submission for rel. authorities' approval	Design (AIP) review by the rel. authorities	Obtain rel. authorities's approval for AIP	SO submit Design (AIP) for approval of GEO	Design (AIP) review/approval by the GEO	Obtain SO's consent for design (AIP)	Design preparation for the DDA submission	Design (DDA) submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	SO submit design (DDA) for approval of GEO	Design (DDA) review/approval by the GEO	Obtain SO's consent for design (DDA)		Design preparation by the Designer
0	02L1DD0404	02L1DD0406	02L1DD0408	02L1DD0412	Site Formation	02L1DD0502	02L1DD0504	02L1DD0506	02L1DD0508	02L1DD0512	Site Formation	02L1DD0602	02L1DD0603	02L1DD0604	02L1DD0606	02L1DD0608	02L1DD0610	02L1DD0612	TBM Launching	02L1DD0702	02L1DD0703	02L1DD0704	02L1DD0706	02L1DD0708	02L1DD0710	02L1DD0712	02L1DD0714	02L1DD0716	02L1DD0718	02L1DD0720	02L1DD0722	02L1DD0723	02L1DD0724	02L1DD0726	02L1DD0728	02L1DD0730	02L1DD0732	02L1DD0734	02L1DD0736	02L1DD0738	02L1DD0740	Hopper Design	02L1DD0802

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Total Float	-169	-212	-169	-212	-212				-194	-153	-194	-194		-157	-124	-157	-124	-157	-157		130	109	132	107	130	134	160	131	110	131	130		1,550	1,260	1,551	1,259	1,550	1,285	1,581	1,283	1,260	1,552	1,550
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WP3D	27JUN09	25JUL09	27JUN09	08AUG09	08AUG09		24MAR09A	25MAR09A	60NUL80	60NUL80	21JUL09	21JUL09		14JUN09	15JUN09	13JUL09	15JUN09	27JUL09	27JUL09		26JUN09	27JUN09	25JUL09	27JUN09	01SEP09	04JUL09	01AUG09	03AUG09	03AUG09	31AUG09	02SEP09		26JUL09	27JUL09	24AUG09	27JUL09	01OCT09	03AUG09	31AUG09	01SEP09	01SEP09	29SEP09	020CT09
Start	27JUN09	28JUN09	27JUN09	1 28JUN09	-		24MAR09A 02JAN09A	25MAR09A 25MAR09A	26MAR09A	60NDC60	10JUN09			02JAN09A	15JUN09	16JUN09	15JUN09	16JUN09			28MAY09	27JUN09	28JUN09	27JUN09	28JUN09	04JUL09	05JUL09	03AUG09	03AUG09 03AUG09	04AUG09				27JUL09	3 28JUL09	27JUL09	28JUL09	_	04AUG09	01SEP09	01SEP09	02SEP09	
AD04 Finish	27JUN09	25JUL09	27JUN09	08AUG09	08AUG09		24MAR09	25MAR09	60NUL80	60NUL60	21JUL09	21JUL09		14JUN09	15JUN09	13JUL09	15JUN09	27JUL09	27JUL09		26JUN09	27JUN09	25JUL09	27JUN09	01SEP09	04JUL09	01AUG09	03AUG09	03AUG0	31AUG09	02SEP09		26JUL09	27JUL09	24AUG09	27JUL09	010CT09	03AUG09	31AUG09	01SEP09	01SEP09	29SEP09	02OCT09
AD04 Start	27JUN09	28JUN09	27JUN09	28JUN09			02JAN09A	25MAR09A	26MAR09A	60NNC60	10JUN09			02JAN09A	15JUN09	16JUN09	15JUN09	16JUN09			28MAY09	27JUN09	28JUN09	27JUN09	28JUN09	04JUL09	05JUL09	03AUG09	03AUG09	04AUG09			27JUN09	27JUL09	28JUL09	27JUL09	28JUL09	03AUG09	04AUG09	01SEP09	01SEP09	02SEP09	
DO4 WP3D	-	28	-	42	0		82	-	28	*	42	0		82	**	28	۳	42	Q		30	-	28	-	99	٣	28	-	-	28	0		93	٠	28	٠	99	-	28		~	28	0
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Activity Description	Design submission for the DC's approval	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Design	Design preparation by the Designer	Design submission for the DC's approval	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Overhead Gantry Support & Noise Enclosure Design	Design preparation by the Designer	Design submission for the DC's approval	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	ELS Design for Spiral Ramp & Vehicular Access	Design preparation for the AIP submission	Design (DDA) submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	SO submit design (DDA) for approval of GEO	Design (DDA) review/approval by the GEO	Obtain SO's consent for design (DDA)	ELS Design for Box Culvert & Open Channel	Design preparation for the AIP submission	Design (DDA) submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	SO submit design (DDA) for approval of GEO	Design (DDA) review/approval by the GEO	Obtain SO's consent for design (DDA)
9	02L1DD0803	02L1DD0804	02L1DD0806	02L1DD0808	02L1DD0810	Steel Platform Design	02L1DD0902	02L1DD0903	02L1DD0904	02L1DD0906	02L1DD0908	02L1DD0910	Overhead Gam	02L1DD1002	02L1DD1003	02L1DD1004	02L1DD1006	02L1DD1008	02L1DD1010	ELS Design for	02L1DD1102	02L1DD1103	02L1DD1104	02L1DD1106	02L1DD1108	02L1DD1110	02L1DD1112	02L1DD1114	02L1DD1116	02L1DD1118	02L1DD1120	ELS Design for	02L1DD1202	02L1DD1203	02L1DD1204	02L1DD1206	02L1DD1208	02L1DD1210	02L1DD1212	02L1DD1214	02L1DD1216	02L1DD1218	02L1DD1220

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WP3D		27MAR09A	29MAY09	60NUC90	60NUL80	04JUL09	17NOV08A	16JUL09	17JUL09	17JUL09		24APR08A	16JUN08A	16JUN08A	14JUL08A	14JUL08A	05JUL08A	09JUL08A		10JUN09	24JUN09	11JUN09	0970L09	607NF60	30JUL09	13AUG09	31DEC12			27MAR09A	27MAR09A	27MAR09A	27MAR09A	60NULE0	OBJULOSA	05MAR09A	06MAR09A	29MAY09	26JUN09	04JUN09	11JUN09	12JUN09	10JUL09
WP3D		27MAR09A 05MAY08A	29MAY09   08AUG08A	06JUN09 09AUG08A	08JUN09 08AUG08A	08AUG08A	17NOV08A 17NOV08A	18NOV08A	17JUL09			24APR08A 22FEB08A	16JUN08A 25APR08A	16JUN08A 25APR08A	14JUL08A 26APR08A		05JUL08A 04JUN08A	09JUL08A 18JUN08A		28MAY09*	11JUN09	11JUN09	12JUN09	2000	10JUL09	13AUG09 31JUL09	10JUL08A			27MAR09A 08FEB08A	27MAR09A 02MAY08A	27MAR09A 03MAY08A	27MAR09A 10JUL08A	03JUN09 11JUL08A	OBJULOSA OSJULOSA	05MAR09A 09JUL08A	DEMARDSA DEMARDSA	29MAY09	30MAY09		04NOV08A	12JUN09	13JUN09
AD04 Finish		27MAR09	29MAY09	60NUL30	90NUL80	04JUL09	17NOV08,	16JUL09	17JUL09	17JUL09		24APR08/	16JUN08/	16JUN08/	14JUL08/	14JUL08A	05JUL08/	09JUL08/		10JUN09	24JUN09	11JUN09	09JUL09	09JUL09	30JUL09	13AUG09	31DEC12			27MAR09,	27MAR09	27MAR09,	27MAR09,	60NULE0	08JUL08/	05MAR09,	06MAR09,	29MAY09	26JUN09	04JUN09	11JUN09	12JUN09	10JUL09
AD04 Start		05MAY08A	08AUG08A	09AUG08A	08AUG08A	08AUG08A	17NOV08A	18NOV08A	17JUL09			22FEB08A	25APR08A	25APR08A	26APR08A		04JUN08A	18JUN08A		28MAY09*	11JUN09	11JUN09	12JUN09		10JUL09	31JUL09	10JUL08A			08FEB08A	2 OZMAYOBA	28 03MAY08A	10JUL08A	11JUL08A	08JUL08A	09JUL08A	06MAR09A	29MAY09	30MAY09		04NOV08A	12JUN09	13JUN09
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AD04 Dur		225	2	28	2	06	۲	06	-	0		4	7	47	4	0	10	14		14	41	· -	28	0	13	4	1,605			414	2	28	**	99	ţ*	28	•		28	0	8	٠	28
Activity Description	Temporary Drainage Management Plan	TDMP preparation by the Designer	TDMP submission for the DC's approval	TDMP certification by the Design Checker	TDMP submission for the SO's approval	TDMP review by the SO	TDMP submission for DSD's approval	TDMP review by the DSD	Obtain DSD's approval for DDA	Obtain SO's consent for TDMP	Geotechnical Instrumentation Stg 1 for GL Works	Design preparation by the Designer	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Install Geotechnical Instruments	Initial reading	Geotechnical Instrumentation Stg 2 for Deep Exc.	Design preparation by the Designer	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	Obtain design approval from the SO	Install Geotechnical Instruments	Baseline Monitoring	Monitor/report Geotechnical Insturmentatation	Design Packages for Works in Portion F	Jesign	Design preparation for the AIP submission	Design (AIP) submission for the DC's approval	Design (AIP) certification by the Design Checker	Design (AIP) submission for the SO's approval	Design (AIP) review by the SO	AIP submission for rel. authorities' approval	Design (AIP) review by the rel. authorities	Obtain rel. authorities's approval for AIP	SO submit design (AIP) for approval of GEO	Design (AIP) review/approval by the GEO	Obtain SO's consent for design (AIP)	Design preparation for the DDA submission	Design (DDA) submission for the DC's approval	Design (DDA) certification by the Design Checker
QI	Temporary Dra	02L1DD1302	02L1DD1303	02L1DD1304	02L1DD1306	02L1DD1308	02L1DD1310	02L1DD1312	02L1DD1314	02L1DD1316	Geotechnical	3DL1DDG102	3DL1DDG104	3DL1DDG106	3DL1DDG108	3DL1DDG110	3DL1DDG112	3DL1DDG114	Geotechnical	3DL1DDG202	3DL1DDG204	3DL1DDG206	3DL1DDG208	3DL1DDG210	3DL1DDG212	3DL1DDG214	3DL1DDG216	Design Pack	Main Tunnel Design	02L1FF0102	02L1FF0103	02L1FF0104	02L1FF0106	02L1FF0108	02L1FF0110	02L1FF0112	02L1FF0114	02L1FF0116	02L1FF0118	02L1FF0120	02L1FF0122	02L1FF0123	02L1FF0124

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												be endorsed by All Reservior Panel Engineer	Vand									endorsed by All Reservior Panel Eng						20														
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Float	-136	-176	-121	-152	-123	-140	-176	-176								0	0			1690		0		0	8 7	28	23	0	0	0			00)			133		000		97	115	115
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Finish	12JUN09	10AUG09	19JUN09	17JUL09	18JUL09	13JUL09	10AUG09	11AUG09		SOJUNOSA	03JUL08A	18MAR09A	18MAR09A	31MAR09A	02APR09A	10JUN09	11JUN09	31MAR09A		27JUN08A	27JUN08A	60NUL80	15JUL08A	13JUL09	10JUL08A	15JUN09	16JUN09	16JUN09	14JUL09	14JUL09		26JUN08A	26JUN08A	02APR09A	03APR09A	60NUC80	14JUL08A	11MAR09A	11MAR09A	29MAY09	26JUN09	27.JUN09
Start	12JUN09	16JUN09	19JUN09	20JUN09	18JUL09	13JUL09	10AUG09 14JUL09			30JUN08A 29APR08A	03JUL08A 03JUL08A	18MAR09A 04JUL08A	18MAR09A 15JUL08A	31MAR09A 16JUL08A	02APR09A 10JUL08A	10JUN09 11JUL08A	11JUN09 11JUN09			27JUN08A 14APR08A	27JUN08A 27JUN08A	28JUN08A	15JUL08A 15JUL08A	16JUL08A	10JUL08A 10JUL08A	11JUL08A			17JUN09			26JUN08A 28APR08A	26JUN08A 26JUN08A	02APR09A 27JUN08A	03APR09A 15JUL08A	08JUN09 16JUL08A	14JUL08A 14JUL08A	11MAR09A 15JUL08A	11MAR09A 12MAR09A	29MAY09	30MAY09	
Finish	12JUN09	10AUG09	19JUN09	17JUL09	18JUL09	13JUL09	10AUG09	11AUG09		30JUN08	03JUL08A	18MAR09/	18MAR09/	31MAR09/	02APR09/	10JUN09	11JUN09	31MAR09A		27JUN084	27JUN08/	98JUN09	15JUL08A	13JUL09	10JUL08A	15JUN09	16JUN09	16JUN09	14JUL09	14JUL09		-	26JUN08/	02APR09/	03APR09/	08JUN09	14JUL08/	11MAR09/		29MAY09	26JUN09	97.II IND9
Start	12JUN09	16JUN09	19JUN09	20JUN09	18JUL09	13JUL09	14JUL09			29APR08A	03JUL08A	04JUL08A	15JUL08A	16JUL08A	10JUL08A	11JUL08A	11JUN09			14APR08A	27JUN08A	28JUN08A	15JUL08A	16JUL08A	10JUL08A	11JUL08A	16JUN09	16JUN09	17JUN09			28APR08A	26JUN08A	27JUN08A	15JUL08A	16JUL08A	14JUL08A	15JUL08A	12MAR09A	29MAY09	30MAY09	
Dur	-	26	+	28	-	Τ.	28	0		09	-	260		99	-	28	-	0		32	~	285	-	99	-	28	N.	: <del>5</del>	28	0		30	•	90	01	267	_	28	_	-	28	c
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Description	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	SO submit design (DDA) for approval of GEO	Design (DDA) review/approval by the GEO	Obtain SO's consent for design (DDA)	Impact Assessment on WSD Yau Kam Tau WTW	Design preparation for the DDA submission	Design (DDA) submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	Obtain SO's consent for design (DDA)	Impact Assessment on WSD Tai Lam Chung WT No. 3	Design preparation for the DDA submission	Design submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	SO submit design (DDA) for approval of GEO	Design (DDA) review/approval by the GEO	Obtain SO's consent for design (DDA)	Impact Assessment on KCRC West Rail Tunnel	Design preparation for the DDA submission	Design submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	SO submit design (DDA) for approval of GEO	Design (DDA) review/approval by the GEO	Obtain SO's consent for design (DDA)
2	02L1FF0126 De	02L1FF0128 De	02L1FF0130 DI		02L1FF0134 ON	02L1FF0136 SC	02L1FF0138 De		essme	02L1FF0202 De	02L1FF0203 De	02L1FF0204 De	02L1FF0206 De	02L1FF0208 De	02L1FF0210 DI	02L1FF0212 De	02L1FF0214 OI	02L1FF0220 OI	mpact Assessmen	02L1FF0302 De	02L1FF0303 De			02L1FF0308 De	02L1FF0310 DI	02L1FF0312 De	02L1FF0314 OI	02L1FF0316 SC	02L1FF0318 De	02L1FF0320 OI	mpact Assessmen	02L1FF0402 De	02L1FF0403 De	02L1FF0404 De	02L1FF0406 D	02L1FF0408 Di	02L1FF0410 DI	02L1FF0412 D	02L1FF0414 O	02L1FF0416 St	02L1FF0418 De	

2008 2009 2010 2013 2082 2013				to be endorsed by All Reservior Panel Engineer											•					1		1		•	1						11						•							Page 93 of 125
Total						221		226	187	221								-195		-160		-195	-156	-194	-156	-188	-188	ı		182	182	182	186	227	182	227	227		261	211	263	210	261	
E G		2	7	2	-	2	-	2	-	2		2	77	2	2		2	2		2	-	2	-	2		2	7			+	-	-	-	2	-	2	2		2	-	2	-	2	d -
WP3D Finish		02JUL08A	03JUL08A	01APR09A	01APR09A	16JUN09	10JUL08A	10JUN09	11JUN09	17JUN09		20MAY08A	21MAY08A	17JUL08A	17JUL08A		23JAN09A	10JUN09	26MAR09A	20JUN09	14MAR09A	23JUL09	24JUL09	24JUL09	10NOV09	24NOV09	08MAR13			20JUL09	31AUG09	14SEP09	15SEP09	190CT09	03NOV09	24NOV09	24NOV09		19AUG09	20AUG09	17SEP09	20AUG09	17OCT09	
WP3D		OZJULOSA OSMAYOSA	03JUL08A 03JUL08A	01APR09A 04JUL08A	15JUL08A	16JUN09 16JUL08A	10JUL08A 10JUL08A	11JUL08A	11JUN09			OZMAYOSA ZOMAYOSA OZMAYOSA	21MAY08A 21MAY08A	17JUL08A 22MAY08A			23JAN09A 28AUG08A 23JAN09A	10JUN09 24JAN09A	26MAR09A 24JAN09A	24JAN09A	14MAR09A 14MAR09A	15MAR09A	24JUL09		25JUL09	24NOV09 11NOV09	25NOV09			20JUL09 22JUN09*	21JUL09	01SEP09	15SEP09	22SEP09	200CT09	04NOV09			21JUL09	20AUG09 20AUG09	21AUG09	20AUG09 20AUG09	170CT09 21AUG09	of 58
AD04 Finish		02JUL08A	03JUL08A	01APR09A	01APR09A 15JUL08A	16JUN09	10JUL08A	10JUN09	11JUN09	17JUN09		20MAY08A		17JUL08A	17JUL08A		23JAN09A	10JUN09	26MAR09A	20JUN09	14MAR09A	23JUL09	24JUL09	24JUL09	10NOV09	24NOV09	08MAR13			20JUL09	31AUG09	14SEP09	15SEP09	190CT09	03NOV09	24NOV09	24NOV09		19AUG09	20AUG09	17SEP09	20AUG09	17OCT09	Sheet 26 of 58
AD04 Start		05MAY08A	03JUL08A	04JUL08A	15JUL08A	16JUL08A	10JUL08A	11JUL08A	11JUN09			OZMAYOSA	21MAY08A	22MAY08A			28AUG08A	24JAN09A	24JAN09A	24JAN09A	14MAR09A	15MAR09A	24JUL09		25JUL09	11NOV09	25NOV09			22JUN09*	21JUL09	01SEP09	15SEP09	22SEP09	200CT09	04NOV09			21JUL09	20AUG09	21AUG09	20AUG09	21AUG09	
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Activity Description	Impact Assessment on WSD Tsuen Wan Reservoir G.	Design preparation for the DDA submission	Design submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	Obtain SO's consent for design (DDA)	Foult Zone F1	MS preparation for the DDA submission	Ms (DDA) submission for the SO's approval	MS (DDA) review by the SO	Obtain SO's consent for MS (DDA)	Geotechniucal Instrumentation	Design preparation by the Designer	Design certification by the Design Checker	Design submission for the SO's approval	Design review by the SO	DDA submission for rel. authorities' approval	Design (DDA) review by the rel. authorities	Obtain rel. authorities's approval for DDA	Obtain design approval from the SO	Install geotechnical instrumentsation	Baseline Monitoring	Maintain/monitor geotechnical instrumentation	Design Packages for Works in Portion G	Drainage Impact Assessment	Quatation and award consultant	Prepare preliminary DIA report	Prepare final DIA report	Submission of DIA report to SOR/DSD	SOR/DSD review/comment DIA report	Revise DIA incorporating comments	SOR/DSD review/approve DIA report	Obtain consent from SOR and DSD	Temp. Platform Design for H-Piling at Portion G	Design preparation for the DDA submission	Design (DDA) submission for the DC's approval	Design (DDA) certification by the Design Checker	Design (DDA) submission for the SO's approval	Design (DDA) review by the SO	
Q)	Impact Assessi	02L1FF0502	02L1FF0503	02L1FF0504	02L1FF0506	02L1FF0508	02L1FF0510	02L1FF0512	02L1FF0514	02L1FF0520	Grout Trial at Foult Zone F1	02L1FF0602	02L1FF0606	02L1FF0608	02L1FF0620	Geotechniucal	3DL1FFG102	3DL1FFG104	3DL1FFG106	3DL1FFG108	3DL1FFGI10	3DL1FFGI12	3DL1FFGI14	3DL1FFG116	3DL1FFGI18	3DL1FFGI20	3DL1FT0208	Design Pack	Drainage Impa	02L1GG0105	02L1GG0115	02L1GG0125	02L1GG0135	02L1GG0145	02L1GG0155	02L1GG0165	02L1GG0175	Temp. Platform	02L1GG0202	02L1GG0203	02L1GG0204	02L1GG0206	02L1GG0208	

Description	Dur Dur	Start	Finish	Start Fin	Finish	Float			
DDA submission for rel. authorities' approval	-	1 27AUG09	09 27AUG09 27AUG09	G09 27AUG09	309	228		7= \rightarrow \frac{1}{2}	
Design (DDA) review by the rel. authorities	28 2	28 28AUG09	09 24SEP09 28AUG09	G09 24SEP09	2 60	284		13	
Obtain rel. authorities's approval for DDA	-	1 25SEP09	39 25SEP09 25SEP09	P09 25SEP09	1 60	226		=	
Obtain design (DDA) approval from the SO	0	0	18OCT09	18OCT09	T09 2	261		•	
ELS Design for Pipe Jacking at Portion G									
Design preparation for the DDA submission	15	15 20AUG09	09 03SEP09 20AUG09	G09 03SEP09	2 60	284			
Design (DDA) submission for the DC's approval	÷	1 04SEP09	09 04SEP09 04SEP09			1 229			
Design (DDA) certification by the Design Checker	28 2	28 05SEP09	09 02OCT09 05SEP09	P09 02OCT09	T09 2	286		11	
Design (DDA) submission for the SO's approval		1 04SEP09	09 04SEP09 04SEP09			1 228			
Design (DDA) review by the SO	58	58 05SEP09	00 01NOV09 05SEP09	P09 01NOV09	V09 2	284		11	
DDA submission for rel. authorities' approval	÷	1 11SEP09	09 11SEP09 11SEP09	P09 11SEP09		1 246		- 1	20
Design (DDA) review by the rel. authorities	28 2	28 12SEP09	09 09OCT09 12SEP09	P09 09OCT09	T09 2	307			
Obtain rel. authorities's approval for DDA		1 100CT09	99 10OCT09 10OCT09	T09 100CT09		1 248		-	
Obtain design (DDA) approval from the SO	0	0	02NOV09	OZNOVO9		2 284		<b>*</b>	
Schedule of Milestones for Cost Centre No. 2L							e/.		
1; On submission of PDP to the SO	0	0	10JAN08A	10JAN08A	_	2	•		373
2; On acception of PDP by the SO	0	0	04SEP08A	04SEP08A	1 3	2	•		
3; On submission of AIP to the SO; Portion A	0	0	12MAY09A	12MAY09A	50	2	100	•	ijas
4; On acceptance of AIP by the SO; Portion A	0	0	25JUL09	25JUL09		2 1,619	1	•	ijeni s
2L 5; On subumission of DDA to the SO; Portion A	0	0	28SEP09	28SEP09		2 1,554	to:	•	
2L 6; On acceptance of DDA by the SO; Portion A	0	0	100CT09	10OCT09		2 1,542	f 20	<b>•</b>	200
2L 7, On submission of AIP to the SO; Portion B	0	0	07JUL09	0710L09	-120	2 1,637		•	
2L 8; On acceptance of AIP by the SO; Portion B	0	0	12AUG09	12AUG09	-	1,601	1000	•	NA.
2L 9; On submission of DDA to the SO; Portion B	0	0	28SEP09	28SEP09		2 1,554	000	<b>•</b>	SWA
2L 10; On acceptance of DDA by the SO; Portion B	0	0	26OCT09	26OCT09	_	2 1,526		<b>*</b>	
2L 11; On submission of AIP to the SO; Portion C	0	0	25JUL09	25JUL09		2 1,619	250	<b>\$</b>	
2L 12; On acceptance of AIP by the SO; Portion C	0	0	10AUG09	10AUG09	120	2 1,603		<b>*</b>	
2L 13; On submission of DDA to the SO; Portion C	0	0	28SEP09	28SEP09		2 1,554	-21	<b>•</b>	3
2L 14; On acceptance of DDA by the SO; Portion C	0	0	23OCT09	23OCT09		2 1,529		<b>•</b>	
2L 15; On acceptance of AIP by the SO; Portion D	0	0	25JUL09	25JUL09		2 1,619	200	<b>•</b>	700
2L 16; On acceptance of DDA by the SO; Portion D	0	0	10OCT09	100CT09		2 1,542		•	
2L 17; On submission of AIP to the SO; Portion F	0	0	13JUL09	13JUL09	.zev	2 1,631	5 1	<b>*</b>	
2L 18: On acceptance of AIP by the SO; Portion F	o	0	19SEP09	19SEP09		2 1,563		•	
19; On submission of DDA to the SO; Portion F	0	0	28SEP09	28SEP09		2 1,554		•	
2L 20, On acceptance of DDA by the SO; Portion F	0	0	05DEC09	05DEC09		2 1,486		<b></b>	
2L 21; On acceptance of AIP by the SO; Portion G	0	0	27MAY09	27MAY09		2 1,678		•	
2L 22; On acceptance of DDA by the SO; Portion G	0	0	24NOV09	24NOV09		2 1,497		•	
23: On completion of all works under this CC	c	c	SANOVOG	POVONAC	H	7 1 197		•	

2013			200																																					234	
2031 2012						n grouting at F1				nths of DOC			ė.																						-8	100					
2009 2010						sign of pre-excavation grouting				27.73(5), within 6 months of DOC								280				=			-		-0		-	-	-	-	-	-	-				L.		
2008			•			ffor the de	I	63		uting at F11ER.B27			D		-	D				30						80															
Il Total			1				- 1			- 7-				1201				-161	-130	-130		-130	-129	-122	-121	-122	-121		-121	-80	-77	-79	-76	-78	-75		-219	-210	-210	-210	-210
- Cal			8A 2	1 18	18A 1	1 A80	1 A80	18A 1	1 480	1 Y80			8A 2	2 A80	38A 2	38A 2			1 1	1		1	1	1	1	1	1	1	1	1	1	1 1	1	1	1		0 1	1	0 1	1	0
WP3D Finish	Ŀ	ı	Z3JUL08A	30JUL08A	04AUG08A	13AUG08A	15NOV08A	22NOV08A	04SEP08A	05SEP08A			12JAN08A	28SEP08A	08OCT08A	24DEC08A		04AUG09	07AUG09	04SEP09		12SEP09	11SEP09	18SEP09	18SEP09	24SEP09	24SEP09	30SEP09	30SEP09	080CT09	080CT09	14OCT09	14OCT09	200CT09	200CT09		02JAN10	04JAN10	05JAN10	06JAN10	07JAN10
ADO4 WP3D Finish Start			23JUL08A	30JUL08A 24JUL08A	04AUG08A 31JUL08A	13AUG08A 05AUG08A	15NOV08A 14AUG08A	22NOV08A 17NOV08A	11AUG08A 04SEP08A 11AUG08A	5SEP08A 05SEP08A 05SEP08A			12JAN08A 14DEC07A	28SEP08A 21DEC07A	040CT08A 080CT08A 040CT08A	24DEC08A 09OCT08A		04AUG09 06JUL09*	07AUG09 05AUG09	04SEP09 08AUG09		12SEP09 05SEP09	11SEP09 05SEP09	18SEP09 12SEP09	- 1	24SEP09 19SEP09	24SEP09 19SEP09	-	30SEP09 25SEP09	08OCT09 02OCT09	08OCT09 02OCT09	14OCT09 09OCT09	14OCT09 09OCT09	200CT09 150CT09	200CT09 150CT09		02JAN10 02JAN10	04JAN10 04JAN10	05JAN10 05JAN10	06JAN10 06JAN10	07JAN10 07JAN10
A E		H	23.31			1			8A 04SF	3A 05SE			7A 12J/		8A 080								-	_			-								OY.						
AD04 Start				24JUL08A	31JUL08A	05AUG08A	14AUG08A	17NOV08A	11AUG0	05SEP0			14DEC07A	21DEC07A	04OCTD	090CT08A		*6070L60	05AUG09	08AUG09		05SEP09	05SEP09	12SEP09	14SEP09	19SEP09	19SEP09	25SEP09	25SEP09	02OCT09	02OCT09	09OCT09	09OCT09	150CT09	150CT09		02JAN10	04JAN10	05JAN10	06JAN10	07JAN10
ADO4 WP3D Dur Dur			0	9	4	7	45	9	17	-			30	252	7	21: 0		30	m	24		7	9	9	S	9	S	2	2	2	2	S	S	เก	ß		-	-	-	_	7
AD04 Dur		ì	0	9	4	7	45	9	17	-			30	252	7	21		30	ო	24		7	9	9	S	2	ഗ	ω	တ	ດ	5	2	ς.	r.	5		-	-	-	_	-
Activity Description	Construction of Main Tunnel	Trial Grout at Fault Zone F1	HvD issue XP	Adavance notice to HyD/Road advice	Trial pit excavation	Scaffolding, mobilize & set up	Drill & test for 2m Arrangement Test	Backfill drilled holes, demobilization & Tidy up	Drill & test for single hole arrangement test	Backfill drilled hole, demobilization & tidy up	FBM Manufacture/Testing/Delivery	of TBM & Back-ups	TBM & Excavation Sys Procurement	TBM design & manufacturing	TBM workshop tests	TBM dismounting & packing		TBM shipment to Hong Kong	TBM arriving Portion I	Destuffing Containers/Cleaning & lubrication	TBM Pre-assembly/Test & Commis. at Portion I	Cutterhead	Bearing	Backup # 1	Backup #2	Backup # 3	Backup # 4	Baackup # 5	Backup # 6	Backup # 7	Backup # 8	Backup # 9	Backup # 10	Backup #11	Backup # 12	TBM Transport from Portion I to Outfall	Cutterhead	Shield # 1	Shield # 2	Bearing	Erector
Œ	Constructio	Trial Grout a	3AL1FT0002	3AL1FT0004	3AL1FT0006	3AL1FT0010	3AL1FT0012	3AL1FT0014	3AL1FT0016	3AL1FT0018	TBM Manufa	Manufacture o	3AL1FT0302	3AL1FT0304	3AL1FT0306	3AL1FT0308	Delivery of TBM	3AL1FT0105	3AL1FT0110	3AL1FT0115	TBM Pre-asset	3AL1FT0205	3AL1FT0210	3AL1FT0215	3AL1FT0220	3AL1FT0225	3AL1FT0230	3AL1FT0240	3AL1FT0245	3AL1FT0250	3AL1FT0255	3AL1FT0260	3AL1FT0365	3AL1FT0370	3AL1FT0375	TBM Transport	3AL1FT0405	3AL1FT0415	3AL1FT0425	3AL1FT0435	3AL1FT0445

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1 11JAN10
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7 7 28MAY09
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2011 2012 2013			33		stemp dwon transformer											■WSD approval in 2 months advance				-219 betent person authorizes entryinclude 24 hrs ventilation before man entry &									\$25 \$25											000		
2009 2010		-			stemp dwor					-						QSW.			-	uthorizes entry include 24				31			118			-	-			-								
Total 2008 Float	-219	-219	-219		-219	-219	-219	-219	-219	-219	-219	-219	-219	-219	-219	0	-219	-219	-219	-219 betent person at	-219	-219		-219	-219	-219	0	12	0	0	0	0		0	0			-219	-219	-219	7 7 7 7 7 7	-219
₹ 9	-	-			-			-	-	-	-	-	-	-	-	-	-			-	-	-		-		-	-			-	-	-		1	1			-	-	-		<i>5</i> 77
WP3D	01APR10	08APR10	12APR10		31MAR10	13MAR10	13MAR10	31MAR10	17MAR10	19MAR10	20MAR10	25MAR10	29MAR10	31MAR10	01APR10	03SEP10	01APR10	07APR10	08APR10	13APR10	15APR10	17APR10		25JUN10	26JUN10	12JUL10	18AUG10		19AUG10	21AUG10	25AUG10	26AUG10		03SEP10	03SEP10			06JAN10	11JAN10	12JAN10	*********	15JAN10
ADD4 WP3D Finish Start	300	08APR10 07APR10	12APR10 09APR10		31MAR10 27MAR10	13MAR10 13MAR10	13MAR10 11MAR10	31MAR10 30MAR10	17MAR10 15MAR10	19MAR10 18MAR10	20MAR10 20MAR10	25MAR10 22MAR10	29MAR10 26MAR10	31MAR10 30MAR10	01APR10 01APR10	03SEP10 26MAR10	01APR10 01APR10	07APR10 07APR10	08APR10 08APR10	13APR10 09APR10	15APR10 14APR10	17APR10 16APR10		25JUN10 19APR10	26JUN10 26JUN10	12JUL10 28JUN10	18AUG10 13JUL10		19AUG10   19AUG10	21AUG10 20AUG10		26AUG10 26AUG10		03SEP10 27AUG10	03SEP10 03SEP10			06JAN10 04JAN10	11JAN10 07JAN10	12JAN10 12JAN10	071441	15JAN10   13JAN10
AD04 Start	9	07APR10 08	09APR10 12		27MAR10 31	13MAR10 13	11MAR10 13	30MAR10 31	15MAR10 17	18MAR10 15	20MAR10 20	22MAR10 25	26MAR10 29	30MAR10 31	01APR10 0	26MAR10 03	01APR10 0	07APR10 07	08APR10 08	09APR10 13	14APR10 18	16APR10 17		19APR10 2	26JUN10 28		13JUL10 18		19AUG10 18	20AUG10 27		26AUG10 26		27AUG10 03	03SEP10 03			04JAN10 0		12JAN10 1:	t	13JAN10
MP3D	m.	2	က		4	ets ATS	n	2	m	2	·	4	ю	2	T	131*	•	-	•	4	2	2		56	-	12	32		7	2	m	-		7	-			ø	4	-		m
ADO4 WP3D	ო	2	က		4	+	က	2	က	2	<b>*</b>	4	က	2	+	131	•		*	4	2	2		56	7	12	32		-	2	က			7	-			ю	4		33	m
Activity Description	Connect exhaust fan to valve shaft	Connect new vent pipe to exhaust fan(s)	Test and commission exhaust fan(s)	Preparation Works at Chai Wan Kok Shaft	Install electricity take off, switch board &	Install waste reception/disposal area	Install toilet and shower	Set up generatior, two 2" water pumps	UU detection	Excavate to lower platform apprx. 0.5m-1m	Set out & align sheet pilling	Install sheet piles & excavate to install rails	Excavate to the bottom of DN1200 pipe	Lay conrete blinding to pit	ICE checking	WSD-Tunnel Shut Down Period	WSD Tunnel #3 commences shut down	Cut & clean invert and inner face of DN1200	Plug DN1200 pipe at the face near valve house	Fabricate trolly & trial	Install longituditual tensioned wire	Temporary plug main tunnel to form air seal	duct	Install instruments	Inspection	TBM crossing affected 120m section	De-install instruments		Remove trolley system	Remove the plug at Ting Kau	Remove ventilation system, reinstate T.K. valve	Remove temporary portal at junction	Works	Reinstate opening at Chai Wan Kok	WSD Tunnel #3 re-operates	TBM Assembly & Initial Driving; Day Time Work	TBM Assembly/Test & Commiss. at Outfall	Cutterhead	Shield (bottom)	Bearing		Erector & Conveyor Belt
Q)	3AL1WT3B52	3AL1WT3B62	3AL1WT3B72	Preparation W	3AL1FTCT02	3AL1FTCT12	3AL1FTCT22	3AL1FTCT32	3AL1FTCW02	3AL1FTCW04	3AL1FTCW06	3AL1FTCW08	3AL1FTCW10	3AL1FTCW12	3AL1FTCW14	3AL1FTCW16	3AL1FTCW18	3AL1FTCW20	3AL1FTCW22	3AL1FTCW24	3AL1FTCW26	3AL1FTCW36	Works In Aqueduct	3AL1FTAD04	3AL1FTAD06	3AL1FTAD08	3AL1FTAD10	Demobilisation	3AL1FTAE04	3AL1FTAE14	3AL1FTAE24	3AL1FTAE34	Reinstatement Works	3AL1FTRS02	3AL1FTRS04	TBM Assemi	TBM Assembly	3AL1FT0605	3AL1FT0615	3AL1FT0625	SALACTORSE	3AL 11 10933

3AL1FT0665 Ba 3AL1FT0675 Ba 3AL1FT0695 Ba 3AL1FT0705 Ba 3AL1FT0715 Ba 3AL1FT0775 Ba 3AL1FT0775 Ba	Description  Backup # 3  Test & commission stage 1		3 25	25 IAN10		ı	,	LIDGI				
	mission stade	0			27 IANI 10 25 IANI 10	27 IAN10		-219				
	ckup # 3 commission stage 1		L	t			T	2 6				100
	st & commission stage 1	77		+			1	-219				
		9	6 01	01FEB10	06FEB10 01FEB10	06FEB10	-	-219				
	Backup # 4	က	3 24	24FEB10	26FEB10 24FEB10	26FEB10	-	-199				
	Backup # 5	က	3 27	27FEB10	02MAR10 27FEB10	02MAR10	-	-199		-		
	Backup # 6	ო	3 03	03MAR10	05MAR10 03MAR10	05MAR10	-	-199				
	Backup # 7	ო	3 29	29MAR10	31MAR10 29MAR10	31MAR10	-	-218				200
	Backup # 8	n	3 01,	01APR10	08APR10 01APR10	08APR10	-	-218				
	Backup # 9	ю	3 09,	09APR10	12APR10 09APR10	12APR10	÷	-218				
	Backup # 10	ю	3 13,	3APR10	15APR10 13APR10	15APR10	-	-218		-		
3AL1FT0765 Ba	Backup # 11	т	3 16,	6APR10	19APR10 16APR10	19APR10	-	-218				
3AL1FT0775 Ba	Backup # 12	е	3 20,	20APR10	22APR10 20APR10	22APR10	-	-218		-		
3AL1FT0785 Te	Test & commission stage 2	12	12 23,	23APR10	07MAY10 23APR10	07MAY10	-	-218		•		
TBM Initial Advacing; Day Time Work	g; Day Time Work											
3AL1FT0704 TB	TBM advancing; Ch. 5098 to Ch. 5084	9	90	08FEB10	17FEB10 08FEB10	17FEB10	-	-219				
3AL1FT0708 TB	TBM advances; CH5084-4963	54	54 18	8FEB10	26APR10 18FEB10	26APR10	-	-219				
3AL1FT0720 TB	TBM stop to install rem, items	10	10 27,	27APR10	08MAY10 27APR10	08MAY10	-	-219				
Main Tunnel Wo	Main Tunnel Works; Day & Night Work											
TBM Advancing up	TBM Advancing upto Crossing WSD Tunnel #3							i				
3AI 1FT0816 TB	TBM advances: CH4963-4415 (to WSD Tunnel # 3)	40	40 101	10MAY10	26JUN10 10MAY10	26JUN10	-	-219		•		
	TBM crossing WSD Tunnel # 3; CH4415- 4295	12	12 28	28JUN10	12JUL10 28JUN10	12JUL10	-	-219				
TBM Advancing upt	upto Breakthrough											- 
1	TBM advances; CH4295-4250	ß	5 13	13JUL10	17JUL10 13JUL10	17JUL10		-219		-		250
3AL1FT0820 TB	TBM advances; P6 CH4250-4220	2	2 19	19JUL10	20JUL10 19JUL10	20JUL10	-	-219		-		187
3AL1FT0822 TB	TBM advances; CH4220-3940	4	14 21	21JUL10	05AUG10 21JUL10	05AUG10	-	-219		crit	criterion 1	9,82
3AL1FT0824 TB	TBM advances; CH3940-3560	24	24 06,	DEAUG10	02SEP10 06AUG10	02SEP10	-	-219		P5 (5m)■K(	P5 (5m) KCRC WRTL Tunnel Protection Area ch39	Protection Are
3AL1FT0826 TB	TBM advances CH3560-2970	40	40 03	33SEP10	220CT10 03SEP10	220CT10	-	-219	Intake I-2	(Ch3160-3100)	Intake I-2 (Ch3160-3100) PP4 (10m) & P3 (50m)	rick A
3AL1FT0828 TB	TBM advances; WSD WS Reservior CH2970-2860	13	13 23	230CT10	06NOV10 23OCT10	06NOV10	-	-219				
3AL1FT0830 TB	TBM advances; CH2860-1250	83	83 08	38NOV10	18FEB11 08NOV10	) 18FEB11	-	-219	Intake I-	Intake I/3 (CH1370-1250)	15	n), F3(20m)
3AL1FT0832 TB	TBM advances; CH1250-0	91	91 19	19FEB11	11JUN11 19FEB11	11JUN11	-	-219			F2(20m), P2(25m), P1(10m) & F	(25m), P1(10
3AL1FT0890 De	Desembly & demobilization of TBM	20	50 13	13JUN11	10AUG11 13JUN11	10AUG11	~	-114				106
3AL1FT0892 Ba	Back grouting (daytime); CH5100-00	382	382 04	34MAR10	18JUN11 04MAR10	18JUN11	~	-20			1.79m3/m, V	1.79m3/m, W/C=44%, W=590kg
3AL1FT0894 Cc	Complete maintennce access & dry weather channel	9	60 11,	11AUG11	220CT11 11AUG11	I 220CT11	·	94				
3AL1FT0896 Ins	Installation of communication system (Daytime)	09	60 11,	11AUG11	220CT11 11AUG11	1 220CT11	-	49		-11	1	
3AL1FT0898 Te	Testing & Commissioning; daytime	28	28 10	0NOV12	07DEC12 22DEC12	18JAN13	7	-462				
3AL1FT0902 Cc	Contractor serve notice for Works completion	7	7 08	38DEC12	14DEC12 19JAN13	25JAN13	2	0				-
3AL1FT0904 Ha	Handover of Portion F	0	0		07DEC12	18JAN13	τ-	-375				•
3AL1FT0906 SC	SO issues completion certificate	21	21 15	5DEC12	04JAN13 26JAN13	15FEB13	2	0				
Schedule of Mile	Schedule of Milestones for Cost Centre No. 6aR	İ			THE STATE OF		1					
								Ī				
	6aR 1; On completion of grouting at P7	0	0		31MAR10	31MAR10		1,370		<b>•</b>		33k
6AR1FT0904 6a	6aR 2; On completion of grouting at F6c	0	0		19MAY10	19MAY10	2 1	1,321		•		53

	Description	Die										
6AR1FT0906	6aR 3: On completion of arouting at F6b	0			0	27MAY10		1.313		٠		
6AR1FT0908	grouting	0	0	15	15JUN10	15JUN10		1,294		•		88
6AR1FT0910	grouting	0	0	17	17JUL10	17JUL10		1,262		•		
6AR1FT0912	6aR 6; On completion of 20% grout by Ith at P6	0	0	17	17JUL10	17JUL10	2	1,262		•		
6AR1FT0914	6aR 7; On completion of 40% grout by Ith at P6	0	0	23	23JUL10	23JUL10	2	1,256		<b>•</b>		Ŋ.
6AR1FT0916	6aR 8; On completion of 60% grout by Ith at P6	0	0	28	29JUL10	29JUL10	2	1,250		•		
6AR1FT0918	6aR 9; On completion of 80% grout by Ith at P6	0	0	17	17JUL10	17JUL10	2	1,262		•		
6AR1FT0920	6aR 10; On completion of grouting works at P6	0	o	20	20JUL10	20JUL10	2	1,259		•		
6AR1FT0922	6aR 11; On completion of grouting wks at P5	0	0	90	06AUG10	06AUG10	2	1,242		•		
6AR1FT0924	6aR 12; On completion of grouting wks at P4	0	0	49	04SEP10	04SEP10	2	1,213		•		
6AR1FT0926	6aR 13; On completion of grouting wks at P3	0	0	0.5	07OCT10	07OCT10	2	1,180		•		
6AR1FT0928	6aR 14; On completion of grouting wks at WSD's	0	0	90	06NOV10	06NOV10	2	1,150	O	CH 2865-2970	Tsuen Wan West Service Reservior G	Service Reservic
6AR1FT0930	6aR 15; On completion of grouting wks at F5	0	0	13	13NOV10	13NOV10	2	1,143		•		
6AR1FT0932	6aR 16; On completion of grouting wks at F4	0	0	26	26NOV10	26NOV10	2	1,130				
6AR1FT0934		0	0	22	22DEC10	22DEC10		1,104				
6AR1FT0936	6aR 18; On completion of grouting wks at F2	0	0	21	21FEB11	21FEB11	I. I	1,043			<b>♦</b>	
6AR1FT0938	6aR 19; On completion of grouting wks at P2	0	0	31	31MAR11	31MAR11	2	1,005			•	
6AR1FT0940	6aR 20; On completion of grouting wks at P1	0	0	27.	27APR11	27APR11	2	978			•	The state of the s
6AR1FT0942	6aR 21; On completion of 10% grout by Ith at F1	0	10	21	21MAY11	21MAY11	8	954			•	
6AR1FT0944	6aR 22; On completion of 20% grout by Ith at F1	0	0	23	23MAY11	23MAY11	2	952			<b>•</b>	
6AR1FT0946	6aR 23; On completion of 30% grout by Ith at F1	0	0	24	24MAY11	24MAY11	2	951			•	
6AR1FT0948	6aR 24; On completion of 40% grout by Ith at F1	0	0	25	25MAY11	25MAY11	2	950			•	
6AR1FT0950	6aR 25; On completion of 50% grout by Ith at F1	0	0	261	26MAY11	26MAY11	2	949			•	
6AR1FT0952	6aR 26; On completion of 60% grout by Ith at F1	0	0	27	27MAY11	27MAY11	2	948			<b>•</b>	Ž.
6AR1FT0954	6aR 27; On completion of 70% grout by Ith at F1	0	0	281	28MAY11	28MAY11	2	947			•	5-3
6AR1FT0956	6aR 28; On completion of 80% grout by Ith at F1	0	0	30	30MAY11	30MAY11	2	945			•	SV
6AR1FT0958	6aR 29, On completion of 90% grout by Ith at F1	0	0	31	31MAY11	31MAY11	2	944			•	
6AR1FT0960	6aR 30, On completion of grouting works at F1	0	0	01	01JUN11	01JUN11	2	943			<b>•</b>	33
6AR1FT0970	6aR 31; On completion of all works under this CC	0	0	18	18JUN11	18JUN11	2	926			♦under this Cost Centre	tost Centre
Schedule of	Schedule of Milestones for Cost Centre No. 3aL											
3AL1FT1002	3aL 1: On providing evidence of procuring TBM	0	0	19.	19JAN08A	19JAN08A	2	•				
3AL1FT1004	3aL 2; On providing evidence of TBM Factory Test	0	0	080	08OCT08A	080CT08A	2		•			
3AL1FT1006	3aL 3; On delivery of all parts of TBM to the Si	0	0	20	07AUG09	07AUG09		1,606	•			
3AL1FT1008	3aL 4; On completion of site comm. & test. of TB	0	0	170	07MAY10	07MAY10	- 27	1,333		<b>\$</b>		
3AL1FT1010	3aL 5; On completion of 5% perm. tunnel lining	0	0	18	18MAY10	18MAY10	2 1	1,322	-	<b>•</b>		
3AL1FT1012	3aL 6; On completion of 10% perm, tunnel lining	0	0	60	01NUL60	09JUN10	2	1,300		•	100	
3AL1FT1014	3aL 7; On completion of 15% perm. tunnel lining	0	0	02	02JUL10	02JUL10	2	1,277		<b></b>	10	000 Nos
3AL1FT1016	3aL 8; On completion of 20% perm. tunnel lining	0	0	28	28JUL10	28JUL10	2	1,251		•		
3AL1FT1018	3aL 9; On completion of 25% perm. tunnel lining	0	0	13,	13AUG10	13AUG10	2 1	1,235		•		
3AL1FT1020	3al. 10; On completion of 30% perm. tunnel lining	0	0	02	02SEP10	02SEP10	2	1,215		<b>•</b>		
3AL1FT1022	3al. 11; On completion of 35% perm. tunnel lining	0	0	22	22SEP10	22SEP10	2 1	1,195	-	•		
3AL1FT1024	3at. 12: On completion of 40% perm. tunnel lining	c	(	00		Carlotte and the Control of the Control		1 4 3 4		*		

SAL1FT1026   3aL 13; On completion of 45% perm. tunnel lining   0   3AL1FT1028   3aL 14; On completion of 50% perm. tunnel lining   0   3AL1FT1032   3aL 14; On completion of 50% perm. tunnel lining   0   3AL1FT1032   3aL 15; On completion of 50% perm. tunnel lining   0   3AL1FT1034   3aL 15; On completion of 50% perm. tunnel lining   0   3AL1FT1034   3aL 15; On completion of 70% perm. tunnel lining   0   3AL1FT1040   3aL 20; On completion of 75% perm. tunnel lining   0   3AL1FT1040   3aL 20; On completion of 75% perm. tunnel lining   0   3AL1FT1040   3aL 20; On completion of 75% perm. tunnel lining   0   3AL1FT1044   3aL 22; On completion of 85% perm. tunnel lining   0   3AL1FT1046   3aL 22; On completion of 90% perm. tunnel lining   0   3AL1FT1040   3aL 22; On completion of perw tunnel lining   0   3AL1FT1040   3aL 22; On completion of perw tunnel lining   0   3AL1FT1040   3aL 22; On completion of perw tunnel lining   0   3AL1FT1050   3aL 25; On completion of perw tunnel lining   0   3AL1FT1050   3aL 25; On completion of perw tender this CC   0   3AL1FT1050   3aL 25; On completion of perw tender this CC   0   3AL1FT1050   3aL 25; On completion of perw tender this CC   0   3AL1FT1050   3aL 25; On completion of maint. to 24   3AL1FT1050   3aL 25; On completion of maint. Strong SaL1FT1050   3aL 25; On completion of FMD at Portion B   3DL10T1212   3aL 2; On installation of FMD at Portion B   3DL10T1212   3aL 11; On completion of maint. Strong SaL1FT1050   3aL17T1050	Dur Start	10NOV10	10NOV10	2 1,146		
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ition geo. inst. for 48  tion of maint. & monit. of geo.  tion of FMD at Portion A  tion of FMD at Portion B  tion of FMD at Portion C  ation of FMD at Portion C  ettion of maint. & monit. of FMD  lettion of all works under this CC	0	0	26DEC10	26DEC10	2 1,100	♦installed instruments for 36 months free
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tion of FMD at Portion A tion of FMD at Portion B tion of FMD at Portion C ation of FMD at Portion D letion of maint. & monit. of FMD letion of all works under this CC	0	0	08MAR13	08MAR13	2 297	monitoring for installed instruments
tion of FMD at Portion B tion of FMD at Portion C ation of FMD at Portion D letion of maint. & monit. of FMD letion of all works under this CC	0	0	29DEC11	29DEC11	2 732	flow measurement devices at Portion A.◆
tion of FMD at Portion C ation of FMD at Portion D letion of maint. & monit. of FMD letion of all works under this CC	0	0	20FEB12	20FEB12	-	flow measurement devices for Portion B.
ation of FMD at Portion D letion of maint. & monit. of FMD letion of all works under this CC	0	0	28JAN12	28JAN12	2 702	flow measurement devices for Portion C.
letion of maint. & monit. of FMD letion of all works under this CC	0	0	17APR12	17APR12	2 622	flow measurement devices for Portion D◆
letion of all works under this CC	0	0	07DEC13	18JAN14	+	flow monitoring to issue of Maint. Certificate
Construction of Intake I-1 Preliminary Works VO#07; Transperant Hoarding at I-1	0	0	07DEC13	18JAN14	2 23	annear triscolor and a second
Preliminary Works VO#07; Transperant Hoarding at I-1						
VO#07; Transperant Hoarding at H1					Ì	
VO007-02 Receive VO7 for transparent hoarding 0	0	0	19MAY08A	19MAY08A	-	•
VO007-04 Procure/prepare/install transparent hoarding 70	70	70 20MAY08/	20MAY08A 11AUG08A 20MAY08A	11AUG08A	-	8
01R1A1102 Possession of site 0	0	0 19MAR08A	19MAR08A		_	◆90d after DOE
01R1Al1104 Obtain TTA (ingress & egress) approval 0	0	0 19APR08A	19APR08A		2	•
01R1A11106 Site clearance 30	30	30 21APR08A	26MAY08A 21APR08A	26MAY08A	_	
01R1Al1108 Obtain tree 6	9	6 13MAY08A			_	
01R1AI1110 Hoarding erection enclosing the Site	18	18 23MAY08A			-	
01R1A1112 Site entrance construction 6	9	6 23JUND8A		25JUL08A	_	
01R1Al1114 Install wheel wahing facilities 7	7	7 03JUN08A	07JUN08A 03JUN08A	07JUN08A	_	

OI .	Activity	AD04 WP3D	WP3D AD04	ADD4 WP3D	D WP3D	Cal Total	2008	2008 2010	Ser.	2012	2013
	Description	Dur	Dur Start	_	_	ID Float					
.01R1AI1116	Erect SOR's secondary site office	ဖ	6 28AUG08A	A 03SEP08A 28AUG08A	08A 03SEP08A	-	-				
01R1AI1118	Footing for temp. bridge span over Shing M. Nul.	26	26 10JUN08A	16JUL08A 10JUN08A	38A 16JUL08A	÷	ij				
01R1AI1120	Decking for temp. bridge span over Shing M. Nul.	5	13 17JUL08A	01AUG08A 17JUL08A	ISA 01AUG08A	<b>,-</b>	e.				
01R1AI1122	Install remote control CCTV as per ER 4.4.10	12	12 04SEP08A	18SEP08A 04SEP08A	38A 18SEP08A	٠	•				
16R1AI1101	Tree Identification & Report	4	14 14MAR08A	4 01APR08A 14MAR08A	08A 01APR08A	2					
16R7Al1102	1st tree pruning for small 3 nos. trees	-	1 03JUN08A	A 03JUN08A 03JUN08A	SA 03JUND8A	-					
16R7AI1104	2nd tree pruning for small 3 nos. trees	~	1 04JUL08A	04JUL08A 04JUL08A	18A 04JUL08A	-					
16R7AI1106	Final pruning & uplifting of 3 nos. small trees	2	2 08SEP08A	4 09SEP08A 08SEP08A	38A 09SEP08A	·-					
16R7AI1108	Confirm location for trees to be transplanted	51	51 02APR08A	A 27AUG08A 02APR08A	08A 27AUG08A	*					
16R7Al1114	One stg transplant for big 4 nos. big trees	o	9 11FEB09A	19FEB09A 11FEB09A	39A 19FEB09A	,					
Permanent S	Permanent Soil Nailing Works										
11R2AI1302	Erect working platform & mobilization	00	8 17MAY08A	A 24MAY08A 17MAY08A	08A 24MAY08A						
11R2AI1304	Install test nails & proof loading test, 2 nos.	00	8 24JUN08A	N 08JUL08A 24JUN08A	SSA OSJULOSA		20				i Asi
11R2AI1306	Soil nailing for A to C rows; 69 nos.	9	16 02JUL08A	14JUL08A 02JUL08A	14JUL08A	-					
11R2AI1308	Soil nailing for D to F rows, 71 nos.	58	29 15JUL08A	05SEP08A 15JUL08A	18A 05SEP08A	-	0				
11R2AI1310	Constrcut soil nail heads; 140 nos.	22	22 19JUL08A	06SEP08A 19JUL08A	8A 06SEP08A		B			33	
11R2AI1312	Demobilization	m	3 08SEP08A	10SEP08A 08SEP08A	08A 10SEP08A	-				*	
Construction	Construction of Spiral Ramp & Cascade										
Additional GI V	Additional Gl Woks to Fnalize Design						ă and				002
AGIA-02	Drill for 5 nos, additional GI works	21	21 09SEP08A	SEP08A 04OCT08A 09SEP08A	38A 04OCT08A		0				
Temp. Pipe-pile cofferdam	e cofferdam										
04L1AI1202	Erect piling platform	43	43 220CT08A			-					
04L1AI1203	Mobilization & set up piling rig	ო		A 01NOV08A 30OCT08A	11	-	I			3	
04L1AI1204	Install 273 mm dia. temp. pipe piles; 144 nos.	43	43 08NOV08A	-		-	11				
04L1AI1226	Demobilize all plant and materials	9	6 06JAN09A	13JAN09A 06JAN09A	13JAN09A						
Excavate +104.	Excavate +104.0 to +100.5mPD; Row 7						200				
04L1AI1402	Mobilization	·	1 23FEB09A	A 23FEB09A 23FEB09A	39A 23FEB09A	Ţ				50!	
04L1AI1404	Bulk excavation; soil (155m3)	4	4 24FEB09A	A 27FEB09A 24FEB09A		-	700				
04L1AI1406	Install test tie-back & proof load test	4	4 28FEB09A		39A 04MAR09A						303
04L1AI1408	Install tie backs/wailing & shortcrete	4	4 03MAR09A	4 DEMAROSA D3MAROSA	OSA DEMAROSA	-					
Excavate +100.	Excavate +100.5 to +99.0mPD; Rows 1 & 8						V. C.				
04L1AI1410	Bulk excavation; soil (219m3)	2	2 07MAR09A	A D9MAR09A 07MAR09A		-					×1,11
04L1AI1412	Install tie backs/wailing & shorcrete	9	6 10MAR09A	10MAR09A 16MAR09A 10MAR09A	09A 16MAR09A	-		alia.			
Excavate +99.0	) to +96.5mPD; Rows 2, 9 & 18										
04L1Al1414	Bulk excavation; soil (710m3)	m	3 17MAR09	17MAR09A 19MAR09A 17MAR09A	19MAR09A	-	(S)				
04L1AI1416	Install test tie-back & proof load test	4	4 26MAR09	26MAR09A 01APR09A 26MAR09A 01APR09A	09A 01APR09A	•				9.4	
04L1Al1418	Install tie backs/wailing & shortcrete	9	6 23MAR09A	23MAR09A 28MAR09A 23MAR09A	09A 28MAR09A	i i			-		
Excavate +96.5	Excavate +96.5 to +95.0mPD; Rows3, 10 & 19									0.0	
04L1AI1420	Bulk excavation; soil (721m3)	က	3 30MAR09A	30MAR09A 04APR09A 30MAR09A 04APR09A	09A 04APR09A	·					
04L1AI1422	Install tie backs/wailing & shortcrete	4	4 02APR09A	A 20APR09A 02APR09A 20APR09A	39A 20APR09A	-		22			

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Page 102 of 125	ů.			Sheet 35 of 58				
		-	09OCT10 1	09OCT10 17SEP10	18 17SEP10		Cast roof slabs	04L1AI1478
	<b>31</b>	-22	16SEP10 1	16SEP10 27AUG10	18 27AUG10	<u>©</u>	Cast walls 2nd lift, 200mm down from soffit	04L1AI1476
			26AUG10 1	26AUG10 06AUG10	18 06AUG10	<del>0</del>	Cast walls 1st lift	04L1AI1474
	*	-22	05AUG10 1	05AUG10 23JUL10	12 23.II.JL 10	12	Cast base slabs	DAI 1AI1472
		-	+				dording characters of the second of	Ę
		Н	24AUG10 1			7	Construct RC soiral ramp top	07R1AI1420
	@ 5m3/5minutes	103	06AUG10 1	06AUG10 23JUL10	13 23JUL10	13	Backfill spiral ramp; 2496m3 @ 200m3/day	07R1AI1418
		-22	22JUL10 1	22JUL10 06JUL10	15 06JUL10	5	Cast ramp up to +102,31mPD	07R1AI1416
		-22	05JUL10 1	05JUL10 17JUN10	15 17JUN10	15	Cast ramp up to 98.01mPD	07R1AI1414
	•	-22	15JUN10 1	15JUN10   29MAY10	15 29MAY10	15	Cast ramp up to 93.71mPD	07R1AI1412
	1000	-22	28MAY10 1	28MAY10 11MAY10	15 11MAY10	15	Cast ramp up to 89.41mPD	07R1AI1410
	•	-52	10MAY10 1	10MAY10 22APR10	15 22APR10	15	Cast ramp up to +85.10mPD	07R1AI1408
1			21APR10 1	21APR10 31MAR10	15 31MAR10	15	Cast ramp up to +80.81mPD	07R1AI1406
				30MAR10 13MAR10		15	Cast ramp up to +76.51mPD	07R1AI1404
				12MAR10 27FEB10	2.7	12	Cast base slab	07R1AI1402
		H					0,	Construction of
	•	-22	26FEB10 1	26FEB10 10FEB10	12 10FEB10	12	Cast roof slab	04L1AI1456
	-	$\exists$	09FEB10 1		235	12	Cast walls	04L1AI1454
			26JAN10 1	26JAN10 20JAN10	6 20JAN10	9	Cast base slab	04L1AI1452
							of Vehiucular Access	Construcion of
#15,089m3 rock@90m3/day with 2 work fronts	371m3 sql 115,089m3 rock@	Н	19JAN10 1	19JAN10 30JUN09	168 30JUN09	168 1	Rock excavation/mucking out/temp. support	07R1AI1444
	=	-22	29JUN09	29JUN09 20JUN09	8 20JUN09	ω	Set up for dewatering	07R1AI1442
-513							Excavate +88.5 to 71.5mPD; Rows 27 to 31	Excavate +88.5
	-	-22	19JUN09 1	19JUN09 17JUN09	3 17JUN09	က	Install tie backs/wailing & shorcrete	04L1AI1450
			16JUN09 1		60NUL30 6	o	Bulk excavation; soil (269m3) & rock (690m3)	04L1AI1448
							5 to 88.5mPD; Rows 15 & 26	Excavate +89.5
		H	05JUN09 1	05JUN09 02JUN09	4 02JUN09	4	Install tie backs/wailing & shorcrete	04L1AI1446
		-22		4	ار	12	Bulk excavation; soil (724m3) & rock (811m3)	04L1AI1444
							1 to 89.5mPD; Rows 14, 17 & 25	Excavate +91.1
			27MAY09A 1	27MAY09A 18MAY09A	4 18MAY09A	4	Install tie backs/wailing & shorcrete	04L1AI1442
			25MAY09A 1	25MAY09A 08MAY09A	4 08MAY09A	4	Install test tie-back & proof load test	04L1AI1440
			23MAY09A 1		8 OGMAY09A	80	Bulk excavation; soil (1002m3) & rock (342m3)	04L1AI1438
							5 to 91.1mPD; Rows 6,13,16,17&23	Excavate +92.5
			27MAY09A 1	19MAY09A   27MAY09A   19MAY09A   27MAY09A	2 19MAY09A	2	Install tie backs/wailing & shorcrete	04L1AI1436
			18MAY09A 1	04MAY09A   18MAY09A   04MAY09A   18MAY09A	3 04MAY09A	ന	Bulk excavation; soil (423m3) & rock (52m3)	04L1AI1434
							Excavate +93.0 to +92.5mPD; Row 22	Excavate +93.0
	f.a	3	16MAY09A 1	16MAY09A 21APR09A	5 21APR09A	n n	Install tie backs/wailing & shorcrete	04L1AI1432
			16MAY09A 1			4	Install test tie-back & proof load test	04L1AI1430
			27APR09A 1	1	4 20APR09A 3	4	Bulk excavation; soil (818m3)	04L1AI1428
							Excavate +94.0 to + 93.0mPD; Rows 5,12,16,21&24	Excavate +94.0
	52		30APR09A 1	03APR09A   30APR09A   03APR09A   30APR09A	5 03APR09A :	co.	Install tie backs/wailing & shorcrete	04L1AI1426
	***		18APR09A 1	6APR09A 18APR09A 06APR09A		n	Bulk excavation; soil (701m3)	04L1AI1424
							Excavate +95.0 to +94.0 mPD; Rows 4, 11 & 20	Excavate +95.0
		Float	Finish	-		Dur Dur	Description	ı
70 2012	2008 2009 2010 2011	Total	WP3D	-	3D AD94	D04 WP3D	Activity	Q

Description	Dur	o ma	-	CHIEST COUNTY					
Dismantle & Removal of TBM									
Backfill & form cranage platform	24	24 110	110CT10	08NOV10 110CT10	08NOV10	1 -22			
TBM break through	0	0		11JUN11*	11JUN11*	1 -195		•	3 3
Dissembly & demobilization of TBM	20	50 13J	13JUN11	10AUG11 13JUN11	10AUG11	1 -195			50
Cast lower base slab	12	12 06J	06JUL10	19JUL10 06JUL10	19JUL10	1-19		before TBM retrieval	
Construction of Box Culvert Structure				- 1					8)8
Cast upper base	9	6 11A	11AUG11	17AUG11 11AUG11	17AUG11	1 -195			
Cast walls 1st lift	42	18 18A	18AUG11	07SEP11 18AUG11	07SEP11	1 -195	after retrieval of TBM & gantry crane	k gantry crane#	
Cast walls 2nd lift, 200mm down from soffit	18	18 085	08SEP11	29SEP11 08SEP11	29SEP11	1 -195			8
Cast roof slabs	18	18 305	30SEP11	220CT11 30SEP11	220CT11	1 -195			
Backfill & compaction above box culvert; ~13m	22	22 24C	24OCT11	17NOV11 240CT11	17NOV11	1 -195			94
Modification of Existing Channel in Dry Season									7
Channel Modification (Varied)Works (Civil Works)									
Break wall & slab at pipe pile location	00	8 02N	*80VON20	10NOV09 02NOV09*	10NOV09	1 70	ar 14		
Set up pipe pile rig	es	3 11N	11NOV09	13NOV09 11NOV09	13NOV09	1 70			
Install pipe piles (30n*12m)	10		14NOV09	25NOV09 14NOV09	25NOV09	1 70			
Break existing masonry wall	4	4 26N	26NOV09	30NOV09 26NOV09	30NOV09	1 70			
PC blcok/sand back bund wall for water diversion	2	2 010	01DEC09	02DEC09 01DEC09	02DEC09	1 70			
Cut existing slab	·	1 03	03DEC09	03DEC09 03DEC09	03DEC09	4 70			
Demolish Wo Yi Hop Nullah wall & slab	9	6 04E	04DEC09	10DEC09 04DEC09	10DEC09	1 70	-		
Construct WYH Nullah wall below slab	ဖ	6 110	11DEC09	17DEC09 11DEC09	17DEC09	1 70			3.0
Backfill & SRT behind wall below slab	13	18 18E	18DEC09	11JAN10 18DEC09	11JAN10	1 70			
Demolish Shing Mun Nullah wall with struts	9	6 12.	12JAN10	18JAN10 12JAN10	18JAN10	1 70	***		
Demolish Shing Mun Nullah slab	4		19JAN10	_	22JAN10				
Construct slab	80	8 23.	23JAN10		01FEB10	H			
Construct wall for WYH Nullah	10	10 02F	02FEB10	12FEB10 02FEB10	12FEB10				30
Constrtuct wall for SM Nullah	10	10 178	17FEB10	27FEB10 17FEB10	27FEB10				
Assoc. RC works for trash grill & stop slogs	18	18 01	01MAR10	20MAR10 01MAR10	20MAR10	1 70			4
Mass concrete infill	ო		22MAR10		24MAR10				
PC block & san bag bund wall	ო	3 25N	25MAR10	27MAR10 25MAR10	27MAR10	1 70			
Channel Modification Works (Steel Works)									
Install steelworks, Phase 3	36	36 01N	01NOV11*	12DEC11 01NOV11*	12DEC11	1 -143		JIII -	5
Pling Works Along Crest Plarform									
Erect piling platform for upper piles	12	12 228	22SEP10	07OCT10 22SEP10	07OCT10	1 103		•	302
Mobilize piling rig & set up	ဖ	6 080	080CT10	140CT10 080CT10	14OCT10	1 103			Val.
350mm dia. pre-bored H-piles (upper); 36 nos.	36	36 150	150CT10	26NOV10 15OCT10	26NOV10	1 103		#@ 1no/day	
Demobilize piling rig	ω	6 271	27NOV10	03DEC10 27NOV10	03DEC10	1 103		-	33
Crest Platform									100
Excavate & hack off grout	80	8 04[	04DEC10	13DEC10 04DEC10	13DEC10				N.
Construct skin wall	12	12 14[	14DEC10	29DEC10 14DEC10	29DEC10	1 103			
Construct capping hear	α	200	0.01	OF CHOCK PERSON	7717	,			8

2008 2009 2510 2011 2012 2013					■@ 1no/day										201			150nos, climber, 200nos, woodland#63nos, trees, 2072nos.					♦for Cascade at Intake I-1	♦for Cascade at Intake I-1	◆ for Cascade at Intake I-1	◆for Cascade at Intake I-1	◆for Cascade at Intake I-1	◆at Intake I-1	◆box culvert at Intake I-1	within this Cost Centre				spiral allip at make I-	◆spiral ramp at Intake I-1	♦spiral ramp at Intake I-1	◆for spiral ramb at Intake I-1	♦ spiral ramp at Intake I-1	♦spiral ramp at Intake I-1	♦spiral ramp at Intake I-1
Total 2	103	103		-195	-195	-195		-195	-195	-195	-195	-195	i	-195	-195	0	0	-183	-181	-143	-118		1,645	1,441	1,403	1,222	1,178	800	800	648	1	740	, (	T,645	1,557	1,489	1,441	1,349	1,307	1,266
0 5	<u>-</u> چ	1		1	2 1	2 1		2 1	2 1	2 1	2 1	12 1		12 1	12 1	12 2	2 2	12 1	13 2		12 2	1	19 2	-	0 2	10 2	10 2	11 2		12 2	Ţ	, c	+	+	+	+		10 2	10 2	0 2
WP3D Finish	13JAN11	27 JAN11		24NOV11	02JAN12	09JAN12		16JAN12	02FEB12	11FEB12	16FEB12	01MAR12	Ì	15MAR12	22MAR12	29MAR12	19APR12	01MAR12	01MAR13	29DEC11	28DEC12	j	29JUN09	19JAN10	26FEB10	26AUG10	09OCT10	220CT11	220CT11	22MAR12		420EC44	משות שו	SONOFES	25SEP09	02DEC09	19JAN10	21APR10	02JUN10	13JUL10
WP3D	10JAN11	4JAN11		18NOV11	25NOV11	03JAN12		10JAN12	17JAN12	03FEB12	13FEB12	7FEB12		03FEB12	17FEB12	23MAR12	30MAR12	27JAN12	02MAR12	13DEC11	30DEC11										Ì									
AD04 Finish	13JAN11 1	27JAN11 14JAN11		24NOV11	02JAN12 2	09JAN12 C		16JAN12	02FEB12 1	11FEB12 (	16FEB12 '	01MAR12 17FEB12		15MAR12 (	22MAR12	29MAR12 2	19APR12	_	01MAR13 (		28DEC12	i	29JUN09	19JAN10	26FEB10	26AUG10	090CT10	220CT11	220CT11	22MAR12	j	40000	IZDECIII	29JUN09	25SEP09	02DEC09	19JAN10	21APR10	02JUN10	13JUL10
AD04 Start	10JAN11	14JAN11		1BNOV11 2	25NOV11 (	03JAN12 (		10JAN12	17JAN12 (	03FEB12 ·	13FEB12	17FEB12 (		03FEB12 1	17FEB12 2	23MAR12 2	30MAR12	27JAN12 (	02MAR12 (		30DEC11	i									ı						.X			
WP3D Dur	4 10	12 14		6 18	29 25	6 03		6 10	12 17	8 03	4 13	12 17		36 03	30 17	7 23	21 30	30 27	365 02		365 30		0	0	0	0	0	0	0	0	ì	C	o (	0	0	0	0	0	0	0
DO4 W	4	12		9	29	9		9	12	ω	4	12		36	30	7	21	30	365	12	365		0	0	0	0	0	0	0	0	1		0	0	0	0	0	0	0	0
Activity	Backfill & construct U-channel	Fix rebar/ erect fwk/concrete ramp	Piling Works Above Inclined Access Ramp	Mobilize piling rig & set up	350mm dia. pre-bored H-piles (lower); 29 nos.	Demobilize piling rig	Inclined Access Ramp	Excavate & hack off grout	Construct skin wall	Construct capping beam	Backfill & construct U-channel	Fix rebar/erect fwk/concrete ramp	Remaining Works Prior to Handover	Finishing & reinstatement works; Portion A	Pre-handover inspections and remedial works	Contractor serve notice for Works completion	SO issues completion certificate	Landscaping works at Portion A	Establishment Works at Portion A	Install flow measurement devices at Intake I-1	Maintain & monitor flow monitoring	Schedule of Milestones for Cost Center No. 4L	4L 1; On completion of 50% excavation	4L 2; On completion of excavation	4L 3; On completion of 25% concreting	4L 4; On completion of 50% concreting	4L 5; On completion of 75% concreting	4L 6; On completion of Cascade	4L 7; On completion of connecting BC	4L 8; On completion of all works under this CC	of Milestones for Cost Centre No. 7R	: :	/R 1; On completion of trash grills	7R 2; On completion of 25% excavation	7R 3; On completion of 50% excavation	7R 4; On completion of 75% excavation	7R 5; On completion of all excavation	7R 6; On completion of spiral ramp to +80mPD	7R 7; On completion of spiral ramp to +90mPD	7R 8; On completion of spiral ramp to +100mPD
9	11R2AI1216	11R2AI1218	Piling Works A	11R2AI1220	11R2Al1222	11R2AI1224	Skin Wall & Inc	11R2AI1226	11R2AI1228	11R2AI1230	11R2AI1232	11R2AI1234	Remaining W	07R1AI1606	07R1AI1608	07R1AI1610	07R1AI1612	16R7AI1602	16R7Al1604	3DL1AI1602	3DL1AI1604	Schedule of	04L1AI1802	04L1AI1804	04L1AI1806	04L1AI1808	04L1AI1B10	04L1AI1812	04L1AI1814	04L1AI1816	Schedule of		07R1AI1902	07R1AI1904	07R1AI1906	07R1AI1908	07R1AI1910	07R1AI1912	07R1AI1914	07R1AI1916

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	♦at Intake I-1	under this Cost Centre			Vat Intake I-1	wall at platform at Intake I-1	wall at branch access at Intake I-1◆	♦under this Cost Centre																														1			
				•	al							-	0	D		п		П	-	9	- X	E3	•			1		<b>•</b>	10		•		•	•		l					•
Float	1,224	648		Ī	Ī	1,130	728	1,123										7.0		1									5/47				T					1017			
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FIMSh	24AUG10	22MAR12	1		06SEP08A	26NOV10	02JAN12	03DEC10				16SEP08A	03NOV08A	24NOV08A		OCT08A		05DEC08A	03OCT08A	04NOV08A	07NOV08A	18NOV08A	19NOV08A	21NOV08A	25NOV08A	05DEC08A		14JUL08A	13SEP08A		16SEP08A	17NOV08A		19APRORA	05SEP08A	16MAR09A	13MAR09A	23APR09A			10JUL08A
ı	24,	22	ï	100	90	26	02	03								8A 17		8A 05						-									88A		-		-	1	d		5
Simil			4								ı	12SEP0	17SEP0	11NOV0		)2SEP0		зосто	зосто	340CT0	SNOVO	DAONSC		SONOVO	SZNOVO	SENOVO			15JUL08			17SEP0	26MAR08A		DZMAYC	ONULSC	28FEB0	10DEC0	i		
	24AUG10	22MAR12			06SEP08A	26NOV10	02JAN12	03DEC10				16SEP08A 12SEP08A	03NOV08A 17SEP08A	11NOV08A 24NOV08A 11NOV08A		02SEP08A 17OCT08A 02SEP08A 17OCT08A		03OCT08A 05DEC08A 03OCT08A	03OCT08A 03OCT08A 03OCT08A	04NOV08A 04OCT08A	07NOV08A 05NOV08A	18NOV08A 08NOV08A	19NOV08A	21NOV08A 20NOV08A	ZZNOV08A Z5NOV08A ZZNOV08A	26NOV08A 05DEC08A 26NOV08A		14JUL08A	13SEP08A 15JUL08A		16SEP08A	17SEP08A 17NOV08A 17SEP08A		TOAPPORA	05SEP08A 02MAY08A	16MAR09A 05JUN08A	13MAR09A 28FEB09A	23APR09A 10DEC08A			10JUL08A
ı	24	22	ä		068	56	02	03					8A 03h	8A 24N		8A 170		8A 05I	8A 030	8A 04	18A 07		191	18A 21	18A 251	18A 05I		14			16.	8A 17I	88A	1	-	-		+	ı		10
oliano.												12SEP08A	17SEP08A	11NOV0		02SEP0		озосто	озосто	04OCT08A	05NOV08A	08NOV08A		20NOV08A	SZNOVO	SENOVO			15JUL08A			17SEP0	26MAR08A		OZMAYOBA	05JUN08A	28FEB09A	10DEC08A	Ī		
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nond	7R 9; On completion of spiral access ramp	7R 10; On completion of all works under this CC	itre No. 11R		11R 1; On completion of soil nailing works	11R 2; On completion of piling at platform	11R 3; On completion of piling at branch access	11R 4; On completion of all works under this CC				Erect platform/mibilization & set up GI rig	Structures	Drill 1 hole for Intersection with Main Tunnel		Temporary diversion of CLP overhead cable		Temporary Diversion of 100mm dia. Watermain	ر				. support		r sample	۵		hoarding	Procure/prepare/install transparent hoarding	nce	Receive VO-32 for replacing hoarding by CLF	Procure/prepare/install transparent hoarding	of DOC	annual	5.0.145		Install remote contorl CCTV as per ER 4.4.10		Channel/H-Pile Wall		Received VO22 for revised layout of pile wall
Description	of spiral &	of all wo	st Cen		n of soil n	of piling	of piling	ι of all wα			ign	ation & se	or Intake	ction with		of CLP or		of 100mr	diversion				for temp		ake water	n by WS		nsparent	all transpa	Link Fe	placing h	all transp⊱	b -90d c	2 parace)	200		CCTV as	10.	hanne		evised lay
	npletion	mpletion	for Co		mpletion	mpletion	mpletion	mpletion	1-2		ize Des	n/mibiliz	I holes f	or Interse	Cable	iversion	ain	iversion	for temp.	works	support	ermain	ertificate	به	pipe & t	connectic	ng at 1-2	11 for tra	are/insta	/ Chalin	32 for re	are/inst	of Portion	ingroce	200	200	e contor	anting; 1		at I-2	)22 for re
	3 9; On car	₹ 10; On cc	Schedule of Milestones for Cost Centre No.	- 276	R 1; On C	R 2; On CC	R 3; On a	R 4; On CC	Construction of Intake I-2	KS	Additional GI Works to Finalize Design	ect platfon	Drill 3 nos. Gl holes for Intake Structures	rill 1 hole fo	Diversion of CLP Overhead Cable	emporary d	Dievrsion of 100mm Watermain	emporary L	Issue VO35 for temp. diversion	Preparation works	Install steel support	Lay new watermain	Obtain ICE certificate for temp. support	Pressure test	Sterilise new pipe & take water sample	Watermain connection by WSD	VO #11; Transperant Hoarding at I-2	Receive VO11 for transparent hoarding	ocure/prep	VO#32; Replace Hoarding by Chain Link Fence	eceive VO-	ocure/prep	Possession of Portion B -90d of DOC	Obtain TTA (ingress & soress) and	Site clearance	Frect hoarding	stall remote	Tree transplanting; 1 no.	Stream Diversion/Approach	Revised Layout of Pile Wall at I-2	eceived VC
			of Mile						tion of	Preliminary Works	GI Work	ū	Ğ	۵	of CLP o	227	of 100mm				-20		ec.			8	anspera	œ	ď	place Ho									iversio	ayout of	쬬
	07R1Al1918	07R1AI1920	edule		11R2AI1R02	11R2Al1R04	11R2Al1R06	11R2AI1R08	struc	limina	litional	AGIB-02	AGIB-04	AGIB-06	ersion	01R1BU0102	vrsion	01R1BU0202	01R1BU0204	01R1BU0206	01R1BU0208	01R1BU0210	01R1BU0212	01R1BU0214	01R1BU0216	01R1BU0218	#11; Tr	VO011-02	VO011-04	#32; Re	VO032-I202	VO032-1204	01R1BI2102	0464812404	01R1R12108	01R1BI2112	01R1BI2116	16R7BI2002	eam D	rised L	VO022-02
	07F	07F	Sc		17	7	115	118	Co	Pre	Ad	AG	AG	AG	ă	016	ă	01F	01F	40	910	110	01	011	01	014	8	9	8	8	9	8	150	5	2 2	15	15	19	Š	S.	8

	Contraction of the Contraction o												
VO022-04	SOR confirmed to demolish exit ret. wall	38	38	11JUL08A	3A 11J	21,	-		8				
VO022-06	Demolish existing retaining wall	,	-	13SEP08A	13SEP08A 13SEP08A	A 13SEP08A						žč.	
VO022-16	Reinstate piling platform	2	2	16SEP08A	17SEP08A 16SEP08A	A 17SEP08A	-		-			725	
Phase 1: Cons	Phase 1: Construct 550 dia. H-pile Wall							y					
12R3BI2202	Form temp, access ramp along west side of stream	44	44	10JUN08A	31JUL08A 10JUN08A	A 31JUL08A	-		n				
12R3BI2204	Additional SI & engineering works	76	26 2	25AUG08A	24SEP08A 25AUG08A	3A 24SEP08A	·						
12R3BI2206	Mobilize piling rig & set up	2	5	25SEP08A	30SEP08A 25SEP08A	A 30SEP08A						A L	
12R3BI2208	Construct piles 1 to 18	13	13 (	020CT08A	17OCT08A 02OCT08A	3A 170CT08A	ν-						
12R3BI2210	Piling works stopped by the SOR	80	00	180CT08A	270CT08A 180CT08A	3A 270CT08A	-						
12R3BI2212	Construct piles 19-58	28	28 2	280CT08A	26NOV08A 28OCT08A	3A 26NOV08A	-		n				
12R3BI2214	SOR's instruction to delet pile 59	0	0		02DEC08A	02DEC08A	<b>,</b> -		•				
12R3Bl2216	Demobilize piling rig	4	4	03DEC08A	06DEC08A 03DEC08A	3A 06DEC08A	Ψ.		-				
12R3BI2218	Construct skin wall/caping beam/u-channel	*0 <i>L</i>	70*	25JUN09	15SEP09 25JUN09	15SEP09	-	80		==58 nos; @ 750mm c/c	50mm c/c		
12R3BI2220	Excavate for skin wall, 4 bays	20	18	25JUN09	16JUL09 25JUN09	16JUL09	-	80		11		200	
12R3BI2222	Construct for skin wall; 4 bays	24	24	17JUL09	13AUG09 17JUL09	13AUG09	-	80		n			
12R3BI2224	Construct capping beam; 4 bays	16	16	14AUG09	01SEP09 14AUG09	9 01SEP09	-	80				531	
12R3BI2226	Construct drainage, 4 bays	12	12	02SEP09	15SEP09 02SEP09	15SEP09		80		=3		812	
Phase 1; Cons	Phase 1: Construct Dry Weather Flow Channel												
08R1BI2202	Excavate for new low flow channel	9	9	27MAR09A	03APR09A 27MAR09A							UN.	
08R1BI2204	Construct new low flow channel	9	9	11JUN09	17JUN09 11JUN09	17JUN09	er.	-196					
08R3BI2208	Remove blcock wall/excavate for gantry footing	12	12	18JUN09	02JUL09 18JUN09	02JUL09	*	-196					
08R3BI2212	Construct PC bund wall to protect gantry footing	9	9	0370109	09JUL09 03JUL09	09JUL09		-196		_			
Phase 2; Cons	Phase 2; Construct Approach Channel West												
08R1BI2218	Construct temp. concrete block bund	12	12	*e0VON20	14NOV09 02NOV09*	9* 14NOV09	-	43		Provision (	provision of water pump		
08R1BI2220	Excavate for western portion guide wall & slab	12	12	16NOV09	28NOV09 16NOV09	9 28NOV09		43		<b>C3</b>			
08R1BI2222	Construct western portion of guide wall & slab	20	20	30NOV09	29JAN10 30NOV09	9 29JAN10		43		0			
08R1BI2224	Remove concrete block bund	9	9	30JAN10	05FEB10 30JAN10	05FEB10	<b>,-</b>	43		-		5.0	
Phase 3; Cons	Phase 3; Construct Approach Channel North												
08R1BI2226	Construct temp. concrete block bund	9	9	01NOV10*	06NOV10 01NOV10*		-	22			provision of water pump	t bnmb	
08R1BI2228	Excavate for L-shaped retaining wall	12	12	08NOV10	20NOV10 08NOV10	0 20NOV10		22					
08R1BI2230	Construct L-shaped retaining wall	18	18	22NOV10	11DEC10 22NOV10	0 11DEC10		22				261	
08R1BI2232	Excavate eastern portion of guide wall & slab	12	12	13DEC10	28DEC10 13DEC10		-	22					
08R1BI2234	Construction of boulder traps; 7nos.	24	24	29DEC10	26JAN11 29DEC10	26JAN11		22				201	
08R1BI2236	Construct eastern portion of guide wall & slab	24	24	27JAN11	26FEB11 27JAN11	26FEB11	•	22			1		
08R1BI2240	Remove temp, concrete blook bund	9	9	28FEB11	05MAR11 28FEB11	05MAR11	-	22			-		
Phase 4 - Com	Phase 4 - Construct Remaining Appr. Channel	e.											
08R1BI2242	Remove gantry crane & steel deck	18	18	16DEC11	10JAN12 16DEC11	1 10JAN12		-196					
08R1BI2244	Excavation for remaining approach channel	12	12	11JAN12	27JAN12 11JAN12	27JAN12	•	-196					
08R1BI2246	Construct remaining approach channel	24	24	28JAN12	24FEB12 28JAN12	24FEB12		-196					
08R1BI2248	Close out last section of guide wall	12	12	25FEB12	09MAR12 25FEB12	09MAR12		-196				- 11	
08R1BI2250	Construct trach arill	4	4	OFFEEDAD	CAUTATION CAUTAINO	CACAMACA	,	000					

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24   24   20.JANUG9A   21FEBGBA   201ANUG9A   21FEBGBA   1     4   4   22FEBGBA   27FEBGBA   27FEBGBA   1     12   27FEBGBA   12MARGBA   27FEBGBA   12MARGBA   1     12   12   13MARGBA   18MARGBA   13MARGBA   18MARGBA   1     12   12   13MARGBA   18MARGBA   13MARGBA   1     12   12   27MARGBA   18MARGBA   27MARGBA   1     12   12   27MARGBA   1     13   28MARGBA   28MARGBA   27MARGBA   1     14   12   27MARGBA   1     15   12   27MARGBA   1     15   12   27MARGBA   1     16   13   28MARGBA   23MARGBA   23MARGB   1     17   13   23     18   300CTGB   23MARGB   1     18   300CTGB   23MARGBA   1     19   11   1     11   1   1     11   1   1	2	Activity	AD04 WP3D	WP3D	AD04 Street	AD04 WP3D	WP3D	3 9	Float		
24 24 24 20.04N09A 21FEBORA 2014N09A 1 1 1 2 1 2 1 2 1 2 1 2 2 2 2 2 2 2 2		the distance of the state of th							H		Ę
Every Currented Register   24   27   27   21   21   27   27   27   27	Excavate &	Construct Vortexionop Smail		l	ĺ			l			Ş.
Construct for min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min gling  Construct for min min min gling  Construct for min min min gling  Construct for min min gling  Construct for min min min gling  Construct for min min for min min for min min for min min for min min for min min for min min for min min for min for min for min for min for min for min for min for min for min for min for min for min for min for min	Steel Deck &	Gantry Crane/Noise Enclosure			4 00	ACCIAGIOO ACCULTAC	4000LLL	,			58
Construct of Nos. min places   12   2   2   2   2   2   2   2   2	05L18I2300	Construct 8 nos, mini piles	47 7		SULFERNA	26FFB09A 23FFB09A		-   -	Ī		73
Construction for footingfale capes   12   12   13 AAARGBA   20AAARGBA   20AAARGBA   14   15   15   15   15   15   15   15	051 1812307	Construct & nos mini piles	- 12		27FEB09A	12MAR09A 27FEB09A		-			
Construction of federing-piles cape   12   27/AMORGA   14APROBA   14APROBA   14APROBA   1475   177	05L1B(2502	Excavation for footing/oile caps	12			26MAR09A 13MAR09A	_	-	Ī		
Construct focusing torgathy crane   25 25 CAMANYOBA 30,UULOB 01404YOBA 17166   17166	05L1BI2304	Construction of footing/oile caps	12			18APR09A 27MAR09A		-			183
Construct footing for gantry crane   12   12   25AUGOB   078EPOB   25OCTOB   1-156	05L1BI2305	Install steel deck	25		04MAY09A				-175	1	33
Problem gentry crane & noise enclosure   42 42 085EP08   290CT09   11JUL09	05L1BI2316	Construct footing for gantry crane	12	12	25AUG09		07SEP09		-196		
Senting with the construction of Vortex Shaft   37   13.0UL09   11.0UL09	05L1BI2318	Install gantry crane & noise enclosure	45	42	08SEP09	29OCT09 08SEP09	29OCT09		-196		200
Setting up   Setting ground shaft   2 2 2 (10,010.09   11,010.09   11,010.09   1   1166   1   1166   1   1166   1   1	Ground Treat	ment Works for Vortex Shaft									
Proting & curtain ground sheft   37 37 13.0U.09   54AUG09   13.0B   1.18   18 0.0CT09   23AAR10   30.0CT09   23AAR10   1.196   24AUG09   1.196   24AUG09   24AUG09   24AUG09   2.196   2.106   2.20AR10   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.106   2.20AR10   2.2	05L1BI2306	Setting up	2	2	10JUL09	11JUL09 10JUL09	11JUL09		-196	following chanell diversion to west	is.
Percentage of Vortex Shaft	05L1BI2308	Probing & curtain grouting around shaft	37	37	13JUL09	24AUG09 13JUL09	24AUG09	Ĭ	-196	:	
Standard Shaft +89mPD to +65mPD (39m)   118   118   300CT09   23MAR10   17NOV11   17NOV11   1966     Standard African Shaft +89mPD to +65mPD (39m)   6   6   11NOV11   17NOV11   17NOV11   17NOV11   1966     Construct Permanent lining 30m @4m/4days	Excavation ar	nd Construction of Vortex Shaft									
Set up for lining construction   6   6   11NOV11   17NOV11   17NOV11   1-196	05L1BI2320	Excavate shaft, +99mPD to +65mPD (30m)	118	118	30OCT09	23MAR10 300CT09	23MAR10		-196		- 17
Construct Air Vent Shaft         30         11NOV11         15DEC11         1 - 196           Construct Air Vent Shaft         Final Address Action of Table Construct Air Vent Shaft         Final Address Action Air Action Air Action Air Action Action Air Action Ac	05L1BI2321	Set up for lining construction	ဖ	ဖ	11NOV11	17NOV11 11NOV11	17NOV11		-196		357
Construct Air Vent Shaft	05L1BI2322	Construct permanent lining; 30m @ 4m/ 4days	8	30	11NOV11	15DEC11 11NOV11	15DEC11		-196	200	
15   15   08DECO8A   27DECO8A   08DECO8A   1   1   1   1   1   29DECO8A   06JAN09A   1   29DECO8A   06JAN09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   13MAR09A   14MAR09A   13MAR09A   13MAR09A   14MAR09A		Construct Air Vent Shaft		Ħ	Ī		i	Ī	1		S. 1885
15   15   15   15   15   15   15   15											
## 54 54 07JANU9A 13MAR09A 13MAR09A 1 provision of Tanabaros 13MAR09A 13MAR09B 13MAR	05L1B12418	Enlarge the platform for RCD operation	15	15	08DEC08A	27DEC08A 08DEC08A		-			
## 54 54 07JAN09A 13MAR09A 13MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 19MAR09A 1 1 2 19MAR09A 28APR09A 28APR09A 28APR09A 1 -196 1 1 2 11 2 11 2 11 2 11 2 11 2 11 2	05L1BI2420	Mobilize & set up RCD for excavation	മ	ω	29DEC08A	06JAN09A 29DEC08A	-	-			
5 5 14MARO9A 19MARO9A 14MARO9A 1 1 1 21MARO9A 23MARO9A 23MARO9A 21MARO9A 20MARO9A 21MARO9A 21MARO9A 21MARO9A 21MARO9A 21MARO9A 21MARO9A 21MARO9A 21MARO9A 21MARO9A 21MARO9A 1 196  1	05L1BI2422	Bore shaft with RCD; 37.5m @1m/day	54	24	07JAN09A	13MAR09A 07JAN09A	13MAR09A	-		0	
3   3   20MARO9A   20MARO9A   20MARO9A   1   1   1   1   1   1   1   1   1	05L1BI2424	Demobilize RCD rig	ιΩ	2	14MAR09A	19MAR09A 14MAR09A	19MAR09A	٠			
1   1   21MAR09A   25APR09A   1   1   25APR09A   1   1   25APR09A   25APR09A   1   1   1   25APR09A   1   1   25APR09A   1   1   25APR09A   1   1   25APR09A   1   1   25APR09A   1   1   25APR09A   25APR09A   25APR09B   1   1   1   1   1   1   1   1   25APR09B   25APR09B   25APR09B   1   1   1   1   1   1   1   1   25APR09B   25APR09B   25APR09B   1   1   1   1   1   1   1   1   25APR09B   25APR09B   25APR09B   1   1   1   1   1   1   1   1   1	05L1BI2426	Install permanent steel liner	m		20MAR09A	23MAR09A 20MAR09A	100	-			
1	05L1BI2427	Preparation works for casting concrete		-	21MAR09A	25APR09A 21MAR09A	21	-			
17   17   05JUN09   27APRO9A   04JUN09   1 -196     1   1   1   1   1   1   1   1   1	05L1BI2428	Damage found on installed steel liner	0	0		25APR09A	25APR09A	-	né;	•	
17   17   05JUN09   25JUN09   24JUN09   1 -196   1   1	05L1BI2429	Removal of steel liner	31	31	27APR09A		-	-	-196		
12 12 25JUNO9 09JULO9 1 -196   1-196   1 -196	05L1BI2430	Remove RCD platform	17	17	05JUN09		24JUN09		-196		355
12   12   09JULO9   09JULO9   1 -196   1   1   1   1   1   1   1   1   1	05L1BI2432	Construct PC bund wall	12	12	25JUN09		607NF60	-	-196		
12   12   12   12   12   14   14   15   15   15   15   15   15	05L1BI2434	Divert channel to West	0	0		607NF60	607NF60	•	-196	•	
36 36 16NOV09 29DEC09 16NOV09 29DEC09 1 -96 6 6 30DEC09 06JAN10 20FEB10 1 -96 3 3 22FEB10 27FEB10 27FEB10 1 -96 3 3 25FEB10 27FEB10 27FEB10 1 -96 3 3 25FEB10 27FEB10 27FEB10 1 -96 3 4 24 01MAR10 27MAR10 01MAR10 27MAR10 1 -96 144UG09 10JUL09 14AUG09 15AUG09 1 -50 15 12 15AUG09 28AUG09 15AUG09 1 -50 16 16 16 16 16 16 16 16 16 16 16 16 16 1	05L1BI2436	Footing for gantry crane	12	12	02NOV09*	14NOV09 02NOV09*	14NOV09		96-		
6 6 8 30DEC09 06JAN10 20FEB10 1 -96 36 36 07JAN10 20FEB10 1 -96 3 3 22FEB10 24FEB10 27FEB10 1 -96 3 3 25FEB10 27FEB10 27FEB10 1 -96 24 24 01MAR10 27MAR10 01MAR10 27MAR10 1 -96  naft 31 31 10JUL09 14AUG09 10JUL09 1 4AUG09 1 -50  flootings 12 12 15AUG09 28AUG09 15AUG09 1 -50	05L1BI2438	Erection of gantry crane	36	36	16NOV09	29DEC09 16NOV09	29DEC09		96-		
36 36 07JAN10 20FEB10 27FEB10 1 -96 3 3 22FEB10 24FEB10 24FEB10 1 -96 3 3 25FEB10 24FEB10 24FEB10 1 -96 3 24 24 01MAR10* 27MAR10 01MAR10* 27MAR10 1 -96  aft 31 31 10JUL09 14AUG09 10JUL09 14AUG09 1 -50  flootings 12 12 15AUG09 28AUG09 15AUG09 1 -50	05L1BI2440	Set up sliding system	9	9	30DEC09	-	06JAN10	-	96-		
3 3 22FEB10 24FEB10 24FEB10 1 -96 3 3 25FEB10 27FEB10 27FEB10 1 -96 24 24 01MAR10* 27MAR10 01MAR10* 27MAR10 1 -96  aft 31 31 10JUL09 14AUG09 10JUL09 14AUG09 1 -50  flootings 12 12 15AUG09 28AUG09 15AUG09 1 -50	05L1BI2446	Install steel casing	98	36	07JAN10		20FEB10	-	96-		
3 3 25FEB10 27FEB10 1 -96  24 24 01MAR10* 27MAR10 01MAR10* 27MAR10 1 -96  1aft 31 10JUL09 14AUG09 10JUL09 14AUG09 1 -50  12 12 15AUG09 28AUG09 15AUG09 1 -50  Indicided	05L1BI2448	Survey checking & capping concrete	က	m	22FEB10	24FEB10 22FEB10	24FEB10	÷	96-		
1       24       24       24       01MAR10*       27MAR10       01MAR10*       27MAR10       1       -96         1aft       31       31       10JUL09       14AUG09       10JUL09       14AUG09       1       -50         12       12       12       15AUG09       28AUG09       15AUG09       28AUG09       1       -50	05L1BI2450	Preparation & concreting	m	ო	25FEB10	27FEB10 25FEB10	27FEB10	-	-98	Ifollowing consent from the SOR	
naft         31         31         10JUL09         14AUG09         10JUL09         14AUG09         1 4AUG09         1 50           rootings         12         12         15AUG09         28AUG09         15AUG09         15AUG09         15AUG09         15AUG09         10JUL09         10J	05L1BI2452	Construct upstand wall	24	24	01MAR10*	27MAR10 01MAR10*		-	96-	100	8
Shaft         31         31         10JUL09         14AUG09         10JUL09         14AUG09         1         -50           S. gantry footings         12         12         15AUG09         28AUG09         15AUG09	Excavate &	Construct Man Access Shaff									
around shaft         31         31         10JUL09         14AUG09         10JUL09         14AUG09         1 4AUG09         1 5AUG09         1 5AUG0	Ground Treat	ment for Man Access Shaft									
ine & Noise Enclosure at M. A. Shaft  Excavate & construct 4 nos. gantry footings 12 12 15AUG09 28AUG09 15AUG09 28AUG09 1 -50	05L1B12502	Probing & curtain grouting around shaft	31	31	10JUL09	14AUG09 10JUL09	14AUG09	-	-50	***	
Excavate & construct 4 nos, gantry footings 12 12 15AUG09 28AUG09 15AUG09 28AUG09 1 -50	Gantry Crane	& Noise Enclosure at M. A. Shaft							i		
	05L1BI2504	Excavate & construct 4 nos. gantry footings	12	12	15AUG09	28AUG09 15AUG09	28AUG09	-	-50	including 1 wk concrete strength	3

250   250	QI	Activity	004 WP3D	MP3D	AD04	AD04 WP3D	WP3D	Total	Sums	00 mm mm mm mm mm mm mm mm mm mm mm mm m
tr 127 12 04NOV09 12AUR09 15AUG09 12AUG09 1 -44  18 130CT09 03NOV09 13APR10 13MAR11 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 13MAR11 1 1 1 13MAR11 1 1 1 13MAR11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	051 1R12505	Install gaptiv crane & noise enclosure	36	36	29AUG09	12OCT09 29AUG09			09	■provision of TTA
tr. 127 127 04NOV08 12APERIO GANOV08 17ADERIO 1 -50  report 75 72 2AMARTI 23MARTI 13MARTI 1 1-50  report 75 72 2AMARTI 23MURTI 32MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 75 72 2AMARTI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 23 2ALUNI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23MURTI 23MURTI 23MURTI 1 1-50  report 20 2 2ALUNI 23MURTI 23M	FI S and Excav	ation unto Rock Head Level at M.A.		33						
trick out  200 200 230CT10 30APR10 13APR10 1 -50  pshard  72 72 24MAR11 13MAR11 13MAR11 13JUL11 1 -50  pshard  72 72 24MAR11 22MAR11 13JUL11 22JUL11 1 -50  8 8 4-4JUL11 22JUL11 13JUL11 13JUL11 1 -50  8 9 6 24JUN10 21JUL10 23JUN10 11 -196  psharts  12 12 24JUR11 22JUR11 13JUL11 1 -196  psharts  13 2 25JUR11 25JUL11 13JUL11 1 -196  psharts  14 1 2 12 24JUR11 22JUR11 13JUL11 1 -196  psharts  15 2 24JUR11 22JUR11 13JUL11 1 -196  psharts  16 2 2 24JUR11 25JUL11 12JUL11 1 -196  psharts  17 2 2 24JUR11 25JUL11 13JUL11 1 -196  psharts  18 2 3 2 25JUR11 25JUL11 1 -196  psharts  19 3 6 25JUR11 25JUL11 1 -196  psharts  24 2 2 25JUR11 25JUL11 1 -196  psharts  25 2 25JUR11 25JUL11 25JUL11 1 -196  psharts  27 2 2 25JUR11 25JUL11 25JUL11 1 -196  psharts  28 2 3 25JUR11 25JUL11 25JUL11 1 -196  psharts  29 2 3 25JUR11 25JUL11 25JUL11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUL11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUL11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  29 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  20 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  20 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  20 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  20 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  20 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  20 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  21 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  22 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  23 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  24 2 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  25 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  27 2 2 25JUR11 25JUR11 25JUR11 25JUR11 1 -196  psharts  28 2 2	05L1BI2503	Install sheet piles	9	ဖ	15AUG09	21AUG09 15AUG09			14	
tr. 127 127 0ANOV08 12APR10 0ANOV08 12APR10 1 -50 after construction only)  6 6 (19MAR11 15MAR11 15MAR11 113JUL11 1 -50 after construction only)  8 6 (19MAR11 25MAR11 15MAR11 13JUL11 1 -50 after construction only)  12 12 23JUL11 25MAR11 23JUL11 13JUL11 1 -50 after construction only)  12 12 23JUL11 23JUL11 23JUL11 13JUL11 1 -50 after construction only)  12 12 23JUL11 23JUL11 23JUL11 13JUL11 1 -50 after construction only)  12 12 23JUL11 23JUL11 33JUL11 1 -196 after construction only)  13 12 24 24 21SEP11 20SEP11 20SEP11 1 -196 after construction only)  14 12 24 24 21SEP11 20SEP11 20SEP11 1 20SEP11 1 -196 after construction only)  15 2 25AUG10 22OCT10 13JUL11 1 2SAUG10 1 -196 after construction only)  15 2 25AUG10 22OCT11 21SEP11 1 -196 after construction only)  15 2 25AUG10 22OCT11 21SEP11 20SEP11 1 -196 after construction only)  15 2 25AUG10 22JUN11 23AUG10 23AUG10 1 -196 after construction only)  15 2 2 25AUG10 22AUN11 23AUG10 23AUG10 1 -196 after construction only)  16 3 4 4 4 99ECC10 23AUG	05L1BI2506	Excavation to rock head level	48	18	130CT09	03NOV09 13OCT09			90	
127   127   127   124	_	construction of Man Access Shaft								
1	0.000	Excavation/muck out/temporoary support	127	127	04NOV09	12APR10 04NOV09			00	
1	05L1BI2522	Construct base	4	4	15MAR11	18MAR11 15MAR11				ion of man access adit
yelland 75 75 28/MAR11 28/MAR11 1 -50  8 8 1 14/LU11 23/LU11 1 24/LU11 1 -50  8 8 8 1 14/LU11 23/LU11 1 22/LU11 1 1 -50  12 12 23/UL11 23/UL11 1 23/UL11 1 -50  12 12 23/UL11 23/UL11 1 23/UL11 1 -50  13 23/UL12 23/UL11 23/UL11 1 1 -196  14 12 12 23/UL12 23/UL11 23/UL11 1 1 -196  15 0 50 23/UL12 23/UL11 23/UL11 1 1 -196  16 0 50 23/UL12 23/UL11 23/UL11 1 1 -196  17 1 2 24/UL12 20/UL11 23/UL11 1 1 -196  18 13 21/UL11 20/UL11 20/UL11 1 1 -196  19 12 24/UL12 20/UL11 23/UL11 1 1 -196  19 14/UL12 20/UL11 23/UL11 1 1 -196  19 15 23/UL11 20/UL11 23/UL11 1 1 -196  10 13/APR10 20/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 13/APR10 23/UL11 23/UL11 1 1 -196  10 10/VI) 22 23/UL11 23/UL11 23/UL11 1 1 -196  10 10/VI) 22 23/UL11 23/UL11 23/UL11 1 1 -196  10 10/VI) 23/UL11 23/UL11 23/UL11 1 1 -196  10 10/VI) 23/UL11 23/UL11 23/UL11 1 1 -196  10 10/VI) 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 1 1 -196  10 14/DECTO 23/UL11 23/UL11 23/UL11 2	05L1BI2524	Set up for 37m shaft construction (wall only)	9	9	19MAR11	25MAR11 19MAR11			00	•
12 12 23JUN11 13JUL11 13JUL11 1 560  8 8 14JUL11 12JUL11 12JUL11 15JUL11 1 550  12 23JUL11 105AUG11 13JUL11 1 5GJUL1	05L1BI2526	Construct wall/stair, 25 landings @ 3 days/land	75	75	26MAR11	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			09	1
8 8 14JUL11 22JUL11 12JUL11 1 56DUG11 1 550  upport 72 72 24MAR10 23JUN10 24MAR10 23JUN10 1 -196  r bottom 50 50 24JUN10 21AUG10 23JUN10 1 -196  r bottom 50 50 24JUN10 21AUG10 22COCT10 1 -196  r bottom 50 50 24JUN10 21AUG10 22COCT10 1 -196  g 9 9 08SEP11 20SEP11 20SEP11 1 -196  p shefts 18 21OCT11 10NOV11 21AUG10 1 -196  muck out 200 23OCT10 12SEP11 20OCT11 1 -196  muck out 200 23OCT10 13APR10 30JUL10 1 -50  pport 2 2 22AUG11 23AUG11 25AUG11 1 -50  pport 2 2 22AUG11 23AUG11 25AUG11 1 -50  pport 2 2 22AUG11 23AUG11 25AUG11 1 -50  pport 2 2 22AUG11 23AUG11 25AUG11 1 -50  pport 2 2 22AUG11 23AUG11 25AUG11 1 -50  pport 2 2 22AUG11 23AUG11 23AUG10 1 -50  pport 2 2 22AUG11 33AUG10 33AUG10 23EEP10 1 -50  pport 2 2 22AUG11 33AUG10 23EEP10 1 -50  pport 2 2 22AUG11 33AUG10 23EEP10 1 -50  pport 2 3 31AUG10 23AUG11 23AUG10 23EEP10 1 -50  pport 2 3 31AUG10 23AUG11 23AUG10 23EEP10 1 -50  pport 2 2 22AUG11 33AUG10 23EEP10 33AUG10 1 -50  pport 2 3 31AUG10 23AUG11 23AUG10 33AUG10 1 -50  pport 2 3 31AUG10 23EEP10 33AUG10 33AUG10 1 -50  pport 3 3 3 30AUG10 33AUG10 33AUG10 1 -50  pport 3 3 3 30AUG10 33AUG10 33AUG10 1 -50  pport 3 3 3 30AUG10 33AUG10 33AUG10 1 -50  pport 3 3 3 30AUG10 33AUG10 33AUG10 1 -50  pport 3 3 3 30AUG10 33AUG10 33AUG10 1 -50  pport 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	05L1BI2528	Removal of gantry crane	12	12	29JUN11		13JUL11		00	
12   12 23JUL11   05AUG11   23JUL11   05AUG11   1 -50   10p heading 4m cheanth 50   50 24JUN10   21AUG10   21AUG10   21AUG10   1 -196   10p heading 4m cheanth 50   50 24JUN10   21AUG10   22AUG10   1 -196   10p shefts   18   18   21OCT11   20CT11   21SEP11   1 -196   10p shefts   18   18   21OCT11   20CT11   21DCT11   1 -196   10p shefts   18   18   21OCT11   20CT11   22AUG11   1 -196   10p shefts   18   18   21OCT11   22AUG11   22AUG11   1 -196   10p shefts   22   22AUG11   22AUG11   22AUG11   1 -196   10p shefts   22   22AUG11   22AUG11   22AUG11   22AUG11   1 -50   22AUG10	05L1BI2530	Construct wall above ground level	œ	co	14JUL11	22JUL11   14JUL11	22JUL11		00	_ `
upport         72         72         24MAR10         23JUN10         24MAR10         23JUN10         1-196         top heading         4m           r bench         50         50         24JUN10         21AUG10         22AUG10         1-196         1-196         4m           r bottom         50         50         22AUN11         23AUG10         22AUG11         1-196         1-196         4m         1-196         1-196         4m         1-196         4m         1-196         1-196         4m         1-196         1-196         4m         1-196	05L1BI2532	Construct shaft roof	12	12	23JUL11	05AUG11 23JUL11	05AUG11		09	•
And the support 72 24MAR10 23JUN10 24MAR10 1-196 and for beards 50 24JUN10 21AUG10 24JUN10 1740610 1 -196 and for beards 50 24JUN10 21AUG10 24JUN10 1740610 1 -196 and for beatness 50 50 24JUN10 21AUG10 24JUN10 1740610 1 -196 and for beatness 50 50 24JUN10 22AUG10 22AUG10 1 -196 and for beatness 50 50 24JUN10 22AUG10 22AUG10 1 -196 and for beatness 18 18 210CT11 10NOV11 1 -196 and for beatness 50 50 24 218EP11 20SEP11 20SEP11 1 -196 and for beatness 50 200 23OCT10 27JUN11 25AUG11 1 -196 and for beatness 50 50 24JUN11 25AUG11 24JUN11 1 -196 and for beatness 50 50 24JUN11 25AUG11 24JUN11 1 -196 and for beatness 50 50 24JUN11 25AUG11 24JUN11 1 -196 and for beatness 50 50 24JUN11 25AUG11 24JUN11 1 -196 and for beatness 50 50 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 24JUN11 25AUG11 24JUN11 1 -50 24JUN11 24JUN11 24JUN11 24JUN11 1 -50 24JUN11 24JUN11 24JUN11 1 -50 24JUN11 24JUN11 24JUN11 24JUN11 1 -50 24JUN11 24JUN11 24JUN11 24JUN11 1 -50 24JUN11 24JUN11 24JUN11 1 -50 24JUN11 24JUN11 24JUN11 24JUN11 1 -50 24JUN11 24JUN11 24JUN11 24JUN11 1 -50 24JUN11 24JUN1	Excavate & C	Construct Deseration Chamber						1		
ring support         72         72         24MAR10         23JUN10         24MAR10         23JUN10         1 -196         top heading 4m           ort for bench         50         50         50         24JUN10         21AUG10         22JUN10         1 -196         1 -196         4           ort for bench         50         50         23AUG10         22AUG11         20SEP11         1 -196         1 -196         4         1-196										
A drop shafts by Sa 230CT10	05L1BI2602	Probing/grout/excavate/muckout/temp.support	72	72	24MAR10	23JUN10 24MAR10				N
ation/muck out 200 230CT10 220CT10 23AUG10 22OCT10 1 -196  2	05L1BI2604	Drill/excavate/muckout/temp. support for bench	20	20	24JUN10	21AUG10 24JUN10	21AUG10		96	4.5m deep=22*4.5*9=891m3, 17.8m3/day
12 12 28ALGH1 08SEP11 20SEP11 1 -196	05L1BI2607	Drill/excavate/muckout/temp. support for bottom	20	20	23AUG10	220CT10 23AUG10			96	4.5m deep=22*4.5*9=891m3, 17.8m3/day
8 9 9 095EP11 20SEP11 10NOV11 1 -196  action/muck out 200 230CT10 27JUN11 230CT10 10NOV11 1 -196  antion/muck out 200 230CT10 27JUN11 230CT10 27JUN11 1 -196  antion/muck out 200 230CT10 27JUN11 230CT10 27JUN11 1 -196  antion/muck out 200 230CT10 27JUN11 230CT10 27JUN11 1 -196  antion/muck out 200 230CT10 27JUN11 230CT10 27JUN11 1 -196  antion/muck out 200 230CT10 27JUN11 230CT10 1 -50  antion/muck out 200 230CT10 27JUN11 230CT10 1 -50  antion/muck out 200 230CT10 27JUN11 230CT10 1 -50  antion/muck out 200 230CT10 27JUN11 230CT10 1 -50  antion/muck out 200 230CT10 27JUN11 27JUN11 1 -50  antion/muck out 200 230CT10 230CT10 230CT10 1 -50  antion/muck out 200 230CT10 230CT10 230CT10 1 -50  antion/muck out 200 230CT10 230CT10 230CT10 1 -50  antion/muck out 200 230CT10 230CT10 230CT10 1 -50  antion/muck out 200 230CT10 230CT10 230CT10 1 -50  antion/muck out 200 230CT10 230CT10 230CT10 1 -50  antion/muck out 200 230CT10 230CT10 230CT10 1 -50  antion/muck out 200 230CT10 230C	05L1BI2608	Set up for lining construction	12	12	26AUG11		08SEP11		98	-
8 drop shafts         24         24         2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2	05L1BI2610	Construct base; 3 bays	o	o	09SEP11		20SEP11		98	_
## Support Support   18   18   10   210CT11   10NOV11   1   100CT11   1   100CT11   1   100CT11   1   100CT11   1   100CT11   1   100CT11   1   100CT11   1   100CT11   1   100CT11   1   100CT11   1   1   100CT11   1   1   1   1   1   1   1   1   1	05L1BI2612	Construct walls 2 lifts; 3 bays	24	24	21SEP11		200CT11		98	
ation/muck out 200 230CT10 27JUN11 230CT10 27JUN11 1 -196 including 5 days for setup of mouldary support 50 50 28JUN11 25AUG11 25AUG11 1 -50 including 5 days for setup of mouldary support 2 2 28AUG11 25AUG11 25AUG11 1 -50 including 5 days for setup of mouldary support 2 2 28AUG10 30AUG10 28SEP10 30AUG10 1 -50 including 5 days for setup of mouldary support 2 2 28AUG10 30AUG10 28SEP10 30AUG10 30AUG10 1 -50 including 5 days for setup of mouldary support 2 2 28AUG10 28SEP10 30AUG10 28SEP10 1 -50 including 5 days for setup of mouldary support 2 2 28AUG10 28SEP10 30AUG10 20BCC10 13DEC10 1 -50 including 5 days for setup of mouldary support 2 2 2 28AUG10 28SEP10 30AUG10 20BCC10 14DEC10 20BCC10 14DEC10 20BCC10 14DEC10 20BCC10 14DEC10 20BCC10 14DEC10 20BCC10 14DEC10 28SEP10 30SEP10 1 -50 including 5 6 6 14DEC10 28SEP10 30SEP10 1 -50 including 5 6 6 09NOV10 12N	05L1BI2614	Const. crown/underpin. of air vent & drop shafts	18	18	210CT11				96	-
action/muck out         200         230CT10         27JUN11         25AUG11         1 -196         including 5 days for setup of mould and	Excavate & C	Construct Main Adit Tunnel							3.4	
ation/muck out 200 23OCT10 27JUN11 23OCT10 27JUN11 1 -196 including § days for setup of moulding and among support 50 50 28JUN11 25AUG11 1 25AUG11 1 -196 including § days for setup of moulding and among support 50 50 50 13APR10 30JUL10 13APR10 30JUL10 1 -196 including § days for setup of moulding and among support 51 22 28AUG11 1 25AUG11 1 -196 including § days for setup of moulding and among start 52 2 28AUG11 1 25AUG11 1 -196 including § days for setup of moulding and among start 52 2 28AUG10 27AUG10 1 -196 including § days for setup of moulding and among start 52 2 28AUG10 28AUG10 28AUG10 27AUG10 1 -196 including § days for setup of moulding and among start 52 2 28AUG10 28AUG10 28AUG10 27AUG10 1 -196 including § days for setup of moulding and among start 52 2 28EPP10 28AUG10 28AUG10 27AUG10 1 -196 including § days for setup of moulding and among start 52 2 28EPP10 28EPP10 28EPP10 1 -196 including § days for sight including start 52 2 28EPP10 28EPP10 28EPP10 28EPP10 1 -196 including § days for sight including start 52 2 28EPP10 28EPP10 28EPP10 28EPP10 1 -196 including start 52 2 28EPP10 28EP										
So   So   28JUN11   25AUG11   25AUG11   1   -196   including   6 days for setup of moulding   Library support   So   13APR10   30JUL10   1   -50     -50	3BL1BI2102	Probing/grout/temp. support/excavation/muck out	200	200	230CT10	27JUN11 23OCT10			-	56m @ 4m/11 days
State	3BL1BI2104	Construct permanent lining	20	20	28JUN11	25AUG11 28JUN11	25AUG11			b days for setup of mould■
Probing/goru/texcavate/muckout/temporary support   90 90 13APR10   30JUL10   1 APR10	Excavate & C	Construct Man Access Adit						i	200	
Probing/gonut/excavate/muckout/temporary support   6   6   26JaN11   01FEB11   1-50	Upper Horizon	tal Section							= ('	
Set up for 23m upper adit construction         6         6         28JaN11         01FEB11         26.0         1         -50           ction         Construction of permanent lining         2         2         22FEB11         14MAR11         02FEB11         14MAR11         01FEB11         1         -50           Probing & curtain grouting around shaft         24         2         23 JUL10         27AUG10         27AUG10         27AUG10         27AUG10         27AUG10         27AUG10         1         -50           Set up for 7.Zm raise (shaft) excavation         2         2         28AUG10         28AUG10         28AEP10         1         -50           Construct base of raise shaft mover adit excavation         4         4         09DEC10         13DEC10         20DEC11         15DEC10         25DEC10         14DEC10         25DEC10         15DEC10         25DEC10         BI2806</td> <td>Probing/gorut/excavate/muckout/temporary support</td> <td>06</td> <td>90</td> <td>13APR10</td> <td>30JUL10 13APR10</td> <td></td> <td></td> <td>20</td> <td>@ 4 m/9 day</td>	05L1BI2806	Probing/gorut/excavate/muckout/temporary support	06	90	13APR10	30JUL10 13APR10			20	@ 4 m/9 day
ction         Probing & curtain grouting around shaft         24         24         31JUL10         27AUG10         31JUL10         27AUG10         1         -50           Probing & curtain grouting around shaft         24         24         31JUL10         27AUG10         31JUL10         27AUG10         1         -50         #@0.3m/day & night           Set up for 7.2m raise (shaft) excavation         2         2         28AUG10         38AUG10         28AUG10         3AAUG10         28ABP10         1         -50         #@0.3m/day & night           Excavate/removal of rock/temporary support         4	05L1Bl2830	Set up for 23m upper adit construction	9	ω	26JAN11	01FEB11 26JAN11	01FEB11		20	
ction         Probing & curtain grouting around shaft         24         24         31JUL10         27AUG10         11JUL10         27AUG10         28AUG10         11JUL10         27AUG10         28AUG10         28AUG10         28AUG10         11JUL10         28AUG10         28AUG10         11JUL10         28AUG10         28AUG10         11JUL10         28AUG10         28AUG10         28AUG10         11JUL10         28AUG10         28AUG10         11JUL10         28AUG10         28AUG10         11JUL10         28AUG10         11JUL10         28AUG10         11JUL10         28AUG10         28AUG10         11JUL10         28AUG10         12JUL10         28AUG10         28AUG10         28A	05L1Bl2834	Construction of permanent lining	32	32	02FEB11	14MAR11 02FEB11	14MAR11		20	
Probing & curtain grouting around shaft   24   31JUL10   27AUG10   31JUL10   27AUG10   1   -50	Vertical Section	_								
Set up for 7.2m raise (shaft) excavation         2         2 28AUG10         28AUG10	05L1BI2807	Probing & curtain grouting around shaft	24	24	31JUL10	27AUG10 31JUL10	П		20	
Excavate/removal of rock/temporary support         24         31AUG10         28SEP10         31AUG10         28SEP10         1         -50           Construct base of raise shaft         4         4         09DEC10         13DEC10         13DEC10         1         -50           Set up for 9m raise stair, 7 landings @4days/landin         28         28         21DEC10         20DEC10         14DEC10         20DEC10         1         -50           Construct wall & stair, 7 landings @4days/landin         28         28         21DEC10         25JAN11         1         -50           Set up for 9m raise stair, 7 landings @4days/landin         2         2         29SEP10         25JAN11         1         -50           Set up for 9m raise stair, 7 landings @4days/landin         2         2         29SEP10         30SEP10         1         -50           Set up for 9m lower adit excavation         31         31         31         02OCT10         08NOV10         1         -50           Set up for 7m lower adit construction         6         6         09NOV10         15NOV10         15NOV10         1         -50           Construction of permanent lining for lower adit         20         20         16NOV10         08DEC10         1         -50	05L1BI2808	Set up for 7.2m raise (shaft) excavation	2	7	28AUG10	30AUG10 28AUG10	- 1	-	20	1000
Construct base of raise shaft         4         4         09DEC10         13DEC10         13DEC10         1 -50           Set up for 9m raise stairway const. (wall only)         6         6         14DEC10         20DEC10         1 -50           Zonstruct wall & stair, 7 landings @4days/landin         28         28         21DEC10         25JAN11         1 -50           Set up for 9.3m lower adit excavation         2         2         29SEP10         30SEP10         1 -50           Excavate/removal of rock/temporary support         31         31         02OCT10         08NOV10         1 -50           Set up for 7m lower adit construction         6         6         09NOV10         15NOV10         1 -50           Construction of permanent lining for lower adit         20         20         16NOV10         08DEC10         1 -50	05L1BI2810	Excavate/removal of rock/temporary support	24	24	31AUG10	28SEP10 31AUG10			20	■@ 0.3m/day & night
Set up for 9m raise stairway const. (wall only)         6         6         14DEC10         20DEC10         14DEC10         20DEC10         1 -50           Zontal Section         Set up for 9.3m lower adit excavation         2         2         21DEC10         25JAN11         21DEC10         25JAN11         1         -50           Set up for 9.3m lower adit excavation         2         2         2 9SEP10         30SEP10         1         -50           Excavate/removal of rock/temporary support         31         31         02OCT10         08NOV10         1         -50           Set up for 7m lower adit construction         6         6         09NOV10         15NOV10         15NOV10         1         -50           Construction of permanent lining for lower adit         20         20         16NOV10         08DEC10         16NOV10         1         -50	05L1BI2822	Construct base of raise shaft	4	4	09DEC10	13DEC10 09DEC10			20	
Zontal Section         Construct wall & stair, 7 landings @4days/landin         28         28 L1DEC10         25JAN11         21DEC10         25JAN11         1         -50           Zontal Section         Set up for 9.3m lower adit excavation         2         2         29SEP10         30SEP10         1         -50           Excavate/removal of rock/temporary support         31         31         02OCT10         08NOV10         1         -50           Set up for 7m lower adit construction         6         6         09NOV10         15NOV10         15NOV10         1         -50           Construction of permanent lining for lower adit         20         20         16NOV10         08DEC10         16NOV10         1         -50	05L1BI2824	Set up for 9m raise stairway const. (wall only)	9	ű	14DEC10	20DEC10 14DEC10		-	20	
Zontal Section         2         2         2 29SEP10         30SEP10         29SEP10         1-50           Set up for 9.3m lower adit excavation         31         31         02OCT10         08NOV10         1         -50           Set up for 7m lower adit construction         6         6         09NOV10         15NOV10         1         -50           Construction of permanent lining for lower adit         20         20         16NOV10         08DEC10         16NOV10         1         -50	05L1BI2826	Construct wall & stair, 7 landings @4days/landin	28	28	21DEC10				20	**
Set up for 9.3m lower adit excavation         2         2         29SEP10         30SEP10         20SEP10         1         -50           Excavate/removal of rock/temporary support         31         31         31         02OCT10         08NOV10         02OCT10         08NOV10         1         -50           Set up for 7m lower adit construction         6         6         09NOV10         15NOV10         15NOV10         1         -50           Construction of permanent lining for lower adit         20         20         16NOV10         08DEC10         16NOV10         08DEC10         1         -50	Lower Horizon	tal Section								
Excavate/removal of rock/temporary support         31         31         02OCT10         08NOV10         02OCT10         08NOV10         1 -50           Set up for 7m lower adit construction         6         6         09NOV10         15NOV10         15NOV10         1 -50           Construction of permanent lining for lower adit         20         20         16NOV10         08DEC10         1 -50	05L1BI2812	Set up for 9.3m lower adit excavation	2	2	29SEP10	30SEP10 29SEP10			50	-
Set up for 7m lower adit construction         6         6         6         6 09NOV10         15NOV10         09NOV10         15NOV10         >05L1BI2814</td> <td>Excavate/removal of rock/temporary support</td> <td>31</td> <td>31</td> <td>020CT10</td> <td>08NOV10 02OCT10</td> <td></td> <td></td> <td>20</td> <td>■@0.3m/day &amp; night</td>	05L1BI2814	Excavate/removal of rock/temporary support	31	31	020CT10	08NOV10 02OCT10			20	■@0.3m/day & night
Construction of permanent lining for lower adit 20 20 16NOV10 08DEC10 16NOV10 08DEC10 1 -50	05L1BI2816	Set up for 7m lower adit construction	9	ယ	09NOV10	15NOV10 09NOV10		-	20	
	05L1BI2818	Construction of permanent lining for lower adit	20	20	16NOV10	08DEC10 16NOV10		-	20	

Junction Between Main Tunnel & Adit Tunnel							1	
		ı	i					
Temp, support & excavation breakthrough	48	48	26AUG11	240CT11 26AUG11	240CT11	-	-127	11
Construct collar between MT & AT	48		+	19DEC11 25OCT11	19DEC11	-	-127	
Remaining Works Prior to Handover		Ä						
Finishing & reinstatement works; Portion B	36	36 0	04FEB12	16MAR12 04FEB12	16MAR12	-	-196	130
Pre-handover inspections and remedial works	30	30	18FEB12	23MAR12 18FEB12	23MAR12	-	-196	303
Contractor serve notice for Works completion	2	7 2	24MAR12	30MAR12 24MAR12	30MAR12	2	0	
SO issues completion certificate	23	21 3	31MAR12	20APR12 31MAR12	20APR12	2	0	
Landscaping works at Portion B	72	1	16DEC11	16MAR12 16DEC11	16MAR12	-	-158	
Establishment Works at Portion B	-	365 1	7MAR12	16MAR13 17MAR12	16MAR13	2 -	-196	
Install flow measurement devices at Intake I-2	12	12 0	07FEB12	20FEB12 07FEB12	20FEB12		-184	
Maintain & monitor flow monitoring	365	365 2	21FEB12	19FEB13 21FEB12	19FEB13	7	0	
Schedule of Milestones for Cost Centre No. 3bL								
3bL 1; On establishing tunnelling equipments	0	0		220CT10	220CT10	2 1,	1,165	equipment for tunnelling at Intake I-2
3bL 2; On completion of 12,5% perm. tunnel linin	0	0		18NOV10	18NOV10	2 1,	1,138	♦for Adit Tunnel at Intake I-2
3bL 3; On completion of 25% perm. tunnel lining	0	0		16DEC10	16DEC10	2 1,	1,110	◆for Adit Tunnel at Intake I-2
3bL 4; On completion of 37.5% perm. tunnel linin	0	0		15JAN11	15JAN11	2 1,	1,080	◆for Adit Tunnel at Intake I-2
3bL 5; On completion of 50% perm. tunnel lining	0	0		15FEB11	15FEB11	2 1,	1,049	◆for Adit Tunnel at Intake I-2
3bL 6; On completion of 62.5% perm. tunnel linin	0	0		15MAR11	15MAR11	2 1,	1,021	♦for Adit Tunnel at Intake I-2
3bL 7; On completion of 75% perm. tunnel lining	0	0		12APR11	12APR11	7	993	♦for Adit Tunnel at Intake I-2
3bL 8; On completion of 87.5% perm. tunnel linin	0	0		09JUL11	09JUL11	2	905	◆for Adit Tunnel at Intake I-2
3bL 9; On completion of perm. tunnel lining	0	0		25AUG11	25AUG11	2	858	♦for Adit Tunnel at Intake I-2
3bL 10; On completion of all works under this CC	0	0		19DEC11	19DEC11	2	742	◆under this Cost Centre
Schedule of Milestones for Cost Centre No. 5L								
51 1. On completion of 25% of excavation	0	0		08DEC09	08DEC09	2 1	1,483	♦below G.L except for Adit at Intake I-2
5L 2: On completion of 50% of excavation	0	0		12APR10	12APR10	2 7	1,358	♦ below G.L. except for Adit at Intake I-2
5L 3; On completion of 75% of excavation	0	0		23JUN10	23JUN10	2 1,	1,286	♦ belowe G.L. except for Adit at Intake I-2
5L 4; On completion of all excavation	0	0		220CT10	22OCT10	2 1,	1,165	♦below G.L. except for Adit Intake I-2
5L 5, On completion of drop shaft & vortex shaft	0	0		15DEC11	15DEC11	2	746	◆vortex shaft at Intake I-2
5L 6; On completion of de-aeration chamber	0	0		10NOV11	10NOV11	2	781	♦ chamber at Intake I-2
5L 7; On completion of air vent shaft	0	0		27MAR10	27MAR10	2 1,	1,374	◆shaft at Intake I-2
5L 8; On completion of man access shaft	0	0		05AUG11	05AUG11	2	878	◆shaft at Intake I-2
5L 9; On completion of man access adit	0	0		14MAR11	14MAR11	2 1,	1,022	◆adit at Intake I-2
5L 10; On completion of all works under this CC	0	0		23MAR12	23MAR12	2	647	under this Cost Centre◆
Schedule of Milestones for Cost Centre No. 8R						ă		
						Ì		
8R 1; On completion of approach channel	0	0		09MAR12	09MAR12	2	661	channel and assictated decking at Intake I-2
8R 2: On completion of trash grill							1000	C

Laj         -2008         2010         2011         2012         2013           3et         3et         3et         3et         3et	647 under this Cost Centre		◆wall at Intake I-2	◆wall at Intake I-2	69 Atraps at Intake I-2	647 under this Cost Centre							•						7					9				52				1.1	1							
Total	2	ş	2	7	2 1,069	2 6	1			-	-		-	-		7		-	-	-		2	-	<b>4-</b>	-	τ-	~	-	<u> </u>	-	-	-		-		l	-	_	-	-
WP3D	23MAR12	L	06NOV08A	26NOV08A	26JAN11	23MAR12				05NOV08A	19NOV08A		16SEP08A	06MAR09A			20SEP08A	30JUL08A	03JUL08A	10NOV08A		26APR08A	13SEP08A	21JUN08A	04JUL08A	13SEP08A	09MAR09A	15JUL08A	12SEP08A	09MAR09A	30JAN10	16NOV09	18DEC09	30JAN10			16AUG08A	28AUG08A		26NOV0RA
AD04 WP3D Finish Start	23MAR12		06NOV08A	26NOV08A	26JAN11	23MAR12				03NOV08A 05NOV08A 03NOV08A 05NOV08A	06NOV08A 19NOV08A 06NOV08A 19NOV08A		16SEP08A	06MAR09A 17SEP08A		ZeMARUSA	20SEP08A 22APR08A	30JUL08A 03JUN08A	03JUL08A 30JUN08A	10NOV08A 28OCT08A		26APR08A 01APR08A	13SEP08A 04JUN08A	21JUN08A 04JUN08A	04JUL08A 04JUL08A	13SEP08A 08SEP08A	09MAR09A 21JUN08A	15JUL08A 21JUN08A	12SEP08A 15JUL08A	09MAR09A 28FEB09A	30JAN10 12NOV09	16NOV09 12NOV09	18DEC09 15DEC09	30JAN10 20JAN10			AUG08A 16AUG08A 11AUG08A	28AUG08A 18AUG08A		
AD04 Start	0	i	0	0	0	0	i.			3 03NOV08A			0	17SEP08A		U ZEMAKUSA				280CT08A		7 01APR08A	* 04JUN08A	2 04JUN08A		6 08SEP08A	Ŋ	3 21JUN08A	3 15JUL08A	8: 28FEB09A	_	4 12NOV09	4 15DEC09	20JAN10			6 11AUG08A	20	1 29AUG08A	1 SENOVORA
Dur Dur	L	Ĭ					k				12			80		+	-	4	_	12	j	1	*98	.,	.,	u	* 214*		.,	w.	*99	7	1	10						-
Oper	0	Ĭ	0	0	0	0	i			9	12		0	80	(	o   :	40	40	9	12		7	*98	2	2	9	214*	m	ო	00	*99	4	4	10			9	-	-	-
Activity Description	8R 3; On completion of all works under this CC	Schedule of Milestones for Cost Centre No. 12R	12R 1; On completion of 50% pile retain. wall	12R 2; On completion of pile retain. wall	12R 3; On completion of boulder traps	12R 4; On completion of all works under this CC	Construction of Intake I-3	Works	Additional GI Works To Finalize Design	Erect platform/mibilization & set up GI rig	Drill 3 nos. GI holes for Intake Structures	VO#32; Replace Hoarding by Chain ∐nk Fence	Received VO-32 for replacing hoarding by CLF	Procure/prepare/install transparent hoarding		Possession of Portion C -908 of DOC	Site clearance	Haording at slope crest	Set-up wheel washing facilities	Install remote contorl CCTV as per ER 4.4.10	Tree Transplanting Works	Tree inspection & report	Tree transplant for upper parts; 8 nos.	1st stg tree pruning	2nd stg tree pruning	Final stg. tree pruning & tree uplifting	Tree transplanting at Ch250-Ch200); 20 nos.	1st stg tree pruning	2nd stg tree pruning	Final stg tree pruning & tree uplifting	Tree transplanting at Ch100-Ch0	1st stg tree pruning	2nd stg tree pruning	Final stg tree pruning & tree uplifting	H-Pile Retaining Wall for Wall A		Mobilize & set up piling rig	Drill 28 nos. grout (partially) 11 nos. piles	Piling stopped due to accessive grout loss	Piling resumed date
Q	08R1BI2R06	Schedule of	12R3BI2S02	12R3BI2S04	12R3BI2S06	12R3BI2S08	Constructio	Preliminary Works	Additional GIV	AGIC-02	AGIC-04	VO#32; Replac	VO032-I302	V0032-I304		01R1Cl310Z	01R1CI3104	01R1CI3106	01R1Cl3110	01R1Cl3118	Tree Transpi	16R7CI3202	16R7CI3204	16R7CI3206	16R7CI3208	16R7CI3210	16R7Cl3212	16R7Cl3214	16R7Cl3216	16R7Cl3218	16R7Cl3220	16R7CI3222	16R7CI3224	16R7Cl3226	H-Pile Retair	Piling Works	13R4CI3400	13R4Cl3401	13R4CI3402	13R4CI3403

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Complete all H-piles, Well A; 34Tross   70   70   18AUGOBA   21AANGBA   11AAUGBA   11A	21JAN09A 02MAR09A 02APR09A 19MAY09A	
Truct Increasing the series of the series	02MAR09A 02APR09A 19MAY09A	
Accordance   Acc	02MAR09A 02APR09A 19MAY09A	
10   10   10   10   10   10   10   10	02APR09A 19MAY09A	
truct skin wali; truct the same from the sam	19MAY09A	
truct for capping beams; 24 24 14APR00A GAUNN9 14APR0AA GAUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14APR0AB AGUNN9 14ABAABA AGUNN9 1AABAABA AGUNN9 1AABAABA AGUNN9 1AABAABA AGUNN9 1AABAABA AGUNN9 1AABAABA AGUNN9 1AABAABAA		
1   12   12   12   13   14   15   15   15   15   15   15   15	04JUN09 1	
Scavation Area         18         18         18         08SEP08A         280CT08A         17         17         17SEP08A         17         17SEP08A         17SEP0BA         17SEPDBA         17SEPDBA         17SEPDBA         17SEPDBA         17SEPDBA         17SEPDBA         17SEPDBA <th< td=""><td>18JUN09</td><td>93</td></th<>	18JUN09	93
Abea         Makea         In India         18         16         18         16         18         16         18         16         18         16         18         16         18         16         18         16         18         16         18         18         16         18		
In fails 261 no.s + 8 Test N.  Ch. 270-210  Ch. 370-210		
Ch. 270-210         Feet Sepons of Inalise Sepons of	28OCT08A	
Ch. 270-210         Ferror Forting         188EP08A         09DECOBA   188EP08A         19DECOBA   188EP08A         19DECOBA   188EP08A         19DECOBA   188EP08A         19DECOBA   188EP08A         19DECOBA   11MAY0BA   12DECOBA   11MAY0BA   12DECOBA   11MAY0BA   11	17SEP08A	
Ch. 270-210         Ch. 270-210         Ch. 270-210         Ch. 270-210         Ch. 270-210         Inelis         Ch. 270-130         Inelis         Ch. 130-0         "><td>09DEC08A</td><td></td></t<>	09DEC08A	
Inable   Chi. 130-0		
Ch.130-130         Ch.130-130         117*         117*         12DECOBA         111MAY09A         12DECOBA         111MAY09A         111MAY09	06OCT09	
Ch.130-O         Ch.130-O         117*         117*         117*         12DECOBA         11MAY09A         12DECOBA         11MAY09A         11MAY09		
Ch.130-O         Ch.130-O         Ch.130-O         In alis         267*         267*         267*         300CT09         22SEP10         1           ation         mr for soil nailing         12         12         100CT09         23OCT09         100CT09         23OCT09         1           In alis, 261 no.s + 3 Test N, planting design         100         100         24OCT09         24OCT09         25FEB10         1           avising design         0 <td>11MAY09A</td> <td></td>	11MAY09A	
ation         12         12         10OCT09         22SEP10         30OCT09         22SEP10         1           ation         Imalis; 261 no.s + 3 Test N.         100         100         24OCT09         23OCT09         10OCT09         23OCT09         1           Inalis; 261 no.s + 3 Test N.         100         100         24OCT09         25FEB10         1         1           Inalis; 261 no.s + 3 Test N.         100         100         24OCT09         25FEB10         1         1           avising design         100         0		
## Find the conting of the conting o	22SEP10	
Inalis; 261 no.s + 3 Test N,   100   100   240CT09   230CT09   1   1   1   1   1   1   1   1   1		
Inalis; 261 no.s + 3 Test N,   100   100   240CT09   25FEB10   240CT09   25FEB10   1     Inded VO#043	23OCT09	
Parising design	25FEB10	- U
y Works for Works Included VO#6043         0         0         0         0.5MAY09A         <		
Receive VO for revising design		
Procurement of lean mix concrete   12   12   06MAY09A   14MAY09A   06MAY09A   1   1   1   1   1   1   1   1   1		•
Procurement of lean mix concrete   12   12   06MAY09A   14MAY09A   4MAY0A   14MAY0A		
to Protect Retained Trees; VO #043         18         18         18         18         18MAY09A         06JUN09         15MAY09A         05JUN09         1           Setting out at site         Setting out at site         69         69         03FEB09A         28APR09A         28APR09A         28APR09A         1           Excavate & muck out manually; 50m @ 4m/day         2         2         29APR09A         30APR09A         28APR09A         30APR09A         1           Erect formwork; 70m2 @ 14m2/day         5         5         08MAY09A         09MAY09A         08MAY09A         1           Set up for conreting         Pour concrete & removal of formwork         2         2         08MAY09A         09MAY09A         1         1           Spt; VO# 043         Pour concrete & removal of formwork         1         2         2         09MAY09A         11JUN09         11JUN09         1           Spt; VO# 043         Bulk excavation for benching; 1061 @ 45m3/day         1         1         12         23MAY09         12JUN09         28JUL09         12JUN09         28JUL09         12JUN09         28JUL09         13JUN09         12JUN09         12JUN09         28JUL09         07AUG09         07AUG09         07AUG09         07AUG09         07AUG09         07AUG09 </td <td>14MAY09A</td> <td></td>	14MAY09A	
to Protect Retained Trees; VO #043  Setting out at site  Excavate & muck out manually; 50m @ 4m/day	60ND(90	
Setting out at site		
Erect formwork, 70m2 @ 14m2/day   2 2 9APR09A 30APR09A 30APR09A 1	28APR09A	•
Set up for connecting   Set	30APR09A	
S70; VC# 043         2         2         2         08MAY09A         09MAY09A         08MAY09A         1           370; VC# 043         Bulk excavation for benching;1061 @ 45m3/day         12         2         09MAY09A         11MAY09A         11MAY09A         11MAY09A         1           Fill & compaction; 39 layers @ 1 day/layer         39         39         12JUN09         28JUL09         12JUN09         28JUL09         11JUN09         1           Excavation for access road Ch. 370 to 310         4         4         29JUL09         01AUG09         11JUN09         28JUL09         1           Bulk excavation for benching; Ch. 310 to 270         5         03AUG09         07AUG09         07AUG09         1           Fill & compaction lean mix concerete; 15 layers         15         08AUG09         25AUG09         07AUG09         1	08MAY09A	
370; VO# 043         2         2         2         2         2         09MAY09A         11MAY09A	09MAY09A	
370; VO# 043         Bulk excavation for benching; 1061 @ 45m3/day         12         12         29MAY09         11JUN09         29MAY09         11JUN09         12JUN09	11MAY09A	
Bulk excavation for benching;1061 @ 45m3/day   12 29MAY09   11JUN09   29MAY09   11JUN09   11JU		
Fill & compaction; 39 layers @ 1 day/layer         39   12JUN09   28JUL09   12JUN09   28JUL09   1         28JUL09   1         1         28JUL09   1         1         28JUL09   1         1	11JUN09	
h. 270; VO #043         A 29JUL09         01AUG09         29JUL09         01AUG09         1           Excavation for access road Ch. 370 to 310         4 4 29JUL09         01AUG09         1         1           Bulk excavation for benching: Ch. 310 to 270         5 03AUG09         07AUG09         07AUG09         1           Fill & compaction lean mix concerete; 15 layers         15 08AUG09         25AUG09         25AUG09         1	28JUL09	
Excavation for access road Ch. 370 to 310         4         4         29JUL09         01AUG09         1           Bulk excavation for benching. Ch. 310 to 270         5         03AUG09         07AUG09         07AUG09         1           Fill & compaction lean mix concerete; 15 layers         15         08AUG09         25AUG09         25AUG09         1		
Bulk excavation for benching; Ch. 310 to 270         5         6         03AUG09         03AUG09         07AUG09         07AUG09         1           Fill & compaction lean mix concerete; 15 layers         15         08AUG09         25AUG09         25AUG09         1	01AUG09 1	
Fill & compaction lean mix concerete; 15 layers 15 08AUG09 25AUG09 08AUG09 25AUG09 1	07AUG09	
	25AUG09	
09R1CI3610 Temporary concrete paving & curing 16 16 26AUG09 12SEP09 12SEP09 1 1-13	12SEP09	

2013		55.0				N	- 1	X.,					V.SOY		- A		3.5		81		:0		8									33(2			.8		200				38	
2010 2011 2012	=10,513m3 @ 225m3/day							13								11			11	1)			3								150mm thick			•			50			-	**	=2 nos. pile/rig
									•	•																																
Total Float	321		-160	-160	-160			22			-79	55	-160	-160		17	17		17	17	17		-160	-157	-157	-157	-157		-160	-137	-125	-125		-160	-160	-160	-160		F	17	17	12
0			·*				-		-	-	-	-		,-							-		-	-		•			-	-		-		-	-		-			-	-	-
WP3D	10NOV09		29SEP09	09OCT09	21OCT09		11MAY09A	26NOV09			25JUN09	12NOV09	06OCT09	17MAY11		13JAN10	30JAN10		22SEP10	11NOV10	19NOV10		05AUG11	29AUG11	17SEP11	080CT11	05AUG11		28JUN11	13JUL11	27JUL11	10AUG11		14SEP11	27SEP11	120CT11	250CT11			17FEB10	24FEB10	03MAY10
WP3D	10NOV09 14SEP09		29JUL09	09OCT09 07OCT09	21OCT09 10OCT09		11MAY09A 12DEC08A	26NOV09 13NOV09	12MAY09A	16MAY09A	16MAY09A	22OCT09	30SEP09	26APR11		13JAN10   30OCT09	30JAN10 14JAN10		22SEP10 06AUG10	24SEP10	19NOV10   12NOV10		29JUN11	_	30AUG11	19SEP11	05AUG11 09JUL11		18MAY11	29JUN11		28JUL11				28SEP11	130CT11			17FEB10 01FEB10	24FEB10 18FEB10	25FEB10
AD04 Finish	10NOV08		29SEP09	09OCT08	210CT09		11MAY09	26NOV08			25JUN09	12NOV09	06OCT09	17MAY11		13JAN10	30JAN10		22SEP10	11NOV10	19NOV10		05AUG11	29AUG11	17SEP11	080CT11	05AUG1		28JUN11	13JUL11	27JUL11	10AUG11		14SEP11	27SEP11	120CT11	250CT11	i		17FEB1(	24FEB1(	D3MAY10
AD04 Start	14SEP09		29JUL09	07OCT09	100CT09		12DEC08A	13NOV09	12MAY09A	16MAY09A	16MAY09A	22OCT09	30SEP09	26APR11		300CT09	14JAN10		06AUG10	24SEP10	12NOV10		29JUN11	06AUG11	30AUG11	19SEP11	09JUL11		18MAY11	29JUN11	14JUL11	28JUL11		06AUG11	15SEP11	28SEP11	130CT11			01FEB10	18FEB10	25FEB10
Do4 WP3D Dur Dur	47		54	m	10		48	12	0	0	34	18	4	18		62	15		41	40	7		32	20	16	16	24		35	12	12	12		33	11	11	÷			12	ဖ	53
Dog Our	47		72	т	10		48	12	0	0	34	42	4	18		62	15		4	40	7		32	20	16	16	24		35	12	12	12		33	1	+	+			12	ဖ	23
Activity Description	Excavation of slope batter above access road	. 210	Excavation & soil nailing	Backfill (grade 200) & compaction	Temporary concrete paving & curing	. 130	Excavation as per conforming design	Temporary concrete paving & curing	VO#084 revising the design received	Works resumed as per VO #084	Excavate slope profile as per VO#084	Remove excavated material off site; 6000m3	Soil nailing at Ch. 198 to 210	Excavate to access road formation	Ch. 130 to Ch. 0; up to +74.5mPD	Excavation & soil nailing	Temporary concrete paving & curing	Ch. 130 to Ch. 0; below +74.5mPD	Excavate & soil nailing (+74.5 to 88.5mPD)	Excavate rock (88.5 to 63mPD; 3239m3 @ 80m3/day	Backfill (grade 200) & compaction	Road Paving; Ch. 460 to Ch. 270	Construct drainage as per VO#090; 190m @ 5m/day	Road formation; 190m @ 12m/day	Lay sub-bse and kerb; 190m @ 12m/day	Concrete paving; 190m @ 12m/day	Green slope arrangement as per VO# 095	Drainage & Road Paving; Ch. 270 to Ch. 130	Construct drainage; 140m @ 4m/day	Backfill trench & road formation; 140m @ 12m/day	Lay sub-base and kerb; 140m @12m/day	Concrete paving; 140m @ 12m/day	Drainage & Road paving: Ch. 130 to Ch. 0	Construct drainage; 130m @ 4m/day	Backfill trench & road formation; 130m @ 12m/day	Lay sub-base & kerb; 130m @12m/day	Concrete paving; 130m @ 12m/day	H-Pile Retaining Wall for Wall B		Form piling platform for Wall B	Mobilize & set up piling rig	350mm dia. pre-bored H-piles, Wall B, 98 nos.
Q	09R1CI3620	Ch. 270 to Ch. 210	09R1CI3624	09R1CI3626	09R1CI3628	Ch. 210 to Ch.	09R1CI3630	09R1CI3632	VO-084-02	VO-084-12	VO-084-22	VO-084-26	VO-084-32	VO-084-42	Ch. 130 to Ch.	09R1CI3634	09R1Cl3636	Ch. 130 to Ch.	09R1CI3638	09R1CI3640	09R1Cl3642	Drainage & R		09R1Cl3674	09R1CI3684	09R1CI3694	VO-095-02	Drainage & R	09R1Cl3644	09R1CI3646	09R1CI3648	09R1CI3654	Drainage & R	09R1Cl3704	09R1Cl3714	09R1Cl3724	09R1CI3734	H-Pile Retail	Piling Works	13R4CI3701	13R4CI3702	13R4Cl3704

Skin Wall  13R4C13705 Demobilize piling rig Skin Wall  13R4C13706 Excavate for skin wall; 48m3 13R4C13706 Hack off piles; piles 1 to 98 13R4C13710 Construct skin wall; 6 bays 13R4C13714 Construct U-channels Channel Modification Works (Dry Season) River Diversion for Underground Works 09R1C13804 Break boulders 09R1C13806 Concrete bedding for bund wall (gabion) 09R1C13810 Divert channel to south west Channel Modification Works 09R1C13816 Excavation of the stream bed & make 09R1C13816 Construct bund wall (gabion) 09R1C13816 Construct bund wall for approch channel Modification Works 09R1C13818 Construct bund wall for approch channel of the stream bed & make 09R1C13818 Construct bund wall for approch channel to south west Channel Modification Works 09R1C13818 Construct bund wall for approch channel of the Stream bed & make 09R1C13818 Construct bund wall for approch channel to Such west	Description  Demobilize piling rig  Excavate for skin wall; 48m3  Hack off piles; piles 1 to 98  Construct skin wall; 6 bays  Excavate for capping beams;  Construct Or capping beams;  Construct U-channels  Ication Works (Dry Season)  or Underground Works  Form a temporay plant access to stream  Break boulders  Concrete bedding for bund wall (gabion)  Construct bund wall (gabion)  Divert channel to south west  ation Works  Breaking of large boulders  Excavation of the stream bed & make good  Laying of rock armour		6 04MAY10 24 26MAY10 24 26MAY10 24 09JUN10 12 02JUL10 18 16JUL10 18 16JUL10 18 15JEE09A 32 05FEB09A 11 25FEB09A 0 0	10MAY10 01JUN10 23JUN10 08JUL10 15JUL10 29JUL10 05AUG10 05AUG10 05AUG10 05AUG10 05AUG10 05AUG10 05AUG10 05AUG10		1 17 17 1 17 1 17 1 17 1 1 17 1 1 1 1 1			
Skin Wall         Demobilize pili           13R4Cl3706         Excavate for s           13R4Cl3708         Hack off piles;           13R4Cl3710         Construct skin           13R4Cl3714         Construct lor g           13R4Cl3714         Construct U-d           13R4Cl3714         Construct U-d           13R4Cl3714         Construct bung           13R4Cl3714         Construct bung           13R4Cl3716         Construct bung           09R1Cl3802         Form a tempo           09R1Cl3804         Break boulder           09R1Cl3819         Construct bung           09R1Cl3810         Divert channe           Channel Modification Works         OBR1Cl3814           09R1Cl3814         Excavation of           09R1Cl3818         Construct bung	skin wall; 48m3 s; piles 1 to 98 capping beams; capping beams; channels orks (Dry Season) und Works oray plant access to stream oray plant access to stream ord wall (gabion) el to south west arge boulders of the stream bed & make good sk armour	6 1 2 2 2 2 3 0 0 5 2 5 7 3 5 6 1 4 5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9							
Skin Wall         Excavate for s           13R4Cl3706         Excavate for s           13R4Cl3710         Construct skin           13R4Cl3714         Construct skin           13R4Cl3714         Construct U-of           13R4Cl3714         Construct U-of           13R4Cl3716         Construct U-of           Channel Modification Works         O9R1Cl3802           09R1Cl3802         Form a tempo           09R1Cl3806         Concrete bed           09R1Cl3806         Construct bun           09R1Cl3810         Divert channe           Channel Modification Works         O9R1Cl3814           09R1Cl3814         Excavation of of           09R1Cl3818         Construct bun           09R1Cl3818         Construct channe           09R1Cl3818         Construct	skin wall; 48m3 s; piles 1 to 98 in wall; 6 bays capping beams; capping beams; channels orks (Dry Season) und Works oray plant access to stream oray plant access to stream oray plant access to stream arg for bund wall (gabion) el to south west arge boulders if the stream bed & make good sk armour	18 1 1 2 2 4 7 8 8 9 0 0 7 5 7 7 7 8 8 9 0 0 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7						n 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
13R4Cl3706         Excavate for s           13R4Cl3718         Hack off piles;           13R4Cl3712         Excavate for c           13R4Cl3714         Construct skin           13R4Cl3714         Construct U-c           13R4Cl3714         Construct U-c           Channel Modification Wc         River Diversion for Undergrow           09R1Cl3802         Form a tempo           09R1Cl3804         Break boulder           09R1Cl3806         Construct bun           09R1Cl3819         Construct bun           09R1Cl3819         Divert channe           Channel Modification Works         OBR1Cl3814           09R1Cl3814         Excavation of lat           09R1Cl3818         Construct bun           09R1Cl3819         Divert channe	skin wall; 48m3 s; piles 1 to 98 In wall; 6 bays capping beams; capping beams; channels  orks (Dry Season)  und Works oray plant access to stream oray plant access to stream oray plant access to stream sirs  ding for bund wall (gabion) and wall (gabion) el to south west arge boulders if the stream bed & make good sk armour	84 24 24 30 0 0 25 1 1 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3						n 11 11 11 11 11 11 11 11 11 11 11 11 11	
13R4Cl3708         Hack off piles;           13R4Cl3710         Construct skin           13R4Cl3712         Excavate for C           13R4Cl3714         Construct for G           13R4Cl3714         Construct U-ch           Chamnel Modification Wc         River Diversion for Undergrow           09R1Cl3802         Form a tempo           09R1Cl3804         Break boulder           09R1Cl3806         Concrete bed           09R1Cl3819         Construct bun           09R1Cl3819         Divert channe           Channel Modification Works         OBR1Cl3814           09R1Cl3814         Excavation of Iai           09R1Cl3816         Laying of rock           09R1Cl3818         Construct bun           09R1Cl3818         Construct channe           Excavation for AVS/VS/I           Open Excavation for Underging	in wall; 6 bays capping beams; capping beams; channels  ouks (Dry Season)  ound Works  oray plant access to stream oray plant access to stream affing for bund wall (gabion) and wall (gabion) el to south west arge boulders if the stream bed & make good k armour	24 24 30 0 0 25 1 2 3 3 3 6 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9						n " n " n " n " n " n " n " n " n " n "	
13R4Cl3710 Construct skin 13R4Cl3712 Excavate for C 13R4Cl3714 Construct for C 13R4Cl3714 Construct U-c  Channel Modification Wo River Diversion for Undergrow 09R1Cl3802 Form a tempo 09R1Cl3804 Break boulder 09R1Cl3809 Concrete bed 09R1Cl3819 Construct bun 09R1Cl3812 Breaking of Ial 09R1Cl3814 Excavation of 09R1Cl3814 Construct bun 09R1Cl3818 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3818 Construct bun 09R1Cl3818 Construct bun 09R1Cl3818 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3819 Construct bun 09R1Cl3810 C	in wall; 6 bays capping beams; capping beams; channels  orks (Dry Season)  wand Works oray plant access to stream afring for bund wall (gabion) and wall (gabion) el to south west arge boulders if the stream bed & make good k armour	24 24 30 0 52 24 30 0 54 25 25 25 25 25 25 25 25 25 25 25 25 25						n B	
13R4Cl3712 Excavate for c 13R4Cl3714 Construct for c 13R4Cl3716 Construct U-or Channel Modification Wo River Diversion for Undergrou 09R1Cl3802 Form a tempo 09R1Cl3804 Break boulder 09R1Cl3806 Concrete bed 09R1Cl3806 Construct bun 09R1Cl3810 Divert channe Channel Modification Works 09R1Cl3812 Breaking of lan 09R1Cl3814 Excavation of opert channe 09R1Cl3818 Construct bun 09R1Cl3818 Construct bun 09R1Cl3818 Divert channe 09R1Cl3818 Construct bun 09R1Cl3818 Construct bun 09R1Cl3818 Divert channe Excavation for AVS/VSII	capping beams; capping beams; channels  orks (Dry Season)  oray plant access to stream  oray plant access to stream  ding for bund wall (gabion)  el to south west  arge boulders  if the stream bed & make good  k armour	12 14 18 80 0 85 14 17 17 17 18 80 0 8 17 17 17 17 17 17 17 17 17 17 17 17 17						n B D	
13R4C 3714   Construct for case and construct of case and case a	capping beams; channels  orks (Dry Season)  vand Works  oray plant access to stream  oray plant access to stream  ding for bund wall (gabion)  el to south west  arge boulders  if the stream bed & make good  k armour	18 80 0 22 11 13 80 0 24 24 30 0 5 24 24 30 0 5 24 24 30 0 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6						n B	
Construct U-cr Channel Modification Wc River Diversion for Undergrot. 09R1Cl3802 Form a tempol 09R1Cl3804 Break boulden 09R1Cl3806 Concrete bedr 09R1Cl3810 Divert channe Channel Modification Works. 09R1Cl3810 Divert channel Channel Modification Works. 09R1Cl3812 Breaking of laying of laying of laying of laying of rock 09R1Cl3818 Construct burn 09R1Cl3818 Construct burn 09R1Cl3820 Divert channel Channel	channels  orks (Dry Season)  vund Works  oray plant access to stream  ars  dding for bund wall (gabion)  nd wall (gabion)  el to south west  arge boulders  if the stream bed & make good  k armour	18 60 62 74 75 75 75 75 75 75 75 75 75 75 75 75 75						a B	
Channel Modification Wo River Diversion for Undergrot 09R1Cl3802 Form a tempo 09R1Cl3804 Break boulden 09R1Cl3806 Concrete bedc 09R1Cl3810 Construct bun 09R1Cl3810 Divert channe Channel Modification Works 09R1Cl3812 Breaking of Iai 09R1Cl3814 Excavation of 09R1Cl3818 Construct bun 09R1Cl3818 Construct bun 09R1Cl3818 Construct bun 09R1Cl3820 Divert channe Excavation for AVS/VS/I	orks (Dry Season)  und Works  oray plant access to stream  sirs  dding for bund wall (gabion)  nd wall (gabion)  el to south west  arge boulders  if the stream bed & make good  k armour	0 22 1 33 0 0 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3							
River Diversion for Undergrou           09R1Cl3802         Form a tempo           09R1Cl3804         Break boulder           09R1Cl3806         Concrete bed           09R1Cl3808         Construct bun           09R1Cl3810         Divert channe           Channel Modification Works         Divert channe           09R1Cl3812         Breaking of Iai           09R1Cl3814         Excavation of O9R1Cl3816           09R1Cl3818         Construct bun           09R1Cl3818         Construct bun           09R1Cl3820         Divert channe           Excavation for AVS/VS/I           Open Excavation for Undergrand           Open Excavation for Undergrand	vund Works  oray plant access to stream  ars  ding for bund wall (gabion)  nd wall (gabion)  el to south west  arge boulders  f the stream bed & make good  k armour	0 0 22 1 2 3 0 0 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7							
09R1Cl3802         Form a tempor           09R1Cl3804         Break boulden           09R1Cl3806         Concrete bed           09R1Cl3808         Construct bun           09R1Cl3810         Divert channe           Channel Modification Works         Breaking of lai           09R1Cl3812         Breaking of lai           09R1Cl3814         Excavation of           09R1Cl3816         Laying of rock           09R1Cl3818         Construct bun           09R1Cl3818         Divert channe           Excavation for AVS/VS/I           Open Excavation for Undergrand           Open Excavation for Undergrand	oray plant access to stream srs dding for bund wall (gabion) nd wall (gabion) el to south west arge boulders if the stream bed & make good sk armour	60 82 32 32 33 32 30 0 22 4 5 2 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6							
09R1Cl3804         Break boulder           09R1Cl3806         Concrete bed           09R1Cl3808         Construct bun           09R1Cl3810         Divert channel           Channel Modification Works         Breaking of lat           09R1Cl3812         Breaking of lat           09R1Cl3814         Excavation of           09R1Cl3816         Laying of rock           09R1Cl3818         Construct bun           09R1Cl3820         Divert channe           Excavation for AVS/VS/I           Open Excavation for Undergrammed Average           Open Excavation for Undergrammed Average	dding for bund wall (gabion)  Id wall (gabion)  If to south west  arge boulders  If the stream bed & make good  k armour	22 2 30 0 22 24 24 24 24							
09R1Cl3806         Concrete bedd           09R1Cl3808         Construct bun           09R1Cl3810         Divert channel           Channel Modification Works         Breaking of lar           09R1Cl3812         Breaking of lar           09R1Cl3814         Excavation of           09R1Cl3816         Laying of rock           09R1Cl3818         Construct bun           09R1Cl3820         Divert channe           Excavation for AVS/VS/I           Open Excavation for Undergrammed Average           Open Excavation for Undergrammed Average	dding for bund wall (gabion) and wall (gabion) el to south west arge boulders if the stream bed & make good k armour	22 0 0 22 23							
09R1Cl3808 Construct bun 09R1Cl3810 Divert channel Channel Modification Works 09R1Cl3812 Breaking of lar 09R1Cl3814 Excavation of construct bun 09R1Cl3818 Construct bun 09R1Cl3820 Divert channe Excavation for AVS/VS/I	nd wall (gabion) el to south west arge boulders if the stream bed & make good	8 2 2 3					1 5 5 5 5 1		
Channel Modification Works Channel Modification Works OBR1CI3812 Breaking of lar OBR1CI3814 Excavation of OBR1CI3816 Laying of rock OBR1CI3818 Construct bun OBR1CI3820 Divert channe Excavation for AVS/VS/I	el to south west arge boulders if the stream bed & make good	0 0 27 72 3	0	30APR09A 05DEC09 02NOV08 06JAN10 07DEC09				n u o	
Channel Modification Works  09R1Cl3812 Breaking of lar  09R1Cl3814 Excavation of  09R1Cl3816 Laying of rock  09R1Cl3820 Divert channe  Excavation for AVS/VS/I  Open Excavation for Undergr	arge boulders of the stream bed & make good k armour	30 24 27		06JAN10 07DEC09				n u .0	
09R1Cl3812 Breaking of lar 09R1Cl3814 Excavation of 09R1Cl3816 Laying of rock 09R1Cl3818 Construct bun 09R1Cl3820 Divert channe Excavation for AVS/VS/I	arge boulders if the stream bed & make good k armour	30		05DEC09 02NOV08 06JAN10 07DEC09				n <sup>B</sup>	
09R1Cl3816 Excavation of 09R1Cl3816 Laying of rock 09R1Cl3818 Construct burn 09R1Cl3820 Divert channe Excavation for AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of AVS/VS/I Open Excavation for Undergrading of Excavation	if the stream bed & make good k armour	24	30 02NOV09*					u n	
09R1Cl3816 Laying of rock 09R1Cl3818 Construct bun 09R1Cl3820 Divert channe Excavation for AVS/VS/I Open Excavation for Undergr	k armour	24	24 07DEC09	_	ľ				
O9R1CI3818 Construct bun o9R1CI3820 Divert channel Excavation for AVS/VS/I Open Excavation for Undergrad AVISION OF AVENTS OF AVISIONS (MARITICAL CHAIR OF AVISIONS OF AVISION		i	24 07JAN10	03FEB10 07JAN10	03FEB10				
Excavation for AVS/VS/I Open Excavation for Undergr	Construct bund wall for approach channel const.	24	24 04FEB10	06MAR10 04FEB10	06MAR10	1 21		128	
Open Excavation for AVS/VS/E	Divert channel to south west	0	0	06MAR10	06MAR10	1 21		•	
Open Excavation for Undergr	DC/MAS/MAA								× ,
rilling oriliday.	round Structures								300
	Mobilize drilling rig, backhoes	-	1 300CT09	300CT09 300CT09	9 300CT09	1 -160			
06L1Cl3908 Excavate/muc	Excavate/mucking out/temporary support	200	200 31OCT09	07JUL10 31OCT09	9 07JUL10	1 -160		6000m3, 30m3/day = 200	500
Excavation & Construction of Main Adit	ion of Main Adit								200
3CL1Cl3102 Excavation/m	Excavation/mucking out/temporary support	40	40 08JUL10	23AUG10 08JUL10	23AUG10	1 -134		■10m, @0.3m/day	
3CL1Cl3104 Construction o	Construction of permanent lining	24	24 24AUG10	20SEP10 24AUG10	0   20SEP10	1 -134		18	
Construction of Man Access Adit (MAA)	cess Adit (MAA)								
06L1Cl3112 Cast invert; 1 bay	1 bay	7		22SEP10 15SEP10					
06L1Cl3114 Cast walls		12		08OCT10 24SEP10					55
06L1Cl3116 Cast crown		12	12 09OCT10	230CT10 090CT10	0 230CT10	1 -160			
Construction of Man Access Shaft (MAS)	cess Shaft (MAS)					I			
		100					XS.		
06L1Cl3122 Cast base		m		- 1					
	vorks	ဖ		_					
	Construct wall/stair, 14 landings @ 6 days/land.	28				7	(0)	4 days/ landing==22m & 14 landings	
06L1Cl3128 Construct wall	Construct wall above ground level	ω	6 31MAR11	07APR11 31MAR11	1 07APR11	6-			
06L1Cl3129 Construct shaft roof	aft roof	12	12 08APR11	21APR11 08APR11	1 21APR11	1 -9		•	

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O)	Activity Description	D04 WP3D Dur Dur	MP3D Dur	AD04 Start	AD04 WP3D. Finish Start	D WP3D t Finish	•	Total 2008 Float	2009 2010 2011 2012 2013
Construction	Construction of Deaerarion Chamber (DC)							N	
06L1Cl3132	Construct base	თ	6	250CT10	03NOV10 25OCT10	10 03NOV10	-	-160	
06L1Cl3134	Construct walls 2 lifts	12	12	04NOV10	17NOV10 04NOV10	17NOV10	-	-160	
06L1Cl3136	Const. crown/underpin of air vent & drop shafts	18	18	18NOV10	08DEC10 18NOV10	10 08DEC10	-	-160	1000
Construction	Construction of Vortex Shaft (VS)								
06L1Cl3142	Set up formworks	9	ω	17DEC10	23DEC10 17DEC10	10 23DEC10	-	-160	
06L1Cl3144	Construction of drop shaft; 4m high	9	9	24DEC10			-	160	@4m/4days
06L1CI3146	Construction of vortex structure	24	24	04JAN11	31JAN11 04JAN11		-	-160	
06L1Cl3148	Construct remaining of the vortex	18	18	31MAR11	21APR11 31MAR11	11 21APR11	1	-160	
Construction	Construction of Air Vent Shaft Shaft (AVS)	Ĭ	H						
06L1Cl3152	Set up formworks	9	φ	01FEB11	10FEB11 01FEB11	1 10FEB11	٦	-160	_
06L1Cl3514	Cast 15m high circular wall	15	15	11FEB11	28FEB11 11FEB11	1 28FEB11	-	-160	-
06L1Cl3516	Construct upstand wall	12	12	01MAR11	14MAR11 01MAR11	11 14MAR11	-	-160	
Backfill Arou	Backfill Around Structure								
06L1Cl3162	Granular fill up to +54mPD; 623m3	7	7	09DEC10	16DEC10 09DEC10	16DEC10	-	-160	
06L1Cl3164	Granular fill above +54mPD; 1400m3	41	4	15MAR11	30MAR11 15MAR11	11 30MAR11	-	-160	
Construction							i.		
09R1Cl3172	Excavation for Approach Channel	9	9	01NOV10*	12JAN11 01NOV10*	10* 12JAN11	-	00	1
09R1CI3174	Construction of Approach Channel; upstream	82	82	20DEC10				80	1
09R1Cl3176	Construction of boulder trap; 7 nos.	24	24	01NOV11*	28NOV11 01NOV11*	11* 28NOV11	-	-165	
09R1Cl3177	Construction of Approach Channel; downstream	40	40	01NOV11	16DEC11 01NOV11	11 16DEC11	-	-165	10
09R1Cl3178	Construction of trash grill	12	12	17DEC11	04JAN12 17DEC11	11 04JAN12	-	-165	
09R1Cl3179	Removal of concrete bolck bund	9	9	05JAN12	11JAN12 05JAN12	2 11JAN12	-	-165	
Junction Be	Junction Between Main Tunnel & Adit Tunnel								
3CL1Cl3106	Temp. support & excavation breakthrough	48	48	19JUL11	12SEP11 19JUL11	1 12SEP11	-	-94	
3CL1Cl3108	Construct collar between MT & AT	48	48	14SEP11	10NOV11 14SEP11	11 10NOV11	۳-	-94	
Remaining V	Works Prior to Handover to Client								
09R1CI3142	Finishing & reinstatement works; Portion C	36	36	10DEC11	28JAN12 10DEC11	11 28JAN12	۳	-155	
09R1CI3143	Pre-handover inspections and remedial works	30	30	28DEC11	04FEB12 28DEC11	11 04FEB12	τ.	-155	
09R1CI3144	Contractor serve notice for Works completion	7	7	05FEB12	11FEB12 05FEB12	2 11FEB12	7	299	
09R1Cl3146	SO issues completion certificate	21	21	12FEB12	03MAR12 12FEB12	2 03MAR12	2	299	
16R7CI3142	Landscaping works at Portion C	120	120	31AUG11	28JAN12 31AUG11		-	-117	
16R7CI3144	Establishment Works at Portion C	365	365	29JAN12	27JAN13 29JAN12	2 27JAN13	2	-148	
3DL1Cl3141	Install flow measurement devices at Intake I-3	12	12	12JAN12	28JAN12 12JAN12	2 28JAN12	<b>T</b>	-165	
					Sheet 47 of 58				

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Page

		(		Sheet 48 of 58			(		
at II land 1-2		7	18DECU8A	18DECU8A		٥	0	13R 6; On completion of 30% piles by number	13R4Cl3S06
• at Intake I-3		2	13DEC08A	13DEC08A		0	0	13R 5; On completion of 20% piles by number	13R4Cl3S05
◆at Inake I-3		2	05DEC08A	05DEC08A		0	0	13R 4; On completion of 10% piles by number	13R4Cl3S04
◆at Intake I-3	1,195	7	22SEP10	22SEP10		0	0	13R 3; On completion of all soil naing works	13R4CI3S03
◆at Intake I-3	1,404	1	25FEB10	25FEB10		0	0	13R 2; On completion of 60% soil nailing	13R4Cl3S02
◆at intake I-3	1.553	2	29SEP09	29SEP09		0	0	13B 1: On completion of 30% soil nailing	13B4CI3S01
	Y	į				ì	i	Schedule of Milestones for Cost Centre No. 13R	Schedule of
◆under this Cost Centre	695	2	04FEB12	04FEB12		0	0	9R 9; On completion of all works under this CC	09R1CI3R18
◆at Intake I-3	726	7	04JAN12	04JAN12		0	0	9R 8; On completion of trash grill	09R1CI3R16
Channel and associated decking at	1,005		31MAR11	31MAR11		٥	0	9R 7; On completion of approach channel	09R1CI3R14
◆channel at Intake I-3	1,042		22FEB11	22FEB11		0	0	9R 6; On completion of 50% of approach channel	09R1CI3R12
◆at G.L. at Intake I-3	1,083		12JAN11	12JAN11		0	0	9R 5; On completion of excavation at G.L.	09R1CI3R10
◆at Intake I-3	1,447		13JAN10	13JAN10		0	0	9R 4; On completion of 75% of excavation at G.L	09R1CI3R08
◆at Intake I-3	1,612		01AUG09	01AUG09		0	0	9R 3; On completion of 50% of excavation at G.L.	09R1CI3R06
◆at Intake I-3	1,663		11JUN09	11JUN09		0	0	9R 2; On completion of 25% of excavation at G.L.	09R1CI3R04
♦at Intake I-3	797		250CT11	250CT11		0	0	9R 1; On completion of access road	09R1CI3R02
						١.			Concorne
								Schooling of Milostone for Cost Contro No OR	Cabadalland
◆under this Cost Centre	984	2	21APR11	21APR11		0	0	6L 8; On completion of all works under this CC	06L1CI3M18
◆adit at Intake I-3	1,164		23OCT10	230CT10		0	0	6L 7; On completion of man access adit	06L1CI3M16
♦shaft at Intake I-3	984	2	21APR11	21APR11		0	0	6L 6; On completion of man access shaft	06L1CI3M14
◆at Intake I-3	1,022	2	14MAR11	14MAR11		0	0	6L 5: On completion of vent shaft	06L1CI3M12
♦chamber at Intake I-3	1,118	2	08DEC10	08DEC10		0	О	6L 4; On completion of de-aeration chamber	06L1CI3M10
◆at Intake I-3	984	7	21APR11	21APR11		0	0	6L 3; On completion of vortex shaft	06L1CI3M08
◆belowe G.L. escept for Adit Tunnel at Intake	1,272	2	07JUL10	07JUL10		0	0	6L 2; On completion of excavation works	06L1CI3M04
♦below G.L. except for Adit Tunnel at Intake I-3	1,403	2	26FEB10	26FEB10		0	0	6L 1; On completion of 50% of excavation	06L1CI3M02
		1						Schedule of Milestones for Cost Centre No. 6L	Schedule of
◆under this Cost Centre	781	2	10NOV11	10NOV11		٥	0	3cL 10; On completion of all works under this CC	3CL1CI3A20
◆Adit Tunnel at Intake I-3	781	2	10NOV11	10NOV11		0	0	3cL 9; On completion of perm. tunnel lining	3CL1Cl3A18
◆Adit Tunnel at Intake I-3	1,197	2	20SEP10	20SEP10		0	O	3cL 8; On completion of 87.5% perm. tunnel linin	3CL1Cl3A16
◆Adit Tunnel at Intake I-3	1,209		08SEP10	08SEP10		0	0	3cL 7; On completion of 75% perm, tunnel lining	3CL1Cl3A14
♦ Adit Tunnel at Intake I-3	1,218	5	30AUG10	30AUG10		0	0	3cL 6; On completion of 62.5% perm. tunnel linin	3CL1Cl3A12
♦ Adit Tunnel at Intake I-3	1,228	5	20AUG10	20AUG10		0	0	3cL 5; On completion of 50% perm. tunnel lining	3CL1Cl3A10
♦ Adit Tunnel at Intake I-3	1,237	5	11AUG10	11AUG10		0	0	3cL 4; On completion of 37.5 perm. tunnel lining	3CL1CI3A08
♦ Adit Tunnel at Intake I-3	1,246	2	02AUG10	02AUG10		0	0	3cL 3; On completion of 25% perm. tunnel lining	3CL1Cl3A06
◆Adit Tunnel at Intake I-3	1,256	5	23JUL10	23JUL10		0	0	3cL 2; On completion of 12.5% perm. tunnel linin	3CL1Cl3A04
♦euipment for tunnelling at Intake I-3	1,265	5	14JUL10	14JUL10		0	0	3cL 1; On establishing tunnelling equipments	3CL1Cl3A02
						Н			
						H		Schedule of Milestones for Cost Centre No. 3cL	Schedule of
	-148	2	27JAN13	27JAN13   29JAN12	29JAN12	365	365	Maintain & monitor flow monitoring	3DL1Cl3143
	Float	100	Finish			Dur	Dur	Description	)
2008 2010 2011 2012 2013	Total		WP3D			AD04 WP3D	ADD4	Activity	<b>GI</b>

	Description	ano)	3	Cielly.								
13R4CI3S07	13R 7; On completion of 40% piles by number	0	0		23DEC08A	23DEC08A	2		♦at Inta	take I-3		
13R4Cl3S08	13R 8; On completion of 50% piles by number	0	0		02JAN09A	02JAN09A	2		♦at Inta	take I-3		
13R4CI3S09	13R 9; On completion of 60% piles by number	0	0		DOJANOSA	09JAN09A	2		◆at Inta	ntake I-3		
13R4Cl3S10	13R 10; On completion of 70% piles by number	0	0		16JAN09A	16JAN09A	2		♦at mt	ntake I-3		
13R4Cl3S11	13R 11; On completion of 80% piles by number	0	0		21JAN09A	21JAN09A	2		♦at Int	ntake I-3		
13R4CI3S12	13R 12; On completion of 90% piles by number	0	0		17MAR10	17MAR10	2 1,	1,384		♦at Intake I-3		
13R4Cl3S13	13R 13; On completion of all piling works	0	0		03MAY10	03MAY10	2 1,	1,337		♦at Intake I-3		
13R4CI3S14	13R 14; On completion of boulder traps	0	0		28NOV11	28NOV11	2	763			traps at Intake I-3	<b>m</b>
13R4Cl3S15	13R 15; On completion of all work under this CC	0	0		28NOV11	28NOV11	2	763			under this Cost Centre	entre
nstructio	Construction of Outfall 0-1											
Preliminary Works	Vorks											
# 06: Trans	VO # 06: Transperant Hoarding at Outfall											
01R1D00106	Receive VO6 for transperant hoarding	0	o		16APR08A	16APR08A	-		•			
01R1D00108	Procurement for transperent hoarding	21	21	17APR08A	20MAY08A 17APR08A	ZOMAYOBA	-		11			
01R1D00110	Erect hoarding	18	8	21APR08A	02JUL08A 21APR08A	02JUL08A	_		n			
#16; Chain	VO #16; Chain Link Fence at 0-1											
V01602	Issue VO16 for chain link fence	0	0		02JUL08A	02JUL08A	-					
V01612	Preparation works for chain link fence	-	T	03JUL08A	18AUG08A 03JUL08A	18AUG08A	S.		(1			Ī
V01622	Erect chain link fence; 460m	38	38	19AUG08A	19SEP08A 19AUG08A	19SEP08A	· -		n			
Temporary CLP	P Power Supply for TBM Operation											
01R1DCLP02	Application/approval for temp. CLP Power Supply	200	200	07MAR08A	01AUG08A 07MAR08A	, 01AUG08A	2	fi				
01R1DCLP14	Appoint sub-contractor for design & build TX Rm	67	29	14JUL08A	07NOV08A 14JUL08A	07NOV08A	<b>.</b>		11		900	
01R1DCLP24	Design for transformer room	24	24	08NOV08A	11MAR09A 08NOV08A		-				98Å	Ī
01R1DCLP34	Constuct transformer room	9	9	12MAR09A			<b>3</b> 77		II.			
01R1DCLP44	CLP inspection & defect rectification	14	14	15MAY09A	10JUN09 15MAY09A	- 1	· .	-181	4			
01R1DCLP54	CLP cabling to TX room & commissioning	32	32	11JUN09	18JUL09 11JUN09	18JUL09		-181				
01R1DCLP74	CLPE cabling from TX room to 24mPD platform	18	8	19SEP09	120CT09 19SEP09	120CT09	-	-165				
VO#25; Revised	ed Fencig Details at O-1 Next to GVT											
V025-02	Receive VO16 for revised details next to GVT	0	0		17SEP08A		<del>7</del> 0					Ī
V025-12	Preparation works	124	24	22JAN09A	07FEB09A 22JAN09A							
V025-22	Erect proposed transparent hoarding	4	4	09FEB09A	O2MAR09A 09FEB09A	02MAR09A		i	-follo	owing transplanting of T160/T293/T140	0/T293/T140	
V055-02	Receive VO#55 in lieu of VO#25	0	0		21JAN09A	21JAN09A			<b>•</b>			
01R1DO0102	Obtain TTA (ingress & egress) approval	0	0		18APR08A		7		•			Ī
01R1D00103	Implment TTA for diverting footpath	-	•	19APR08A	19APR08A 19APR08A		-					
01R1D00104	Obtain excavation permit	0	0		29MAY08A	-	2		•			
01R1D00112	Erect catch fencing	10		26MAY08A		- 1	-		0			
01R1D00114	Site establishment	30	30	21APR08A	15JUL08A 21APR08A	15JUL08A	-	מ	faci Re-align footpath,	tpath, erect hoarding/catchfence	chfence,	
01R1D00116	Site clearance	30	30	21APR08A			-		1			
01R1D00118	Install remote contorl CCTV as per ER 4.4.10	12	12	280CT08A	10NOV08A 28OCT08A	10NOV08A	÷	Ī	•			
0770007007	Transfer of motions over the	1		ASSABASA	ACCUMENT ACCUMENTAL ACCUMENTAL ACCUMENTAL	ACCAMACO	,		-			

2	10AUG08A 2 2 24DEC08A 1 1 8JUL08A 1 1 8JUL08A 1 1 25OCT08A 1 1 27OCT08A 1 1 27OCT08A 1 1 24DEC08A 1 1 24DEC08A 1 1 24DEC08A 1 1 2NOV08A 1 1 6DEC08A 1 1 2AUG09 1 -184 06JAN09A 1 1 17EB09A 1 1 17EB09A 1 1 17FEB09A 1	2
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2012 2013						Vday													183		3		(0)																		33,	No.	
2006 2010 2011		11	1	I	I	soil 450m3/day & rock 185m3/day			•		-		•	-		1	•		•		•				•	•							11				_				130	18	
2008																																	7 11			0.70							10
Float	-219		-219	-219	-219	-219	-219	-219	-219		-212	-219	-219	-217		-181	-172	-172	-172	-172	-172	-181		-219	-219	-219		-181	-157	-157	-207		-159			-181	-181		-120			-195	-195
	*	A .	-	_	-	***	***	-	•		-	~	~	***		~		_	***	-	-	-		_		_		-	-	-			-	-	-	*			-		•	•	·-
WP3D	13AUG09	27MAY09A	17AUG09	24AUG09	04SEP09	. 08OCT09	16SEP09	21SEP09	05OCT09		28SEP09	22DEC09	22DEC09	29DEC09		20AUG09	*e0NUL90	20JUN09	20JUN09	08JUL09	08JUL09	20AUG09		22DEC09	31DEC09			29AUG09	10SEP09	11SEP09	24APR12		04AUG09	12SEP09	28OCT09	11NOV09	14NOV09		10AUG09	08OCT09	300CT09	24FEB10	27FEB10
WP3D	13AUG09 20APR09A	27MAY09A 21APR09A	11MAY09A	21MAY09A	12MAY09A	27MAY09A	16SEP09 05SEP09	02SEP09	22SEP09		18SEP09	22DEC09 09OCT09	22DEC09 09DEC09	29DEC09 23DEC09		60NUL80		90NUL80		22JUN09		20JUL09		22DEC09 16DEC09	31DEC09 16DEC09	02JAN10		29AUG09 21AUG09	10SEP09 08SEP09	11SEP09	24APR12 11APR12		04AUG09 18JUN09*	12SEP09 31AUG09	14SEP09	290CT09	14NOV09 12NOV09		10AUG09 22JUN09*	23SEP09		27JAN10	25FEB10
AD04 Fluish	13AUG09	27MAY09A	17AUG09	24AUG09	04SEP09	08OCT09	16SEP09	21SEP09 02SEP09	05OCT09 22SEP09		28SEP09	22DEC09	22DEC09	29DEC09		20AUG09 08JUN09	.60NN090	20JUN09	20JUN09	08JUL09	08JUL09	20AUG09		22DEC09	31DEC09			29AUG09	10SEP09	11SEP09	24APR12		04AUG09	12SEP09	28OCT09	11NOV09	14NOV09		10AUG09	08OCT09	300CT09	24FEB10	27FEB10
AD04 Start	20APR09A	21APR09A	11MAY09A	21MAY09A	12MAY09A	27MAY09A	05SEP09	02SEP09	22SEP09		18SEP09	09OCT09	09DEC09	23DEC09		60NUL80		08JUN09		22JUN09		2010109		16DEC09	16DEC09	02JAN10		21AUG09	08SEP09	11SEP09	11APR12		18JUN09*	31AUG09	14SEP09	290CT09	12NOV09		22JUN09*	23SEP09	09OCT09	27JAN10	25FEB10
DO4 WP3D Jur Dur	43	30	22	12	5	95	5	17	10		ത	63	12	4		63*	0	12	0	14	0	28		9	12	0		œ	က	-	12		40	12	38	12	m		42	12	18	22	m
00d	43	30	22	12	5	98	10	17	10		6	63	12	4		63*	0	12	0	14	0	28		9	12	0		œ	ო	<u>.</u>	12		40	12	36	12	ю		42	12	18	22	က
Activity Description	Excavation; 40 to 30mPD; soil 8291m3/rock 2778m3	Reinstate temp, access	Erect working platfrom for rows Q to U	Test nails for P6, P7, P8 & P11	Drill/install/grout Q1 to U10; 99 nos.	Excavation; 30 to 24mPD; soil 4197m3/rock 7592m3	Drill/install/grout V1 to X14; 37 nos.	Construct nail heads/remove platform; row V to X	Erosion mat, wire mesh & hydroseed; rows V to X	Chamber	Pipe pile roof support	Excavate/construct TBM launching chamber	Form launching chamber cradle	Ground treatment prior to TBM commence boring	TBM Access Road; +24 to +14mPD	+24 to +14mPD	Relocate sedimentation tank	Form access for big breaker	Mobilization of big breaker	Form new TBM access +14mPD to +24mPD	Divert access to new TBM access	Demolish masonry & ret. wall at +14mPD	urea at +24mPD	Construct temporary draiange	Concrete slab	Commence TBM initial assembly		Foundation	Erection	Test & commissioning	Removal of tower crane & reinstatement		Pre-fabrication	Foundation	Erect steel framework	Install platform	ICE certification		Pre-fabrication	Foundation	Erect steel framework	Cladding	ICE certification
0	10R1DO131	10R1DO132	10R1DO133	10R1DO134	10R1DO135	10R1DO136	10R1DO137	10R1DO138	10R1DO139	TBM Launching	10R1DO1305	10R1DO1310	10R1DO1315	10R1DO1325	Slope Cut & TBN		10R1DO240	10R1DO250	10R1DO260	10R1DO270	10R1D0280	10R1D0290	TBM Assembly Area at +24mPD	10R1DO185	10R1DO195	3AL1D00314	Tower Crane	3AL1DO2005	3AL1DO2010	3AL1DO2015	3AL1DO2025	TBM Platform	3AL1DO2505	3AL1D02515	3AL1D02525	3AL1D02535	3AL1D02545	Noise Enclosure	3AL1D03005	3AL1D03015	3AL1D03025	3AL1DO3035	3AL1D03045

<b>Q</b>	Activity	ADD4 WP3D	3D AD04	ADO4 WP3D Finish Start	WP3D	Cal Total	2006 2010 2011 2012	2013
3AL1FT0802	Apply to EPD for CNP for 24 hrs. tunnel work		<u>~</u>	27FEB10 11F	27FEB10			W.
3AL1FT0804	EPD process/approve CNP application	36	36 28FEB10	0 04APR10 28FEB10	04APR10	2 -237		Sale:
105 Ton Gantry	Crane							8.0
3AL1D03505	Manufacture	66	99 29MAY09	22SEP09	22SEP09	1 -159		200
3AL1D03515	Shipping to Hong Kong	9	6 23SEP09	29SEP09	29SEP09	1 -159		
3AL1DO3525	Assembly	œ	8 30SEP09	9 10OCT09 30SEP09	10OCT09	1 -159	3000	
3AL1D03535	Install rails	4	4 230CT09	9 28OCT09 23OCT09	28OCT09	1 -169		
3AL1D03545	Test & commission	က	3 29OCT09	9 31OCT09 29OCT09	31OCT09	1 -169		
3AL1DO3555	Receive initial segments and stock	ധ	6 02JAN10	0 08JAN10 02JAN10	08JAN10	1 -209		
Muck Hopper								-10"
3AL1DO4005	Pre-fabrication	75	75 22JUN09*	3* 17SEP09 22JUN09*	17SEP09	1 -83	1	33
3AL1D04015	Foundation	82	18 14SEP09	9 06OCT09 14SEP09	06OCT09	1 -97		
3AL1DO4025	Erect steelwork	18	18 12NOV09	9 02DEC09 12NOV09	02DEC09	1 -127	***	
3AL1DO4035	Erect hopper	18	18 03DEC09	9 23DEC09 03DEC09	23DEC09	1 -127		
3AL1D04045	Install transfer conveyor	4	4 24DEC09	9 30DEC09 24DEC09	30DEC09	1 -127		
3AL1DO4055	M&E works	9	6 31DEC09	9 07JAN10 31DEC09	07JAN10	1 -127		iss
3AL1DO4065	Test & commissioning	က	3 08JAN10	0 11JAN10 08JAN10	11JAN10	1 -127		
Marti Conveyor								
3AL1DO4505	Engineering	20	50 29MAY09	19 27JUL09 29MAY09	27JUL09	1 -105		
3AL1D04515	Pre-fabrication	9	60 28JUL09	9 07OCT09 28JUL09	07OCT09	1 -105	•	
3AL1DO4525	Delivery to Hong Kong	22	25 23SEP09	230CT09	23OCT09	1 -105		pois
3AL1D04535	Pre-assembly at Portion I	9	6 240CT09	9 31OCT09 24OCT09	31OCT09	1 -105		
3AL1D04545	Foundation	က	3 02JAN10	0 05JAN10 02JAN10	05JAN10	1 -155		
3AL1D04555	Install belt conveyor stage 1	24	24 06JAN10		02FEB10	1 -155		
3AL1D04565	Install transfer conveyor		1 03FEB10	0 03FEB10 03FEB10	03FEB10	1 -155		
3AL1DO4575	Install belt conveyor stage 2	9	6 27APR10		04MAY10	1 -218		351
3AL1DO4585	M&E works	2	2 05MAY10	0 06MAY10 05MAY10	06MAY10	1 -218		
3AL1DO4595	Test & commission	*	1 07MAY10	0 07MAY10 07MAY10	07MAY10	1 -218		
LV Station								80.
3AL1DO5005	Delivery & install containers 1/2/3	4		-0	16SEP09	1 -157		
3AL1DO5015	M&E works		12 17SEP09		30SEP09	1 -157		20
3AL1DO5025	Test & commission	12	12 13OCT09	9 27OCT09 13OCT09	27OCT09	1 -165		83
Cooling Water System	System							323
3AL1D05505	Pre-fabrication	53	53 09JUL09		08SEP09	1 -129		
3AL1D05515	Foundation			19SEP09	19SEP09	1 -129		20%
3AL1D05525	Erect cooling system	12	12 21SEP09	9 06OCT09 21SEP09	06OCT09	1 -129	•	
3AL1D05535	M&E works	4	4 07OCT09	100CT09 07OCT09	100CT09	1 -129		
3AL1D05545	Test & commission	2	2 12OCT09	13OCT09 12OCT09	13OCT09	1 -129		3/5
Grout System								535
3AL1DO6005	Pre-fabrication	06	90 22JUN09*	07OCT09	07OCT09	1 -134		
3AL1D06015	Erect system	9	6 16NOV09	21NOV09	21NOV09	1 -166		3-1
3AL1D06025	M&E works	e	3 23NOV09	25NOV09	25NOV09	1-166		533
3AL1DO6035	Test & commission		1 26NOV09	9 26NOV09 26NOV09	26NOV09	1 -166		

(II)	Activity Description	DO4 WP3D Our Dur	MP3D Dur	AD04 Start	AD04 Finish	WP3D Start	WP3D	0	Total 20	2006	2008	2010	2011	2012	2013
Pea Gravel Plant	nt													57	
3AL1D07505	Pre-fabrication	36	38	22JUN09	03AUG09 22.	22JUN09 (	03AUG09	*-	-82		•				
3AL1D07515	Install hopper	4		06OCT09	09OCT09 06OCT09		09OCT09		-134				0		
3AL1D07525	Erect conveyor	2	2	100CT09	12OCT09 10OCT09		12OCT09		-134		~		A		
3AL1DO7535	M&E works	4		130CT09	16OCT09 13OCT09		16OCT09	-	-134						
3AL1D07545	Test & commission	2	2	170CT09	19OCT09 170		19OCT09		-134						
3AL1D07555	Install conveyor connecting to TBM	4	4	27APR10	30APR10 27/	27APR10	30APR10		-213		-			-8	
Ventilation System	tem														
3AL1DO8005	Pre-fabrication	72	72	29MAY09			21AUG09	-	41-		1			(CII)	
3AL1DO8015	Erect system	2	7	27APR10	28APR10 27	27APR10	28APR10	-	-213		-				
3AL1DO8025	M&E works	•	W-	29APR10		29APR10	29APR10	-	-213					10.1	
3AL1DO8035	Test & commission	5	*	30APR10	30APR10 30/	30APR10	30APR10	-	-213						
Micsellaneous															
3AL1DO8502	Install transformer & hormonic filter	2	8	27APR10	28APR10 27	27APR10	28APR10	<b>-</b> -	-218		-			28	
3AL1D08512	Remove invert segments; 19 nos.	2		27APR10	28APR10 27/	27APR10	28APR10	-	-218		-				
3AL1D08522	Make good slab	က	m	28APR10	30APR10 28/	28APR10	30APR10	-	-218		-				
3AL1D08532	Install rail switch	F	-	03MAY10	03MAY10 03N	03MAY10 (	03MAY10	-	-214						
VO#49 & 53; A	VO # 49 & 53; Additional Drainage & Stairway														
VO-04910	Received Variation orders	0	0		26FEB09A		26FEB09A	No.		<b>*</b>					
VO-04920	Preparation works for varied works	14	14 2	7FEB09A	14MAR09A 27FEB09A		14MAR09A	*-		N.W.					
VO-04930	Construct u-channel & stairway; +71mPD to +55mPD	09	1 09	16MAR09A	29MAY09 16N	16MAR09A	29MAY09	***	-179	*					
VO-04940	Construct u-channel & stairway;+55mPD to +47mPD	27	27	05JUN09	07JUL09 05JUN09		07JUL09	-	-184						
VO-04950	Construct u-channel & stairway; +47mPD to +41mPD	49	40	08JUL09	22AUG09 08JUL09		22AUG09	-	-184						
VO-04960	Construct u-channel & stairway; +41 to +24 mPD	09	09	060CT09	15DEC09 06OCT09		15DEC09	-	-219		1		//		
VO #88; Revise	VO #88; Revised Slope Profile with Add. Supports														
VO-088000	Received VO #088	0	Ō		27MAY09A	Lu.	27MAY09A			×					
VO-088005	Excavate from 38.5mPD to 36.5mPD	9	9	29MAY09	04JUN09 29F	29MAY09 (	04JUN09	-	-218						
VO-088010	Procure and prepare materials	6	0	29MAY09	08JUN09 29N	29MAY09 (	60NUL80		-219						
VO-088015	SOR confirm soil nails location	2	2	60NUL20	06JUN09 05.	05JUN09	60NDC90		-218				c.w.e		
VO-088020	Drill/install/grout soil nails; rows AA-AB	7	7	60NNC60	16JUN09 09JUN09		16JUN09		-219						
VO-088025	Install wire mesh & shorcrete 150mm	က	ĺλ	17JUN09	19JUN09 17JUN09		19JUN09	-	-219						
VO-088030	Excavate from +36.5 mPD to 34.5mPD	9	9	20JUN09	26JUN09 20.	20JUN09	26JUN09	-	-219		_		2-3		
VO-088035	SOR confirm soil nails location	2	2	27JUN09	29JUN09 27.		29JUN09	-	-219						
VO-088040	Drill/install/grout soil nails; rows AC-AD	7		30JUN09	08JUL09 30.	30JUN09	08JUL09	-	-219		_				
VO-088045	Install wire mesh & shorcrete 150mm	ന	ო	607NF60	11JUL09 09.	. 6070L60	11JUL09	-	-219		-		5.00		
VO-088050	Excavate from +34.5 mPD to 32.5mPD	9	9	13JUL09	18JUL09 13.	13JUL09	18JUL09	-	-219		_				
VO-088055	SOR confirm soil nails location	2	2	20JUL09	21JUL09 20.	20JUL09	21JUL09	-	-219						
VO-088060	Drill/install/grout soil nails; rows AE-AF		~	22JUL09	29JUL09 22.	22JUL09	29JUL09	-	-219		-				
VO-088065	Install wire mesh & shorcrete 150mm	က	m	307NL09	01AUG09 30.	3070109	01AUG09	-	-219					120	
VO-088070	Excavate from +34.5 mPD to 32.5mPD	9	9	03AUG09	08AUG09 03/	03AUG09 (	08AUG09		-219		_				
VO-088075	SOR confirm soil nails location	2	2	10AUG09	11AUG09 10AUG09		11AUG09	-	-219		-				
VO-088080	Drill/install/grout soil nails; row AG	2	ιΩ	12AUG09	17AUG09 12/		17AUG09	-	-219						
VO-088085	Install wire mesh & shorcrete 150mm	ო	ო	18AUG09	20AUG09 18AUG09		20AUG09	-	-219		_			-0	
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Suspension of rock drilling & breaking	· ·	•	20JUN09*	20JUN09 20JUN09*		-	-219	
Erection of noise bearriers	ю	m	22JUN09	24JUN09 22JUN09	24JUN09	۳	-219	
Construct Spiral Ramp & Associ. Vehicular Access							H	
Install 273mm dia. temp. pipe piles; 40 nos.	12	12	08MAY10	22MAY10 08MAY10	3 22MAY10	-	-938Ms	-93 M starts operating day & nightl40 nos."13m long
Soil excavation & install wailing & tie backs	24	24	24MAY10	21JUN10 24MAY10	21JUN10	•	-93	432m3 soil#including temp. supports mesures
Rock excavation for spiral ramp; 4629m3	20	20	22JUN10	11SEP10 22JUN10	11SEP10		-63	4000m3 rock—including temp. supports mesures
Construct base of spiral ramp, Outfall O-1	12	12	13SEP10	27SEP10 13SEP10	27SEP10	-	-93	
Cast sprial ramp up to +6.73mPD	15	15	28SEP10	15OCT10 28SEP10	15OCT10		-93	
Cast sprial ramp up to +11.58mPD	15	15	18OCT10	03NOV10 18OCT10	03NOV10	۳	-93	
Cast sprial ramp up to +16.00mPD	15	15	04NOV10	20NOV10 04NOV10	3 20NOV10	-	-93	
Cast sprial ramp up to +20.00mPD	5	15	22NOV10	08DEC10 22NOV10	0 08DEC10	-	-93	
Cast sprial ramp up to +24.23mPD	5	15	09DEC10	28DEC10 09DEC10	3 28DEC10	-	6-	
Backfill spiral ramp; 1700m3	4	4	29DEC10	03JAN11 29DEC10	03JAN11		-93	@ 5m3/5minutes/480m3/day
Construct spiral ramp top; Outfall O-1	20	20	04JAN11	26JAN11 04JAN11	26JAN11	•	-93	1981
Construct vehicular access bet, tunnel & s. ramp	10	10	12JUL11	22JUL11 12JUL11	22JUL11	•	-5	
Commission of Spiral Ramp	9	9	27JAN11	02FEB11 27JAN11	02FEB11		-93	
Install 40 nos. roof piles # 375mm c/c	24	24	110CT10	08NOV10 02NOV10	0 29NOV10		-128	1
Excavation for vehicular access underneath CPR	2	20	09NOV10	01FEB11 30NOV10		-		sheet pile roofing & lagging ~180m2=soil 450m3 + rock 50m3
Construct base for vehicular access	12	12	02FEB11		11MAR11	÷	-128	
Construct wall & roof for vehicular access	24	24	19FEB11	18MAR11 12MAR11	1 09APR11	<u>.</u>	-128	:4:
Box Culvert/Open Channel By Mining							1	
Site possession of Portion E-650d of DOC	0	0	080CT09	080CT09		5	453	•
Divert exist. outfall "W" under CPR arch bridge	36	36	60AON60			-	-395	
Remove rock armour & form platform @+2.3mPD	36	36	21DEC09	03FEB10 14JAN10		-	-395	<b>=9</b> 40m3
Install temp, pile for pipe roofing	96	96	04FEB10	05JUN10 01MAR10	0 28JUN10	-	-395	cells; 210 nos.
Excavate for box-culvert, 2 cells	44	44	07JUN10	29JUL10 29JUN10	19AUG10	•	-395	-soil 2900m3
Construct base slabs of box culvert; 2 cells	20	20	30JUL10	21AUG10 20AUG10	0 11SEP10	•	-395	Concete 160m3
Construt wall & roof of box culvert; 2 cells	40	40	23AUG10	09OCT10 13SEP10	01NOV10	÷	-395	Foncete 390m3
Excavate for box-culvert, 2 cells	44	44	110CT10	01DEC10 02NOV10	0 22DEC10	-	-395	Soil 2900m3
Construct base slabs of box culivert; 2 cells	20	20	02DEC10	24DEC10 23DEC10	18JAN11	•	-395	Concete 160m3
Construt wall & roof of box culvert; 2 cells	40	40	28DEC10	16FEB11 19JAN11	09MAR11	-	-395	Econcrete 390m3
Excavate for open channel	24	54	17FEB11	16MAR11 10MAR11	1 07APR11	-	-395	•
Construct open channel at 2.3 mPD	24	24	17MAR11	14APR11 08APR11	1 09MAY11	-	-395	
Reinstate existing outfall "W"	9	9	08APR11	14APR11 03MAY11	1 09MAY11	-	-395	•
Construct Portal Head & Associated Strutures							i	
Excavate tapered open channel/ upper cascade	24	24	12JUL11				-219	•
Chococo rough, o leaved the man have the second		100	the table of or a to be desired	The state of the s	· · · · ·	*		

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						×								- 1																	-				Ū=		Town						
Float	200	285-	-395	-395	-395	-395	-395	-395	-395	-395	-395	-250	-250	-345	-251	-251	-251	-251	-395	-395	-395	-287	-287	-395	-395	-395	-287	-250	-244	-250	-244	-250	-250	-287	-395	1	-395	-395	0	0	-369	-455	-219
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Finish	04 A LO 4 4	U4AUG11	18AUG11	29AUG11	02SEP11	09SEP11	100CT11	240CT11	10NOV11	15NOV11	22NOV11	08DEC11	03JAN12	24SEP11	110CT11	09DEC11	28JAN12	09FEB12	20DEC11	07JAN12	27FEB12	13APR12	25APR12	02MAY12	11DEC12	27DEC12	25MAY12	17JAN12	03FEB12	03FEB12	17FEB12	24FEB12	16MAR12	22JUN12	27DEC12		11JAN13	18JAN13	25JAN13	15FEB13	11JAN13	11JAN14	17APR12
MP3D	00 II IN14.4	Zaudnii	16SEP11 05AUG11	12AUG11	30AUG11	03SEP11	10SEP11	110CT11	250CT11	20DEC11 11NOV11	16NOV11	23NOV11	09DEC11	10SEP11	26SEP11	120CT11	10DEC11	30JAN12	23NOV11	21DEC11	09JAN12	28FEB12	14APR12	28FEB12	13MAR12	27MAR12	26APR12	04JAN12	09MAR12 18JAN12		04FEB12	04FEB12	25FEB12	26MAY12		į	28NOV12	12DEC12	19JAN13	26JAN13	18AUG12	12JAN13	30MAR12
AD04	PEALICA	25AUG11	16SEP11	060CT11	110CT11	180CT11	14NOV11	28NOV11	15DEC11	20DEC11	30DEC11	17JAN12	10FEB12	290CT11	12NOV11	16JAN12	01MAR12	13MAR12	11JAN12	28JAN12	13MAR12	30APR12	12MAY12	30MAR12	02NOV12	16NOV12	09JUN12	24FEB12	09MAR12	09MAR12	23MAR12	30MAR12	25APR12	10JUL12	16NOV12		30NOV12	07DEC12	14DEC12	04JAN13	30NOV12	30NOV13	17APR12
ADB4	SIBIL OCT II INIA 4	27JUN11	26AUG11	17SEP11	07OCT11	120CT11	190CT11	15NOV11	29NOV11	16DEC11	21DEC11	02JAN12	18JAN12	190CT11	310CT11	14NOV11	17JAN12	02MAR12	02JAN12	12JAN12	30JAN12	14MAR12	02MAY12	14MAR12	31MAR12	19APR12	14MAY12	11FEB12	25FEB12	25FEB12	10MAR12	10MAR12	31MAR12	11JUN12		į	190CT12	03NOV12	08DEC12	15DEC12	11JUL12	01DEC12	30MAR12
MP3D		36	12	15	4	9	23	12	15	4	9	14	60	12	12	51	36	9	24	12	4	36	9	20	224	224	24	12	12	12	12	18	13	24	0	3	36	30	2	27	120	365	12
AD04 WP3D	unc :	25	18	15	4	9	23	12	15	4	9	44	80	9	12	51	36	9	o	12	38	36	9	15	175	175	24	12	12	12	12	13	18	24	0		36	30	7	21	120	365	12
Activity	Description	Dredge in rock armour to -3.75mPD	Place grade 400 rockfill & levelling layer	Form seawall type 2(W)	Construct detail Y	Construct mass concrete	Form seawall type 1	Construct mass concrete	Form seawall type 2 (E)	Construct detail X	Construct mass concrete	Construct coping	Place infill blocks M1 & M4	Dredge in sea bed to -3.75mPD for seawall (W)	Place grade 400 rockfill & levelling layer	Form seawall type 5, 2B, 4 & 1A (W)	Backfill sea walls west & north (half)	Place type 2 armour	Dredge in sea bed to -3.75mPD for seawall (E)	Place grade 400 rockfill & levelling layer	Form seawall type 6, 3 & 2A (E)	Backfill sea walls east & north (half)	Place type 2 armour	Dredge in sea bed for stepped blocks	Place levelling layer	Place stepped blocks	Place type 2 armour to reinstate exist. seawall	Form ground beam (W)	Form ground beam (E)	Form invert slab (W)	Form invert slab (E)	Form end wall (W)	Form end wall (E)	Reinstate rock armour	Complete basin	Remaining Works Prior to Handover	Finishing & reinstatement works; Portion D	Pre-handover inspections and remedial works	Contractor serve notice for Works completion	SO issues completion certificate	Landscaping works at Portion D	Establishment Works at Portion D	Install flow measurement devices at Outfall O-1
Q		VO61-055	VO61-060	VO61-065	VO61-070	VO61-075	VO61-080	VO61-085	VO61-090	VO61-095	VO61-100	VO61-105	VO61-110	VO61-115	VO61-120	V061-125	V061-130	V061-135	VO61-140	V061-145	VO61-150	VO61-155	VO61-160	VO61-165	VO61-170	VO61-175	VO61-180	VO61-185	VO61-190	VO61-195	VO61-200	VO61-205	VO61-210	V061-215	VO61-220	Remaining V	10R1D00904	10R1D00906	10R1D00908	10R1D00910	16R7D00902	16R7D00904	3DL1D00902

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2009 2010 2001 2001					◆Dutfil O-1	♦Outfall O-1	◆Outfall O-1	♦Outfall 0-1	◆at Outfall O-1	♦at Outfall O-1	◆at Ouffall O-1	♦at Ouffall 0-1	and open channel underneath CPR❖	protection works at Outfall O-1	under this Cost Centre		Cilletti (O de annomate)			Anailing at Outrall O-1	◆under this Cost Centre			•	•	•		•				•					=45m, @ 1.3m/day	w.as	(1	≣35m, @ 1,3m/day
Total A	-219	0				1,600	1,544	1,206	069	629	1,136	1,062	713	409	388		07	2	0	1,566	919			181	0	0	165	0	0	0		209	165	165	165	165	165	165	165	165
	1.4	7			2	2 1,6	2 1,5	2 1,2	2	2	2 1,1	2 1,0	2		2		,	H			2		F	-	2	2	-	7	-	-	ş	-	-	-	- -	-	<u>-</u>	٠-	-	-
WP3D Finish	10MAY12	10MAY13			09APR09A	13AUG09	080CT09	11SEP10	09FEB12	10APR12	20NOV10	02FEB11	03JAN12	27DEC12	18JAN13	1	22 II IN14	070000	U/AFRUSA	16SEP09	22JUN11			24NOV09	25NOV09		02JAN10	25NOV09	03DEC09	29DEC12		17OCT09	12DEC09	03MAY10	06MAY10	18JUN10	30JUL10	22JUN10	24JUL10	25AUG10
WP3D	2 02APR12	10MAY13 11MAY12		:	A	6	6	0	2	2	0		2	2	2	1		. <	τ ,					o.	6	26NOV09	26NOV09	6	9 Z6NOV09	2 10DEC09	j	0	12DEC09 10DEC09	0 14DEC09	06MAY10 04MAY10	07MAY10	19JUN10	19JUN10	23JUN10	) 26JUL10
AD04 Finish	10MAY12	10MAY1	1		09APR09A	13AUG09	080CT09	11SEP10	09FEB12	10APR12	20NOV10	02FEB11	17JAN12	16NOV12	07DEC12	ł	25 II IN111	A0000A70	MAPRUS 400FFD0	16SEP09	25JUN11			24NOV09	25NOV09		02JAN10	25NOV09	09DEC09	29DEC12		17OCT09	12DEC0	03MAY10	06MAY1	18JUN10	30JUL10	22JUN10	24JUL10	25AUG10
AD04 Start	02APR12	11MAY12	i													i										26NOV09	26NOV09		26NOV09	10DEC09	į		10DEC09	14DEC09	04MAY10	07MAY10	19JUN10	19JUN10	23JUN10	26JUL10
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Dur Dur	28	365	Ī		0	0	0	0	0	0	0	0	0	0	0	i	c	, ,	0	s	0			٥	0	0	30	0	12	904		0	m	110	ю	35	35	က	27	27
Activity Description	T & C for flow measurement system	Maintain & monitor flow monitoring	Schedule of Milestones for Cost Centre No. 10R		10R 1; On completion of 20% excavation works	10R 2; On completion of 40% excavation works	10R 3; On completion of 60% excavation works	10R 4; On completion of 80% excavation works	10R 5; On completion all excavation works	10R 6; On completion of cascade structure	10R 7; On completion of spiral ramp to +16mPD	10R 8; On completion of spiral access ramp	10R 9; On completion box-culvert & open channel	10R 10; On completion of seabed protection wks	10R 11; On completion of all works under this CC	Schedule of Milestones for Cost Centre No. 14R	148 1: On complet of remove exist rock armour	44D 9: On complete of 500/ coil relies by sumber	14K Z, Ort complet, of 50% soil natified by number	14K 3; On completion all solling works	14R 4; On completion of all works under this CC	Drainage Improvement Works at Portion G	Works	SO consent Drainage Impact Assessment Report.	Obtain TTA (ingress & egress) approval	Possession of Portion G -700d of DOC	Site clearance/Site Establishment	Obtain approval for Geotechnical Instrumentation	Installation of Geotechnical Instrumentation	Monitor/report Geotechnical Instrumentation		Obtain SO's consent for temp, works design	Mibilization & set up for temp. platform	Construct steel working platform for H-pilling	Mibilization & set up for H-piling; Wall 1	52 nos. 600mm dia. H-piles; Wall 1 @1.5 nr/day	Excavate & construct skin wall 1 at Portion G	Mibilization & set up for H-piling; Wall 2	40 nos. 600mm dia. H-piles; Wall 2 @1.5 nr/day	Excavate & construct skin wall 2 at Portion G
Q)	3DL1D00903	3DL1D00904	Schedule of		10R1DO1002	10R1DO1004	10R1DO1006	10R1DO1008	10R1DO1010	10R1DO1012	10R1DO1014	10R1DO1016	10R1DO1018	10R1DO1020	10R1DO1022	Schedule of	1485001100	4405004404	14R5DO 1104	14K5U01106	14R5DO1108	Drainage Im	Preliminary Works	01R6GG0102	01R6GG0112	01R6GG0114	01R6GG0116	3DL6GG0104	3DL6GG0106	3DL6GG0108	Piling Works	15R6GG0200	15R6GG0202	15R6GG0204	15R6GG0206	15R6GG0208	15R6GG0210	15R6GG0212	15R6GG0214	15R6GG0216

<b>Q</b>	Activity Description	AD04 WP3D Dur Dur	WP3D	AD04 Start	AD04 Finish	WP3D Start	WP3D Finish	3 ₽	Total Float					
Drainage Imp	Drainage Improvement Works													
15R6GG0301	Obtain approval of ELS design package incl MS	0	0		02NOV09		02NOV09	7	284	•	as per ER.E	328.08, 4 we	as per ER.B28.08, 4 weeks prior to work commence	rk commence
15R6GG0302	Install ELS & construct shaft for pipe jacking	8	90	04JAN10	26APR10 04JAN10	JAN10	26APR10	-	180		I			200
15R6GG0304	Construct 1.5m dia. drainage by pipe jacking	85	85	27APR10	07AUG10 27APR10	APR10	07AUG10	**	180		850	==85m, @1m/day		i de
15R6GG0306	Construct 1.5m dia. drainage by open trenching	24	24	01NOV10*	27NOV10 01NOV10*	NOV10*	27NOV10	-	111		-	72m, @3m/day	jay	
15R6GG0308	Construct .75m & 1.5m U and Stepped Channel	12	12	29NOV10	11DEC10 29NOV10	NOV10	11DEC10		111			\$56m, @5m/day	day	
15R6GG0310	Construct 3 nos. manhole & 2 nos. catchpit	35	35	13DEC10	25JAN11 13DEC10	DEC10	25JAN11		111			@1nr/week	~	223
Remaining V	Remaining Works Prior to Handover to Client		4	Ì		1	1	1						3000
														A
15R6GG0312	Reinstate carriageway & footway	24	24	26JAN11	25FEB11 26JAN11	JAN11	25FEB11	-	111	EH-0		■72m, @3m/day	m/day	
15R6GG0402	Pre-handover inspections and remedial works	12	12	26FEB11	11MAR11 26FEB11	FEB11	11MAR11	-	111			fincluding	fincluding CCTV inspection	tion
15R6GG0404	Contractor serve notice for Works completion	7	1	12MAR11	18MAR11 12MAR11	MAR11	18MAR11	2	266					
15R6GG0408	SO issues completion certificate	21	21	19MAR11	08APR11 19MAR11	MAR11	08APR11	2	266					
Schedule of	Schedule of Milestones for Cost Centre No. 15R							4						
15R6GG0502	15R 1: On completion of all temp. works	0	0		26APR10		26APR10	2	1,344		Oprior t	o commeno	Prior to commence pipe jacking at Portion G	at Portion G
15R6GG0504	15R 2: On completion of 25% of pipejacking	0	0		06MAY10		06MAY10	2	1,334		♦ pipe	acking meth	◆pipe jacking method at Portion G	m
15R6GG0506	15R 3; On completion of 50% of pipejacking	0	0		14MAY10		14MAY10	63	1,326		♦ pipe	jacking meth	pipe jacking method at Portion G	co
15R6GG0508	15R 4; On completion of 75% of pipejacking	0	0		25MAY10		25MAY10	2	1,315		<b>♦</b> pipe	jacking met	pipe jacking method at Portion G	g
15R6GG0510	15R 5; On completion of all pipejacking	0	0		07AUG10		07AUG10	2	1,241		<b>♦</b>	pe jacking m	pipe jacking method at Portion G	9
15R6GG0512	15R 6; On completion of all wks under this CC	0	0		11MAR11		11MAR11	2	1,025			♦ under t	under this Cost Centre	o)



Appendix D

# Implementation Status of Environmental Mitigation Measures

## **IMPLEMENTATION SCHEDULE** January 2011

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve?	Status
Air Q	<u>uality</u>				
3.6.1	Specific  As mentioned in Section 3.5, exceedances of 1-hour and 24-hour average TSP guideline	DSD's Contractor	Construction Work Sites	Air Pollution Control (Construction Dust) Regulation	<b>√</b>
	levels have been predicted at most of the ASRs. Hence, mitigation measures are considered necessary in order to suppress the potential dust impact.			Regulation	
	The dust suppression measures set out in the <i>Air Pollution Control (Construction Dust) Regulation</i> , in fact, are more extensive. Therefore, it is expected that with watering the construction site every four times daily together with strict implementation of dust suppression measures as stipulated in the <i>Air Pollution Control (Construction Dust) Regulation</i> , the dust level is expected to be reduced by over 75%.				✓
	General				
	To further ensure compliance with the guideline and AQO limit at the ASRs at all time, it is recommended to implement the <i>Air Pollution Control (Construction Dust) Regulation</i> and include good site practice in the contract clauses to minimize cumulative dust impact. In addition, a comprehensive dust monitoring and audit programme is recommended to ensure proper implementation of the identified mitigation measures. Details of the monitoring and audit requirements are provided in a separate EM&A Manual.				
	• effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building or if a canopy is provided at the first floor level, from the first floor level, up to the highest level of the scaffolding where a scaffolding is erected around the perimeter of a building under construction;				N/A
	dump truck for material transport should be totally enclosed by impervious sheeting;				✓
	<ul> <li>any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading;</li> </ul>				✓
	stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones;				✓
	<ul> <li>dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> </ul>				✓

# Appendix D

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
3.6.1	• 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;	DSD's Contractor	Construction Work Sites	Air Pollution Control (Construction Dust) Regulation	✓
	• where a site boundary adjoins a road, street or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;				✓
	• every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet;				✓
	• the portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials;				✓
	• stockpile of dusty materials should be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet;				✓
	all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;				✓
	vehicle speed should be limited to 10 kph except on completed access roads;				✓
	• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;				✓
	the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; and				✓
	• the working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.				✓
Noise		Dab'		DM 0/00 M : C	
4.6.1	Appropriate mitigation measures such as the use of quiet equipment and movable barriers will be developed to ensure that noise can be reduced to acceptable levels without causing programme delays	DSD's Contractor	Construction Work Sites	PN 2/93 Noise from Construction Activities & EIAO	✓
	Good Site Practice Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during construction:				
	<ul> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works;</li> </ul>				✓
	machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;				✓

# Appendix D

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve?	Status
4.6.1	• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs;	DSD's Contractor	Construction Work	PN 2/93 Noise from Construction Activities &	<b>✓</b>
	mobile plant should be sited as far away from NSRs as possible; and		Sites	EIAO	✓
	• material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				✓
	<ul> <li>For Drill and Blast Works</li> <li>Charge mass per delay should be decreased by minimising the number of blastholes firing on each delay.</li> </ul>				N/A
	Smaller blasthole patterns and longer delays should be used between dependent charges.				N/A
	Times of blasting should be established to suit the situation and firing blasts when neighbours are busy with their daily tasks (and at a regular time such as lunch time).				N/A
	<ul> <li>For TBM Tunnelling</li> <li>For the tunnel excavation, it is anticipated that beyond the initial length (say within 30m), excavation will be carried out well within the tunnel and door should be provided to further minimize the noise nuisance to the nearby receivers.</li> </ul>				N/A
4.6.2	During Operation  Good site practice and noise management can significantly reduce the impact of maintenance activities on nearby NSRs. The following package of measures should be followed during	DSD's Contractor	Project Area	NCO & EIAO	
	<ul> <li>construction</li> <li>only well-maintained plant should be operated on-site;</li> </ul>	 <del> </del>			N/A
	machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; and				N/A
	<ul> <li>plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs.</li> </ul>				N/A
	Quality	1	T		
5.9.1	During Construction  Mitigation measures and a spill control and response plan have been prepared for works at	DSD's Contractor	Construction Work Sites	Practice Note for Professional Persons with regard to site drainage	<b>✓</b>
	the intakes and work sites.			(ProPECC PN 1/94) and	
	Precautions to be taken at any time of year when rainstorms are likely:			WQO	✓
	<ul> <li>Temporarily exposed surfaces should be covered e.g. by tarpaulin.</li> <li>Temporary access roads should be protected by crushed stone or gravel.</li> </ul>	-			$\checkmark$
	Trenches should be dug and backfilled in short sections. Measures should be taken to minimize the ingress of rainwater into trenches.				· ✓
	Actions to be taken when a rainstorm is imminent or forecast:  • Silt removal facilities, should be checked to ensure that they can function properly.				✓

	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve?	Status
1	<ul> <li>Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric.</li> </ul>	DSD's Contractor	Construction Work Sites	WQO	✓
	All temporary covers to slopes and stockpiles should be secured.				✓
	Actions to be taken during or after rainstorms:     Silt removal facilities should be checked and maintained to ensure satisfactory working conditions.				✓
	Spill Control and Response Plan				
	1 Prevention and Precaution Measures				
	<ul><li>General Precautions</li><li>No discharge of silty water into watercourses.</li></ul>				✓
	• All materials to be used during construction and operation shall be identified and their hazard potential evaluated.				✓
	<ul> <li>Maintenance of vehicles and equipment involving activities with potential for leakage and spillage shall only be undertaken with the areas appropriately equipped to control these discharges.</li> </ul>				✓
	<ul> <li>Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials.</li> </ul>				✓
	<ul> <li>Any construction plant which causes pollution to catchwaters or water gathering ground due to leakage of oil or fuel shall be removed off-site immediately.</li> </ul>				✓
	Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport				✓
	Chemical waste containers shall be suitably labelled to notify and warn the personnel who are handling the wastes to avoid accidents.				✓
	Storage areas shall be selected at safe locations on site and adequate space shall be allocated to the storage area.				✓
	Prevent obstructions and tripping hazards.				✓
	Storage Precautions  • All chemical storage containers shall be correctly labelled.				✓
	Solid and impermeable enclosure walls or storage shelves shall be used.				$\checkmark$
-	Only compatible chemical wastes shall be stored in the same storage area.	=			$\checkmark$
	<ul> <li>The storage areas shall be inspected to detect any leakages or defective containers on a regular basis.</li> </ul>				✓
	Suitable notices warning of hazards, emergency response plans, telephone numbers etc shall be posted around the site, including storage areas.	1			✓
Ī	Large and heavy containers shall be stored at ground level.				✓

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
	Chemical waste containers shall be stored below eye level.				✓
5.9.1	Adequate space for handling of the containers shall be provided	DSD's	Construction	WQO	✓
	• Spill response kits shall be located adjacent/near to the storage areas.	Contractor	Work Sites		✓
	A log of chemical wastes shall be maintained.				✓
	Incompatible chemicals shall be stored separately.				✓
	2 Responses/Action Plan				
	All Workers shall be made aware of emergency telephone numbers and the location of all relevant pollution control equipment. Training be given in emergency response/action plans. The action include the following steps:				✓
	• Only trained personnel who are equipped with protective clothing and equipment shall be allowed to enter the spillage area for clean up.				✓
	• Spills shall be transferred appropriate back into containers using suitable equipment.				✓
	<ul> <li>Absorbent materials shall be used to clean up the spills and shall be disposed of as chemical wastes.</li> </ul>				✓
	<ul> <li>Where appropriate suitable solvents may be used to clean the contaminated area after removal of all contaminated materials.</li> </ul>				✓
	<ul> <li>All necessary protective devices, safety equipment, containers and clean up materials for emergency use shall be maintained to a high standard.</li> </ul>				✓
	3 Spill Clean Up and Disposal				
	Effect the response plan.				✓
	Control the leakage and absorb the spillage using suitably absorbent materials.				✓
	Provide safety equipment and personal protective equipment for handling of chemical wastes would be similar to that for handling of chemicals.				✓
	Safety equipment includes but is not limited to: • Fire extinguishers.				✓
	• Spades, brushes, dustpan, mop and bucket (or similar readily available on site).				✓
	• Absorbent material such as dry sand, tissues and toweling (all materials readily available on-site).				✓
	Containers including plaster bags, drums, etc.				✓
	Absorbing materials.				$\checkmark$
	Pumps.				$\checkmark$
	Personal protective equipment includes as appropriate:  • First-aid kits.				$\checkmark$
	Safety helmet and goggles.				✓
	Gloves which can resist chemical reaction.				✓

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EIA Ref.	Recommended Mitigation Measures	Who to implement the measure?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
	Protective boot and clothing.	DSD's	Construction	WQO	✓
5.9.1	Respirators and gas masks.	Contractor	Work Sites		✓
	Face visor and masks.				✓
5.9.2	Emergency Responses to Spillages				
	Emergency plans and clean up procedures will need to be provided by the Contractor recognising his specific working methods and construction programme, activities and sequences. Agreement must be sought prior to commencement of the construction work but the following principles should be considered.				
	The emergency plans should include the procedures for:				✓
	spill prevention and precaution;	_			
	response actions; and				✓
	spill clean up and disposal.				✓
	Spill prevention and precaution embraces good site practice and covers:				✓
	good housekeeping practices;	4			
	chemical storage requirements; and				✓
	chemical transfer and transport.				✓
5.9.3	During Operation	DSD's Contractor	Project Area		
	Regular inspection of the tunnels is essential to monitor the structural integrity and proper functioning of the drainage tunnel, which allows repairing of structural deterioration when it begins to develop. It is recommended that routine inspection shall be carried out at least two times per year for the drainage tunnel at the beginning and end of wet season from April to September.				N/A
Waste	Management				
6.5.1	During Construction	DSD's Contractor	Construction Work	Waste Disposal Ordinance (Cap.354); Waste Disposal (Chemical Wastes)	<b>√</b>
	Vegetation Removed from Site Clearance Wastes generated from site clearance shall be sorted and excavated topsoil segregated from roots for re-use in landscaping works, thus eliminating the need for off-site disposal.		Sites	(General) Regulation (Cap 354) and ETWBTC No.	V
	Construction and Demolition Materials  The Contractor should reuse any C&D material on-site. C&D waste should be segregated and stored in different containers to other wastes to encourage the re-use or recycling of materials and their proper disposal. The use of wooden hoardings shall not be allowed. An alternative material, which can be reused or recycled, for example, metal (aluminium, alloy, etc) shall be used.			15/2003, Waste anagement on Construction Site	<b>√</b>

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
6.5.1	As referred to the section 6.4.1, the 317,936m3 of inert surplus material generated by the project is suitable for public fill. The public fill reception facility at Tuen Mun Area 38 provides a suitable facility for the reuse of surplus inert C&D material generated from the project.	DSD's Contractor	Construction Work Sites	WDO (Cap.354), ETWBTC No. 15/2003, ETWBTC No. 12/2002 and ETWBTC No. 31/2004	
	Under the contract, the contractor will be required to minimise the generation of C&D material and reuse it on site through the following:				
	(a) to plan in the design and construction, methods to minimise the generation of C&D material;				✓
	(b) to submit a Waste Management Plan (WMP) in accordance with Environment Transport and Works Bureau Technical Circular (ETWBTC) No. 15/2003 or any superseding circular(s);				✓
	(c) to reuse recycled aggregates in accordance with ETWBTC No. 12/2002 or any superseding circular(s);				✓
	(d) to observe the requirements of the Trip-Ticket System, stipulated in ETWBTC No. 31/2004 or any superceding circular(s), for disposal of C&D material;				✓
	(e) to incorporate a Waste Management System into the WMP for effective management and control of C&D materials to avoid/reduce/minimise the generation of C&D material during construction.				✓
	The contractor will be required to properly sort into inert C&D materials, metals, timber and other non-inert C&D material in the workplace to prevent cross-contamination.				$\checkmark$
	In addition, DSD will conduct site inspection to monitor the contractors' performance in the implementation of the WMP and other relevant specified requirements.	DSD	Construction Work Sites	WDO (Cap.354) and ETWBTC No. 15/2003	<b>√</b>
	Excavated Materials  Excavated materials should be segregated from other wastes to avoid contamination thereby ensuring acceptability at public filling areas and avoiding the need for disposal at landfill.  Municipal Waste	DSD's Contractor	Construction Work Sites	WDO (Cap.354) and ETWBTC No. 15/2003	<b>V</b>
	Temporary refuse collection facilities should be set-up by the contractor and wastes should be stored in appropriate containers prior to collection and disposal.				✓
	Domestic effluent generated by the workforce will be directed to foul sewer or chemical toilets if public facilities are not available.				$\checkmark$
6.5.1	Waste Management Plan  A Waste Management Plan (WMP) for the construction of the Project should be prepared as part of the contractors submission. It will provide recommendations for appropriate recycling or disposal route and should include method statement for stockpiling and transportation of the excavated material and other construction wastes should also be included in the WMP and approved before the commencement of construction. All mitigation measures arising from the approved WMP shall be fully implemented.	DSD's Contractor	Construction Work Sites	WDO (Cap.354), ETWBTC No. 15/2003 and ETWBTC No. 33/2002	<b>√</b>

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve?	Status
	For the purpose of enhancing the management of C&D material including rock, and to minimize its generation at source, a C&D Material Management Plan (C&DMMP) has been prepared for this project and would be processed in accordance with the Environment, Transport and Works Bureau Technical Circular (Works) No. 33/2002 - Management of Construction and Demolition Material Including Rock.				N/A
<b>Ecology</b>					
7.7.1	Avoidance  The surface structures are located mainly on existing disturbed areas (ie pollution and urbanisation) and have generally avoided the natural stream sections of higher species diversity and abundance of aquatic organisms.	DSD's Contractor	Construction Work Sites	EIAO	✓
	The major construction activities at streams are scheduled to avoid wet season of high water flow which may adversely affect the downstream natural habitats due to the construction runoff.				✓
7.7.2	Minimisation  The previous discussion in Section 7.6.4 has indicated that the impacts on ecological resources due to the construction and operation of the proposed Project are generally expected to be low. The following mitigation measures to minimise impacts and disturbance to the surrounding habitats, are recommended.  Measures for Construction Runoff  Install sheet piles/cofferdam/weir along the boundary of the works area within the stream habitats in particular Sam Dip Tam Stream and Tso Kung Tam Stream before the commencement of works to prevent construction runoff during construction. Provision of adequate designed sand/ silt removal facilities such as sand traps, silt traps and sediment basin in the areas which could potentially be affected may be required.  Good Construction Practice	DCD'-	Contraction	EMO	✓
	Erect fences along the boundary of the works area before the commencement of works to prevent tipping, vehicle movements, and encroachment of personnel onto adjacent areas, particularly the stream habitats.  Avoid any damage and disturbance, particularly those caused by filling and illegal dumping,	DSD's Contractor	Construction Work Sites	EIAO	✓
	to the remaining and surrounding natural stream habitats.  Regularly check the work site boundaries to ensure that they are not breached and that no				<b>√</b>
	damage occurs to surrounding areas.  Prohibit and prevent open fires within the site boundary during construction and provide temporary fire fighting equipment in the work areas.				✓
	Treat any damage that may have occurred to individual major trees in the adjacent area with surgery.				✓

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure?	Location of the measure	What requirements or standards for the measure to achieve?	Status
	Reinstate temporary work sites/disturbed areas, particularly stream of natural bottom and bank, plantation, intertidal habitat, and the areas located within the proposed Ecological Park, immediately after completion of the construction works, ie through on-site tree/shrub planting and reprovision of natural or semi-natural bottom (also refer to Section 7.7.3), in order to facilitate the recolonisation of the wildlife recorded during the baseline surveys. Tree/shrub species used should make reference from those in the surrounding area	DSD's Contractor	Construction Work Sites	EIAO	✓
7.7.3	Provide natural stream bed (approximately 0.03 ha) for the new Dry Weather Flow Channel (created from village-orchard) by laying natural stones at Intake I-2 (Figure 7.7). The reinstated stream bed shall mimic the existing natural conditions with certain portion of big boulders creating the lentic and lotic zones for the aquatic fauna, and while it will be developed during detailed design may draw on concepts shown in Figure 2.18.  Provide natural stream bed (approximately 0.5 ha,) for the Approach Channel and Dry				N/A
	Weather Flow Channel by laying natural stones at Intake I-3 (Figure 7.8). The reinstated stream bed shall mimic the existing natural conditions (rocky bottom with very limited aquatic plants) with certain portion of big boulders creating the lentic and lotic zones for the aquatic fauna, and while it will be developed during detailed design may draw on concepts shown in Figure 2.18.				N/A
	Provide natural bottom (ie retain the existing stream bed or reinstate the stream bed by providing boulders/ rocks, riprap or gabion) for the affected stream sections (Figure 7.8) in order to allow natural colonisation of aquatic fauna.				N/A
	Provide at least 2.2 ha of compensatory planting on the permanent and temporary affected plantation areas, particularly the slopes along access road and adjacent to Intake I-3 and cascade at Outfall O-1, after construction to stabilise the slope to present soil erosion and consequent stream sedimentation. Among the 2.2 ha compensatory planting, at least 0.5 ha of compensatory tree planting on the new formed slope along the access road of the Intake I-3 and 0.5 ha of compensatory tree planting over the cascade (by constructing intermediate platform) at Outfall O-1 will be provided (location refer to Figures 7.4 – 7.6). Species used for planting should take reference from the species identified in Appendix F and be native to Hong Kong or South China region.				N/A
	Provide armour rocks for the affected intertidal habitat in order to allow natural colonisation of intertidal organisms.				N/A

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
Cultural I	Heritage				
8.6	As no impacts on recorded archaeological sites or area with archaeological potential were identified within the Study Area, no mitigation measure for archaeological resources is considered necessary.				N/A
	The construction methods to be employed should seek to avoid potential vibration impacts to Kuen Yuen Tung Monastery at Lo Wai, the Western Monastery, Yuen Yuen Home for the Aged, Hong Hoi Chee Hong Temple, Chiu Yum Tsing Yuen, Tse's Grave, Wan Lin Bridge and Sam Dip Tam Rock Carving in Sam Dip Tam and the Tin Hau Temple, Yam Kom Tau Village Rural Committee and the Yeung's Ancestral Hall in Yau Kom Tau as these sites fall within 50 m of the Preferred Option of the drainage tunnel alignment or associated Intakes/Outfall construction activities. Construction works that generates excessive vibration in close proximity to these sites should be restricted to protect the building from adverse vibration impacts and to ensure that the building structures will not be damaged as a result of these impacts.	DSD's Contractor	Construction Work Sites	EIAO	✓
	In order to ensure that no structural or superficial damage will be caused by the construction activities, a precautionary approach involving a pre-construction condition survey and establishment of appropriate vibration limits for the potentially impacted structures should be adopted. Protection measures for the potentially impacted structures, if considered necessary from the pre-construction condition survey, should be implemented prior to the commencement of construction works. Vibration monitoring during the construction phase should be undertaken as part of the EM&A programme.	Qualified archaeologist/ built heritage specialist	Construction Work Sites	EIAO	✓
<b>Fisheries</b>					
10.6	In accordance with the guidelines in the <i>EIAO-TM</i> on fisheries impact assessment the general policy for mitigating impacts to fisheries, in order of priority are avoidance, minimization and compensation.	DSD's Contractor	Construction Work Sites	EIAO	N/A
	Impacts to fisheries resources and fishing operations have largely been avoided during the construction and operation of the drainage tunnel through the avoidance of dredging, reclamation and filling activities. Good construction practice and associated measures were recommended in Water Quality Assessment in Section 5 to control water quality impacts to within acceptable levels and are also expected to control impacts to fisheries resources. Hence, no fisheries-species mitigation measures are required during construction and operation of the drainage tunnel.				N/A
Remarks:	<ul> <li>✓ Compliance of mitigation measure</li> <li>× Non-compliance of mitigation measure</li> <li>N/A Not applicable</li> </ul>				



# Appendix E

# Status of License and Permit







#### **Updated Status of Environmental Permit & Licence**

<b>Application Date</b>	Environmental Permit / Licence	Issued Date	Ref No.	Account No.	Permit / Licence No.	Permit / Licence Validity Date	Remarks
2 Jan 2008	Registration as a Waste Producer	3 Jan 2008	001026707				Valid
2 Jan 2008	Waste Disposal (Chemical Waste) (General) - Chemical Waste Producer	26 Feb 2008		5111-324- M2703-01			Valid
2 Jan 2008	Waste Disposal (Charges for Disposal of Construction Waste) Regulation - Billing Account	17 Jan 2008		7006574			Valid
10 Jan 2008	Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation	10 Jan 2008	001026901				Valid
25 Feb 2008	Water Discharge Licence – Outfall O-1	7 Aug 2008	001028154		EP760/323/012997I	7 Aug 2008 - 31 Aug 2013	Valid
18 Apr 2008	Water Discharge Licence – Intake I-1	19 Jun 2008	001029978		EP760/327/013315I	19 Jun 2008 - 30 Jun 2013	Valid
18 Apr 2008	Water Discharge Licence – Intake I-2	2 Jul 2008	001029959		EP760/321/013020I	2 Jul 2008 - 31 Jul 2013	Valid
18 Apr 2008	Water Discharge Licence – Intake I-3	5 Aug 2008	001029960		EP760/323/013324I	5 Aug 2008 - 31 Aug 2013	Valid
18 Apr 2008	Water Discharge Licence – Portion I	26 Jun 2008	001029974		EP760/350/013334I	26 Jun 2008 - 30 Jun 2013	Valid
23 Jul 2008	Water Discharge Licence – Intake I-1 (Intersection of Wo Yi Hop Lane and Ho Fung College)	27 Aug 2008	001031974		EP760/325/013536I	27 Aug 2008 - 31 Aug 2013	Valid
2 Sep 2008	Variation of Environmental Permit	25 Sep 2008	VEP-271/2008		EP-275/2007/B		Valid
29 Apr 2009	Water Discharge Licence – Intake I-3 (Additional Discharge Point)	25 Mar 2010	305058		WT00005917-2010	25 Mar 2010 - 31 Mar 2015	Valid
5 Oct 2009	Further Environmental Permit	27 Oct 2009	FEP-096/2009		FEP-01/275/2007/B		Valid
26 Jan 2010	Water Discharge Licence – Outfall O-1 (Additional Discharge Point)		313803				Canceled







#### **Updated Status of Environmental Permit & Licence**

Application Date	Environmental Permit / Licence	Issued Date	Ref No.	Account No.	Permit / Licence No.	Permit / Licence Validity Date	Remarks
13 Jul 2010	Application for Vessel Chits for Disposal of Construction Waste for Existing Account Holder (Billing Account)	23-Jul-10		7011131			Valid
22 Jul 2010	Application for a Permit to Dump Material at Sea - Dredged / Excavated Sediment Requiring Type 1 - Open Sea Disposal	20-Sep-10	319729		EP/MD/11-049	02 Oct 2010 - 01 Apr 2011	Valid
27 Jul 2010	Construction Noise Permit - Portion G - (Water Pump)	12-Aug-10	319871		GW-RW0399-10	12 Aug 2010 - 09 Feb 2011	Valid
4 Sep 2010	Water Discharge Licence – Portion G	28-Oct-10	321337		WT00007685-2010	28 Oct 2010 - 31 Oct 2015	Valid
8 Nov 2010	Construction Noise Permit - Intake 2	24 Nov 2010	323325		GW-RW0629-10	24 Nov 2010 - 14 May 2011	Valid
12 Nov 2010	Construction Noise Permit - Outfall (For Mining Works and Probe Drilling to 24hrs)	29 Nov 2010	323497		GW-RW0656-10	04 Dec 2010 - 03 Jun 2011	Valid
23 Nov 2010	Construction Noise Permit - Valve House (Near the Wonderland at Castle Peak Road, Ting Kau - Ventailation Fan)	23 Nov 2010	323886		GW-RW0652-10	26 Nov 2010 - 25 May 2011	Valid
1 Dec 2010	Construction Noise Permit - Chai Wan Kok - Valve House (Group A + B)	9 Dec 2010	324176		GW-RW0680-10	27 Dec 2010 - 26 Jun 2011	Valid
1 Dec 2010	Construction Noise Permit - Intake I-1	13 Dec 2010	234178		GW-RW0701-10	13 Dec 2010 - 03 Jun 2011	Valid
1 Dec 2010	Construction Noise Permit - Intake I-3	9 Dec 2010	234179		GW-RW0682-10	09 Dec 2010 - 02 Jun 2011	Valid
15 Dec 2010	Water Discharge Licence – Outfall O-1 (Additional Discharge Point)						Submission made on 15 Dec 2010 and acknowledge received by EPD on 15 Dec 2010.
12 Jan 2011	Construction Noise Permit - Portion G - (Water Pump)	27 Jan 2011			GW-RW0049-11	09 Feb 2011 - 08 Aug 2011	Valid



Appendix F

# **Calibration Certificates**

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Ho Fung College (ASR 1)

Calibration Date: Calibration Due Date 23-Nov-10 23-Jan-11

Time:

08:00

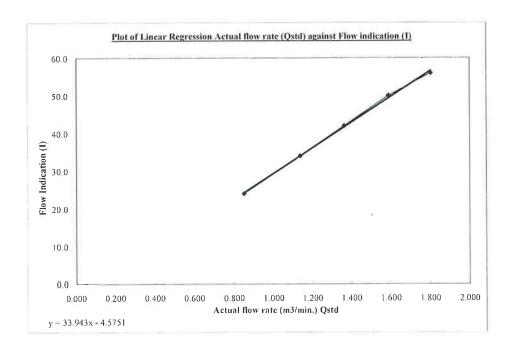
Sampler Model:	BM2000HX
Serial No.:	4994
Calibrator Orifice no	1785
Slope (m):	1.97702
Intercept (b):	-0.00070
Correction coeff. (r)	0.99992

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$Qstd = \frac{1}{m} \times (\sqrt{\frac{1}{m}})$	u Pa	Tstd	- 63
$QSIU = \frac{1}{m} \times V$	Pstd	Ta	-0)

Sample no.	Pressure Drop (H), inch	Flow (correted), m <sup>3</sup> /min	Actual flow rate (Qstd), m³/min	Flow indication (I), arbitrary
i i	12.6	3.564	1.803	56.0
2	9.8	3.143	1.590	50.0
3	7.2	2.694	1.363	42.0
4	5.0	2.245	1.136	34.0
5	2.8	1,680	0.850	24.0

Correlation Coefficient: 0.9993



 $IHPa = 0.750062 \; mmHg$ 

Calibrated by:

Arthur Chiu

Date: 23/11/2010

Checked by:

F.C. Tsang

Date: 23/11/2010

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Heng Hoi Chi Hong Ship Temple (ASR 3)

Calibration Date:
Calibration Due Date

23-Nov-10 23-Jan-11

Time:

08:15

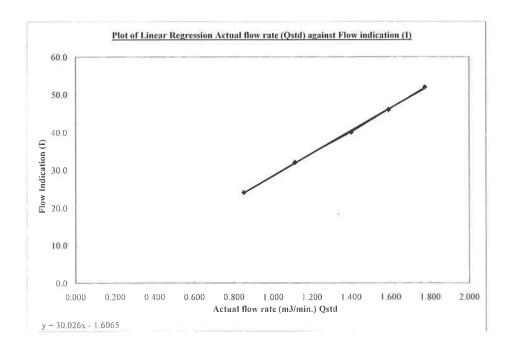
Sampler Model:	BM2000HX
Serial No.:	5875
Calibrator Orifice no.:	1785
Slope (m):	1.97702
Intercept (b):	-0.00070
Correction coeff. (r)	0.99992

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

02000	1	I.,	Pa	Tstd	1975
Qsta	$=\frac{1}{m}\times 0$	$V^{H}$	Pstd	Ta	- 6)

Sample no.	Pressure Drop (H), inch	Flow (corrcted), m³/min	Actual flow rate (Qstd), m <sup>3</sup> /min	Flow indication (I), arbitrary
	12.2	3.507	1.774	52.0
2	9_8	3.143	1.590	46.0
3	7.6	2.768	1.401	40.0
4	4.8	2,200	1.113	32.0
5	2.8	1.680	0.850	24.0

Correlation Coefficient: 0.9996



Remark

1HPa = 0.750062 minHg

Calibrated by:

Arthur Chiu

Date: 23/11/2010

Checked by:

F.C. Trang
( Hongton Read )

Date: 23/11/2010

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Long Beach Gardan (ASR 8)

Calibration Date:
Calibration Due Date

23-Nov-10 23-Jan-11

Time:

08:30

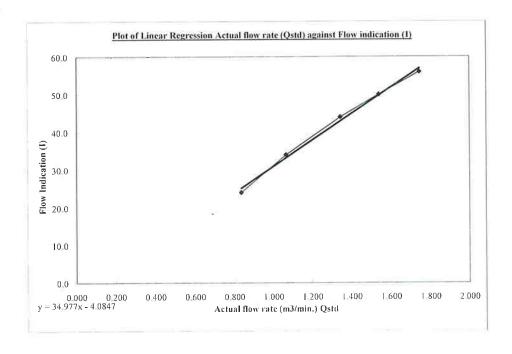
Sampler Model:	TE5005X
Serial No.:	1059
Calibrator Orifice no.:	1785
Slope (m):	1,97702
Intercept (b):	-0.00070
Correction coeff. (r)	0.99992

$$Plow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$Qstd = \frac{1}{m} \times (\sqrt{H})$	Pa Txid	<i>b</i> )
$Qsia = \frac{1}{m} \times (\sqrt{H})$	× Psid × Ta	~ ())

Sample no.	Pressure Drop (H), inch	Flow (correted), m <sup>3</sup> /min	Actual flow rate (Qstd), m <sup>3</sup> /min	Flow indication (1), arbitrary
1	11.8	3.449	1.745	56.0
2	9.2	3,046	1.541	50.0
3	7.0	2.657	1.344	44_0
4	4.4	2.106	1.066	34.0
5	2.7	1.650	0.835	24.0

Correlation Coefficient: 0.9969



Remark

1HPa = 0.750062 mmHg

Calibrated by:

Arthur Chiu

Date: 13/11/2010

Checked by:

F.C. Tsang

Date: 23/11/2010

( Hangtan Reary )

**Project Title:** 

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Greenview Terrance (ASR 9)

Calibration Date: Calibration Due Date 23-Nov-10 23-Jan-11

Time:

08:45

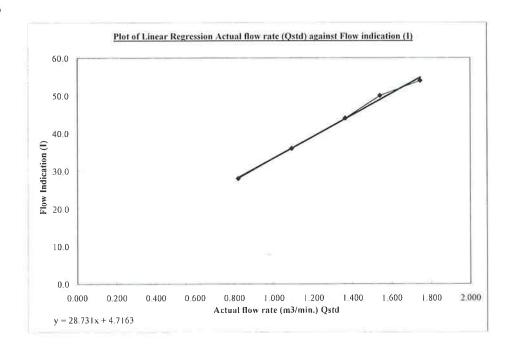
Sampler Model:	TE5005X
Serial No.:	1713
Calibrator Orifice no :	1785
Slope (m):	1_97702
Intercept (b):	-0.00070
Correction coeff. (r)	0.99992

$$Plow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

0.01	Pa	Tstd	- b)
$Qstd = \frac{1}{m} \times (\sqrt{\frac{1}{m}})$	$H \times {Pstd} \times$	Ta	-0)

Sample no.	Pressure Drop (H), inch	Flow (correted), m <sup>3</sup> /min	Actual flow rate (Qstd), m3/min	Flow indication (I), arbitrary
Ī	11.8	3.449	1.745	54.0
2	9 2	3 046	1.541	50.0
3	7.2	2.694	1.363	44.0
4	4.6	2.154	1.090	36.0
5	2.6	1.619	0.819	28.0

Correlation Coefficient: 0.9979



Remark

1HPa = 0.750062 mmHg

Calibrated by:

Date: 23/11/2010

Checked by:

F.C. Tsang

Date: 23/11/20(0

( Hangton Deog

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Ho Fung College (ASR 1)

Calibration Date:

21-Jan-11

**Calibration Due Date** Time:

20-Маг-11 08:00

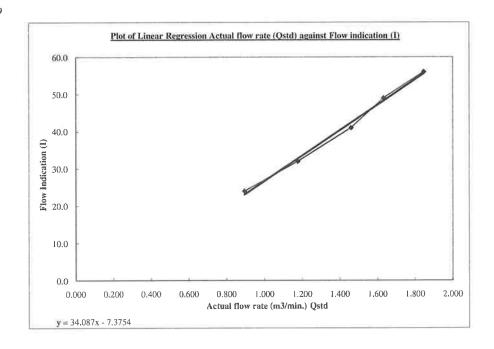
Sampler Model:	BM2000HX
Serial No.:	4994
Calibrator Orifice no.:	1785
Slope (m):	1.97702
Intercept (b):	-0.00070
Correction coeff. (r)	0.99992

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

and I will	Pa Tsid	ь
$Qsia = - \times (\sqrt{m})$	$H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}$	- 0)

Sample no.	Pressure Drop (H), inch	Flow (correted), m3/min	Actual flow rate (Qstd), m <sup>3</sup> /min	Flow indication (I), arbitrary
i i	12.8	3.649	1.846	56.0
2	10.0	3.225	1.632	49.0
3	0.8	2.885	1.459	41.0
4	5.2	2.326	1.177	32.0
5	3.0	1.767	0.894	24.0

Correlation Coefficient: 0.9969



Remark

1HPa = 0.750062 mmHg

Calibrated by:

Arthur Chiu

Date: 21/01/2011

Checked by:

Date: 21/01/2011

Project Title: Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location: Heng Hoi Chi Hong Ship Temple (ASR 3)

Calibration Date: 21-Jan-11
Calibration Due Date 20-Mar-11
Time: 08:15

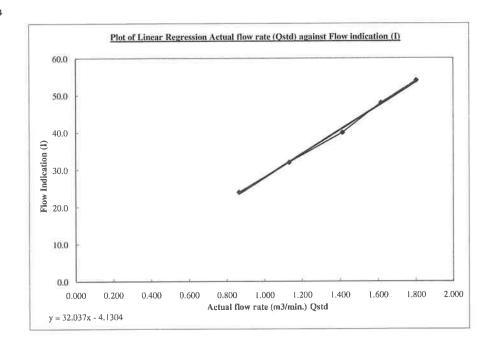
Sampler Model:	BM2000HX		
Serial No.:	5875		
Calibrator Orifice no.:	1785		
Slope (m):	1.97702		
Intercept (b):	-0.00070		
Correction coeff. (r)	0.99992		

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$$Qstd = \frac{1}{m} \times (\sqrt{H \times \frac{Pa}{Pstd}} \times \frac{Tstd}{Ta} - b)$$

Sample no.	Pressure Drop (H), inch	Flow (correted), m <sup>3</sup> /min	Actual flow rate (Qstd), m <sup>3</sup> /min	Flow indication (I), arbitrary
	12,2	3.562	1.802	54.0
2	9.8	3.193	1.615	48.0
3	7,5	2.793	1.413	40.0
4	4.8	2.235	1.131	32.0
5	2,8	1,707	0.864	24.0

Correlation Coefficient: 0.9984



Remark

1HPa = 0.750062 mmHg

Calibrated by:

Arthur Chiu

Date: 21/01/2011

Checked by:

F.C. Tsang

Date: 21/01/2011

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Long Beach Gardan (ASR 8)

Calibration Date: **Calibration Due Date** 

Time:

21-Jan-11 20-Mar-11 08:30

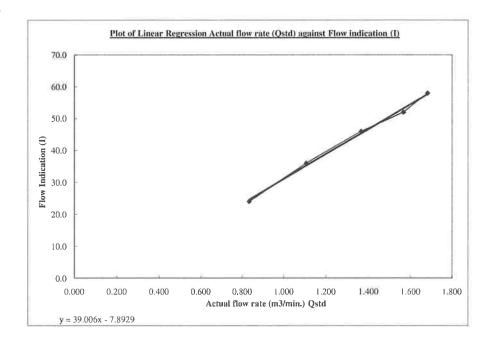
Sampler Model:	TE5005X
Serial No.:	1059
Calibrator Orifice no.:	1785
Slope (m):	1.97702
Intercept (b):	-0.00070
Correction coeff (r)	0.00002

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

0 - 1	u., Pa	Tstd	- b
$Qstd = \frac{1}{m} \times (\sqrt{\frac{1}{m}})$	Pstd	Ta	-0

Sample no.	Pressure Drop (H), inch	Flow (correted), m3/min	Actual flow rate (Qstd), m <sup>3</sup> /min	Flow indication (I), arbitrary
1	10.6	3.321	1.680	58.0
2	9.2	3,094	1.565	52.0
3	7.0	2.698	1.365	46.0
4	4.6	2.187	1.107	36.0
5	2.6	1.645	0,832	24.0

Correlation Coefficient: 0.9981



Remark

1HPa = 0.750062 mmHg

Calibrated by:

Arthur Chiu

Date: 21/01/2011

Checked by:

F.C. Tsang Fraggacking (TSANG, FAN CHEONG)

Date: 21/0//20/1

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

**Monitoring Location:** 

Greenview Terrance (ASR 9)

Calibration Date: **Calibration Due Date** 

Time:

21-Jan-11 20-Mar-11 08:45

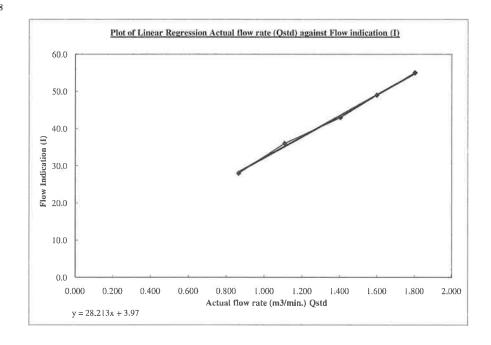
Sampler Model:	TE5005X
Serial No.:	1713
Calibrator Orifice no.:	1785
Slope (m):	1,97702
Intercept (b):	-0.00070
Correction coeff. (r)	0.99992

Flow (corrected) = 
$$\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$$Qstd = \frac{1}{m} \times (\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}} - b)$$

Sample no.	Pressure Drop (H), inch	Flow (correted), m³/min	Actual flow rate (Qstd), m <sup>3</sup> /min	Flow indication (I), arbitrary
1	12.2	3.562	1.802	55.0
2	9.6	3,160	1.599	49.0
3	7.4	2.774	1.404	43.0
4	4.6	2,187	1.107	36.0
5	2.8	1.707	0.864	28.0

Correlation Coefficient: 0.9988



Remark 1HPa = 0.750062 mmHg

Calibrated by:

Arthur Chiu

Date: 21/01/2011

Checked by:

F.C. Tsang fragta lange (TSANG, FAN CHEONG)

Date: 21/01/2011



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

#### AIR POLLUTION MONITORING EQUIPMENT

#### ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Ma Operator	_	Rootsmeter Orifice I.I	•	333620 1785	Ta (K) - Pa (mm) -	29 <b>6</b> - 750.57
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA NA	NA NA NA NA NA	1.00 1.00 1.00 1.00	1.3960 0.9840 0.8790 0.8390 0.6940	3.2 6.4 7.9 8.7 12.7	2.00 4.00 5.00 5.50 8.00

#### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9900 0.9858 0.9837 0.9827 0.9774	0.7092 1.0018 1.1191 1.1713 1.4084	1.4102 1.9943 2.2296 2.3385 2.8203		0.9957 0.9915 0.9894 0.9884 0.9830	0.7133 1.0076 1.1256 1.1781 1.4165	0.8881 1.2560 1.4042 1.4728 1.7762
Qstd slop intercept coefficie y axis =	(b) = ent (r) =	2.01637 -0.02316 0.99996 Pa/760)(298/	 [a)]	Qa slope intercept coefficie y axis =	(b) =	1.26262 -0.01458 0.99996

#### 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:

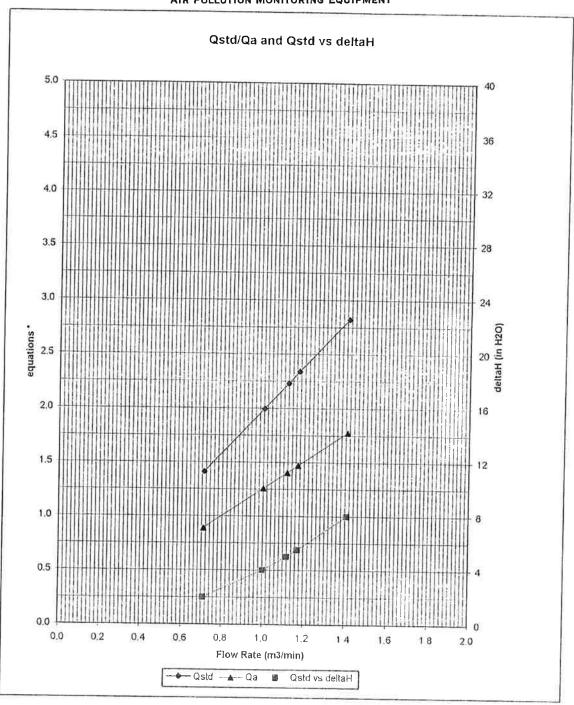
Qstd =  $1/m\{[SQRT(H2O(Pa/760)(298/Ta))] - b\}$ 

 $Qa = 1/m\{ [SQRT H2O(Ta/Pa)] - b \}$ 



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.GOM

#### AIR POLLUTION MONITORING EQUIPMENT



\* y-axis equations:

**Qstd** series:

$$\sqrt{A H \left(\frac{P a}{P s \ell d}\right) \left(\frac{T s \ell d}{T a}\right)}$$

Qa series:

#1785



### 輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No.: C102904

# Certificate of Calibration

### This is to certify that the equipment

Description: Sound Level Meter

Manufacturer: Rion

Model No.: NL-31

Serial No.: 00410224

has been calibrated for the specific items and ranges.

The results are shown in the Calibration Report No. C102904.

### The equipment is supplied by

Co. Name: Envirotech Services Co.

Address: Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue: 31 May 2010

Certified by:

K Lee

Certificate No.: C106297

# Certificate of Calibration

### This is to certify that the equipment

Description: Integrating Sound Level Meter

Manufacturer: Bruel & Kjaer

Model No.: 2238

Serial No.: 2448529

has been calibrated for the specific items and ranges. The results are shown in the Calibration Report No. C106297.

The equipment is supplied by

Co. Name: Hyder Consulting Limited

Address: 47/F., Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong

Date of Issue: 16 November 2010

Certified by:



Certificate No. 07436

Page 1 of 3 Pages

Customer: Hyder Consulting Limited

Address: 47/F., Hopewell Centre, 183 Queens Road East, Wanchai, Hong Kong

Order No.: Q02884

Date of receipt

28-Dec-10

**Item Tested** 

**Description**: Sound Level Meter

Manufacturer: B&K

Model : 2238

Serial No.

: 2562782

**Test Conditions** 

Date of Test: 29-Dec-10

Supply Voltage : --

**Ambient Temperature:** 

 $(23 \pm 3)^{\circ}C$ 

Relative Humidity: (50 ± 25) %

**Test Specifications** 

Calibration check.

Ref. Document/Procedure: Z01.

#### **Test Results**

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No. Description

Cert. No.

Traceable to

S017A

Multi-Function Generator

07279

SCL-HKSAR

S024

Sound Level Calibrator

04062

NIM-PRC & SCL-HKSAR

The values given in this Calibration 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 environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. 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 International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by:

P. F. Wong

Approved by :

30-Dec-10

Dorothy Cheuk

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

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Certificate No. 07436

Page 2 of 3 Pages

Results:

### 1. SPL Accuracy

	UUT Setting			Applied Value	UUT Reading
Range	Freq. Wgt.	Bandwith	Center Freq.	(dB)	(dB)
20 ~ 100	A	BB/F		94.0	94.1
	A	BB/S			94.1
	C	BB/F			94.0
40 ~ 120	A	BB/F		94.0	94.1
	A	BB/F		114.0	113.9

IEC 651 Type 1 Spec. :  $\pm$  0.7 dB

Uncertainty:  $\pm 0.1 \text{ dB}$ 

2. Level Stability: 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty: ± 0.01 dB

### 3. Linearity

### 3.1 Level Linearity

UUT Range	Applied	UUT Reading	Variation	IEC 651 Type 1 Spec.
(dB)	Value (dB)	(dB)	(dB)	(Primary Indicator Range)
140	114.0	114.3	+0.2	± 0.7 dB
130	104.0	104.3	+0.2	
120	94.0	94.1 (Ref.)		
110	84.0	83.9	-0.2	
100	74.0	73.9	-0.2	
90	64.0	63.9	-0.2	
80	54.0	54.2	+0.1	

Uncertainty: ± 0.1 dB



Certificate No. 07436

Page 3 of 3 Pages

### 3.2 Differential level linearity

UUT Range	Applied	UUT Reading		
(dB)	Value (dB)	(dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.9	-0.2	± 0.4 dB
	94.0	94.1 (Ref.)		
	95.0	95.1	0.0	± 0.2 dB

Uncertainty: ± 0.1 dB

### 4. Frequency Weighting

### A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.0	- 39.4 dB, ± 1.5 dB
63 Hz	-26.7	- 26.2 dB, ± 1.5 dB
125 Hz	-16.6	- 16.1 dB, ± 1 dB
250 Hz	-9.1	- 8.6 dB, ± 1 dB
500 Hz	-3.5	- 3.2 dB, $\pm 1$ dB
1 kHz	0.0 (Ref)	$0 \text{ dB}, \pm 1 \text{ dB}$
2 kHz	+1.5	$+ 1.2 \text{ dB}, \pm 1 \text{ dB}$
4 kHz	+1.3	+ 1.0 dB, ± 1 dB
8 kHz	-0.7	- 1.1 dB, + 1.5 dB $\sim$ -3 dB
16 kHz	-6.3	- 6.6 dB, + 3 dB $\sim$ - $\infty$

Uncertainty:  $\pm 0.1 \text{ dB}$ 

### 5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	
1/10	40.0	39.9	± 0.5 dB
$1/10^2$	40.0	40.0	
$1/10^3$	40.0	40.5	± 1.0 dB
1/10 <sup>4</sup>	40.0	41.0	

Uncertainty: ± 0.1 dB

Remarks: 1. UUT: Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric pressure: 1 012 hPa.



Certificate No. 07437

Page 1 of 2 Pages

Customer: Hyder Consulting Limited

Address: 47/F., Hopewell Centre, 183 Queens Road East, Wanchai, Hong Kong

Order No.: Q02884 Date of receipt

**Item Tested** 

**Description**: Sound Level Calibrator

Manufacturer: B&K

Model: Type 4231

: Type 4231

Serial No.

: 2699361

28-Dec-10

**Test Conditions** 

Date of Test: 29-Dec-10

Supply Voltage : --

**Ambient Temperature:** 

 $(23 \pm 3)^{\circ}C$ 

Relative Humidity:  $(50 \pm 25)$  %

**Test Specifications** 

Calibration check.

Ref. Document/Procedure: F21, Z02.

#### **Test Results**

All results were within the IEC 942 Class 1 specification.

The results are shown in the attached page(s).

#### Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S014	Spectrum Analyzer	03926	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR
S041	Universal Counter	04461	SCL-HKSAR
S206	Sound Level Meter	04462	SCL-HKSAR

The values given in this Calibration 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 environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. 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 International System of Units (SI). The test results apply to the above Unit-Under-Test only

Calibrated by:

P. F. Wong

Approved by:

Dorothy Cheuk

This Certificate is issued by:

Hong Kong Calibration Ltd.

Date: 30-Dec-10

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong. Tel: 2425 8801 Fax: 2425 8646



Certificate No. 07437

Page 2 of 2 Pages

Results:

### 1. Level Accuracy

UUT Nominal Value (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94	94.02	± 0.3 dB
114	114.10	

Uncertainty:  $\pm 0.1 \text{ dB}$ 

### 2. Frequency

UUT Nominal Value	Measured Value	IEC 942 Class 1 Spec.
1 kHz	1.000 kHz	± 2 %

Uncertainty:  $\pm 3.6 \times 10^{-6}$ 

3. Level Stability: 0.0 dB

IEC 942 Class 1 Spec. :  $\pm$  0.1 dB

Uncertainty: ± 0.01 dB

4. Total Harmonic Distortion : < 0.5 %

IEC 942 Class 1 Spec. : < 3 % Uncertainty : ± 2.3 % of reading

Remark: 1. UUT: Unit-Under-Test

- 2. The above measured values are the mean of 3 measurement.
- 3. The uncertainty claimed is for a confidence probability of not less than 95%.
- 4. Atmospheric Pressure: 1012 hPa.

----- END -----

### **CERTIFICATE OF ANALYSIS**

Work Order: Date of Issue: HK1030685

31/12/2010

Client:

HYDER CONSULTING LIMITED

**Client Reference:** 

DC2007/12 DESIGN AND CONSTRUCTION OF

TSUEN WAN DRAINAGE TUNNEL

### Calibration of Turbidity System

Item:

Turbidimter

Model No.: Eutech Instruments TN-100

ALS Lab ID:

HK1030685-001

Equipment No.: --

Date of Calibration: 28 December, 2010

Serial No.: 215619

Testing Results:

**Turbidity** 

Expected Reading	Recording Reading
0.00 NTU	0.29 NTU
4.00 NTU	3.97 NTU
40.0 NTU	39.7 NTU
80.0 NTU	74.2 NTU
400 NTU	433 NTU
800 NTU	783 NTU
Allowing Deviation	± 10%

**Testing Method:** 

APHA (19th edition), 2130B

Mr Chan Kwok Fai, Codfrey Laboratory Manager - Hong Kong

### **CERTIFICATE OF ANALYSIS**

Work Order:

HK1028665

Date of Issue:

03/12/2010

Client:

HYDER CONSULTING LIMITED

**Client Reference:** 

#### Calibration of Mulitimeter

Item:

Mulitimeter

Model No.: WTW pH/Oxi 340i

ALS Lab ID:

HK102866 -001 Date of Calibration: 03 December 2010 Serial No.: 08101283

Testing Results:

рΗ

Expected Reading	Recording Reading
4.00	4.03
7.00	7.18
10.0	10.1
Allowing Deviation	+ 0.2 unit

**Testing Method:** 

APHA (20th edition), 4500-H<sup>+</sup>B

Temperature

Expected Reading	Recording Reading
12.5 °C 20.5 °C 37.0 °C	12.6 °C 20.8 °C 37.1 °C
Allowing Deviation	±2.0°C

**Testing Method:** 

In-House Method

Dissolved Oxygen

Expected Reading	Recording Reading
4.67 mg/L 5.97 mg/L 8.01 mg/L	4.75 mg/L 5.89 mg/L 8.02 mg/L
Allowing Deviation	± 0.2 mg/L

**Testing Method:** 

APHA (20th edition), 4500-OC & G

Mr Chan Kwok Fai, Godfrey Laborator Manager - Hong Kong

ALS Technichem (HK) Pty Ltd



## Appendix G

# **Monitoring Locations**

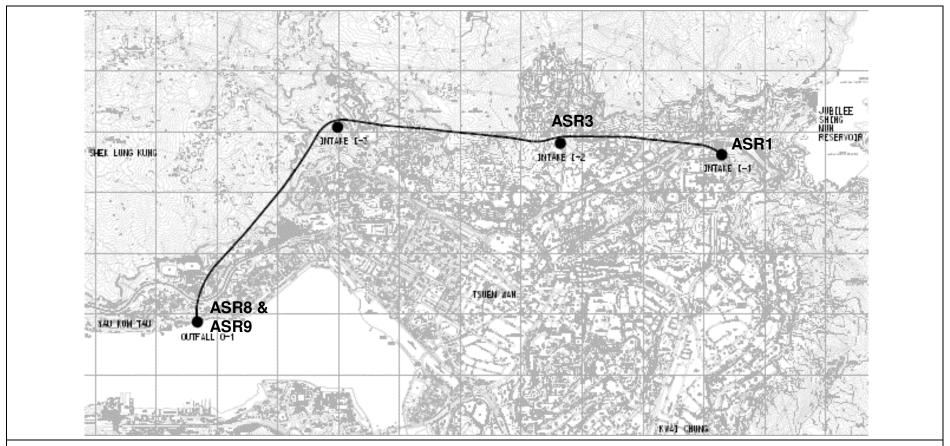


Figure 1 Air Quality Monitoring Stations

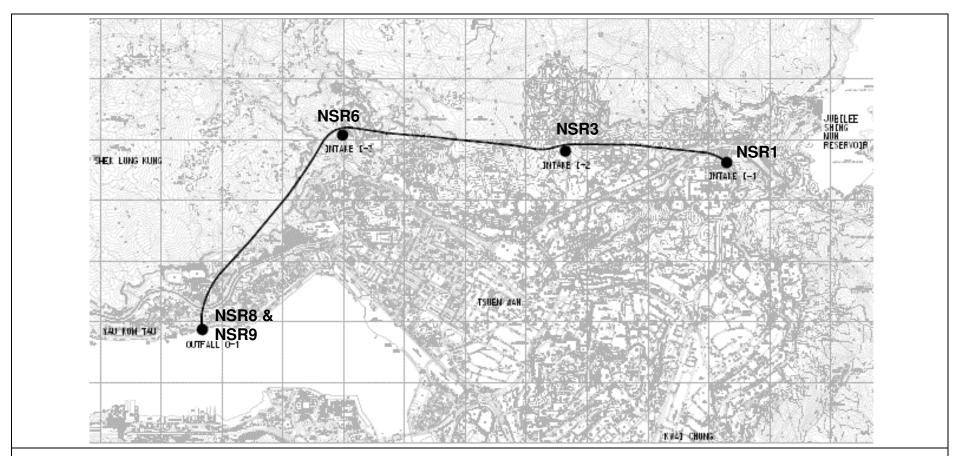


Figure 2 Noise Monitoring Stations

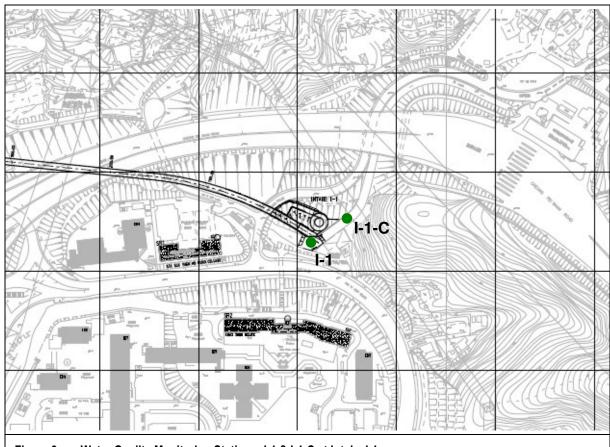
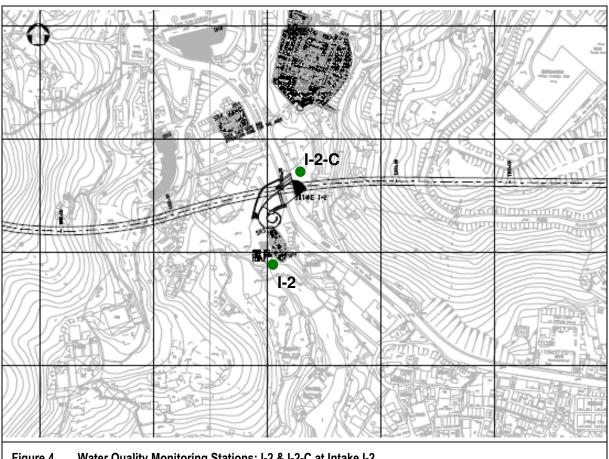
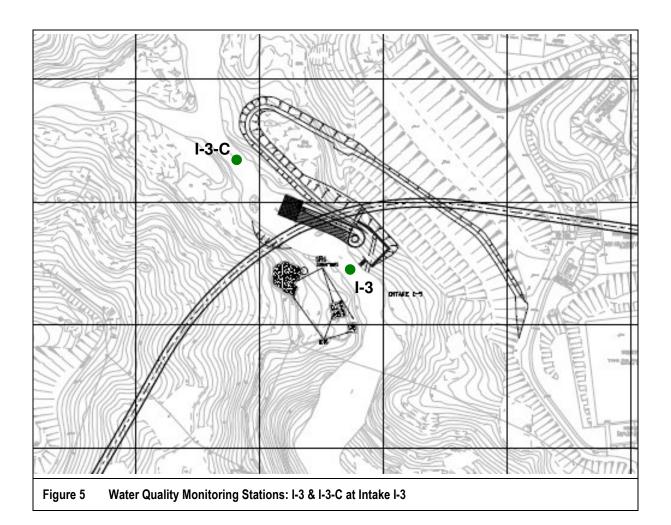


Figure 3 Water Quality Monitoring Stations: I-1 & I-1-C at Intake I-1



Water Quality Monitoring Stations: I-2 & I-2-C at Intake I-2 Figure 4



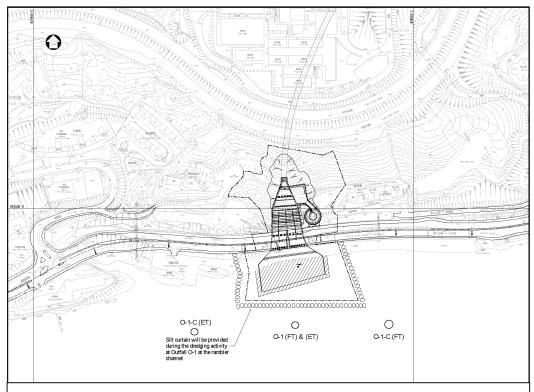


Figure 6 Water Quality Monitoring Stations: O-1 (FT) & (ET), O-1-C(FT) & O-1-C(FT) at Outfall O-1



Appendix H

## **EM&A Schedule**

# Contract No. DC/2007/12 – Design and Construction of Tsuen Wan Drainage Tunnel

### Impact Monitoring Programme - January 11

Date		Air	Noise	Water		
01-Jan-11	Sat					
02-Jan-11	Sun					
03-Jan-11	Mon			✓		
04-Jan-11	Tue	✓	✓			
05-Jan-11	Wed			✓		
06-Jan-11	Thu					
07-Jan-11	Fri			✓		
08-Jan-11	Sat					
09-Jan-11	Sun					
10-Jan-11	Mon	✓	✓	✓		
11-Jan-11	Tue					
12-Jan-11	Wed			✓		
13-Jan-11	Thu					
14-Jan-11	Fri	✓	<b>√</b> ∧	✓		
15-Jan-11	Sat					
16-Jan-11	Sun					
17-Jan-11	Mon		<b>√</b> ∧	✓		
18-Jan-11	Tue					
19-Jan-11	Wed			✓		
20-Jan-11	Thu	✓	✓			
21-Jan-11	Fri			✓		
22-Jan-11	Sat					
23-Jan-11	Sun					
24-Jan-11	Mon			✓		
25-Jan-11	Tue					
26-Jan-11	Wed	✓	✓	✓		
27-Jan-11	Thu					
28-Jan-11	Fri		<b>√</b> ∧	✓		
29-Jan-11	Sat					
30-Jan-11	Sun					
31-Jan-11	Mon			✓		

#### Note:

Shaded area indicates public holiday.

Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise – Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday)

Water – Water measurements is undertaken three times per week

<sup>^ -</sup> Additional Noise Monitoring at NSR9

# Contract No. DC/2007/12 – Design and Construction of Tsuen Wan Drainage Tunnel

### **Impact Monitoring Programme – February 11 (Tentative)**

Date		Air	Noise	Water
01-Feb-11	Tue	✓	✓	
02-Feb-11	Wed			✓
03-Feb-11	Thu			
04-Feb-11	Fri			
05-Feb-11	Sat			
06-Feb-11	Sun			
07-Feb-11	Mon	✓	✓	✓
08-Feb-11	Tue			
09-Feb-11	Wed			✓
10-Feb-11	Thu			
11-Feb-11	Fri	✓		✓
12-Feb-11	Sat			
13-Feb-11	Sun			
14-Feb-11	Mon			✓
15-Feb-11	Tue			
16-Feb-11	Wed			✓
17-Feb-11	Thu	✓	✓	
18-Feb-11	Fri			✓
19-Feb-11	Sat			
20-Feb-11	Sun			
21-Feb-11	Mon			✓
22-Feb-11	Tue			
23-Feb-11	Wed	✓	✓	✓
24-Feb-11	Thu			
25-Feb-11	Fri			✓
26-Feb-11	Sat			
27-Feb-11	Sun			
28-Feb-11	Mon			✓

Note:

Shaded area indicates public holiday.

Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise – Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday)

Water - Water measurements is undertaken three times per week

### Contract No. DC/2007/12 - Design and Construction of **Tsuen Wan Drainage Tunnel**

### **Impact Monitoring Programme – March 11 (Tentative)**

Date		Air	Noise	Water			
01-Mar-11	Tue	✓	✓				
02-Mar-11	Wed			✓			
03-Mar-11	Thu						
04-Mar-11	Fri			✓			
05-Mar-11	Sat						
06-Mar-11	Sun						
07-Mar-11	Mon	✓	✓	✓			
08-Mar-11	Tue						
09-Mar-11	Wed			✓			
10-Mar-11	Thu						
11-Mar-11	Fri	✓		✓			
12-Mar-11	Sat						
13-Mar-11	Sun						
14-Mar-11	Mon			✓			
15-Mar-11	Tue						
16-Mar-11	Wed			✓			
17-Mar-11	Thu	✓	✓				
18-Mar-11	Fri			✓			
19-Mar-11	Sat						
20-Mar-11	Sun						
21-Mar-11	Mon			✓			
22-Mar-11	Tue						
23-Mar-11	Wed	✓	<b>✓</b>	✓			
24-Mar-11	Thu						
25-Mar-11	Fri			✓			
26-Mar-11	Sat						
27-Mar-11	Sun						
28-Mar-11	Mon			✓			
29-Mar-11	Tue	✓	✓				
30-Mar-11	Wed			✓			
31-Mar-11	Thu						

Note:

Shaded area indicates public holiday. Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise – Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday) Water – Water measurements is undertaken three times per week

### Contract No. DC/2007/12 - Design and Construction of **Tsuen Wan Drainage Tunnel**

### **Impact Monitoring Programme – April 11 (Tentative)**

Date	)	Air	Noise	Water
01-Apr-11	Fri			✓
02-Apr-11	Sat			
03-Apr-11	Sun			
04-Apr-11	Mon	✓	✓	✓
05-Apr-11	Tue			
06-Apr-11	Wed			✓
07-Apr-11	Thu			
08-Apr-11	Fri	✓		✓
09-Apr-11	Sat			
10-Apr-11	Sun			
11-Apr-11	Mon			✓
12-Apr-11	Tue			
13-Apr-11	Wed			✓
14-Apr-11	Thu	✓	<b>✓</b>	
15-Apr-11	Fri			✓
16-Apr-11	Sat			
17-Apr-11	Sun			
18-Apr-11	Mon			✓
19-Apr-11	Tue			
20-Apr-11	Wed	✓	<b>✓</b>	<b>✓</b>
21-Apr-11	Thu			
22-Apr-11	Fri			
23-Apr-11	Sat			
24-Apr-11	Sun			
25-Apr-11	Mon			
26-Apr-11	Tue	✓	✓	
27-Apr-11	Wed			✓
28-Apr-11	Thu			
29-Apr-11	Fri			✓
30-Apr-11	Sat			

#### Note:

Shaded area indicates public holiday.

Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise – Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday) Water – Water measurements is undertaken three times per week



## Appendix I

# **Monitoring Results**

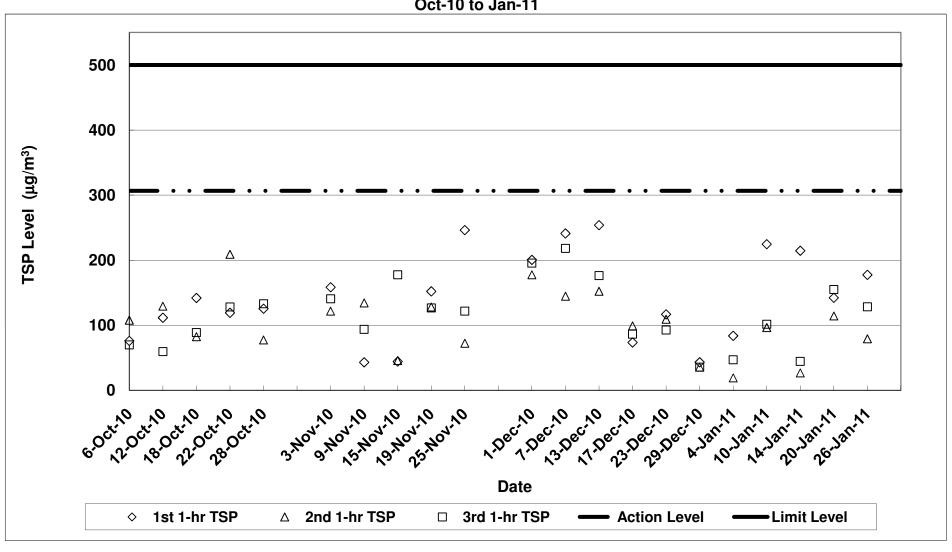
#### Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

Air Quality Impact Monitoring Results (1-Hour TSP)

Location	Monitoring Date	Weather Conditions	Wind Speed with Direction (m/s)	Temp (°C)	Timer-I	Timer-F	Time (mins)	Flow-I (CFM)	Flow-F (CFM)	Flow-I (m³/min)	Flow-F (m <sup>3</sup> /min)	Flow-avg (m <sup>3</sup> /min)	Volume (m³)	Weight-I (g)	Weight-f (g)	Weight-diff. (g)	1-hr TSP (µg/m³)	Average 1-Hr TSP (μg/m³)	Action/Limit Levels (µg/m³)	Observation / Site Condition	Remark
		Cloudy	0.3N	15	606742	606842	60.0	40	40	1.31	1.31	1.31	78.79	2.8524	2.8590	0.0066	83.8		(µg/iii )		
	04-Jan-11	Cloudy	0.3N	15	606842	606942	60.0	40	40	1.31	1.31	1.31	78.79	2.9118	2.9133	0.0015	19.0	49.9		Crane operation	Traffic
		Cloudy Sunny	0.3N 0.3E	15 14	606942 607042	607042 607142	60.0 60.0	40 40	40 40	1.31	1.31	1.31	78.79 78.79	2.8744 2.8299	2.8781 2.8476	0.0037	47.0 224.6				
	10-Jan-11	Sunny	0.3E	14	607142	607242	60.0	40	40	1.31	1.31	1.31	78.79	2.8673	2.8749	0.0076	96.5	140.9		Crane operation	Traffic
		Sunny	0.3E	14	607242	607342	60.0	40	40	1.31	1.31	1.31	78.79	2.7810	2.7890	0.0080	101.5			Crane operation	
	14-Jan-11	Sunny	0.3E	15 15	607342 607442	607442 607542	60.0	40	40	1.31	1.31	1.31	78.79 78.79	2.7611 2.7827	2.7780 2.7848	0.0169	214.5	95.2			Traffic
Sik Sik Yuen Ho Fung	14-Jan-11	Sunny	0.3E	15	607542	607642	60.0	40	40	1.31	1.31	1.31	78.79	2.7827	2.7848	0.0021	44.4	4		Crane operation	Tallic
College - Intake (ASR1)		Cloudy																			
	20-Jan-11	Cloudy	0.5N	15	607742	607842	60.0	40	40	1.31	1.31	1.31	78.79	2.7927	2.8017	0.0090	114.2	137.1		Crane operation	Traffic
		Cloudy Sunny	0.5N 0.5F	15 16	607842 607942	607942	60.0 60.0	40 40	40 40	1.31	1.31	1.31	78.79 83.39	2.7801 2.7506	2.7923 2.7654	0.0122 0.0148	154.8 177.5				
	26-Jan-11	Sunny	0.5E	16	608042	608142	60.0	40	40	1.39	1.39	1.39	83.39	2.7826	2.7892	0.0066	79.1	128.3		Crane opeartion	Traffic
		Sunny	0.5E	16	608142	608242	60.0	40	40	1.39	1.39	1.39	83.39	2.7681	2.7788	0.0107	128.3				
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0			
	-	-	-	+ :-		H :				-	-		-	-	-	-	0.0	0.0			
		Cloudy	0.5N	15	575290	575390	60.0	40	40	1.39	1.39	1.39	83.14	2.8654	2.873	0.0076	91.4				
	04-Jan-11	Cloudy	0.5N	15	575390	575490	60.0	40	40	1.39	1.39	1.39	83.14	2.8560	2.8570	0.0010	12.0	47.3		Excavation works	Traffic
		Cloudy Sunny	0.5N 0.3E	15 14	575490 575590	575590 575690	60.0 60.0	40 40	40 40	1.39	1.39	1.39	83.14 83.14	2.8200 2.8641	2.8232 2.8788	0.0032	38.5 176.8				
	10-Jan-11	Sunny	0.3E	14	575690	575790	60.0	40	40	1.39	1.39	1.39	83.14	2.8641	2.8788	0.0066	79.4	117.1		Drilling and hammering	Traffic
		Sunny	0.3E	14	575790	575890	60.0	40	40	1.39	1.39	1.39	83.14	2.7862	2.7941	0.0079	95.0			_	
		Sunny	0.3E	15	575890	575990	60.0	40	40	1.39	1.39	1.39	83.14	2.7891	2.7994	0.0103	123.9				
Hong Hoi Chee Hong	14-Jan-11	Sunny	0.3E 0.3E	15 15	575990 576090	576090 576190	60.0	40 40	40 40	1.39	1.39	1.39	83.14 83.14	2.8024 2.7810	2.8048 2.7853	0.0024	28.9 51.7	68.2		Drilling	Traffic
Temple - Intake (ASR3)		Cloudy	0.5N	15	576190	576290	60.0	40	40	1.39	1.39	1.39	83.14	2.7837	2.7965	0.0128	154.0		327.4/500		
	20-Jan-11	Cloudy	0.5N	15	576290	576390	60.0	40	40	1.39	1.39	1.39	83.14	2.7818	2.7905	0.0087	104.6	127.5		Drilling and welding works	Traffic
		Cloudy	0.5N	15	576390	576490	60.0	40	40	1.39	1.39	1.39	83.14	2.7825	2.7928	0.0103	123.9				4
	26-Jan-11	Sunny	0.5E	16	576490 576590	576590 576690	60.0 60.0	40 40	40	1.38	1.38	1.38	82.65 82.65	2.7725 2.7710	2.7855 2.7792	0.0130	157.3 99.2	111.7		Drilling	Traffic
		Sunny	0.5E	16	576690	576790	60.0	40	40	1.38	1.38	1.38	82.65	2.7726	2.7791	0.0065	78.6			, and the second	
	-	-	-	-	-	-	-		-			-	-	-	-	-	0.0				
		-	-		-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0			
		Cloudy	0.4N	15	569434	569534	60.0	40	40	1.26	1.26	1.26	75.62	2.8231	2.8293	0.0062	82.0				
	04-Jan-11	Cloudy	0.4N	15	569534	569634	60.0	40	40	1.26	1.26	1.26	75.62	2.8828	2.8880	0.0052	68.8	57.3		Crane operation and dredging	Traffic.
		Cloudy	0.4N	15	569634	569734	60.0	40	40	1.26	1.26	1.26	75.62	2.8696	2.8712	0.0016	21.2				
	10-Jan-11	Sunny	0.3E 0.3E	14 14	569734 569834	569834 569934	60.0 60.0	40 40	40 40	1.26	1.26	1.26 1.26	75.62 75.62	2.8677 2.8017	2.8882 2.8270	0.0205 0.0253	271.1 334.6	278 1		Rock removal and excavation works	Traffic
	10-3411-11	Sunny	0.3E	14	569934	570034	60.0	40	40	1.26	1.26	1.26	75.62	2.7939	2.8112	0.0253	228.8	270.1		nock removal and excavation works	Trainc
		Sunny	0.5E	15	570034	570134	60.0	40	40	1.26	1.26	1.26	75.62	2.7731	2.7958	0.0227	300.2				
	14-Jan-11	Sunny	0.5E	15	570134	570234	60.0	40	40	1.26	1.26	1.26	75.62	2.7704	2.7777	0.0073	96.5	156.9		Dredging and excavator	Traffic
Long Beach Gardens - Outfall (ASR8)		Sunny	0.5E 0.3N	15 15	570234 570334	570334 570434	60.0 60.0	40 40	40 40	1.26	1.26	1.26	75.62 75.62	2.7785 2.7632	2.7841 2.7800	0.0056	74.1 222.2		336.6/500		
	20-Jan-11	Cloudy	0.3N	15	570434	570534	60.0	40	40	1.26	1.26	1.26	75.62	2.7751	2.7863	0.0112	148.1	159.6		Excavation works and drilling	Traffic
		Cloudy	0.3N	15	570534	570634	60.0	40	40	1.26	1.26	1.26	75.62	2.7691	2.7773	0.0082	108.4			_	
	26-Jan-11	Sunny	0.6E	16	570634	570734	60.0	40	40	1.23	1.23	1.23	73.67	2.7744	2.7901	0.0157	213.1	152.5		Breaker and Portion E	Traffic
	20-Jan-11	Sunny	0.6E 0.6E	16 16	570734 570834	570834 570934	60.0	40 40	40 40	1.23	1.23	1.23	73.67 73.67	2.7764 2.7801	2.7882	0.0118	160.2 84.2	152.5		breaker and Fortion E	Tranic
		-	-	-	-	-	-		-		-	-	-	-	-	-	0.0				
	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	0.0	0.0			
-		Cloudy	0.5N	15	562280	562380	60.0	40	40	1.23	1.23	1.23	73.68	2.8949	2.9016	0.0067	0.0 90.9	<del>                                     </del>			
	04-Jan-11	Cloudy	0.5N	15	562380	562480	60.0	40	40	1.23	1.23	1.23	73.68	2.8572	2.8645	0.0067	99.1	98.2		Crane operation and dredging	Traffic.
		Cloudy	0.5N	15	562480	562580	60.0	40	40	1.23	1.23	1.23	73.68	2.8320	2.8397	0.0077	104.5				
	10-Jan-11	Sunny	0.3E	14	562580	562680	60.0	40	40	1.23	1.23	1.23	73.68	2.8622	2.8802	0.0180	244.3	184.6			Traffic
	10-Jan-11	Sunny	0.3E	14 14	562680 562780	562780 562880	60.0	40	40	1.23	1.23	1.23	73.68 73.68	2.7779	2.7880 2.7978	0.0101	137.1	184.6		Rock removal and excavation works	Tallic
		Sunny	0.5E	15	562880	562980	60.0	40	40	1.23	1.23	1.23	73.68	2.7754	2.7968	0.0214	290.4				
	14-Jan-11	Sunny	0.5E	15	562980	563080	60.0	40	40	1.23	1.23	1.23	73.68	2.7912	2.7952	0.0040	54.3	153.4		Breaker and crane operation	Traffic
Greenview Terrance - Outfall (ASR9)		Sunny	0.5E	15	563080	563180	60.0	40	40	1.23 1.23 1.23 73.68 2.8045 2.8130 0.0085 115.4 329.2/500 1.23 1.23 1.23 73.68 2.7785 2.8018 0.0233 316.2											
Outidii (AGH3)	20-Jan-11	Cloudy	0.3N 0.3N	15 15	563180 563280	563280 563380	60.0 60.0	40 40	40 40	1.23	1.23	1.23		Excavation works and drilling	Traffic						
		Cloudy	0.3N	15	563380	563480	60.0	40	40	1.23	1.23	1.23	73.68	2.7746	2.7816	0.0070	95.0	177.0		Excavation works and drining	
		Sunny	0.9E	16	563480	563580	60.0	40	40	1.28	1.28	1.28	76.62	2.7574	2.7677	0.0103	134.4				
	26-Jan-11	Sunny	0.9E 0.9E	16 16	563580 563680	563680 563780	60.0 60.0	40 40	40	1.28	1.28	1.28	76.62 76.62	2.7510 2.7493	2.7640 2.7570	0.0130 0.0077	169.7 100.5	134.9		Breaker and excavation works	Traffic
		Sunny	0.9E	16	563680	563780	60.0	40	40	1.28	1.28	1.28	/6.62	2.7493	2./5/0	0.0077	0.0				
	-	-	-	-	-	-		-	-	-		-	-	-	-	-	0.0	0.0			
1		-	-	-	-	-	-	-	- 1	-	-	-		-	-	_	0.0				

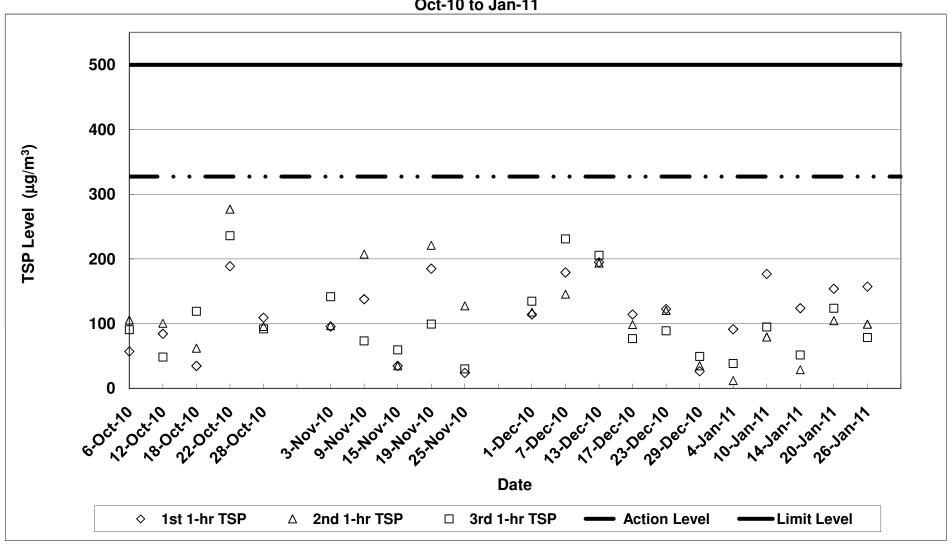
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Sik Sik Yuen Ho Fung College - Intake (ASR1)

Oct-10 to Jan-11



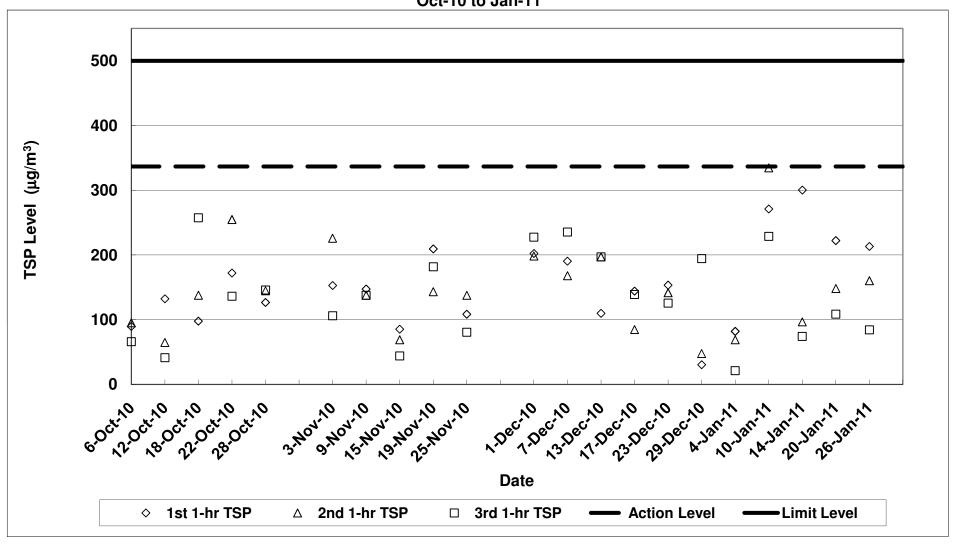
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Hong Hoi Chee Hong Temple - Intake (ASR3)

Oct-10 to Jan-11



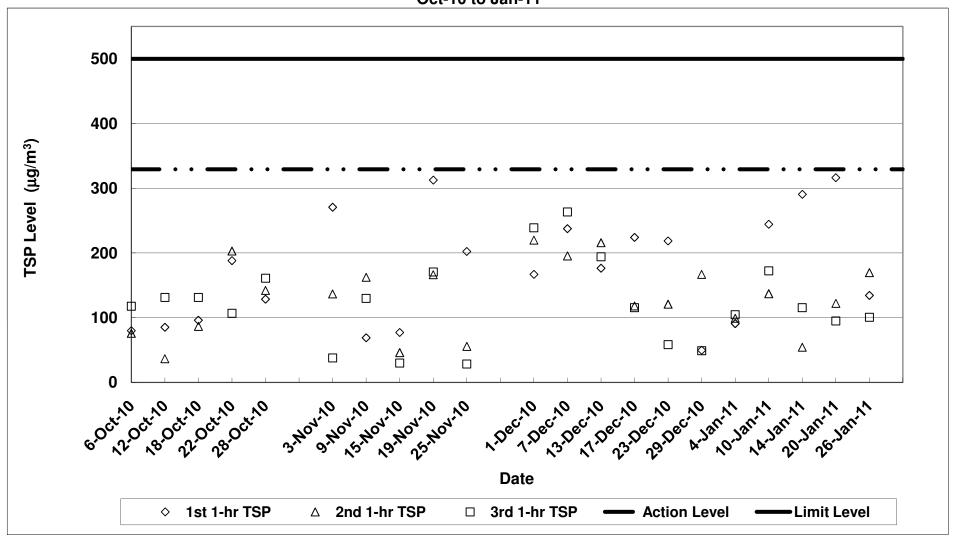
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Long Beach Gardens - Outfall (ASR8)

Oct-10 to Jan-11



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Greenview Terrance - Outfall (ASR9)

Oct-10 to Jan-11



#### Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

#### **Noise Impact Monitoring Results**

Monitoring Locations	Date	Weather	Temperature	Wind Speed	Wind	Start Time	End Time	BL <sup>1</sup>	LL <sup>2</sup>	L <sub>eq(30min)</sub>	L <sub>10(30min)</sub>	L <sub>90(30min)</sub>	CNL <sup>3</sup>	Observation /	Remark
		Conditions	(°C)	(m/s)	Direction			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	Site Condition	
Sik Sik Yuen Ho Fung College	04-Jan-11	Cloudy	15	0.3	N	15:52	16:22		70	64.1	66.8	59.7	-	Crane operation	Traffic noise
NSR 1	10-Jan-11	Sunny	14	0.3	Е	16:53	17:23		70	64.1	66.7	59.4	-	Crane operation	Traffic noise
	20-Jan-11	Cloudy	15	0.5	Ν	14:02	14:32	66.1	70	63.5	66.2	59.0	-	Crane operation	Traffic noise
	26-Jan-11	Sunny	16	0.5	Е	16:20	16:50		70	64.3	66.9	58.8	-	Crane operation	Traffic noise and aircraft noise
	-								70				-		
Hong Hoi Chee Hong Temple	04-Jan-11	Cloudy	15	0.5	N	15:13	15:43		75	56.5	58.3	53.6	-	Excavation works	Traffic noise
NSR 3	10-Jan-11	Sunny	14	0.3	E	16:15	16:45		75	68.6	70.1	66.8	-	Amour rock removal works and hammering	Traffic noise
	20-Jan-11	Cloudy	15	0.5	Ν	14:40	15:10	57.9	75	62.3	64.8	57.0	-	Drilling and welding works	Traffic noise
	26-Jan-11	Sunny	16	0.5	E	15:43	16:13		75	71.1	74.5	58.5	-	Drilling	Traffic noise and aircraft noise
	-								75				-		
Squatters	04-Jan-11	Cloudy	15	0.3	N	13:07	13:37		75	67.0	70.3	57.8	-	Breaker and crane operation	Nil
NSR 6	10-Jan-11	Sunny	14	0.2	E	10:32	11:02		75	65.4	67.7	61.6	-	Breaker and crane operation	Nil
	20-Jan-11	Sunny	15	0.3	N	09:55	10:25	61.2	75	70.1	72.5	65.0	-	Breaker and crane operation	Nil
	26-Jan-11	Sunny	16	0.8	E	13:03	13:33		75	67.3	69.4	62.8	-	Breaker and crane operation	Aircraft noise
	-								75				-		
Long Beach Gardens	04-Jan-11	Cloudy	15	0.4	N	14:30	15:00		75	72.8	75.6	66.8	-	Crane operation and dredging	Traffic noise
NSR 8	10-Jan-11	Sunny	14	0.3	E	14:20	14:50		75	70.7	72.9	62.4	-	Excavation works	Traffic noise
	20-Jan-11	Sunny	15	0.3	N	10:35	11:05	60.9	75	71.3	74.3	63.9	-	Excavation works and drilling	Traffic noise
	26-Jan-11	Sunny	16	0.6	E	10:00	10:30		75	70.8	72.9	65.5	-	Breaker and Portion E	Traffic noise
	-								75				-		
Greenview Terrace	04-Jan-11	Cloudy	15	0.5	N	10:15	10:45		75	71.0	72.9	68.8	-	Crane operation and dredging	Traffic noise
NSR 9	10-Jan-11	Sunny	14	0.3	E	13:40	14:10		75	73.1	76.1	67.9	-	Excavation works	Traffic noise
	14-Jan-11*	Sunny	15	0.5	E	14:35	15:05		75	73.5	76.9	67.6	-	Breaker and crane operation	Traffic noise and aircraft noise
	17-Jan-11*	Sunny	15	8.0	N	13:20	13:50	59.7	75	71.9	74.4	66.7	-	Drilling and breaker	Traffic noise and aircraft noise
	20-Jan-11	Sunny	15	0.3	N	11:14	11:44		75	72.3	73.9	70.1	-	Excavation works and drilling	Traffic noise
	26-Jan-11	Sunny	16	0.9	Ē	13:45	14:15		75	71.3	74.0	68.3		Breaker and excavation	Traffic noise and aircraft noise
	28-Jan-11*	Cloudy	15	0.8	E	10:55	11:25		75	72.7	76.8	67.1	-	Breaker and crane operation	Traffic noise

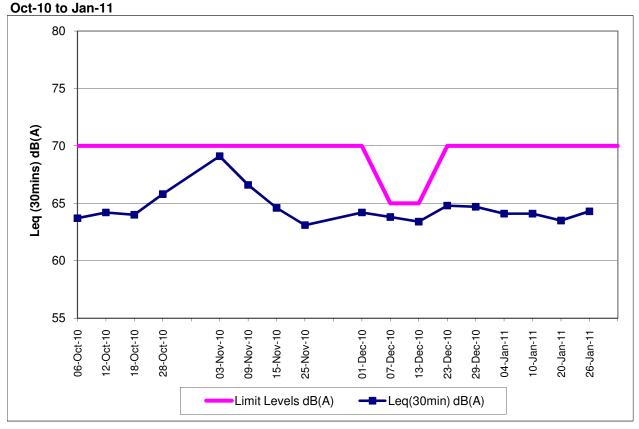
The limit level of NSR1 is 65dB(A) during school examination period.

Red Bold indicates an exceedance of Limit Level

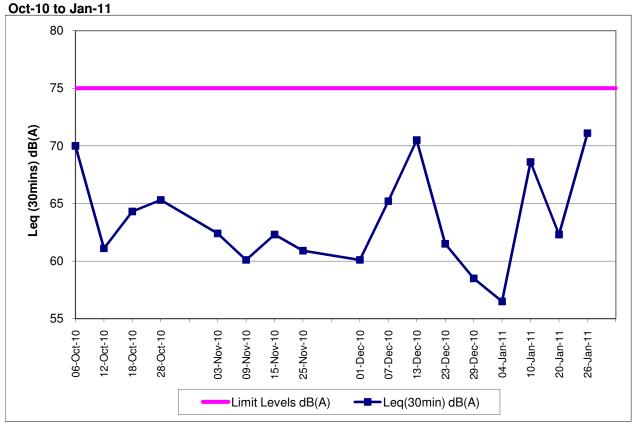
<sup>1:</sup> Baseline Noise Level 2: Limit Level 3: Corrected Noise Level

<sup>\*</sup> means additional noise monitoring

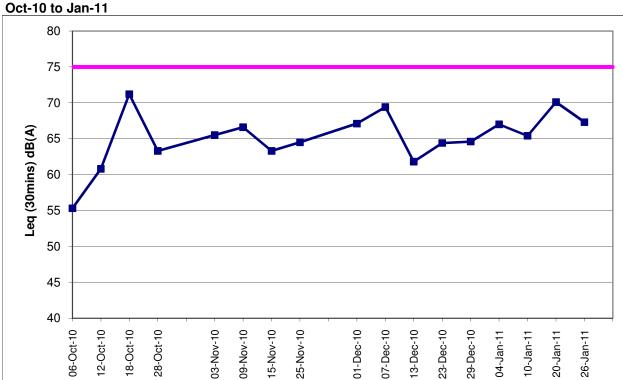
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Sik Sik Yuen Ho Fung College (NSR 1)



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Hong Hoi Chee Hong Temple (NSR 3)



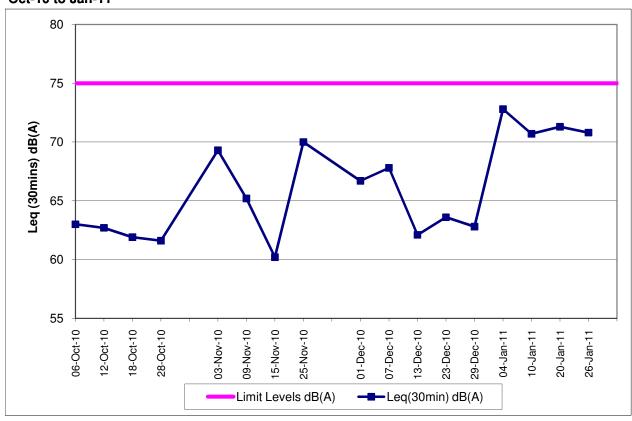
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Squatters (NSR 6)



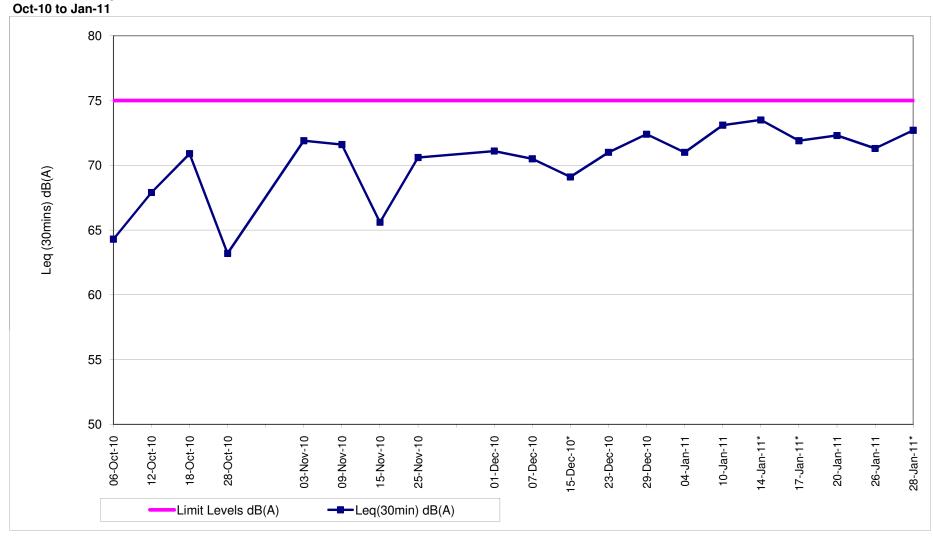
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Long Beach Gardens (NSR 8)
Oct-10 to Jan-11

Leq(30min) dB(A)

Limit Levels dB(A)



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Greenview Terrace (NSR 9)



<sup>\*</sup> Additional Noise Monitoring

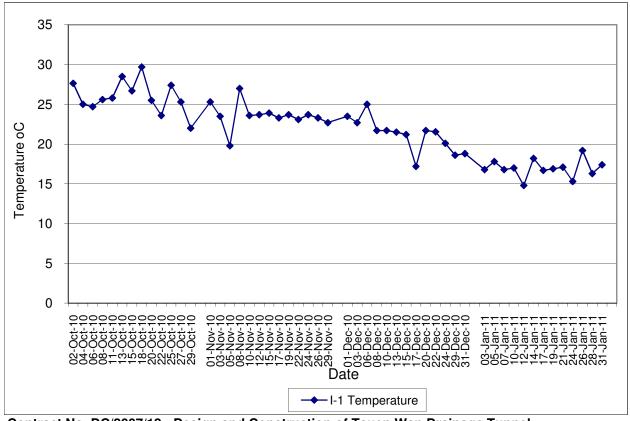
#### Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

Water Quality Impact Monitoring Results

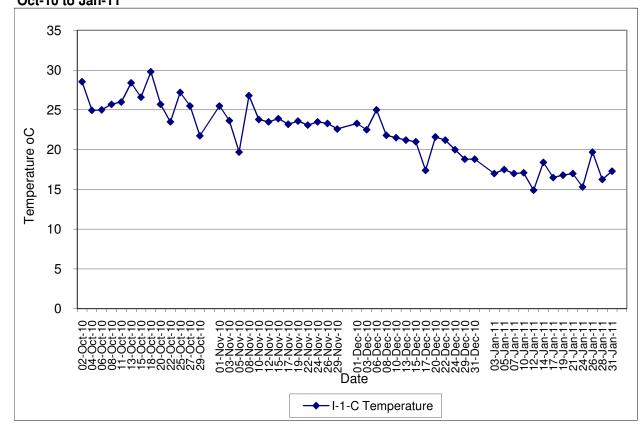
Water Quality Impact Monitoring																							
Monitoring Locations	Date		Weather	Water		Temp			DO(mg/L)		Action/Limit	pH		Turbi	lity(NTU)	Α	Action/Limit		SS (mg/L)		Action/Limit	Remarks:	Action to be taken
		Time									Level of DO(mg/L)	1 2	Avg	1	2 /	Avg L	evel of Tby		2		Level of SS(mg/L)		
Sik Sik Yuen Ho Fung College	03-Jan-11							7.10				8.06 8.06					-	10.00	10.20	10.10		Crane operation	Nil
1-1	05-Jan-11 07-Jan-11	12:15	Sunny	<1	16.80	16.80	16.90	8.16 7.19	8.21			8.04 8.04 8.03 8.03	8.04	3.78	5.73 5	5.82		2.00	2.60 3.40	2.30 3.05		Crane operation Crane operation	NII
	10-Jan-11							7.51				8.02 8.02			5.71 5		-	3.40	3.60	3.50		Crane operation	Nil
	12-Jan-11			<1	14.80	14.80	14.80		7.99			8.02 8.02	8.02	3.48	3.53 3		<b>I</b>	3.60	3.30	3.45		Crane operation	Nil
	14-Jan-11	09:55	Sunny	<1	18.20	18.20	18.20	7.81	7.85	7.83		7.96 7.96	7.96	4.95	1.91 4	4.93	Ī	7.00	6.70	6.85		Crane operation	Nil
	17-Jan-11	09:53	Sunny	<1				8.44			3.42 / 3.34	7.98 7.98			3.74 8		9.75 / 12.47	8.10	9.30	8.70	8.85 / 10.17	Crane operation	Nil
	19-Jan-11	11:16	Sunny	<1	16.90	16.90	16.90	8.04	8.00	8.02	3.42 / 3.34	7.84 7.83	7.84	13.66 1	3.74 1	3.70		15.00	14.00	14.50	0.037 10.17	Crane operation	Nil
	21-Jan-11	11:43	Sunny					8.11				7.76 7.75						6.90	7.30	7.10		Crane operation	Nil
	24-Jan-11	11:53	Sunny	<1				8.70		8.73 7.74		7.97 7.97 8.08 8.08	7.97 8.08		i.85 6	4.08	<u> </u>	7.10 6.30	9.00 6.20	8.05		Crane operation	Nil
	26-Jan-11 28-Jan-11			<1	16.20	16.20	16.20	7.75 7.93				8.08 8.08			5.37 5		-	9.80	10.70	6.25		Crana appration	Nii
	31-Jan-11	14:33	Sunny	<1	17.40	17.40	17.40	8.07	8.03	8.05		8.47 8.47	8.47	8.98	0.12 9		-	8.50	8.80	8.65		Crane operation Crane operation	Nil
	-	-	-	-	-	-	-	-	-	-			-	-	-	-		-	-	-		and approximate	
Sik Sik Yuen Ho Fung College	03-Jan-11	11:00	Cloudy	<1	17.00	17.00	17.00	7.09	7.06	7.08		8.05 8.05 8.03 8.04	8.05	11.50 1	1.38 1	1.44		11.40	10.60	11.00		Nil	Nil
I-1-C	05-Jan-11	12:05	Sunny	<1	17.50	17.50	17.50	8.26	8.30	8.28		8.03 8.04	8.04	3.95	3.86	3.91		2.50	2.00	2.25		Nil	Nil
	07-Jan-11			<1	17.00	17.00	17.00	7.60	7.64	7.62		8.05 8.05	8.05	5.86	5.80 5		<u> </u>	3.20	3.20	3.20		Nil	Nil
	10-Jan-11	09:45	Sunny	<1				7.34	7.28	7.31			8.03			5.93		2.70	2.20	2.45		Nil	Nil
	12-Jan-11	13:05	Cloudy	<1				8.31				8.01 8.01			3.62 3		<u> </u>	3.50	3.70	3.60		Nil	Nil
	14-Jan-11 17-Jan-11			<1	18.40	18.40	18.40	7.61	7.65	7.63		7.98 7.97	7.98	5.05	5.12 5	5.09	-	6.80 12.40	6.60 11.30	6.70 11.85		NII	Nil
	17-Jan-11 19-Jan-11	11:07	Sunny	<1	16.50	16.50	16.50	8.66 8.25	8.59	8.63	- /-	7.95 7.95 7.82 7.82	7.95	12 00 1	3.97 8	2 00	- /-	16.00	14.60	15.30	- /-	NII	NII
	21-Jan-11	11:32	Sunny	<1	17.00	17.00	17.00	8.24	8 19	8.22		7.75 7.75			5.92 5		F	6.70	7.80	7.25		Nil	Nil
	24-Jan-11	11:42	Sunny	<1	15.30	15.30	15.30	8.52	8.55	8.54		7.98 7.98	7.98	6.98	6.92	6.95	H	7.90	7.10	7.50		Nil	Nil
	26-Jan-11	12:00	Sunny	<1	19.70	19.70	19.70	7.82				8.10 8.10	8.10	4.18	.27 4	4.23		6.60	6.10	6.35		Nil	Nil
	28-Jan-11	14:07	Cloudy	<1				8.04		8.06		8.10 8.09		5.50	5.45 5			11.20	10.60	10.90		Nil	Nil
	31-Jan-11	14:22	Sunny	<1	17.30	17.30	17.30	7.70	7.74	7.72		8.50 8.49	8.50	9.50	9.42 9	9.46		8.60	8.80	8.70		Nil	Nil
		-		-	-			-	-	-					-	-							
Hong Hoi Chee Hong Temple	03-Jan-11	10:38	Cloudy	<1				7.14				8.05 8.05			.53 1		<u> </u>	2.40	2.50	2.45		Crane operation and excavation works	NI
1-2	05-Jan-11 07-Jan-11	11:47	Cloudy	<1 <1					8.27 7.42	7.38		8.03 8.03 8.05 8.05	8.03 8.05	2.18	.98 1 2.30 2		-	2.00	2.10	2.05		Excavation works Drilling	Nil Nii
	10-Jan-11	10:10	Sunny	-41	17.20	17.10	17.15	7.34	7.42	7.30		8.06 8.06			.47 1		-	2.00	2.00	2.00		Drilling	Nil
	12-Jan-11	13:48	Cloudy					7.95				7.98 7.99					-	2.00	2.00	2.00		Drilling	Nil
	14-Jan-11	10:28	Sunny	<1						7.58		7 91 7 91	7 91	2 37	42 2	2.40		2.00	2.00	2.00		Drilling	Nil
	17-Jan-11	09:32	Sunny	<1	16.80	16.80	16.80	8.51	8.47	8.49	3.66 / 3.63	7.98 7.97	7.98	1.51	.54 1	1.53	6.63 / 6.99	2.00	2.00	2.00	7.68 / 8.34	Drilling	Nil
	19-Jan-11	10:50	Sunny	<1	17.10	17.10	17.10	7.87			3.00 / 3.03	7.85 7.86	7.86	2.05	2.08 2	2.07	6.63 / 6.99	2.00	2.00	2.00	7.00 / 0.34	Drilling	Nil
	21-Jan-11	11:08	Sunny	<1	17.10	17.10	17.10	8.02	8.07				7.72		2.38 2		<u> </u>	2.00	2.00	2.00		Drilling	Nil
	24-Jan-11	11:30	Sunny	<1				8.69				7.98 7.98						2.00	2.00	2.00		Drilling	Nil Nil
	26-Jan-11 28-Jan-11			<1	19.10	19.10	19.10	7.92 7.97		7.94		8.02 8.02 8.05 8.05	8.02	2.18	2.37 2	2.28	-	2.00	2.00	2.00		Drilling Drilling	NII NII
	31-Jan-11	14:00	Sunny	- 21	17.20	17.20	17.20	8.21				8.35 8.35	8.35	5.17			-	2.20	2.00	2.00		Drilling	Nil
	-	-	-		-	-	-	-	-	-			-	-	-	-	i i	-	-	-		Dining	1311
Hong Hoi Chee Hong Temple	03-Jan-11	10:27	Cloudy	<1	16.50	16.50	16.50	7.18	7.23	7.21		8.06 8.06	8.06	1.50	.68 1	1.59		2.00	2.00	2.00		Nil	Nil
I-2-C	05-Jan-11	11:38	Sunny	<1	17.90	17.80	17.85	8.15	8.05	8.10		8.04 8.04	8.04	2.02	.98 2	2.00		2.00	2.00	2.00		Nil	Nil
	07-Jan-11				16.90	16.90	16.90	7.05	7.11	7.08		8.06 8.06	8.06	2.25	2.36 2	2.31		2.00	2.00	2.00		Nil	Nil
	10-Jan-11	10:10	Sunny					7.24		7.21		8.05 8.05 8.00 8.00	8.05	1.48	2.86 2	1.52	-	2.00	2.00	2.00		NII	NII NII
	12-Jan-11 14-Jan-11	10:10	Sunny	- 41				7.92 7.82				7.92 7.92	8.00	2.90				2.00	2.00	2.00		NII NII	NII
	17-Jan-11	09:22	Sunny	<1	16.70	16.70	16.70	8.40	8.37	8.39		7.96 7.96	7.96	1.55	.62 1			2.00	2.00	2.00		Nil	Nil
	19-Jan-11	10:40	Sunny	<1				8.13		8.11	- /-	7.85 7.85	7.85	2.03	2.10 2	2.07	- /-	2.00	2.00	2.00	- /-	Nil	Nil
	21-Jan-11	11:00	Sunny	<1	17.00	17.00	17.00	8.07	8.10	8.09		7.71 7.71	7.71	2.50	2.47 2	2.49		2.00	2.00	2.00		Nil	Nil
	24-Jan-11							8.60				7.96 7.95			.95 1			6.50	3.80	5.15		Nil	Nil
	26-Jan-11	12:30	Sunny	<1				7.87		7.84			8.00		1.27 4		<u> </u>	6.20	4.80	5.50		Nil	Nil
	28-Jan-11	13:40	Cloudy	<1				7.86				8.06 8.06 8.30 8.31			2.65 2 5.18 5		<u> </u>	2.10	2.00	2.05		Nil	Nil Nil
	31-Jan-11	13.30	Suriny	<1 -	17.00	17.00	17.00	8.36	0.39	0.30		0.30 0.31	0.31	5.03	.10 3	3.11	-	2.00	2.00	2.00		INI	INII
Squatters	03-Jan-11	10:00	Cloudy	<1	16.50	16.50	16.50	7.09	7.07	7.08		8.06 8.05	8.06	1.83	77 1	1.80		2 00	2.00	2.00		Crane operation and excavation works	Nil
1-3	05-Jan-11	11:18	Sunny	<1	17.80	17.90	17.85	8.15	8.21			8.06 8.05	8.06	1.55	.66 1		Ī	2.00	2.00	2.00		Crane operation	Nil
	07-Jan-11	11:40	Cloudy	<1				7.54		7.58			8.02		.90 1			2.00	2.00	2.00		Crane operation and breaker	Nil
	10-Jan-11	10:45	Sunny	<1	17.50	17.50	17.50	7.22	7.26	7.24		8.09 8.09			.48 1			2.00	2.00	2.00		Crane operation and breaker	Nil
	12-Jan-11 14-Jan-11	14:26	Cloudy	<1	14.90	14.90	14.90	7.78 7.58	7.71	7.75 7.57		7.98 7.98 7.96 7.96			.82 1 0.66 1	0.62	<u> </u>	2.00	2.00	2.00		Crane operation and breaker	Nil Nil
	14-Jan-11 17-Jan-11	09:00	Sunny	<1				8.20	8.25				7.98			3.58		2.00	2.00	2.80		Breaker and crane operation Breaker and crane operation	Nil
	19-Jan-11	10:14	Sunny	<1	16.90	16.90	16.90	8.13			3.65 / 3.51	7.87 7.87	7.87	1.86	.92 1	1.89	3.99 / 4.18	2.00	2.00	2.00	6.13 / 7.23	Breaker and crane operation	Nil
	21-Jan-11							8.06				7.75 7.75	7.75	2.00	.95 1		H	2.00	2.00	2.00		Breaker and excavation works	Nil
	24-Jan-11	09:00	Sunny	<1	16.00	16.00	16.00	8.75	8.72	8.74		8.02 8.02	8.02	1.62	.66 1	1.64	ļ i	2.00	2.00	2.00		Breaker and crane operation	Nil
	26-Jan-11	13:25	Sunny	<1				7.78				8.04 8.40	8.22					2.00	2.00	2.00		Breaker and crane operation	Nil
	28-Jan-11	13:14	Cloudy	<1				7.87				8.04 8.04			.93 1			2.00	2.00	2.00		Breaker and crane operation	Nil
1	31-Jan-11	13:13	Sunny	<1	17.30	17.30	17.30	8.01	7.96	7.99		8.13 8.13	8.13	1.79	.83 1	1.81		2.00	2.00	2.00		Breaker and crane operation	Nil
Squatters	03-Jan-11	00:50	Cloudy	- <1	16.60	16.50	16.55	7.15	7.00	7 12		8.03 8.03	9.02	1.00	.86 1	1 02		2.00	2.00	2.00		Nil	Nil
I-3-C	05-Jan-11							8.08				8.03 8.03			.74 1			2.00	2.00	2.00		Nil	Nil
	07-Jan-11	11:30	Cloudy					7.46				8.02 8.02					F	2.00	2.00	2.00		Nil	Nil
	10-Jan-11	10:35	Sunny	<1	17.40	17.40	17.40	7.49	7.53	7.51		8.08 8.08		1.50	.47 1			2.00	2.00	2.00		Nil	Nil
	12-Jan-11	14:15	Cloudy	<1	14.80	14.80	14.80	7.80	7.85	7.83		7.99 7.99	7.99	1.80	.75 1	1.78		2.00	2.00	2.00		Nil	Nil
	14-Jan-11	10:50	Sunny	<1	18.00	18.00	18.00	7.53	7.50	7.52		7.96 7.96	7.96	10.98 1	0.95 1			2.40	2.70	2.55		Nil	Nil
1	17-Jan-11	08:50	Sunny	<1				8.22			- /-	7.99 7.99			3.73 3		- /-	2.00	2.00	2.00	-/-	Nil	Nil
1	19-Jan-11			<1	16.90	16.80	16.85	8.19	8.25	8.22	,	7.80 7.80			.98 1	1.94	·	2.00	2.00	2.00		Nil	Nil
1	21-Jan-11 24-Jan-11	10:20	Sunny	<1	17.20	17.20	17.20	8.08 8.54	8.14	8.11		7.77 7.76 8.00 8.00	7.77	2.03	2.19 2 1.77 1	2.11	-	2.00	2.00	2.00		INII Mili	INII MB
	24-Jan-11 26-Jan-11			<1	19.10	19.10	19.10		7.57			8.00 8.00 8.03 8.03	8.00	2.05	2.13 2		-	2.00	2.00	2.00		Nil	Nil Nil
	28-Jan-11	13:05	Cloudy	<1	16.50	16.50	16.50	7.91	8.00	7.96		8.02 8.02	8.02	1.95		1.96	H	2.00	2.00	2.00		Nil	Nil
	31-Jan-11	13:05	Sunny	<1	17.20	17.20	17.20	8.11	8.17	8.14		8.12 8.12	8.12	1.77		1.82	ļ i	2.00	2.00	2.00		Nil	Nil
		-		-	-	-	-	-	-				-	-	-	-		-	-	-			
			_									_			_								

Note: Blue Italic indicates an exceedance of Action Level Red Bold indicates an exceedance of Limit Level

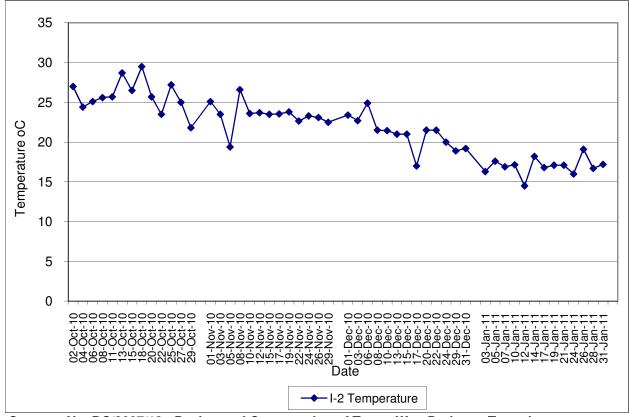
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1) Oct-10 to Jan-11



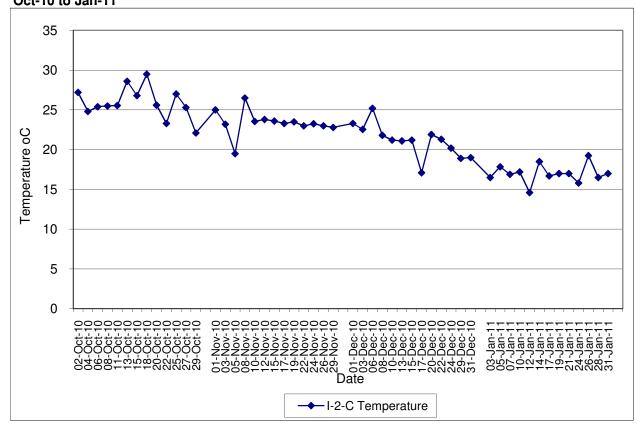
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C)
Oct-10 to Jan-11



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2) Oct-10 to Jan-11

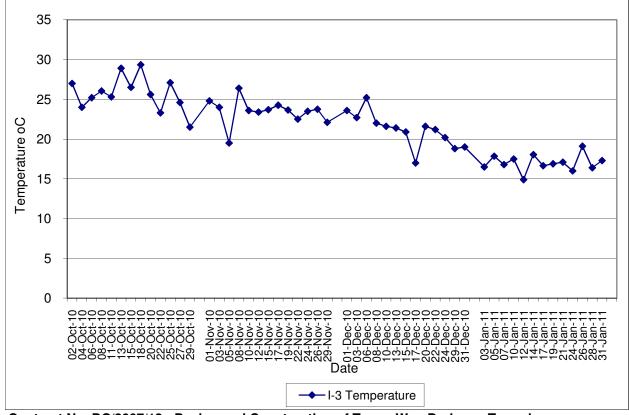


Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Oct-10 to Jan-11

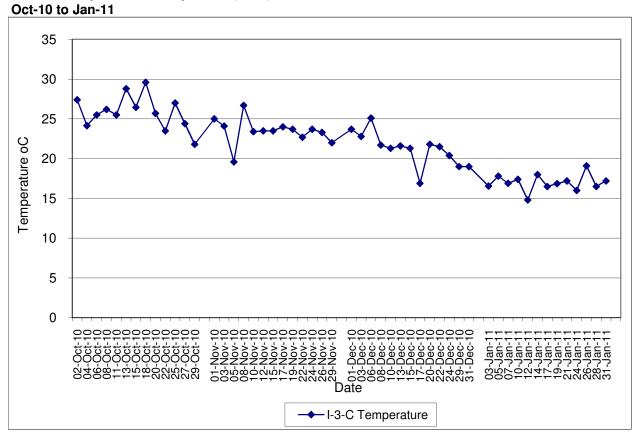


# Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3)

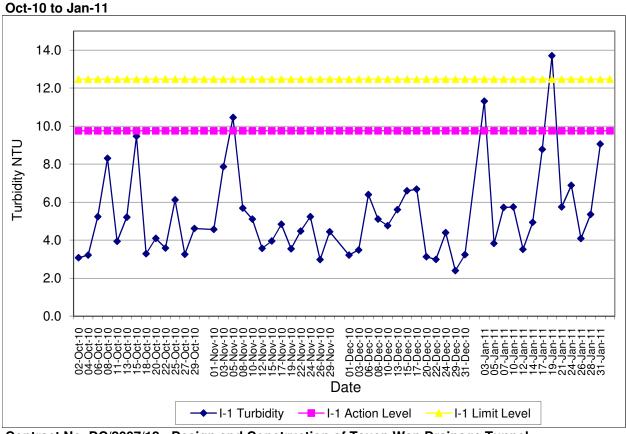




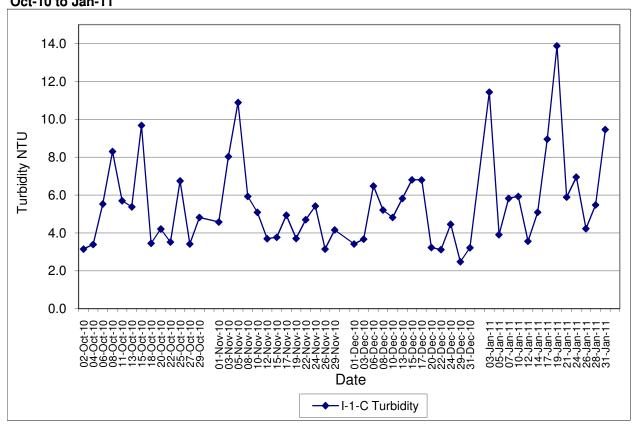
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C)



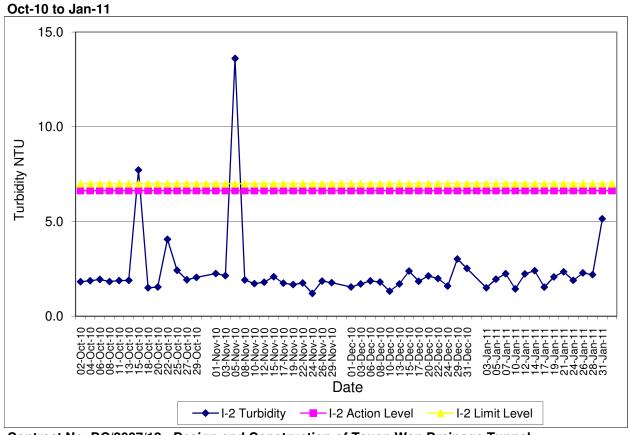
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



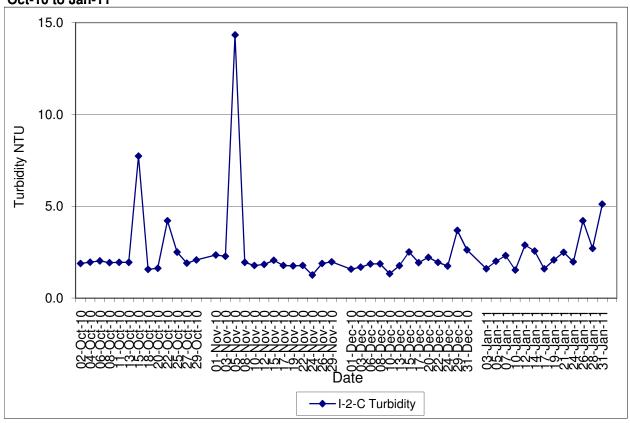
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) Oct-10 to Jan-11



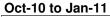
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)

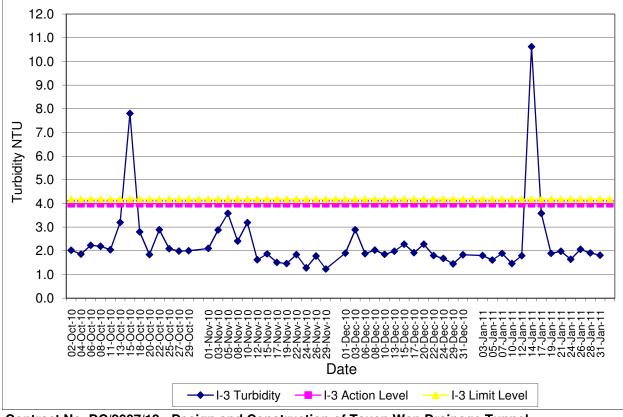


Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Oct-10 to Jan-11

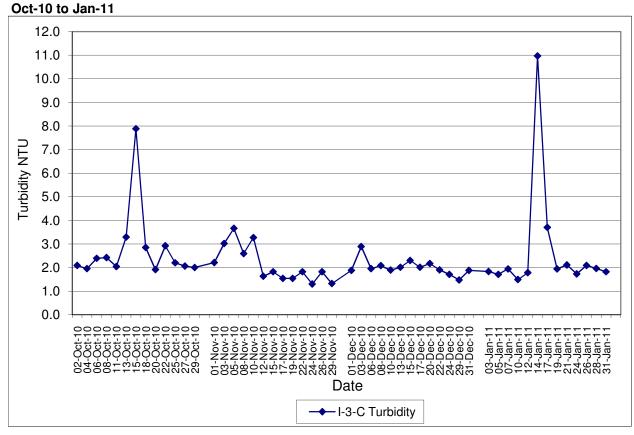


### Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3)

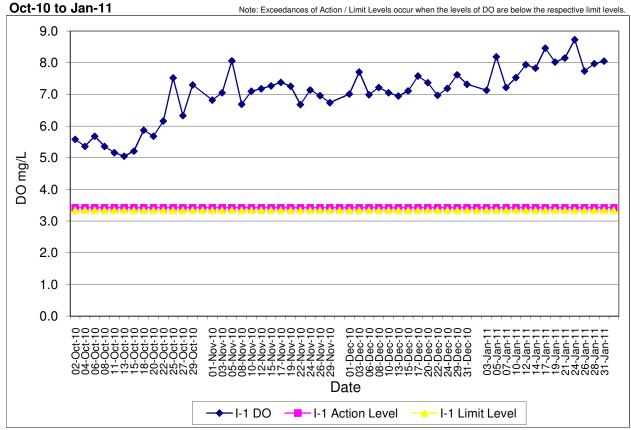




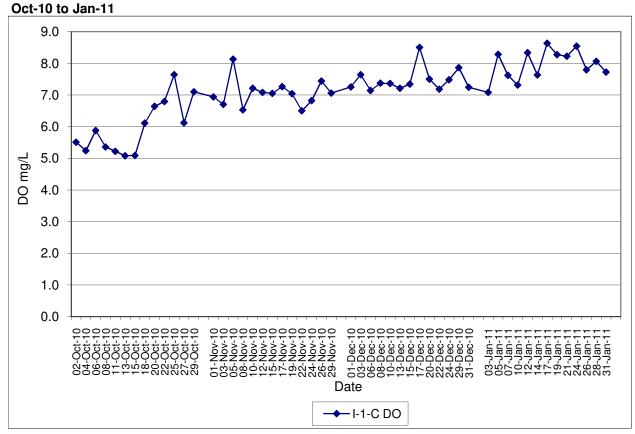
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C)



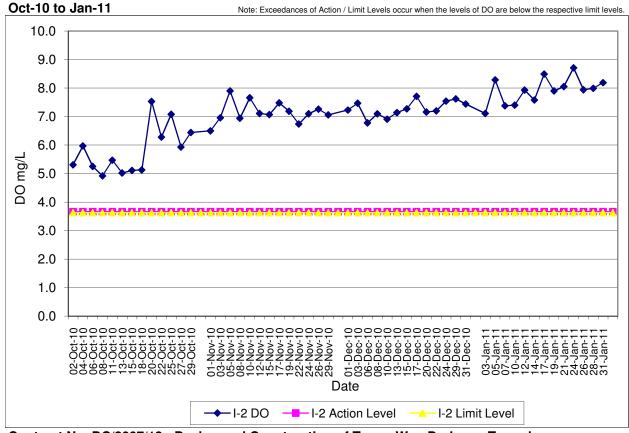
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



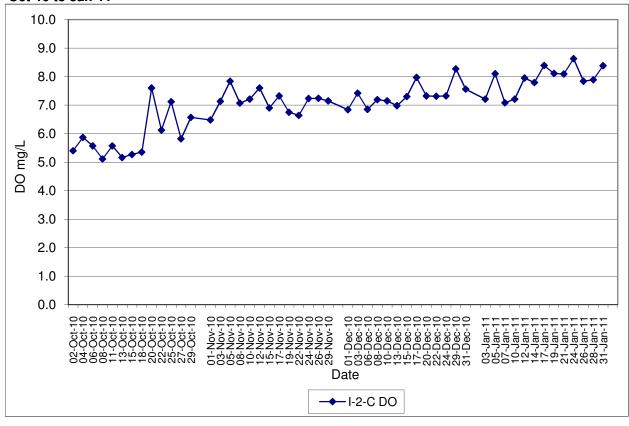
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C)



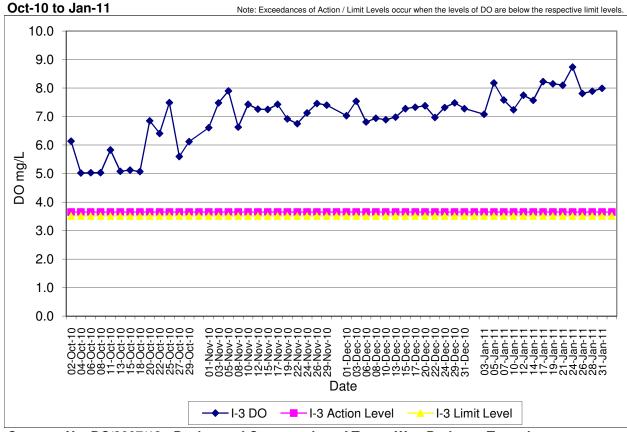
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)



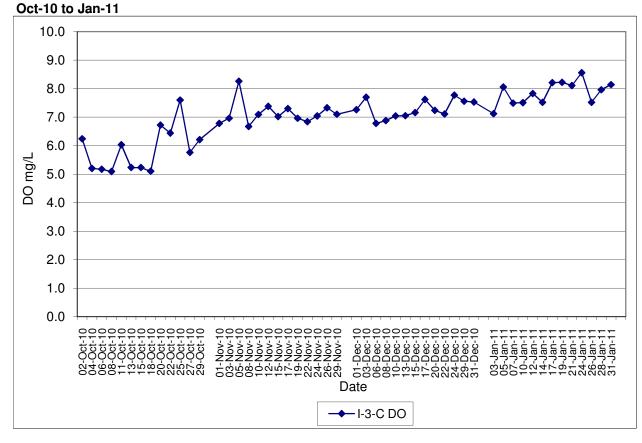
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Oct-10 to Jan-11



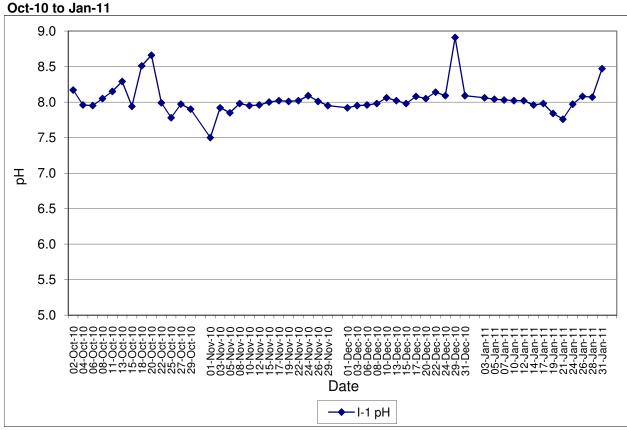
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3)



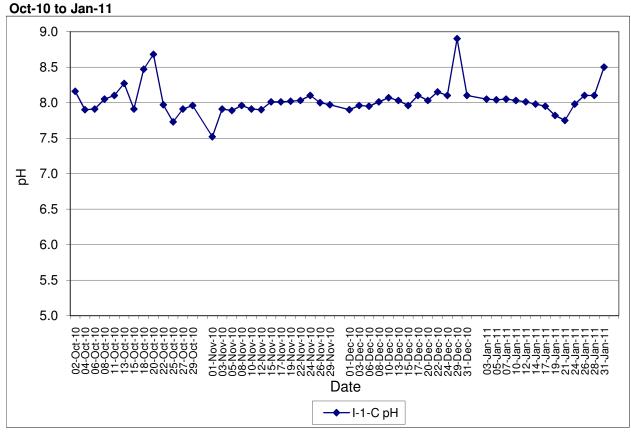
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C)



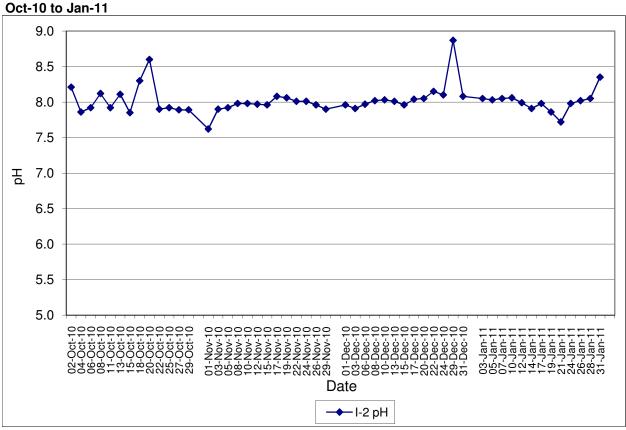
## Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



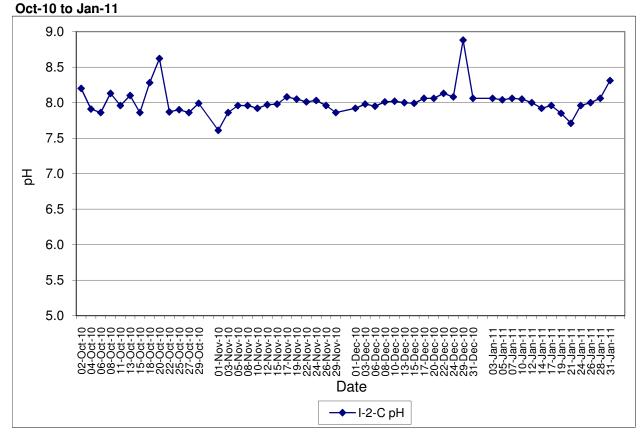
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C)



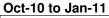
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)

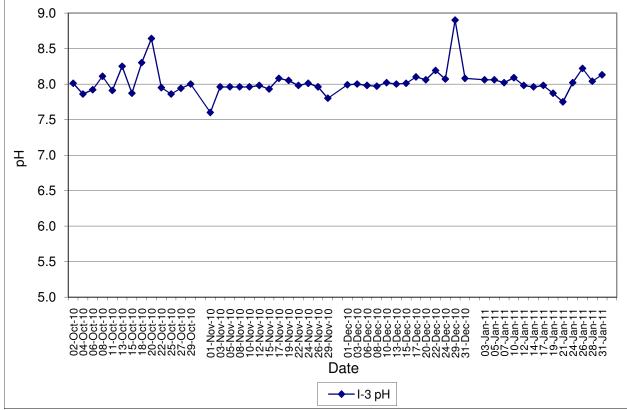


Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C)

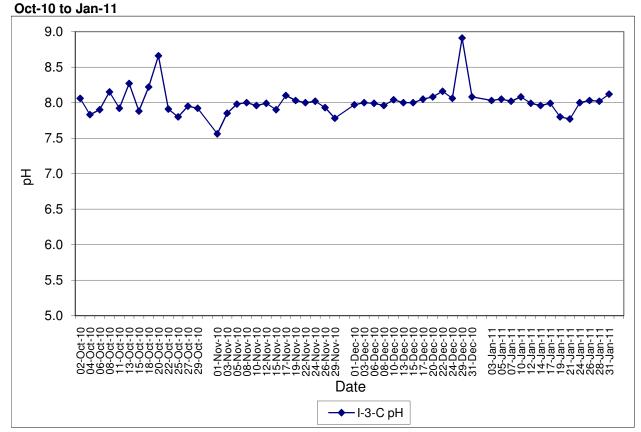


## Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3)

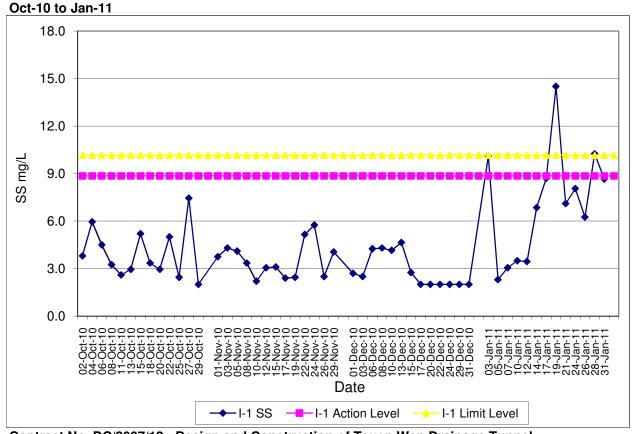




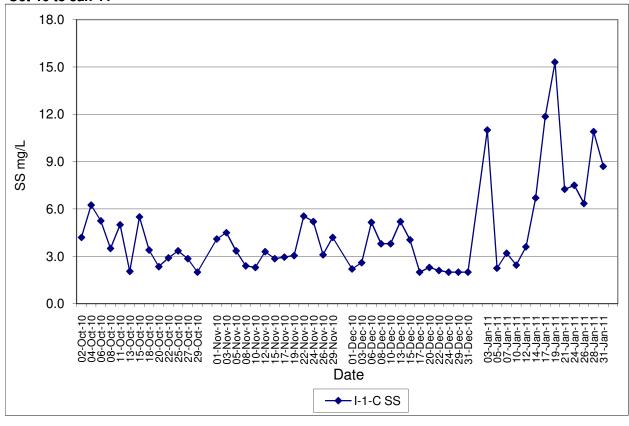
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C)



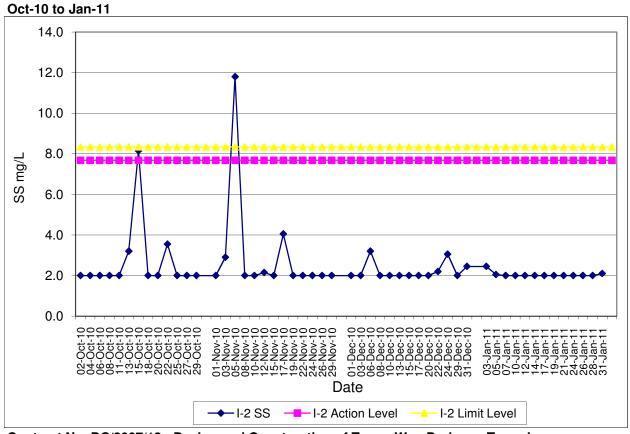
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



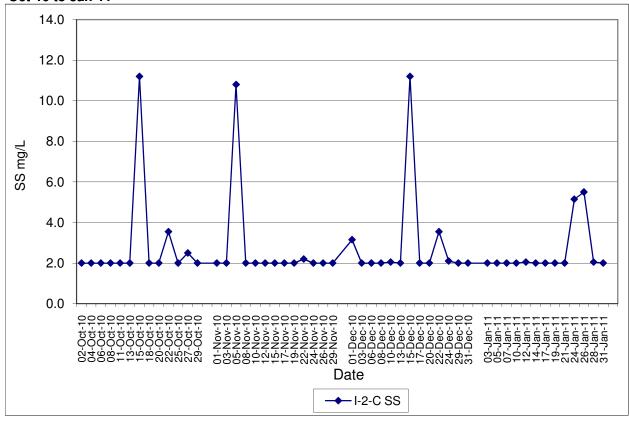
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C)
Oct-10 to Jan-11



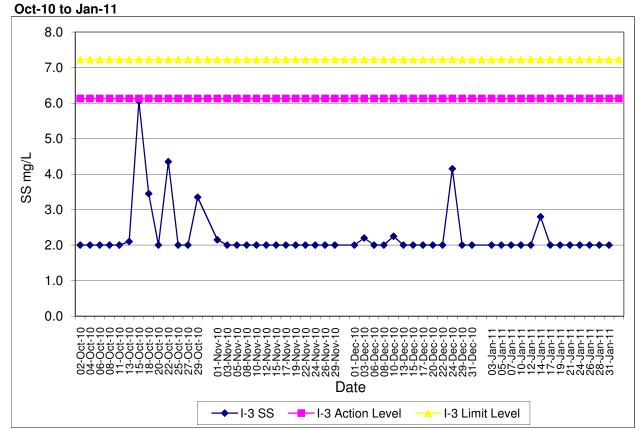
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)



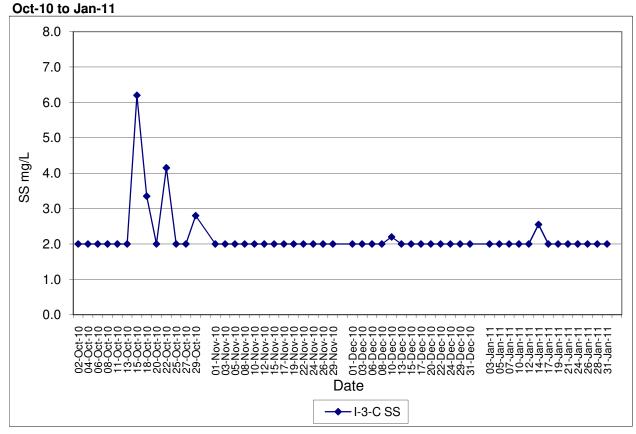
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Oct-10 to Jan-11



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3)



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C)



#### Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

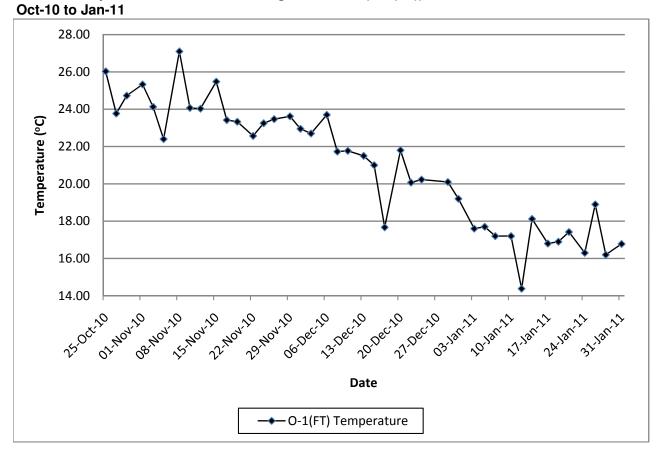
Marine Water Quality Impact Monitoring Results

Maritarian Lasatiana		Danah	Chart Times	Masthau	Iwatan I	T		DO		A sties // issis		-11	ī	Tb.: alia.	(NITLI)	A -+: // : :+	1	CC (/I)		A sties // issit	I Damada.	Matica to be taken
Monitoring Locations	Date	Depth	Start Time	Weather		1 2		1	mg/L) 2 Avg			pH 2	Avg	Turbidity 1 2	Avg	Action/Limit Level of Tby	1	SS (mg/L)	Avg	Action/Limit Level of SS(mg/L)	Remarks:	Action to be taken
Outfall 1 During Flood Tide O-1(FT)	03-Jan-11	Surface Middle Bottom	15:22	Cloudy	4.5 8	17.60         17.60           17.60         17.60           17.60         17.60	17.60	7.27 7 7.32 7	35 7.34	6.84 / 6.81	8.27 8.27 8.27	8.27 8.27	8.27	4.66 4.7 4.82 4.7 4.70 4.7	5		5.90 6.10 6.60	5.90 6.00	6.05		Nil	Nil
	05-Jan-11	Surface Middle Bottom	10:30	Sunny	4 7	17.70 17.70 17.70 17.70 17.70 17.70	17.70	7.99 8 7.96 7	26 8.24 03 8.01 93 7.95	0.04 / 0.01	8.21 8.22 8.21	8.22 8.21	8.21	7.90 7.83 7.67 7.5 7.36 7.4	7.62		9.80 10.00	10.30 9.20	10.55		Rock Removal	Nil
	07-Jan-11	Surface Middle Bottom	10:26	Cloudy	4.5 8	17.20 17.20 17.20 17.20 17.20 17.20	17.20	7.53 7 7.63 7	48 7.47 57 7.55 70 7.67	6.99 / 6.96	8.22 8.22	8.23 8.22 8.22	8.22	6.12 6.23 6.41 6.2 6.20 6.3	6.26		6.70 8.30 8.30	7.80 7.60 7.70	7.73		Rock Removal	Nil
	10-Jan-11	Surface Middle Bottom	11:38	Sunny	4.5 8	17.20 17.20 17.20 17.20 17.20 17.20	17.20	7.51 7 7.48 7		0.04 / 0.01	8.22 8.22	8.22 8.22 8.22	8.22	9.02 8.9 8.74 8.9 9.02 8.9	8.92		10.70 12.00 12.20	12.10	12.13		Rock Removal	Nil
	12-Jan-11	Surface Middle Bottom	11:28	Cloudy	4.75 8.5	14.40 14.40 14.30 14.40 14.40 14.40	14.38	8.49 8 8.22 8 8.31 8	30 8.26 27 8.29		8.19 8.19	8.19 8.19 8.19	8.19	4.95 5.1 5.23 5.1 5.44 5.4	5.24		4.60 4.60 4.70	6.20 6.40 4.20	5.12		Nil	Nil
	14-Jan-11	Surface Middle Bottom	12:27	Sunny	4.5 8	18.20 18.10 18.10 18.10 18.10 18.10	18.12	7.74 7 7.88 7 7.71 7	84 7.86 68 7.70	6.99 / 6.96	8.22 8.22	8.22 8.22 8.22	8.22	2.56 2.6 2.70 2.7 2.83 2.9	2.74		4.80 3.10 2.70	2.70	3.70		Nil	Nil
	17-Jan-11	Surface Middle Bottom	14:35	Sunny	4.5 8	16.80 16.80 16.80 16.80 16.80 16.80	16.80	8.16 8 8.03 8 8.27 8	00 8.02 31 8.29	6.84 / 6.81	8.12 8.12	8.11	8.12	3.07 3.1 3.34 3.2 3.06 3.1	3.17	10.35 / 13.15	6.00 2.70 7.50	3.80 6.20	5.10	14.1 / 18.08	Rock Removal	Nil
	19-Jan-11	Surface Middle Bottom	09:05	Sunny	4.75 8.5	16.90 16.90 16.90 16.90 16.90 16.90 17.40 17.40	16.90	8.26 8 8.18 8 8.12 8 7.87 7	28 8.23 08 8.10	6.99 / 6.96	8.24 8.24	8.23	8.24	4.60 4.7 4.55 4.5 4.77 4.7	4.66		7.10 7.10	9.20 7.00	7.52		Rock Removal	Nil
	21-Jan-11	Surface Middle Bottom	09:33	Sunny	4.25 8.5	17.40 17.40 17.50 17.40 17.40 17.40 16.30 16.30	17.42	7.80 7 7.82 7 8.32 8	85 7.83 86 7.84	6.99 / 6.96	8.19 8.19	8.19	8.19	13.33 13.4 12.07 12.1 12.25 12.4 7.90 8.0	12.61		21.60 22.50 14.10 9.80	22.70	19.27		Nil	Nil
	24-Jan-11	Surface Middle Bottom Surface	09:50	Sunny	4.75 8.5	16.30 16.30 16.30 16.30 18.90 18.90	16.30	8.06 8 8.10 8		6.99 / 6.96	8.22 8.23	8.22 8.23 8.20	8.22	8.50 8.6 8.50 8.4 2.96 3.1	8.34		8.60 8.00 2.60		8.72		Rock Removal	Nil
	26-Jan-11	Middle Bottom Surface	11:22	Sunny	4.75 8.5	18.90 18.90 18.90 18.90 16.20 16.20	18.90	7.69 7 7.89 7	72 7.71 96 7.93 78 7.75	6.84 / 6.81	8.20		8.20	3.22 3.4 3.70 3.6 2.43 2.5	3.36		2.90 2.30 2.00		3.28		Rock Removal	Nil
	28-Jan-11	Middle Bottom Surface	12:33	Cloudy	4.75 8.5	16.20 16.20 16.20 16.20 16.80 16.80	16.20	7.70 7 7.64 7	80 7.75 71 7.68 85 7.83	6.99 / 6.96	8.21 8.21	8.21 8.21 8.23	8.21	2.40 2.2 2.66 2.7 3.62 3.7	2.49		2.00 2.00 3.00	2.00	2.00		Nil	Nil
	31-Jan-11	Middle Bottom Surface	15:27	Sunny	4.5	16.70 16.80 16.80 16.80	16.78	7.83 7 7.80 7	89 7.86	6.84 / 6.81	8.23	8.23 8.23	8.23	3.66 3.6 3.57 3.6			3.30 2.70	3.00 3.50	3.18		Nil	Nil
		Middle Bottom								6.99 / 6.96												Nil
Control of Outfall 1 During Flood Tide O-1-C(FT)	03-Jan-11	Surface Middle Bottom	15:03	Cloudy	7.25 13.5	17.50 17.50 17.50 17.50 17.50 17.50	17.50	7.45 7 7.35 7	44 7.43 50 7.48 41 7.38			8.27 8.27	8.27	4.85 4.8 4.87 4.8 4.90 4.7	4.84		4.90 4.90 6.60	5.60 5.90	5.55		Nil	Nil
	05-Jan-11	Surface Middle Bottom	10:05	Sunny	7 13	17.70 17.70 17.60 17.70 17.70 17.60	17.67	8.12 8 8.21 8	01 7.99 18 8.15 25 8.23		8.21 8.22	8.22	8.22	8.01 7.9 7.90 8.0 8.15 8.2	8.05		7.70 8.90	9.30	8.72		Nil	Nil
	07-Jan-11	Surface Middle Bottom	10:00	Cloudy	7.24 13.5	17.20 17.20 17.20 17.20 17.20 17.10 17.20 17.20	17.18	7.39 7 7.70 7 7.60 7 7.59 7	65 7.68 57 7.59		8.22 8.22	8.22 8.22 8.23 8.22	8.22	7.12 7.0 6.97 6.9 7.14 7.2 9.15 8.9	7.07		8.90 8.70 11.20 12.20	10.80 10.90	10.17		Nil	Nil
	10-Jan-11	Surface Middle Bottom Surface	11:12	Sunny	7.25 13.5	17.20 17.20 17.10 17.10 17.10 17.10 14.40 14.40	17.13	7.47 7 7.45 7	55 7.51 49 7.47 43 8.45		8.22 8.22	8.22	8.22	9.10 9.2 8.90 8.9 6.33 6.1	9.05		11.40 11.00 10.00	11.60 12.10	11.78		Nil	Nil
	12-Jan-11	Middle Bottom Surface	11:00	Cloudy	7.25 13.5	14.40 14.40 14.40 14.40 14.40 18.10	14.40	8.05 8 7.82 7			8.18	8.19 8.19 8.22	8.19	6.05 6.1 6.24 6.3 2.85 2.9	6.20		7.80 7.60 5.80	6.40 6.80 6.10 4.10	7.78		Nil	Nil
	14-Jan-11	Middle Bottom Surface	12:00	Sunny	7.25 13.5	18.10 18.10 18.20 18.20 16.80 16.80	18.13	7.77 7	85 7.81 75 7.70		8.23	8.23 8.23 8.13	8.23	2.77 2.8 2.96 2.8 3.74 3.7	2.87		5.20 4.50 6.50	3.40 3.20 4.40	4.37		Nil	Nil
	17-Jan-11	Middle Bottom Surface	14:07	Sunny	7 13 1	16.70 16.70 16.70 16.70 16.80 16.80	16.73	8.23 8 8.13 8 8.03 8	18 8.21 08 8.11 07 8.05	- /-	8.13 8.12 8.25	8.12 8.12 8.25	8.13	3.65 3.7 3.92 3.8 4.76 4.8	3.77	- /-	3.60 3.70 5.60	3.40 3.50 6.00	4.18	- /-	Nil	Nil
	19-Jan-11	Middle Bottom Surface	08:40	Sunny	7.25 13.5 1	16.80 16.80 16.90 16.90 17.50 17.50	16.83	8.02 7 8.03 7 7.90 7	98 8.00 98 8.01 87 7.89		8.25 8.25 8.19	8.25 8.25 8.20	8.25	4.87 4.79 4.70 4.8 13.08 13.1	4.80		7.60 7.00 15.40	5.60 5.40 13.30	6.20		Nil	Nil
	21-Jan-11	Middle Bottom Surface	09:05		13.5 1	17.50 17.60 17.60 17.50 16.30 16.30		7.88 7	62 7.64 95 7.92		8.19 8.19 8.23	8.19 8.22	8.19	15.03 14.9 15.58 15.6 8.55 8.4	6		12.50	22.10 8.70	16.85		Nil	Nil
	24-Jan-11	Middle Bottom Surface			13.5 1	16.30 16.20 16.30 16.30 19.00 19.00		7.96 8 7.61 7	02 8.00 06 8.01 58 7.60		8.22 8.22 8.19	8.22 8.19		9.04 8.9 8.62 8.6 4.05 3.9	,		8.00 8.40	9.70 13.50 6.80			Nil	Nil
	26-Jan-11	Middle Bottom Surface	10:55		13.5 1	19.00 19.00 19.00 19.00 16.20 16.20		7.96	80 7.78 63 7.61 99 7.98		8.19 8.19 8.21	8.19 8.21		3.62 3.7 3.98 4.1 2.40 2.6	)		7.40 2.00	2.10			Nil	Nil
	28-Jan-11	Middle Bottom Surface	12:07		13.5 1	16.10 16.10 16.20 16.20 17.70 17.70		7.67 7 7.79 7	75 7.73 70 7.69 84 7.82		8.21 8.20 8.23	8.20 8.23		2.31 2.4 2.70 2.5 3.70 3.6			2.40	2.20 2.20 2.70	2.43		Nil	Nil
	31-Jan-11	Middle Bottom Surface	15:00	Sunny		17.60 17.60 17.70 17.70			65 7.63 90 7.87		8.23 8.23		8.23	3.50 3.3 3.47 3.5			5.10	4.00 4.10	3.37		INII	NII
		Middle Bottom																			NII	IVII

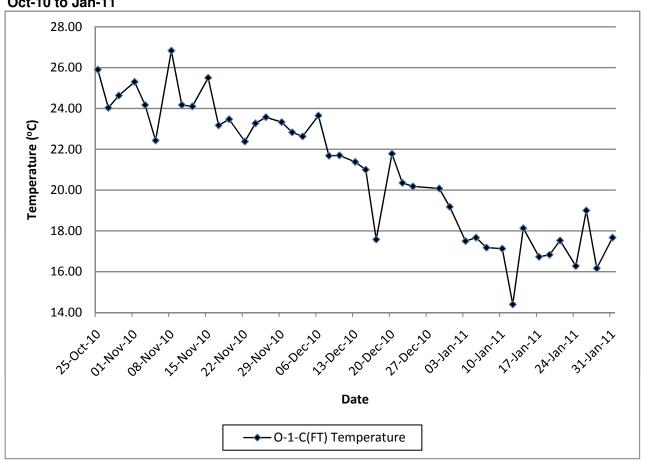
Outfall 1 During Ebb Tide O-1(ET)	03-Jan-11	Surface Middle	12:50	Cloudy	1 4.5	17.40 17.40						7.19 7.12	7.02 / 6.94	8.26 8.26 8.26 8.27			5.42 5.68	5.55		6.70 6.00	7.40 7.90	7.18		Nil		Nii	
0-1(E1)	03-Jan-11	Bottom	12.50	Cloudy	8	17.40	17.4	10	7	.23	7.28	7.26	6.7 / 6.48	8.26 8.26		5.50	5.63	5.55		7.70	7.40	7.10		INII		INII	
	05-Jan-11	Surface Middle	13:28	Sunny	4.5	17.90 18.00						8.27 8.53	7.02 / 6.94	8.22 8.22 8.22 8.23		3.98 4.10	3.92 4.17	4.04		5.90 5.10	4.60 5.20	4.77		Rock Removal		Nil	
		Bottom Surface			8	18.00 17.40						8.35 7.62	6.7 / 6.48	8.23 8.22 8.23 8.23			4.06 4.93			4.00 6.70	3.80 8.60					_	
	07-Jan-11	Middle	14:30	Cloudy	4.75	17.30	17.4	17.	7.37	.54	7.59	7.57	7.02 / 6.94	8.22 8.23	8.23	4.75	4.92	4.89		6.00	5.60	6.37		Rock Removal		Nil	
		Bottom Surface			1	17.40 17.40	17.4	10	7	'.42	7.51 7.37	7.40	6.7 / 6.48 7.02 / 6.94	8.23 8.23 8.23 8.23		5.00 5.55	5.48				6.70					_	
	10-Jan-11	Middle Bottom	15:32	Sunny		17.40 17.40					7.47 7.66	7.49 7.69	8.18	8.23 8.23 8.23 8.23		5.50 5.60	5.57 5.68	5.56		5.70 6.40	7.10 6.50	6.25		Rock Removal		Nil	
	12-Jan-11	Surface Middle	17:25	Cloudy	1	14.80 14.70	14.7	0	8	3.23	8.27		7.02 / 6.94	8.19 8.20 8.20 8.20		4.10	4.02 4.28	4.14		6.60	4.80	4.97		Rock Removal		Nii	
	12-3411-11	Bottom	17.25	Cloudy	8	14.70	14.7	0	8	3.14	8.23	8.19	6.7 / 6.48	8.20 8.20		4.02	4.07	4.14		4.80	4.60	4.57		HOCK Hellioval		IVII	
	14-Jan-11	Surface Middle	18:20	Sunny		18.30						7.91 7.70	7.02 / 6.94	8.22 8.22 8.22 8.22		3.03	3.12 3.15	3.11		8.30 4.10		5.10		Nil		Nil	
		Bottom Surface				18.20 16.70						7.75 8.20	6.7 / 6.48	8.22 8.23 8.13 8.12			3.09 3.44			4.70 3.10						_	
	17-Jan-11	Middle Bottom	10:42	Sunny	4.75	16.60	16.6	16	3.63	3.20	8.28	8.24	7.02 / 6.94	8.12 8.13	8.12	3.55	3.62 3.73	3.55		4.40	4.10	4.63		Nil		Nil	
		Surface			1	16.60 16.80	16.8	80	8	1.05	8.29 8.13	8.09	6.7 / 6.48 7.02 / 6.94	8.12 8.12 8.27 8.27		3.86	3.97		11.87 / 13.44	3.00	7.50 3.70		13.25 / 14.39				
	19-Jan-11	Middle Bottom	12:30	Sunny		16.80 16.80					8.30 8.25		6.7 / 6.48	8.27 8.27 8.26 8.26		4.04 3.85		3.91		4.50 6.20		4.43		Nil		Nil	
	21-Jan-11	Surface Middle	13:30	Sunny	1	17.50 17.50	17.5					7.97 7.83	7.02 / 6.94	8.20 8.20 8.20 8.19	8.20		7.44 7.50	7.57		10.10 7.70	7.90	8.63		Nil		Nil	
	21 0411 11	Bottom	10.00	Cumy	8.5	17.60	17.6	0	7	.78	7.86	7.82	6.7 / 6.48	8.20 8.20		7.71	7.65	7.07		10.00	8.40	0.00					
	24-Jan-11	Surface Middle	15:27	Sunny	4.5	16.50 16.50	16.5	16	3.50 8	3.06	8.26 8.11	8.09	7.02 / 6.94	8.24 8.23 8.23 8.23	8.23	6.50		6.33		3.90 3.00	5.00	5.68		Rock Removal		Nil	
		Bottom Surface				16.50 19.20					7.88		6.7 / 6.48	8.23 8.23 8.20 8.20			6.38 3.43			8.00 10.10						-	
	26-Jan-11	Middle Bottom	17:30	Sunny	4.75	19.20	19.2	19	9.20 7	.80	7.84 7.71	7.82	7.02 / 6.94 6.7 / 6.48	8.20 8.20 8.20 8.20	8.20		3.50	3.49		5.30 6.10	5.40	6.68		Rock Removal		Nil	
		Surface			1	16.10	16.1	0	7	.71	7.75	7.73	7.02 / 6.94	8.20 8.20		2.37	2.41			2.30	3.00						
	28-Jan-11	Middle Bottom	08:42	Cloudy		16.00 16.00					7.83 7.92		6.7 / 6.48	8.20 8.20 8.20 8.20		2.35 2.35	2.44	2.39		2.70 2.50		2.53		Rock Removal		Nil	
	31-Jan-11	Surface Middle	11:08	Sunny		18.40 18.40					7.88 7.70	7.90 7.68	7.02 / 6.94	8.23 8.22 8.22 8.22			3.43 3.40	3.40		3.90 3.10		3.17		Nil		Nil	
		Bottom		· · · · · · · ·	8		18.4					7.78	6.7 / 6.48	8.22 8.22			3.27			2.70					 		
		Surface Middle											7.02 / 6.94													Nil	
													6.7 / 6.48														
Control of Outfall 1 During Ebb Tide		Bottom Surface			1	17.40	17.4	10	7	.49	7.54	7.52		8.27 8.27		5.39	5.48			7.00	7.70						
Control of Outfall 1 During Ebb Tide O-1-C(ET)	03-Jan-11	Surface Middle	12:30	Cloudy		17.40	17.4	17.	7.40 7	.35	7.39	7.37		8.27 8.27 8.27 8.27 8.27 8.26	8.27	5.77		5.61		8.70		7.35		Nil		Nil	
		Surface Middle Bottom Surface			11.5 1	17.40 17.40 17.90	) 17.4 ) 17.4 ) 17.9	10 17. 10	7.40 7 7	7.35 7.30 3.34	7.39 7.34 8.38	7.37 7.32 8.36		8.27 8.27 8.27 8.26 8.21 8.22	8.27	5.77 5.68 4.25	5.80 5.54 4.40			8.70 6.20 4.10	6.60 7.90 5.60			Nil		Nil	
	03-Jan-11 05-Jan-11	Surface Middle Bottom Surface Middle Bottom	12:30 13:04	Cloudy	11.5 1 6 11	17.40 17.40 17.90 17.80 17.80	17.4 17.4 17.5 17.8 17.8	10 17 10 10 10 17 10 17	7.40 7 7 7.85 8 8	7.35 7.30 8.34 8.15 8.29	7.39 7.34 8.38 8.20 8.32	7.37 7.32 8.36 8.18 8.31		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.22 8.22	8.27	5.77 5.68 4.25 4.36 4.07	5.80 5.54 4.40 4.27 4.18	5.61 4.26		8.70 6.20 4.10 6.00 4.40	6.60 7.90 5.60 4.20 6.40	7.35 5.12		Nil Nil		Nil Nil	
		Surface Middle Bottom Surface Middle	13:04	Sunny	11.5 1 6 11	17.40 17.40 17.90 17.80 17.80	17.4 17.4 17.5 17.8 17.8 17.8 17.9	10 17: 10 10 17: 10 17: 10 17:	7.40 7 7 7.85 8 8	7.35 7.30 8.34 8.15 8.29 7.75	7.39 7.34 8.38 8.20 8.32 7.81	7.37 7.32 8.36 8.18		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22	8.27	5.77 5.68 4.25 4.36 4.07	5.80 5.54 4.40 4.27 4.18 5.02	4.26		8.70 6.20 4.10 6.00 4.40	6.60 7.90 5.60 4.20 6.40 5.90	5.12		Nil Nil		Nil Nil Nil	
	05-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom			11.5 1 6 11 1 6	17.40 17.80 17.80 17.80 17.40 17.40 17.30	17.4 17.4 17.4 17.5 17.8 17.8 17.4 17.4 17.4 17.4	17. 100 100 100 100 100 100 100 17.	7.40 7 7.85 8 8 8 7.37 7 7	7.35 7.30 8.34 8.15 8.29 7.75 7.61	7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23	8.27 8.22 8.23	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95			8.70 6.20 4.10 6.00 4.40 4.60 8.50 4.90	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30			Nil Nil		Nil Nil Nil	
	05-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Middle Middle Middle	13:04	Sunny	11.5 1 6 11 1 6 11 1 6	17.40 17.40 17.90 17.80 17.80 17.40 17.40 17.40 17.40 17.40	17.4 17.4 17.5 17.8 17.8 17.8 17.8 17.8 17.4 17.4 17.4 17.5 17.4 17.5 17.4 17.5 17.4 17.5 17.4 17.5	17. 100 100 100 100 100 100 100 10	7.40 7 7.85 8 8 7.85 7 7.37 7 7.40 7	7.35 7.30 8.34 8.15 8.29 7.75 7.61 7.37 7.42	7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23	8.27 8.22 8.23	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61	4.26		8.70 6.20 4.10 6.00 4.40 4.60 8.50 4.90 6.10 6.70	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80	5.12		Nil Nil Nil		Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Surface Middle Surface Middle	13:04 14:05 15:08	Sunny Cloudy Sunny	11.5 1 6 11 1 6 11 1 6 11 1 1 1 1 1 1 1 1 1 1 1 1	17.40 17.40 17.90 17.80 17.80 17.40 17.40 17.40 17.40 17.40 17.40	17.4 17.4 17.5 17.5 17.6 17.6 17.6 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4	17. 100 100 100 100 100 100 100 10	7.40	7.35 7.30 7.30 7.34 7.15 7.29 7.75 7.61 7.37 7.42 7.42 7.48 7.66	7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46 7.53 8.10	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.23 8.25 8.23	8.27 8.22 8.23 8.23	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.78 3.90	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85	4.26 5.02 5.68		8.70 6.20 4.10 6.00 4.40 4.60 8.50 4.90 6.10 6.70 5.90 5.50	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90	5.12		Nil Nil Nil		Nil Nil Nil	
	05-Jan-11 07-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom	13:04 14:05	Sunny	11.5 1 6 11 1 6 11 1 6 11 1 6	17.40 17.40 17.90 17.80 17.80 17.40 17.40 17.40 17.40 17.40	17.4 17.4 17.5 17.5 17.5 17.5 17.5 17.6 17.6 17.7	17. 100 17. 10	7.40 7 7.85 8 8 8 7.37 7 7.40 7 7.40 7	.35 .30 .34 .315 .329 .75 .61 .37 .42 .48 .06	7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46 7.53	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.23 8.25 8.23 8.21 8.23	8.27 8.22 8.23 8.23	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.78	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.77	4.26 5.02		8.70 6.20 4.10 6.00 4.40 4.60 8.50 4.90 6.10 6.70 5.90	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.60	5.12		Nii Nii Nii		Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Middle Middle Middle Middle Middle Surface Middle Surface Middle Surface Middle Surface Middle Surface	13:04 14:05 15:08 17:02	Sunny Cloudy Sunny Cloudy	11.5 1 6 11 1 6 11 1 6 11 1 6 11 1 6 11 1 1 6 11 1 1 1 1 1 1 1 1 1 1 1 1	17.40 17.40 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 17.40 14.60 14.60	17.4 17.4 17.4 17.4 17.6 17.6 17.6 17.6 17.6 17.6 17.7 17.6 17.7	17. 100 17. 10	7.40 7 77 785 8 87.85 8 8 7.37 7 7 7 77.40 7 7 8 84.65 7	.35 .30 .34 .15 .29 .75 .61 .37 .37 .42 .48 .06	7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46 7.53 8.10 8.03 8.10 7.63	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.25 8.20 8.26 8.20 8.27 8.20 8.28 8.20 8.29 8.20	8.27 8.22 8.23 8.23 8.23	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.78 3.90 3.81 3.95 3.12	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.77 3.91 3.23	4.26 5.02 5.68 3.87		8.70 6.20 4.10 6.00 4.40 4.60 8.50 4.90 6.10 6.70 5.90 5.50 4.90 4.80 3.30	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.60 5.20 3.60	5.12 5.92 6.75 5.15		Nil Nil Nil Nil		Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle	13:04 14:05 15:08	Sunny Cloudy Sunny Cloudy	11.5 1 6 11 1 6 6 6 6 11 1 1 6 11 1 1 5.75 10.5	17.40 17.40 17.80 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 17.40 14.60 14.60 14.60 18.30 18.30 18.30	17.4 17.4 17.9 17.9 17.9 17.9 17.9 17.9 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.5 17.5 17.6	17. 100 17. 10	7.40 7 7.85 8 8 7.85 8 7.37 7 7.40 7 7.40 7 8 8 8.65 7 8 8	.35 .30 .34 .34 .15 .29 .75 .61 .37 .37 .442 .448 .06 .98 .02	7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46 7.53 8.10 8.03 8.10 7.63 7.70 7.56	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.23 8.25 8.20 8.27 8.20 8.28 8.20 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22	8.27 8.22 8.23 8.23 8.20 8.20	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.78 3.90 3.81 3.95 3.12 3.36	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.77 3.91 3.23 3.30 3.13	4.26 5.02 5.68		8.70 6.20 4.10 6.00 4.40 4.60 8.50 4.90 6.10 6.70 5.90 5.50 4.90 4.80 3.30 4.60 3.10	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.60 5.20 3.60 3.70	5.12 5.92 6.75		Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom	13:04 14:05 15:08 17:02	Sunny Cloudy Sunny Cloudy	11.5 1 6 11 1 6 11 1 6 11 1 1 6 11 1 1 5.75 10.5 1 6	i 17.40 i 17.40 i 17.90 i 17.90 i 17.80 i 17.80 i 17.40 i 17.40 i 17.40 i 17.40 i 17.40 i 17.40 i 14.70 i 14.60 i 18.30 i 18.30 i 18.20 i 16.60 i 16.60	17.4 17.4 17.5 17.8 17.8 17.8 17.8 17.8 17.8 17.4 17.4 17.4 17.4 17.4 17.4 17.4 17.4	17.00 17.00 17.00 17.00 17.00 17.00 17.00 17.00 17.00 17.00 17.00 17.00 17.00 18.00	7.40 7 7.85 8 8 8 7.37 7 7 7.40 7 7 7.40 7 7 7.40 7 7 7 8.86.63 8 8	.35 .30 .34 .1.15 .229 .7.75 .61 .37 .37 .42 .42 .48 .06 .98 .02 .61 .76 .61	7.39 7.34 8.38 8.20 8.32 7.81 7.46 7.47 7.41 7.46 7.53 8.10 8.03 8.10 7.66 7.70 7.56 8.14 8.15	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.17		8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.25 8.25 8.27 8.25 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.21 8.21 8.22 8.22 8.22 8.22 8.23 8.23	8.27 8.22 8.23 8.23 8.20 8.20	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.78 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.07 4.03 3.05	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.85 3.23 3.23 3.30 3.13 3.97 3.80	4.26 5.02 5.68 3.87		8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.90 5.50 4.80 3.30 4.60 3.10 4.60	6.60 7.90 5.60 4.20 6.40 5.30 6.30 5.30 6.60 8.80 6.60 4.90 5.60 5.20 3.60 3.70 3.50 3.20 4.00	5.12 5.92 6.75 5.15		Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle	13:04 14:05 15:08 17:02 18:00	Sunny Cloudy Sunny Cloudy Sunny	11.5 1 6 11 1 6 11 1 6 11 1 1 6 11 1 1 5 7 1 1 1 1 1 1 1 1 1 1 1 1 1	i 17.40 i 17.40 i 17.90 i 17.80 i 17.80 i 17.80 i 17.80 i 17.40 i 17.40 i 17.40 i 14.60 i 18.30 i 18.30 i 18.30 i 18.20 i 16.60	17.4 17.4 17.5 17.6 17.6 17.6 17.6 17.6 17.6 17.6 17.6	17. 10. 17. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 10. 17. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	7.40 7 7.85 8 8 7 7.37 7 7.40 7 7.40 7 7 8.65 7 8 8 8.65 7	.35 .30 .34 .15 .29 .75 .61 .37 .37 .42 .48 .06 .98 .02 .61 .76 .60 .19	7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46 7.53 8.10 8.03 8.10 7.63 7.70 7.56 8.14	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.17 8.13	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.20 8.20 8.20 8.20 8.22 8.22 8.22 8.22	8.27 8.22 8.23 8.23 8.20 8.22 8.12	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.47 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.85 3.74	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.77 3.91 3.23 3.30 3.13 3.97	4.26 5.02 5.68 3.87 3.20	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 4.90 6.10 6.70 5.50 4.90 4.80 3.30 4.60 3.10	6.60 7.90 5.60 4.20 6.40 6.30 5.30 5.30 6.40 8.80 6.60 4.90 5.60 3.70 3.50 3.20 4.00 3.30	5.12 5.92 6.75 5.15 3.63	-/-	Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Middle Bottom Surface Middle Middle Bottom Surface Middle	13:04 14:05 15:08 17:02 18:00	Sunny Cloudy Sunny Cloudy Sunny	11.5 1 6 11 1 6 11 1 1 6 11 1 1 5 7 1 1 1 6 11 1 1 6 11 1 1 6 11 1 1 1 1 1 1 1 1 1 1 1 1	i 17.40 (	17.4 17.4 17.5 17.5 17.5 17.5 17.5 17.5 17.5 17.5 17.4	17. 10. 17. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 17. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	7.40	.35 .30 .334 .15 .29 .75 .61 .37 .42 .48 .06 .98 .02 .61 .76 .60 .11 .76 .60 .60 .77 .60 .77 .60 .77 .76 .76 .76 .76 .76 .77 .77 .77 .77	7.39 7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46 7.53 8.10 8.03 8.10 7.63 7.70 7.56 8.14 8.15 8.13 8.04 8.16	7.37 7.32 8.36 8.18 8.31 7.78 8.31 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.17 8.17 8.13 8.10 8.18	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.25 8.26 8.27 8.27 8.20 8.20 8.20 8.20 8.21 8.21 8.20 8.20 8.21 8.21 8.21 8.21 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22	8.27 8.22 8.23 8.23 8.20 8.22 8.12	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.47 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.85 3.74 4.13 4.03 3.85 3.74 4.13 4.03 4.04 4.05	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.37 3.31 3.37 3.39 3.83 4.07 4.10	4.26 5.02 5.68 3.87 3.20	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.50 4.90 4.80 3.30 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10	6.60 7.90 5.60 4.20 6.40 6.30 6.30 6.30 6.40 8.80 6.60 4.90 5.60 5.20 3.60 3.70 3.70 4.40 3.70 4.40 3.70	5.12 5.92 6.75 5.15 3.63	-/-	Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11 17-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom	13:04 14:05 15:08 17:02 18:00 10:15	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny	11.5 1 6 6 11 1 1 6 6 11 1 1 1 5.75 1 6 6 11 1 1 6 6 11 1 1 1 1 1 1 1 1 1	i 17.40 17.40 17.90 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 14.70 14.60 14.60 14.60 16.60 16.60 16.60 16.80 16.80 16.80	17.4 17.4 17.5 17.5 17.5 17.5 17.5 17.5 17.4 17.4 17.4 17.4 17.4 14.5 18.3 18.3 18.3 18.3 18.3 18.3 18.3 18.3	17. 10. 17. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	7.40	.35 .30 .33 .34 .15 .29 .75 .61 .37 .37 .42 .48 .06 .98 .98 .02 .61 .76 .61 .76 .61 .76 .61 .77 .61 .77 .77 .78 .78 .79 .79 .79 .79 .79 .79 .79 .79 .79 .79	7.39 7.39 7.34 8.38 8.20 8.38 8.20 8.32 7.81 7.66 7.67 7.41 7.41 7.46 7.53 8.10 8.03 8.10 7.63 7.70 7.55 8.11 8.13 8.10 8.10 8.10 8.10 8.10 8.10 8.10 8.10	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.01 8.01 8.01 8.02 7.62 7.73 7.58 8.17 8.17 8.17 8.18 8.11 8.13	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.25 8.25 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27	8.27 8.22 8.23 8.23 8.20 8.22 8.12	5.77 5.68 4.25 4.36 4.90 5.18 5.02 5.77 5.47 5.47 3.90 3.12 3.95 3.12 3.36 3.07 4.03 3.81 3.95 3.12 3.95 3.12 3.96 3.12 3.96 3.12 3.96 3.12 3.96 3.12 3.96 3.12 3.96	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.37 3.91 3.20 3.30 3.13 3.91 3.80 3.83 4.07 4.10 3.92 7.52	4.26 5.02 5.68 3.87 3.20 3.87 4.01	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.50 4.90 4.80 3.30 4.80 3.31 4.60 3.10 4.60 3.10 4.60 3.50 4.80 3.30 4.80 3.30 4.60 3.50 4.60 3.50 4.60 3.50 4.60 3.50 4.60 3.50 4.60 3.50 4.60 4.60 4.60 4.60 4.60 4.60 4.60 4.6	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.50 3.60 3.70 3.70 4.00 3.70 3.70 3.70 3.70 3.70 3.70 3.70 3	5.12 5.92 6.75 5.15 3.63 4.42	- /-	Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11	Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom Surface Middle Bottom	13:04 14:05 15:08 17:02 18:00	Sunny Cloudy Sunny Cloudy Sunny Sunny	11.5 1 6 6 11 1 1 1 1 6 6 6 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	i 17.40 17.40 17.90 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 17.40 17.40 14.60 14.60 14.60 16.60 16.60 16.80 16.80 17.80 17.80 17.80 17.80 17.80 18.30 18.30 19.80	17.4 17.4 17.5 17.5 17.5 17.5 17.5 17.5 17.5 17.5	17. 10. 17. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	7.40	.35 .30 .30 .34 .15 .29 .75 .61 .37 .37 .42 .42 .48 .06 .98 .02 .61 .76 .60 .19 .11 .07 .09 .20 .20 .20 .20 .20 .20 .20 .20 .20 .20	7.39 7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.41 7.45 8.10 8.03 8.10 7.63 8.10 8.10 8.10 8.10 8.10 8.10 8.10 8.10	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 8.17 8.13 8.10 8.07 8.11 8.17 8.17 8.17 8.17 8.18	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.27 8.27 8.28 8.28 8.29 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.27 8.27 8.28 8.28 8.29 8.20 8.20 8.20 8.20 8.20	8.27 8.22 8.23 8.23 8.20 8.20 8.22 8.12 8.27	5.77 5.68 4.25 4.36 4.90 5.18 5.02 5.77 5.78 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.85 3.74 4.07 4.07 4.07 4.07 5.78 3.90 3.81 3.95 3.12 3.96 3.12 3.96 3.12 3.96 3.12 3.96 3.12 3.96 3.12 3.96	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.37 3.91 3.23 3.30 3.13 3.91 3.80 3.80 4.95 5.96 5.96 5.96 5.96 5.96 5.97	4.26 5.02 5.68 3.87 3.20 3.87	-1-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.90 4.80 3.30 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 5.50 4.60 5.50 4.60 5.50 4.60 5.50 4.60 5.50 5.50 5.50 5.50 5.50 5.50 5.50 5	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 4.90 6.60 4.90 5.20 3.60 3.70 3.50 3.70 4.90 4.90 3.70 4.90 4.90 5.80 3.70 4.90 4.90 4.90 4.90 4.90 5.80 5.80 5.80 5.80 5.80 5.80 5.80 5.8	5.12 5.92 6.75 5.15 3.63	-/-	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11 17-Jan-11 19-Jan-11	Surface Middle Bottom Surface	13:04 14:05 15:08 17:02 18:00 10:15 12:03	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny	11.5 1 6 6 11 1 1 6 11 1 1 1 6 11 1 1 1 5.75 10.5 11 1 6 6.25 11.5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	i 17.40 17.90 17.80 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 17.40 17.40 14.60 14.60 18.30 16.60 16.60 16.60 16.70 16.80 16.80 16.80 17.50 17.50	17.4 17.4 17.5 17.5 17.5 17.5 17.5 17.5 17.5 17.5	17. 100 100 100 100 100 100 100 100 100 17. 100 100 17. 100 100 17. 100 18. 100 18. 100 16. 100 16. 16. 16. 16. 16. 16. 16. 16. 16. 16.	7.40 7 7.40 7 7.85 8 8 8 8 7.85 8 8 7 7.37 7 7.40 7 7.40 7 7.40 7 7.40 7 7.40 7 7.50 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	.35 .30 .30 .33 .34 .15 .15 .29 .75 .61 .37 .37 .37 .37 .37 .37 .37 .37 .37 .37	7.39 7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.47 7.41 7.46 7.53 8.10 8.03 8.10 8.03 8.11 8.10 8.03 8.04 8.05 8.06 8.06 8.06 8.07 8.06 8.06 8.07 8.07 8.07 8.07 8.08	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 7.62 7.73 7.58 8.17 8.13 8.10 8.11 8.12 8.13 8.11 8.11 8.11 8.12 8.13 8.14 8.15 8.15 8.15 8.15 8.17 8.19 8.10	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.20 8.20 8.20 8.20 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.27 8.27 8.27 8.27 8.28 8.28 8.29 8.20 8.29 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.23 8.23 8.24 8.25 8.27 8.27 8.27 8.27 8.27 8.27 8.29 8.20 8.20 8.20 8.20 8.20	8.27 8.22 8.23 8.23 8.20 8.20 8.22 8.12 8.27	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.78 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.81 3.95 3.12 3.36 3.74 4.12 3.98 3.98 3.86 7.46 7.46	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.37 3.91 3.23 3.30 3.13 3.97 3.80 4.07 4.10	4.26 5.02 5.68 3.87 3.20 3.87 4.01	-1-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.90 5.50 4.80 3.30 4.60 3.30 4.60 5.50 4.60 3.30 4.60 3.30 4.60 3.30 4.60 3.30 4.60 3.30 4.60 3.30 4.60 3.30 4.60 3.30 4.60 3.30 4.60 4.60 4.60 4.60 4.60 4.60 4.60 4.6	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.60 5.20 3.60 3.70 3.50 3.70 4.40 3.70 4.40 3.70 4.40 3.70 4.80 3.80 4.90 3.80 4.90 3.70 4.90 3.70 4.90 3.90 4.90 4.90 3.90 4.90 4.90 3.90 4.90 4.90 5.90 4.90 5.90 4.90 5.90 5.90 6.90	5.12 5.92 6.75 5.15 3.63 4.42	- <i>I</i> -	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11 17-Jan-11	Surface Middle Bottom Surface Middle Bottom	13:04 14:05 15:08 17:02 18:00 10:15 12:03	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny Sunny	11.5 1 6 6 11 1 1 6 11 1 1 6 11 1 1 5.75 10.5 1 6 11 1 1 6 11 1 1 1 1 1 1 1 1 1 1 1 1	i 17.40 17.40 17.90 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 17.40 14.60 14.60 14.60 16.60 16.60 16.80 17.50 17.50 17.50 18.30	17.4 17.4 17.4 17.5 17.5 17.6	17. 100 17. 10	7.40	.35 .30 .30 .33 .34 .15 .15 .61 .37 .37 .37 .42 .48 .06 .61 .76 .61 .76 .60 .61 .77 .60 .61 .77 .61 .77 .61 .77 .77 .77 .77 .77 .77 .77 .77 .77 .7	7.39 7.39 7.34 8.38 8.20 8.38 8.20 8.32 7.81 7.66 7.67 7.41 7.41 7.43 8.10 8.10 8.10 8.11 8.15 8.13 8.14 8.15 8.13 8.16 8.04 8.16 8.08 8.08 8.08 8.09 8.10 8.10 8.10 8.10 8.10 8.10 8.10 8.10	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.65 8.13 8.10 8.10 8.11 8.11 8.11 8.11 8.12 8.13 8.11 8.13 8.11 8.13 8.14 8.15 8.16 8.17 8.17 8.18 8.11 8.11 8.12 8.13 8.14 8.15 8.15 8.17 8.17 8.17 8.17 8.17 8.18 8.11 8.11 8.12 8.13 8.14 8.15 8.15 8.15 8.17 8.17 8.17 8.18 8.19 8.19 8.10	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.28 8.22 8.29 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.27 8.27 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.27 8.27 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.23 8.23 8.23	8.27 8.23 8.23 8.23 8.20 8.22 8.12 8.27 8.20	5.77 5.68 4.25 4.36 4.90 5.18 5.02 5.77 5.78 3.90 3.18 3.95 3.12 3.36 3.07 4.03 3.85 3.74 4.12 3.98 3.98 3.98 3.98 3.98 3.19	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.37 3.39 3.39 3.39 3.39 3.39 3.80 3.83 4.07 4.10 3.27 5.02 5.02 5.03 5.06 5.61 5.59 3.85 5.77	4.26 5.02 5.68 3.87 3.20 3.87 4.01 7.64	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 6.10 6.70 4.90 4.80 3.30 4.80 5.90 5.50 4.80 3.31 4.60 5.90 5.50 4.80 5.90 5.50 4.80 5.90 5.90 5.90 5.90 5.90 6.10 6.70 6.70 6.70 6.70 6.70 6.70 6.70 6.7	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.50 5.20 3.60 3.70 4.00 3.60 3.70 4.00 3.70 4.00 3.70 4.00 3.70 4.00 3.60 3.70 4.00 3.70 3.60 3.70 4.00 3.60 3.70 3.60 3.70 4.00 3.60 3.70 3.60 3.70 4.00 3.60 3.70 3.60 3.70 3.60 3.70 3.60 3.70 3.60 3.70 3.60 3.70 3.60 3.70 3.70 3.70 3.70 4.00 3.70 3.60 3.70 3.60 3.70 3.60 3.70 3.60 3.70	5.12 5.92 6.75 5.15 3.63 4.42	-1-	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11 17-Jan-11 19-Jan-11	Surface Middle Bottom Surface Middle	13:04 14:05 15:08 17:02 18:00 10:15 12:03	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny Sunny	11.5.7 (1.5.1 (1	i 17.40 17.40 17.90 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 17.40 17.40 14.60 14.60 14.60 16.60 16.60 16.70 16.80 17.50 17.50 17.50 17.50 17.50 18.30 17.50 18.30 17.50 18.30 18.30 19.5	17.7.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	17. 100 17. 10	7.40	.35 .30 .30 .33 .34 .15 .15 .61 .37 .37 .37 .42 .48 .06 .06 .98 .02 .76 .61 .61 .61 .61 .61 .61 .61 .61 .61 .6	7.39 7.39 7.34 8.38 8.20 8.38 8.20 8.32 7.81 7.66 7.67 7.47 7.41 7.41 7.46 7.53 8.10 8.10 8.10 8.11 8.15 8.13 8.10 8.16 8.18 8.19 8.19 8.19 8.10 8.11 8.11 8.15 8.11 8.11 8.11 8.12 8.13 8.14 8.15 8.16 8.16 8.16 8.16 8.16 8.16 8.16 8.16	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.742 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.11 8.13 8.10 8.11 7.79 7.68 7.69 7.69 7.69 8.18 8.11 7.79 7.68 8.18 8.19 7.69 8.18 8.19 7.69 8.18 8.11 7.79 7.68 8.18 8.19 7.69	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.24 8.25 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.23 8.23 8.24 8.23 8.25 8.26 8.27 8.27 8.27 8.27 8.28 8.29 8.20	8.27 8.23 8.23 8.23 8.20 8.20 8.27 8.27 8.20	5.77 5.68 4.25 4.36 4.90 5.18 5.02 5.77 5.78 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.85 3.74 4.12 3.98 3.86 7.46 7.66 7.67 6.15 6.74 6.15 6.74 6.62 3.57 6.77	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.86 5.59 3.85 3.77 3.91 3.23 3.30 3.13 3.97 4.10 4.10 3.92 7.62 7.69 6.23 6.70 6.53 3.63 3.74	4.26 5.02 5.68 3.87 3.20 3.87 4.01 7.64	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.90 4.80 3.10 4.60 3.10 5.90 5.50 4.90 4.80 3.10 4.60 5.90 5.90 5.90 5.90 5.90 5.90 5.90 5.9	6.60 7.90 5.60 4.20 6.40 5.90 6.30 6.30 6.30 6.40 4.90 6.60 4.90 6.60 3.70 3.50 3.70 4.00 3.70 4.00 3.70 3.70 4.00 3.70 4.00 3.70 3.70 4.00 3.70 3.70 4.00 3.70 3.70 4.70 3.70 3.70 4.70 3.70 3.70 4.70 3.70	5.12 5.92 6.75 5.15 3.63 4.42	-/-	Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11 19-Jan-11 21-Jan-11 24-Jan-11	Surface Middle Bottom Surface Middle Bottom	13:04 14:05 15:08 17:02 18:00 10:15 12:03 13:02 15:02	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny Sunny Sunny Sunny Sunny	11.5.7 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	i 17.40 i 17.40 i 17.90 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.40 i 18.3	17.7.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	17. 100 17. 100 100 17. 100 100 17. 100 100 17. 100 100 17. 100 100 17. 100 100 100 100 100 100 100 100 100 10	7.40 7 7.40 7 7 7.85 8 8 8 8 7 7.37 7 7 7.40 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8	.35 .30 .30 .34 .115 .129 .75 .61 .37 .37 .42 .48 .06 .98 .02 .61 .76 .60 .111 .07 .09 .20 .20 .20 .20 .20 .20 .20 .20 .20 .20	7.39 7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.747 7.41 7.41 7.53 8.10 8.10 8.10 8.11 8.15 8.14 8.15 8.16 8.16 8.16 8.17 8.17 8.17 8.17 8.18 8.18 8.19 8.19 8.19 8.10 8.10 8.11 8.10 8.10 8.11 8.10 8.10	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.62 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.17 8.13 8.10 8.07 8.18 8.11 7.79 7.68 8.18 7.89 8.23 8.23 8.24 7.89 8.23 8.24 7.89 8.27 7.89 8.28	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.23 8.24 8.22 8.25 8.22 8.26 8.20 8.27 8.27 8.28 8.28 8.29 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.27 8.27 8.29 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.23 8.23 8.24 8.25 8.25 8.26 8.27 8.27 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.27 8.27 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23	8.27 8.23 8.23 8.23 8.20 8.20 8.22 8.12 8.27 8.20 8.23	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.47 5.78 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.86 7.46 7.66 7.67 6.12	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 3.77 3.91 3.23 3.30 3.13 4.07 4.10 5.02 5.08 5.61 5.62 5.77 3.91 3.91 3.92 3.83 4.07 4.10 6.02 6.03	4.26 5.02 5.68 3.87 3.20 3.87 4.01 7.64 6.50 3.59	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.70 6.70 5.90 6.10 6.70 5.90 4.80 4.80 3.10 4.60 3.10 2.30 4.60 3.10 2.30 4.60 10.00 3.60 4.80 4.00 5.50 4.80 4.00 5.50 5.50 4.20 5.10	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.50 6.60 4.90 5.60 3.70 3.50 3.70 4.40 3.40 3.40 3.20 4.00 3.50 8.10 12.30 9.20 3.50 3.50 3.50 4.40 3.60 3.50 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.20 3.60 3.70 4.20 3.60 3.70 4.20 3.60 3.70 4.40 3.60 3.60 3.70 3.70 4.40 3.60 3.60 3.70 3.70 3.70 4.40 3.60	5.12 5.92 6.75 5.15 3.63 4.42 3.83 9.60 3.75	-/-	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 14-Jan-11 19-Jan-11 21-Jan-11 24-Jan-11	Surface Middle Bottom Surface Middle Bottom	13:04 14:05 15:08 17:02 18:00 10:15 12:03 13:02	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny Sunny Sunny Sunny Sunny	11.5.75 11.5.1 1	i 17.40 17.90 17.80 17.80 17.80 17.80 17.40 17.40 17.40 17.40 17.40 14.60 14.60 14.60 14.60 16.60 16.60 16.60 16.70 16.80 17.50 17.50 17.50 18.30 19.30	17.7.7.7.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	17. 100 17. 10	7.40	.35 .30 .30 .33 .34 .15 .15 .61 .37 .37 .37 .44 .98 .90 .90 .90 .90 .90 .90 .90 .90 .90 .90	7.39 7.39 7.34 8.38 8.20 8.38 8.20 8.31 7.41 7.46 7.41 7.46 7.41 7.46 7.53 8.10 8.03 8.10 7.63 7.70 7.56 8.11 8.13 8.14 8.16 8.08 8.08 7.82 8.10 8.10 8.10 8.11 8.11 8.15 8.13 8.10 8.11 8.11 8.11 8.12 8.11 8.11 8.12 8.11 8.11	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.42 7.39 7.41 8.01 8.06 7.62 7.73 8.17 8.13 8.10 8.07 8.18 8.11 8.13 8.10 8.07 8.18 8.11 8.11 8.12 8.13 8.10 8.11 8.13 8.11 8.11 8.11 8.12 8.13 8.11 8.13 8.11 8.11 8.13 8.11 8.11	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.27 8.27 8.27 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20	8.27 8.23 8.23 8.20 8.20 8.27 8.27 8.20 8.23 3.97	5.77 5.68 4.25 4.36 4.90 5.18 5.02 5.77 5.78 3.90 3.18 3.95 3.19 3.36 3.06 3.37 4.03 3.86 7.46 7.66 7.87 6.15 6.78 6.15 6.78 6.15 6.23 6.35	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.86 5.61 5.59 3.85 5.37 3.21 3.23 3.30 3.30 3.30 3.30 3.80 3.83 4.07 4.10 3.92 7.61 7.69 6.23 6.70 6.53 3.63 3.74 3.47	4.26 5.02 5.68 3.87 3.20 3.87 4.01 7.64 6.50 3.59	-1-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.50 4.80 4.80 3.30 4.80 3.310 4.80 3.310 4.80 5.90 5.50 4.80 3.30 4.80 5.90 5.90 5.90 4.90 4.90 4.90 5.90 5.90 5.90 4.90 4.90 5.90 5.90 5.90 5.90 5.90 5.90 5.90 5	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.40 8.80 6.60 4.90 5.50 3.60 3.70 3.50 3.70 4.00 3.70 4.00 3.70 4.00 3.70 4.00 3.70 4.00 3.70 4.40 3.60 3.00 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.40 3.60 3.70 4.20 3.60 3.70 4.20 3.60 3.70	5.12 5.92 6.75 5.15 3.63 4.42 3.83 9.60 3.75	-/-	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 17-Jan-11 19-Jan-11 21-Jan-11 24-Jan-11 28-Jan-11	Surface Middle Bottom Surface	13:04 14:05 15:08 17:02 18:00 10:15 12:03 13:02 15:02 17:09 08:18	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny Sunny Sunny Cloudy	11.5.7 (1.5.1) 1.1.1 (1.5.7) 1	i 17.40 i 17.40 i 17.90 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 18.3	17.7.1 17.4.1 17	17. 100 17. 10	7.40	.35 .30 .30 .33 .34 .15 .15 .61 .37 .37 .37 .42 .48 .06 .06 .98 .02 .61 .76 .60 .11 .09 .75 .61 .37 .37 .37 .42 .48 .06 .06 .06 .06 .09 .09 .09 .09 .09 .09 .09 .09 .09 .09	7.39 7.39 7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.67 7.41 7.41 7.46 7.53 8.10 8.10 8.10 8.11 8.13 8.13 8.10 8.16 8.18 8.19 8.19 8.10 8.11 7.57 7.70 7.84 8.10 8.11 8.15 8.17 8.17 8.18 8.18 8.19 8.19 8.19 8.19 8.19 8.19	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.742 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.17 8.13 8.10 8.10 8.11 7.79 7.68 7.69 7.89 8.23 8.23 8.23 8.33 8.14 7.56 7.91 7.89 7.89 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.25 8.20 8.20 8.20 8.20 8.21 8.21 8.21 8.21 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.28 8.28 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.28 8.29 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.23 8.25 8.26 8.27 8.27 8.28 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20	8.27 8.23 8.23 8.23 8.20 8.22 8.12 8.27 8.20 8.23 3.97 8.20	5.77 5.68 4.25 4.36 4.90 5.18 5.02 5.77 5.78 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.85 3.74 4.12 3.98 3.86 7.46 7.66 7.66 7.87 6.15	5.80 5.54 4.40 4.27 4.48 5.02 5.03 4.95 5.86 5.86 5.59 3.85 5.89 3.87 3.91 3.23 3.30 3.13 3.97 4.10 7.69 6.23 6.70 6.53 3.63 3.74 3.47 2.44 2.244 2.22	4.26 5.02 5.68 3.87 3.20 3.87 4.01 7.64 6.50 3.59 2.41	-1-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.90 6.10 6.70 5.90 4.80 4.80 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 5.90 5.10 5.90 5.10 5.10 5.10 5.10 5.10 5.10 5.10 5.1	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.90 6.30 6.40 4.90 5.30 6.40 4.90 5.30 6.40 4.90 5.30 6.40 4.90 5.30 6.40 4.90 5.50 3.70 3.50 3.70 3.50 3.70 3.70 3.40 3.40 3.40 3.70	5.12 5.92 6.75 5.15 3.63 4.42 3.83 9.60 3.75 4.65	-/-	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 17-Jan-11 19-Jan-11 21-Jan-11 24-Jan-11 28-Jan-11	Surface Middle Bottom Surface Middle Bottom	13:04 14:05 15:08 17:02 18:00 10:15 12:03 13:02 15:02	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny Sunny Sunny Sunny Sunny	11.5.75 11.	i 17.40 i 17.40 i 17.90 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.40 i 18.3	17.7.1 17.7.2 17.2 1	17. 100 100 17. 100 100 100 17. 100 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 18. 100 18. 100 18. 100 18. 100 19. 100 115. 115.	7.40	.35 .30 .30 .33 .34 .15 .15 .61 .37 .37 .37 .37 .37 .37 .37 .37 .37 .37	7.39 7.39 7.34 8.38 8.20 8.32 7.81 7.66 7.67 7.41 7.46 7.53 8.10 8.10 8.10 8.10 8.10 8.10 8.10 8.10	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.17 8.10 8.10 8.10 8.10 8.11 8.10 8.11 7.79 8.18 8.11 7.79 8.18 8.11 7.79 7.68 8.17 7.89 8.23 8.08 8.14 7.56 7.91 7.83 7.82 7.93 7.64 7.65 7.75	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.2 8.20 8.20 8.20 8.20 8.21 8.2 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.27 8.27 8.29 8.20	8.27 8.23 8.23 8.20 8.22 8.12 8.27 8.20 8.23 3.97 8.20	5.77 5.68 4.25 4.36 4.90 5.18 5.02 5.77 5.78 3.90 3.81 3.95 3.12 3.36 3.07 4.03 3.85 3.74 4.12 3.98 3.86 7.46 7.66 7.66 7.87 6.15	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.66 5.59 3.77 3.91 3.30 3.37 3.91 3.92 7.61 7.61 7.69 6.23 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.34 6.33 6.33 6.33 6.33 6.33 6.33 6.33 6.34 6.33 6.33 6.33 6.33 6.34	4.26 5.02 5.68 3.87 3.20 3.87 4.01 7.64 6.50 3.59	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.90 6.10 6.70 5.90 5.50 4.80 4.60 3.30 4.60 3.30 4.60 3.30 4.60 3.70 8.40 9.60 10.00 3.60 4.80 4.80 4.00 5.30 4.20 5.30 4.20 2.00 2.00	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.50 3.60 5.20 3.60 3.70 3.50 3.70 4.40 3.40 3.40 3.90 5.30 6.40 3.40 3.40 3.40 3.40 3.40 3.40 3.40 3	5.12 5.92 6.75 5.15 3.63 4.42 3.83 9.60 3.75	-/-	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	
	05-Jan-11 07-Jan-11 10-Jan-11 12-Jan-11 17-Jan-11 19-Jan-11 21-Jan-11 24-Jan-11 28-Jan-11	Surface Middle Bottom Surface Middle	13:04 14:05 15:08 17:02 18:00 10:15 12:03 13:02 15:02 17:09 08:18	Sunny Cloudy Sunny Cloudy Sunny Sunny Sunny Sunny Sunny Cloudy	11.5.75 11.	i 17.40 i 17.40 i 17.90 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 17.80 i 18.80	17.7.1 17.7.2 17.2 1	17. 100 100 17. 100 100 100 17. 100 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 17. 100 18. 100 18. 100 18. 100 18. 100 19. 100 115. 115.	7.40	.35 .30 .30 .33 .34 .15 .15 .61 .37 .37 .37 .37 .37 .37 .37 .37 .37 .37	7.39 7.39 7.39 7.34 8.38 8.20 8.38 8.20 8.31 7.66 7.66 7.66 7.67 7.51 8.10 8.03 8.10 8.10 8.10 8.10 8.10 8.10 8.10 8.10	7.37 7.32 8.36 8.18 8.31 7.78 7.64 7.78 7.64 7.42 7.39 7.44 7.51 8.08 8.01 8.06 7.62 7.73 7.58 8.17 8.10 8.10 8.10 8.10 8.11 8.10 8.11 7.79 8.18 8.11 7.79 8.18 8.11 7.79 7.68 8.17 7.89 8.23 8.08 8.14 7.56 7.91 7.83 7.82 7.93 7.64 7.65 7.75	8.22	8.27 8.27 8.27 8.26 8.21 8.22 8.22 8.22 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.23 8.24 8.22 8.26 8.20 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.26 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.27 8.29 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.20 8.21 8.22 8.22 8.22 8.22 8.22 8.22 8.22 8.23 8.23 8.24 8.25 8.26 8.20	8.27 8.23 8.23 8.20 8.22 8.12 8.27 8.20 8.23 3.97 8.20	5.77 5.68 4.25 4.36 4.07 4.90 5.18 5.02 5.77 5.78 3.90 3.81 3.95 3.12 3.36 3.12 3.36 3.37 4.03 3.86 7.46 6.15 6.74 6.62 3.50	5.80 5.54 4.40 4.27 4.18 5.02 5.03 4.95 5.66 5.59 3.77 3.91 3.30 3.37 3.91 3.92 7.61 7.61 7.69 6.23 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.33 6.70 6.33 6.70 6.33 6.70 6.33 6.34 6.33 6.33 6.33 6.33 6.33 6.33 6.33 6.34 6.33 6.33 6.33 6.33 6.34	4.26 5.02 5.68 3.87 3.20 3.87 4.01 7.64 6.50 3.59 2.41	-/-	8.70 6.20 4.10 6.00 4.40 4.60 8.50 6.10 6.70 5.50 4.90 4.80 3.30 4.80 3.310 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.60 3.10 4.00 5.30 4.20	6.60 7.90 5.60 4.20 6.40 5.90 6.30 5.30 6.40 8.80 6.60 4.90 5.50 3.60 5.20 3.60 3.70 3.50 3.70 4.40 3.40 3.40 3.90 5.30 6.40 3.40 3.40 3.40 3.40 3.40 3.40 3.40 3	5.12 5.92 6.75 5.15 3.63 4.42 3.83 9.60 3.75 4.65	-/-	Nii Nii Nii Nii Nii Nii Nii Nii Nii Nii		Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	

Note:
Blue Italic indicates an exceedance of Action Level
Red Bold indicates an exceedance of Limit Level

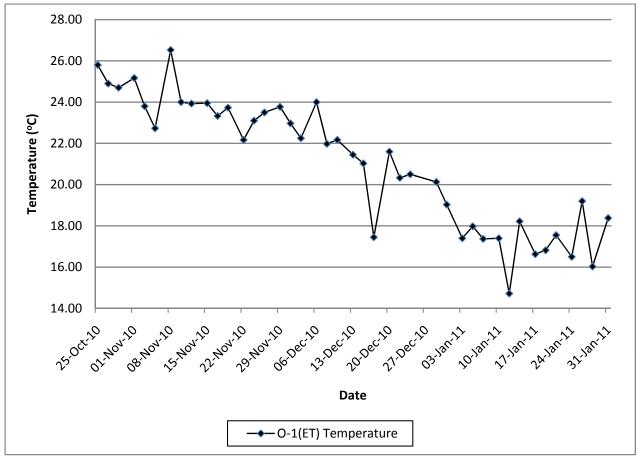
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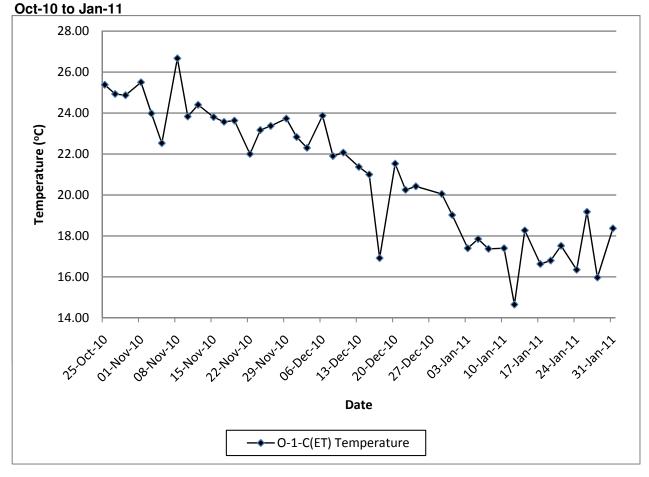
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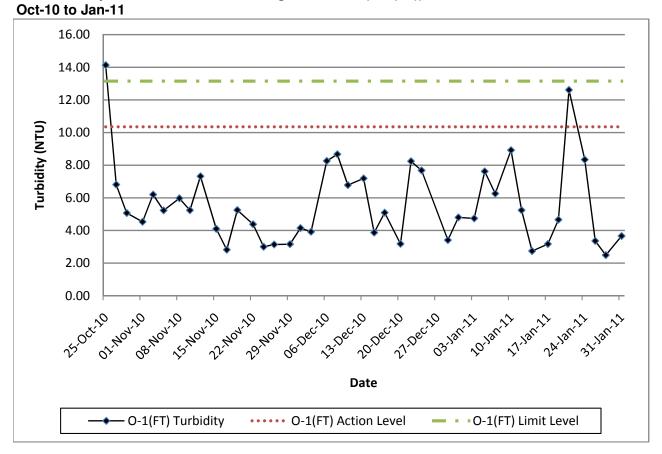
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Oct-10 to Jan-11



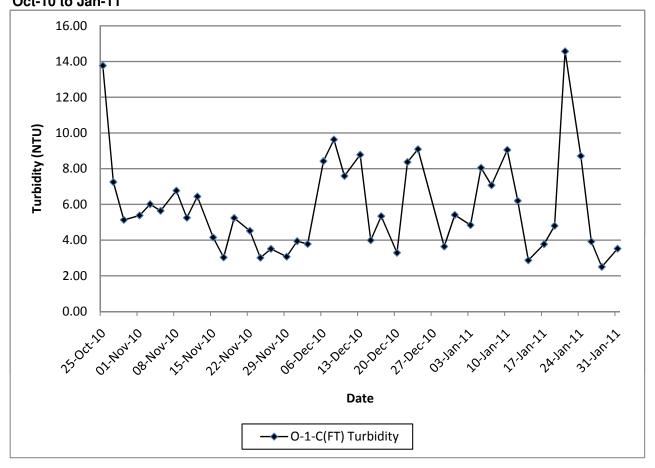
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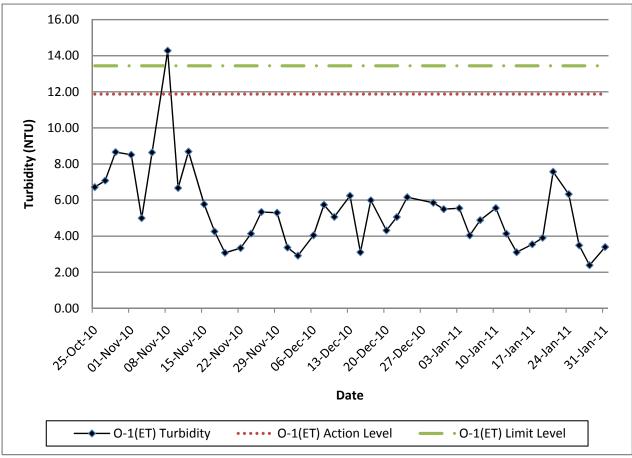
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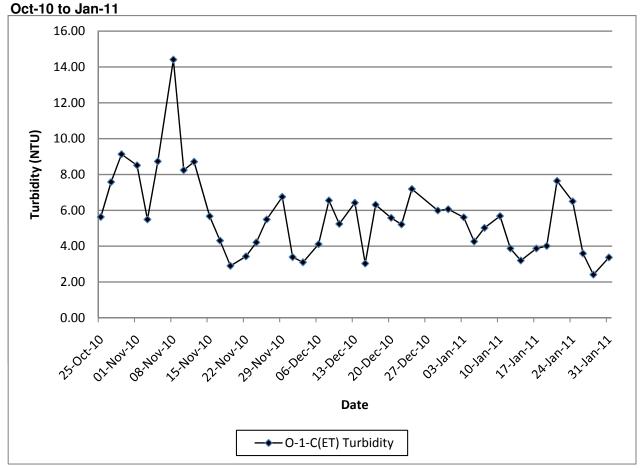
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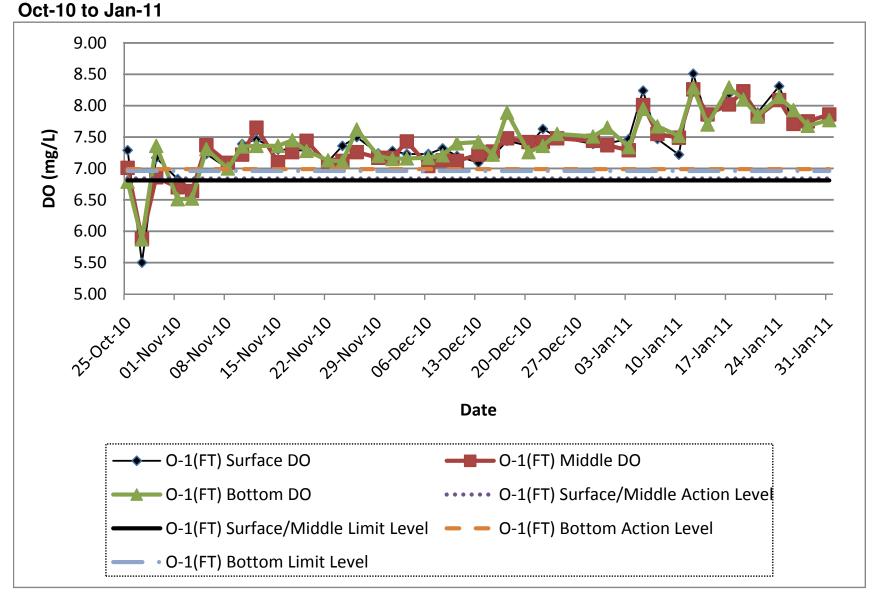
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Oct-10 to Jan-11



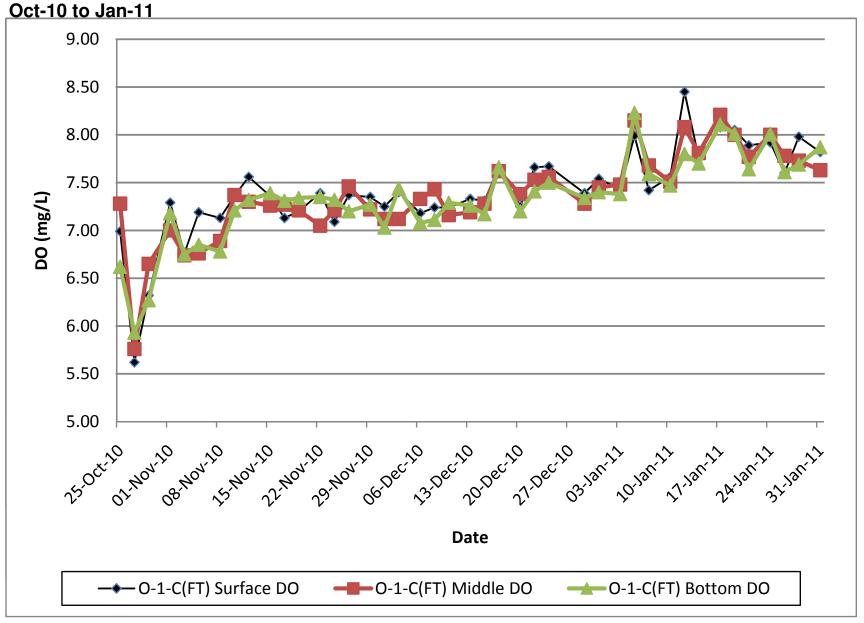
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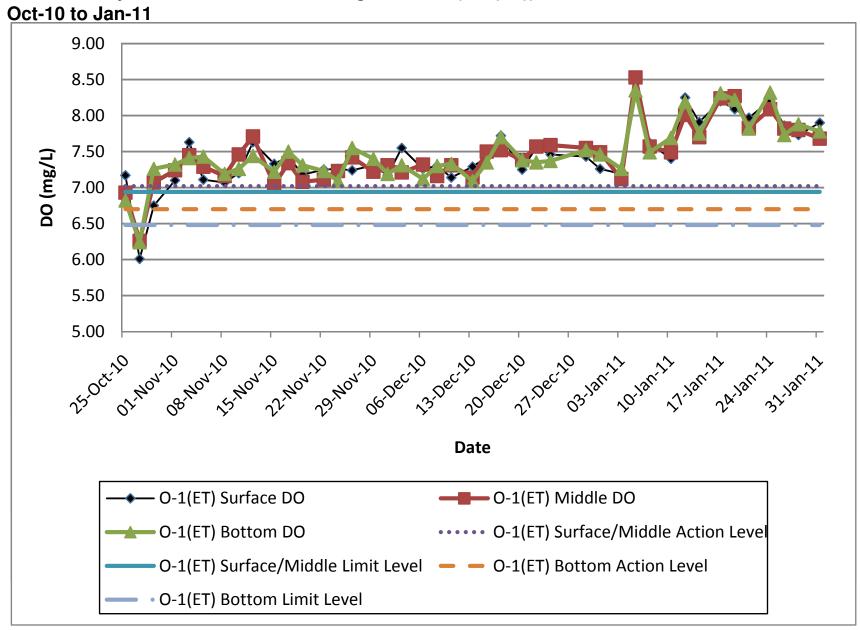
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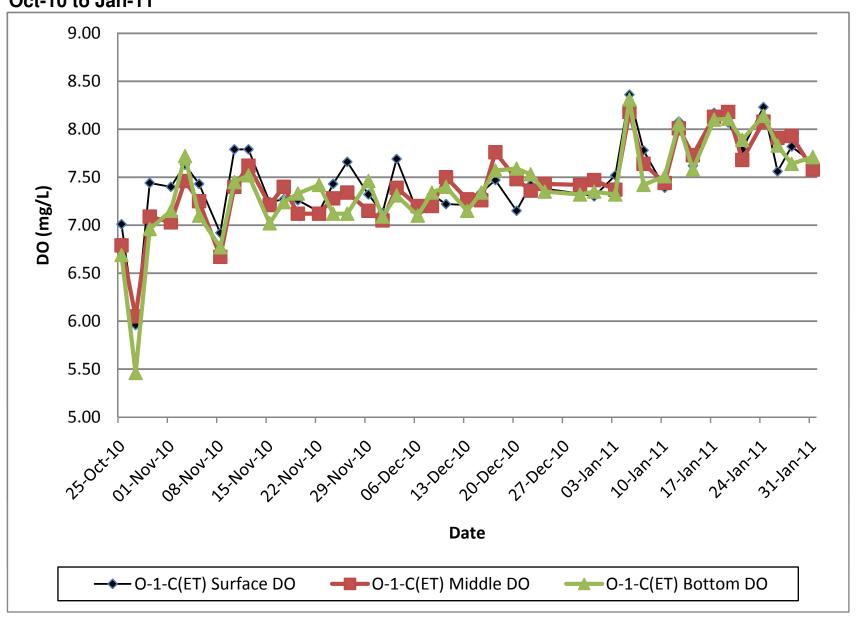
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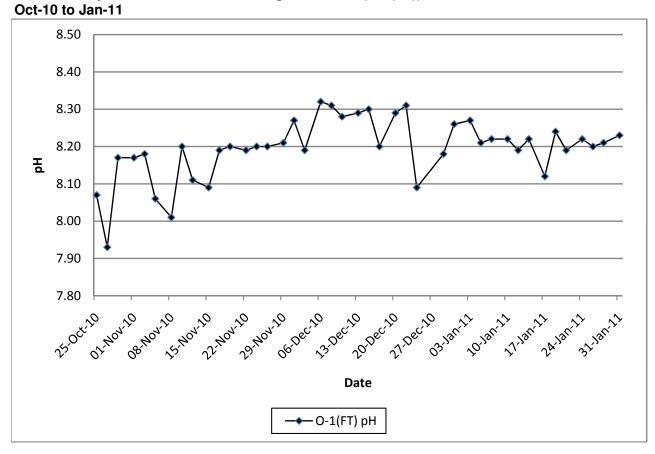
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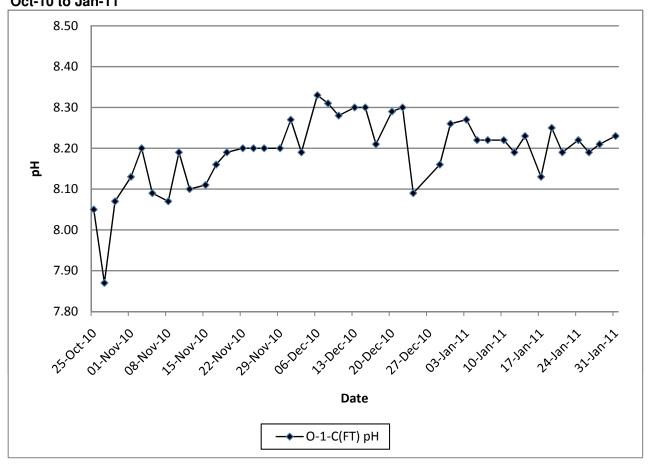
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Oct-10 to Jan-11



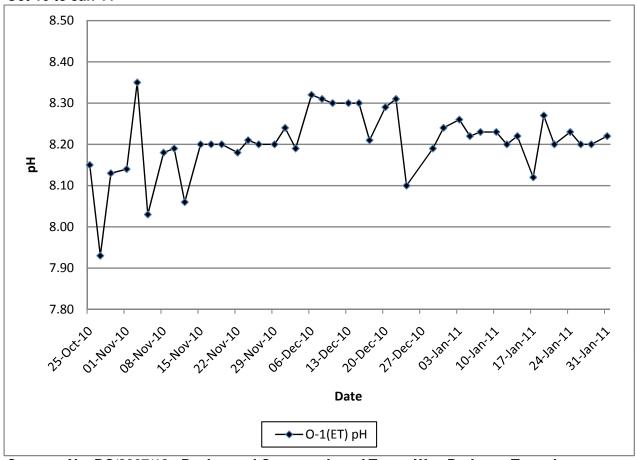
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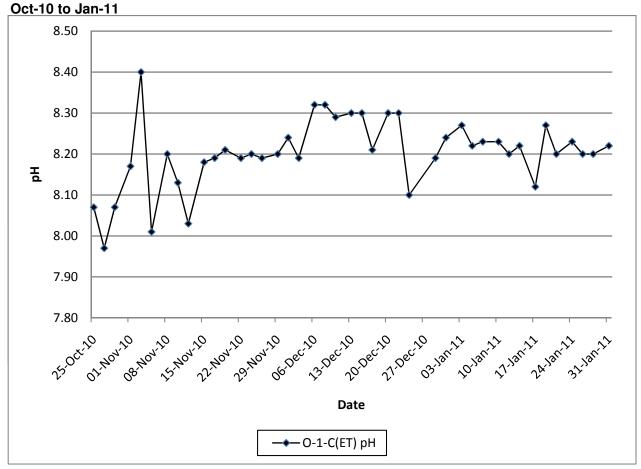
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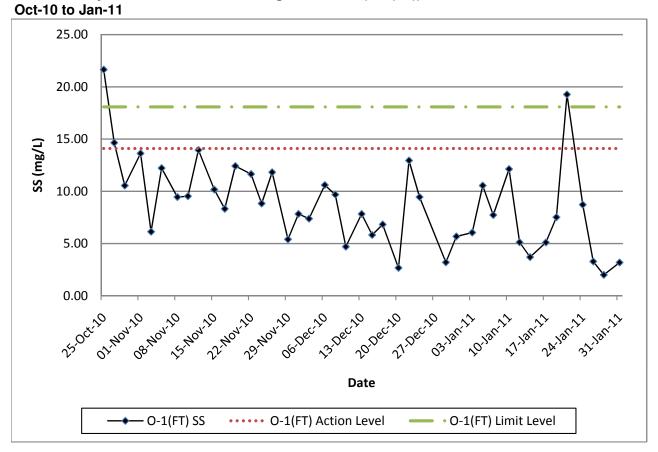
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Oct-10 to Jan-11



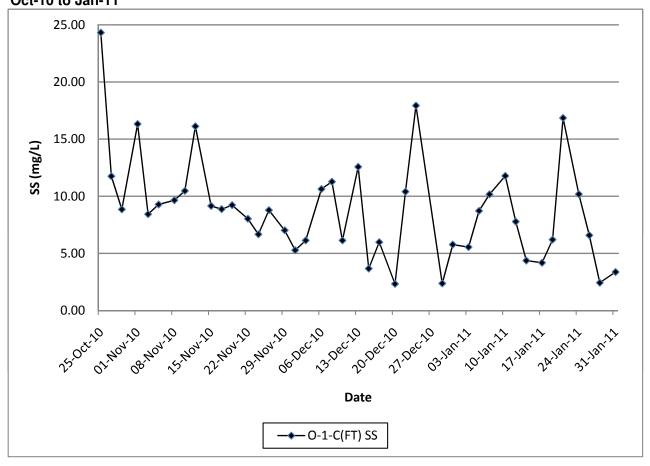
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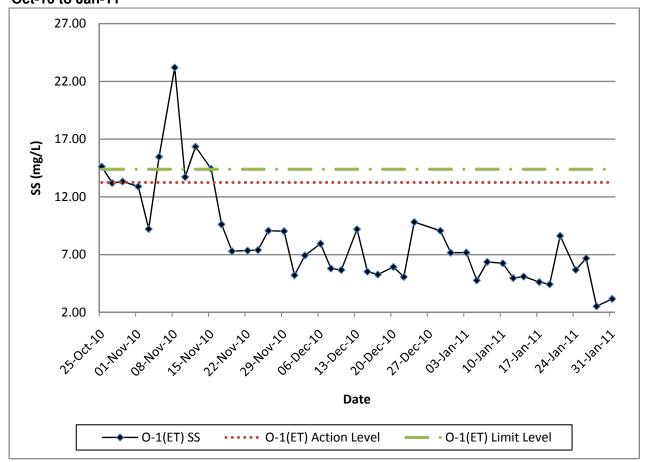
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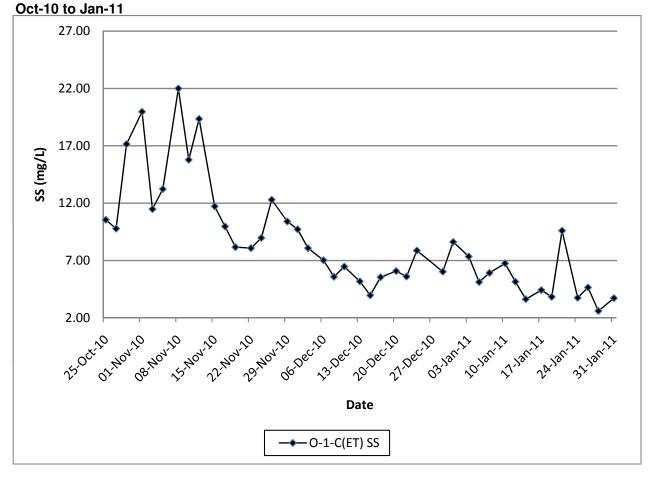
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Control of Outfall 1 During Flood Tide (O-1-C(FT)) Oct-10 to Jan-11



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Outfall 1 During Ebb Tide (O-1(ET))
Oct-10 to Jan-11



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Control of Outfall 1 During Ebb Tide (O-1-C(ET))





### Appendix J

# Interim Notifications of Environmental Quality Limits Exceedances

#### Interim Notifications of Environmental Quality Limits Exceedances

#### Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	03-Jan-11
Time	11:10 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Turbidity
Action & Limit Levels	9.75 / 12.47
Measured Level	11.31
Possible reason for Action or Limit Level Non-compliance	A high turbidity level of 11.44 is recorded at Control Station (I-1-C).
Actions taken / to be taken	The measured turbidity level was above the baseline Action Level, but lower than the turbidty level of the control station (I-1-C) and within the range of baseline turbidity concentration (3.13 - 13.15 NTU). General site cleaning and housekeeping, filling TBM spoil into centre void, spatterdashing on spiral ramp, horizontal drilling and grouting, and geotechnical instrumentation monitoring were undertaken during the measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.
Remarks	Following mitigation measures were provided: (1) Waste water was collected to waste water treatment plant and treated before discharge; and (2) Nullah and site area were separated by sealed concrete block.

Prepared by: Fan Cheong Tsang

Designation: Environmental Team Leader

Signature: Hough Ten Phone

Date: 04-Jan-11

## Photographic record for exceedance of Turbidity recorded at Sik Sik Yuen Ho Fung College (I-1) on 03-Jan-11



Site photo



Photo taken at I-1



Photo taken at I-1-C

#### Interim Notification of Environmental Quality Limit Exceedance

#### Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	03-Jan-11
Time	11:10 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solid
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	10.10
Possible reason for Action or Limit Level Non-compliance	A High SS level of 11.00 mg/L was recorded at Control Station (I-1-C)
Actions taken / to be taken	The measured SS level was above the baseline Action Level, but lower than the SS level of the control station (I-1-C) and within the range of baseline SS concentration (1 - 10.5 mg/L). General site cleaning and housekeeping, filling tunnel boring machine (TBM) spoil into centre void, spatterdashing on spiral ramp, horizontal drilling and grouting, and geotechnical instrumentation monitoring were undertaken during the measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.
Remarks	The following mitigation measures were provided: (1) Waste water was collected and diverted to on-site waste water treatment plant for treatment before discharge; (2) Nullah and site area were separated by sealed concrete block wall and sandbags barrier.

Prepared by	<b>/</b> :	Fan	Cheong	Tsan

Designation: Environmental Team Leader

Signature: Harftenkler

Date: 07-Jan-11

## Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 03-Jan-11



Site photo



Photo taken at I-1



Photo taken at I-1-C

#### Interim Notification of Environmental Quality Limit Exceedance

#### Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	03-Jan-11
Time	10:38 AM
Monitoring Location	Hong Hoi Chee Hong Temple (I-2)
Parameter	Suspended Solid
Action & Limit Levels (mg/L)	7.68 / 8.34
Measured Level (mg/L)	2.45
Possible reason for Action or Limit Level Non-compliance	A low SS level of 2.00 mg/L was recorded at Control Station (I-2-C)
Actions taken / to be taken	The measured SS level was below baseline Action / Limit Level and within the range of baseline SS concentration (1 - 8.5 mg/L) but was more than 120% of the SS level measured at the upstream control station (I-2-C). General site cleaning, housekeeping and temporary traffic arrangement (TTA), excavation (drilling holes) at vortex drop shaft, excavation (shotcreting and mucking) at man access shaft, closed formwork for dry flow channel, rock breaking for 16 <sup>th</sup> jacking pipe at Portion G; erection of 60 ton temporary steel platform at Portion G and excavation for 750 step channel (SC) and catchpit were undertaken during measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.
Remarks	The following mitigation measures had been provided: (1) Waste water was collected to waste water treatment plant and treated before discharge; (2) existing stream has been diverted and bunded by sealed concrete block wall; and (3) existing stream had been bunded off by sand bag to prevent excavated material from washing out of the working area.

Houghten Shoof

Prepared by: Fan Cheong Tsang

Designation: Environmental Team Leader

Signature:

Date: 07-Jan-11

## Photographic record for exceedance of Suspended Solid recorded at Hong Hoi Chee Hong Temple (I-2) on 03-Jan-11



Site photo



Photo taken at I-2



Photo taken at I-2-C

#### Interim Notification of Environmental Quality Limit Exceedance

#### Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	05-Jan-11
Time	10:30 AM
Monitoring Location	O-1(FT)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	14.10 / 18.08 (derived from the baseline monitoring data)
Measured Level (depth- averaged) at Monitoring Location	10.55
Control Station	O-1-C(FT)
Measured Level (depth averaged) at Control Station (mg/L)	8.72
Possible reason for Action or Limit Level Non-compliance	The measured SS level (depth-averaged) at O-1(FT) was below the baseline Action/Limit Level but was higher than 120% of the control station's SS level (O-1-C(FT)) at the same tide of the same day. Only amour rock removal from the sea wall to the derrick barge at Portion E was undertaken during measurement. Silt curtain were deployed long the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed; (4) Condition of silt curtains had been checked by the supervisor daily when marine works was undertaken.
Remarks	None

F. C. Tsang

Designation: Environmental Team Leader

Hougherfleof

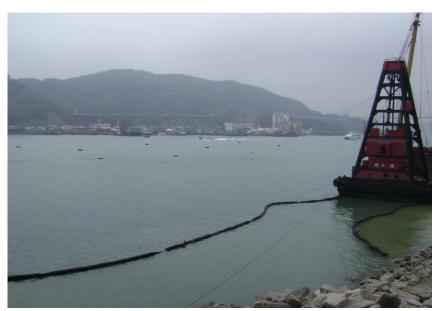
Signature:

Date: 11-Jan-11

Photographic record for exceedance of Suspended Solids (SS) recorded at O-1(FT) on 05-Jan-11



Site photo



Site photo

#### Interim Notifications of Environmental Quality Limits Exceedances

#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	10-Jan-11
Time	9:54 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solid
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	3.50
Possible reason for Action or Limit Level Non-compliance	A low SS level of 2.45 mg/L was recorded at control station (I-1-C).
Actions taken / to be taken	The measured SS level was below the baseline action level, but higher than 130% of the SS level of the control station (I-1-C) and within the range of baseline SS concentration (1 - 10.5 mg/L). General site cleaning and housekeeping, dismantling of facade platform, horizontal drilling and grouting, and geotechnical instrumentation monitoring were undertaken during measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by natural variation and no action was required.
Remarks	The following mitigation measures were provided on-site during monitoring: (1) Waste water was diverted to waste water treatment plant and treated before discharge; and (2) Nullah and site area were separated by sealed concrete block.

Prepared by: Fan Cheong Tsang

Designation: Environmental Team Leader

Signature: Harften Cheof

Date: 14-Jan-11

# Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 10-Jan-11



Site photo



Photo taken at I-1

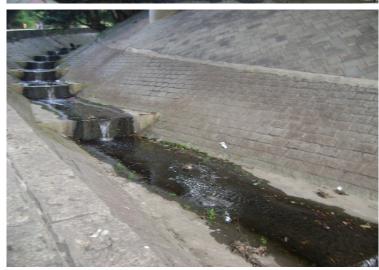


Photo taken at I-1-C

#### Interim Notifications of Environmental Quality Limits Exceedances

#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	14-Jan-11
Time	11:00 AM
Monitoring Location	Squatters (I-3)
Parameter	Turbidity
Action & Limit Levels (NTU)	3.99 / 4.18
Measured Level (NTU)	10.62
Possible reason for Action or Limit Level Non-compliance  Actions taken / to be taken	A high turbidity 10.97 NTU was recorded at control station (I-3-C). Milky green polluted water discharged from others at upstream.  The measured turbidity level was higher than baseline limit level, but lower than the turbuidity level of the control station (I-3-C). General site cleaning and housekeeping, monitoring of deformation monitoring point (DMP), shotcreting at shaft, approach channel excavation – rock removal, rock breaking, pre-drilling, mesh installation, rock dowel drilling and grouting and peeling cement grout outside H-pile for PB wall were undertaken during measurement. No direct disturbance was observed from the site. Milky green colored water was found coming from upstream of the Intake I-3 works area, so the exceedance was considered to be
Remarks	contributed by pollution from upstream and not project related. As a result, no action was required.  The following mitigation measures were provided on-site during monitoring: (1) All waste water were collected and diverted to waste water treatment plant prior to discharge; (2) Existing stream was diverted and bunded by sealed concrete block wall; and (3)  Excavated area had been bunded and sealed by concrete block wall to prevent any excavated material runoff from working area.

Prepared by: Fan Cheong Tsang

Designation: Environmental Team Leader

Signature: Hangten Cheof

Date: 19-Jan-11

#### Photographic record for exceedance of Turbidity recorded at Squatters (I-3) on 14-Jan-11



Site photo



Photo taken at I-1



Photo taken at I-1-C





Milky Green Colored Water found at upstream location

#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	19-Jan-11	
Time	11:16 AM	
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)	
Parameter	Turbidity	
Action & Limit Levels (NTU)	9.75 / 12.47	
Measured Level (NTU)	13.70	
Possible reason for Action or Limit Level Non-compliance	A high turbidity level of 13.88 NTU was recorded at the Control Station (I-1-C).	
Actions taken / to be taken	The measured turbidity level was above the baseline limit level, but lower than the turbidty level of the control station (I-1-C). General site cleaning and tidy up works, filling the spoil of the tunnel boring machine (TBM) into spiral ramp, dismantling of steel working platform and geotechnical monitoring were undertaken during the measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by high turbidity level of upstream location and natural variation. Since the exceedance was not project related, no action was required.	
Remarks	The following mitigation measures were provided: (1) Waste water was collected to waste water treatment plant and treated before discharge; and (2) Nullah and site area were separated by sealed concrete block.	

Prepared by: Fan Cheong Tsang

Designation: Environmental Team Leader

Signature: Hough Ten Phone

Date: 20-Jan-11

## Photographic record for exceedance of Turbidity recorded at Sik Sik Yuen Ho Fung College (I-1) on 19-Jan-11



Site photo



Photo taken at I-1



Photo taken at I-1-C

#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	14-Jan-11	
Time	6:20 PM	
Monitoring Location	O-1(ET)	
Parameter	Suspended Solids (SS)	
Action & Limit Levels (mg/L)	13.25 / 14.39 (derived from the baseline monitoring data)	
Measured Level (depth- averaged) at Monitoring Location	5.10	
Control Station	O-1-C(ET)	
Measured Level (depth averaged) at Control Station (mg/L)	3.63	
The measured SS level (depth-averaged) at O-1(ET) was below the baseline Action/Limit Level but higher than 130% of the control states amount rock and placing them into derrick barge was undertaken deployed along the dredging boundary line and extended from the seawater level to the seabed and floating type silt curtain had bee employed at the inner side. As such, the exceedance was consider be contributed by natural variation and no further action was required.		
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; and (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed.	
Remarks	None	

Prepared by:	F. C. Tsang
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Designation: Environmental Team Leader

Houghten theory

Signature:

Date: 24-Jan-11

Photographic record for exceedance of Suspended Solids (SS) recorded at O-1(ET) on 14-Jan-11



#### Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	17-Jan-11	
Time	2:35 PM	
Monitoring Location	O-1(FT)	
Parameter	Suspended Solids (SS)	
Action & Limit Levels (mg/L)	14.10 / 18.08 (derived from the baseline monitoring data)	
Measured Level (depth- averaged) at Monitoring Location	5.10	
Control Station	O-1-C(FT)	
Measured Level (depth averaged) at Control Station (mg/L)	4.18	
Possible reason for Action or Limit Level Non-compliance	The measured SS level (depth-averaged) at O-1(FT) was below the baseline Action/Limit Level but was higher than 120% of the control station's SS level (O-1-C(FT)) at the same tide of the same day. Only relocation of rock amour to another derrick barge for transportation to storage area was undertaken during measurement and there was no marine works. Silt curtain was deployed long the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.	
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed.	
Remarks	None	

Prepared by:	F. C.	Tsang
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Designation: Environmental Team Leader

Harftentheof

Signature:

Date: 24-Jan-11

Photographic record for exceedance of Suspended Solids (SS) recorded at O-1(FT) on 17-Jan-11



#### Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	21-Jan-11	
Time	9:33 AM	
Monitoring Location	O-1(FT)	
Parameter	Turbidity	
Action & Limit Levels (NTU)	10.35 / 13.15 (derived from the baseline monitoring data)	
Measured Level (depth- averaged) at Monitoring Location	12.61	
Control Station	O-1-C(FT)	
Measured Level (depth averaged) at Control Station (NTU)	14.57	
Possible reason for Action or Limit Level Non-compliance	The measured SS level (depth-averaged) at O-1(FT) was above the baseline action level but was lower than the control station's SS level (O-1-C(FT)) at the same tide of the same day. No marine works was undertaken on that morning. Silt curtain was deployed along the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.	
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed.	
Remarks	None	

Hougherf

Prepared by:	F. C. Tsang
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Designation: Environmental Team Leader

Signature:

Date: 24-Jan-11

Photographic record for exceedance of Turbidity recorded at O-1(FT) on 21-Jan-11



#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	19-Jan-11	
Time	11:16 AM	
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)	
Parameter	Suspended Solid	
Action & Limit Levels (mg/L)	8.85 / 10.17	
Measured Level (mg/L)	14.50	
Possible reason for Action or Limit Level Non-compliance	A High SS level of 15.30 mg/L was recorded	
Actions taken / to be taken	at Control Station (I-1-C)  The measured SS level was above the baseline limit level, but lo than the SS level of the control station (I-1-C). General site clear and tidy up works, filling the spoil of the tunnel boring machine (TBM) into spiral ramp, dismantling of steel working platform and geotechnical monitoring were undertaken during the measureme No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by high SS level of upstream location and natural variation. Since the exceedance was not project related, no action was required.	
Remarks	The following mitigation measures were provided: (1) Waste water was collected to waste water treatment plant and treated before discharge; and (2) Nullah and site area were separated by sealed concrete block.	

Prepared by:	Fan Cheong Tsang
Prepared by.	ran Uneong i Sang

Designation: Environmental Team Leader

Signature: Harftenley

Date: 27-Jan-11

# Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 19-Jan-11



Site photo



Photo taken at I-1



Photo taken at I-1-C

#### Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	19-Jan-11	
Time	9:05 AM	
Monitoring Location	O-1(FT)	
Parameter	Suspended Solids (SS)	
Action & Limit Levels (mg/L)	14.10 / 18.08 (derived from the baseline monitoring data)	
Measured Level (depth- averaged) at Monitoring Location	7.52	
Control Station	O-1-C(FT)	
Measured Level (depth averaged) at Control Station (mg/L)	6.20	
Possible reason for Action or Limit Level Non-compliance	The measured SS level (depth-averaged) at O-1(FT) was below the baseline Action/Limit Level but was higher than 120% of the control station's SS level (O-1-C(FT)) at the same tide of the same day. Only amour rock removal from seawall was undertaken and there was no other marine works during monitoring. Silt curtain was deployed along the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.	
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed.	
Remarks	None	

Prepared b	V:	F.	C.	Tsang

Designation: Environmental Team Leader

Horstandhoof

Signature:

Date: 27-Jan-11

#### Photographic record for exceedance of Suspended Solids (SS) recorded at O-1(FT) on 19-Jan-11



Site photo



A photo showing slit curtain was functioning properly to prevent suspended solids dispersed away from the site

#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	21-Jan-11	
Time	9:33 AM	
Monitoring Location	O-1(FT)	
Parameter	Suspended Solids (SS)	
Action & Limit Levels (mg/L)	14.10 / 18.08 (derived from the baseline monitoring data)	
Measured Level (depth- averaged) at Monitoring Location	19.27	
Control Station	O-1-C(FT)	
Measured Level (depth averaged) at Control Station (mg/L)	16.85	
Possible reason for Action or Limit Level Non-compliance	The measured SS level (depth-averaged) at O-1(FT) was above the baseline limit level and the control station's SS level (O-1-C(FT)) at the same tide of the same day. No marine works was undertaken on that morning. Silt curtain was deployed along the Portion E boundary line and extended from seawater level to seabed. Floating type silt curtain was also employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.	
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed.	
Remarks	None	

Harftentheof

Prepared by:	F. C. Tsang

Designation: Environmental Team Leader

Signature:

Date: 31-Jan-11

Photographic record for exceedance of Suspended Solids (SS) recorded at O-1(FT) on 21-Jan-11



#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	24-Jan-11
Time	3:27 PM
Monitoring Location	O-1(ET)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	13.25 / 14.39 (derived from the baseline monitoring data)
Measured Level (depth- averaged) at Monitoring Location	5.68
Control Station	O-1-C(ET)
Measured Level (depth averaged) at Control Station (mg/L)	3.75
Possible reason for Action or Limit Level Non-compliance	The measured SS level (depth-averaged) at O-1(ET) was below the baseline Action/Limit Level but higher than 130% of the control station's SS level (O-1-C(ET)) at the same tide of the same day. Only removal of amour rock from seawall and placing them into derrick barge was undertaken during measurement and there was no other marine works. Silt curtains had been deployed along the dredging boundary line and extended from the seawater level to the seabed. Floating type silt curtain had been employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; and (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed.
Remarks	None

Prepared by:	F. C. Tsang

Designation: Environmental Team Leader

Houghen Cheof

Signature:

Date: 01-Feb-11

Photographic record for exceedance of Suspended Solids (SS) recorded at O-1(ET) on 24-Jan-11





#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	26-Jan-11
Time	5:30 PM
Monitoring Location	O-1(ET)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	13.25 / 14.39 (derived from the baseline monitoring data)
Measured Level (depth-averaged) at Monitoring Location (mg/L)	6.68
Control Station	O-1-C(ET)
Measured Level (depth averaged) at Control Station (mg/L)	4.65
Possible reason for Action or Limit Level Non-compliance	The measured SS level (depth-averaged) at O-1(ET) was below the baseline Action/Limit Level but higher than 130% of the control station's SS level (O-1-C(ET)) at the same tide of the same day. Only transfer of excavated materials from derrick barge to split barge was undertaken during measurement. Silt curtains had been deployed along the dredging boundary line and extended from the seawater level to the seabed. Floating type silt curtain had been employed at the inner side. As such, the exceedance was considered to be contributed by natural variation and no further action was required.
Actions taken / to be taken	(1) Silt curtain had been provided along the Portion E boundary line and extended from seawater level to the bottom of seabed; (2) Floating type silt curtain had been employed at the inner side; and (3) Sufficient slack of silt curtain was allowed to cope with the wave and tidal action to ensure the curtains (outer and inner) were rested on seabed.
Remarks	None

Houghentheof

Prepared by:	F. C. Tsang
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Designation: Environmental Team Leader

Signature:

Date: 2-Feb-11

#### Photographic record for exceedance of Suspended Solids (SS) recorded at O-1(ET) on 26-Jan-11



#### Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel	
Date	28-Jan-11	
Time	2:18 PM	
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)	
Parameter	Suspended Solid	
Action & Limit Levels (mg/L)	8.85 / 10.17	
Measured Level (mg/L)	10.25	
Possible reason for Action or Limit Level Non-compliance	A High SS level of 10.90 mg/L was recorded at Control Station (I-1-C)	
Actions taken / to be taken	The measured SS level was above the baseline limit level, but lower than the SS level of the control station (I-1-C). General site cleaning, filling the spoil of the tunnel boring machine (TBM) into spiral ramp, breaking shear key for cascade construction and geotechnical instumentation monitoring were undertaken during the measurement. No direct disturbance was observed from the site. Thus, the exceedance was considered to be contributed by high SS level of upstream location and natural variation. Since the exceedance was not project related, no action was required.	
Remarks	The following mitigation measures were provided: (1) Waste water was collected to waste water treatment plant and treated before discharge; and (2) Existing nullah and site area were separated by sealed concrete block.	

Harften Reof

Prepared by:	Fan Cheong Tsang
riepaieu by.	ran Oneong isang

Designation: Environmental Team Leader

Signature:

Date: 2-Feb-11

# Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 28-Jan-11



Site photo



Photo taken at I-1



Photo taken at I-1-C



### Appendix K

## Complaint Log

#### **APPENDIX K**

#### **COMPLAINT LOG**

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
1	CIR-001	9 March 2009 at Outfall	Public through EPD	EPD has received a complaint (EPD ref: EP3/N22/RW/04846-09) regarding to muddy effluent discharged from the outfall of the construction site from a public on 9 March 2009. Site investigation was also carried out by EPD with the Contractor on the same day.	Findings/ Observations In the afternoon on 9 March 2009, the Contractor was carrying out regular maintenance for removing silt accumulated in the wastewater treatment plant. During the maintenance works, some residual silt inside the plant was accidentally leaked out to the outfall discharge outlet. The reason was that a flexible pipe for disposing silt was found connecting to the concrete platform of the outfall discharge outlet.  Conclusion/Remedial Action The complaint was valid and it was due to maintenance works at the wastewater treatment plant at the outfall area. The contractor had cleaned up the silt at discharge outlet and the channel at the outfall area on 12 March 2009 as shown in the attached photo. The ET will closely inspect the discharge outlet and the channel during the routine site inspections and provide advice to the Contractor. The Contractor was also advised to provide mitigation measures during any occasion of the maintenance work on the wastewater treatment plant.  The discharge pipe of the treatment plant should be plugged and ensure not functioned when carrying out maintenance works on the wastewater treatment plant in order to prevent the discharge of silt or muddy water to the outlet.  Flexible pipe for discharge of sludge should not be placed on the concrete platform under the outfall discharge outlet. For disposal of slit or sludge in the	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					wastewater treatment plant, tanker should be used.	
2	CIR-002	8 May 2009 at Outfall	Public through EPD	EPD has received a complaint (EPD ref: EP3/N22/RW/09755-09) regarding to construction dust from the outfall construction site on 8 May 2009. Site investigation was also carried out by EPD with the Contractor on 14 May 2009.	Findings/ Observations Regular 1-hour TSP monitoring, in accordance with EM&A Manual, is performed by Environmental Team. The monitoring station concerned is ASR9 (i.e. at the podium level of Greenview Terrace facing to the construction site).  The closest date for the 1-hour TSP concentration monitoring was on 6 May 2009 and 12 May 2009 at Greenview Terrace, ASR9. Soil nailing works and loading & unloading excavated materials were observed during monitoring. In accordance with the EM&A Manual and the Baseline Monitoring Report, all 1-hour TSP concentrations at ASR9 were below the established Action and Limit Levels. No exceedance was recorded on 6 and 12 May 2009.  The contractor and the environmental team were also undertaken site investigation on the subject area in response to the complaint. It was confirmed that the air quality mitigation measures as recommended in EIA have been provided by the Contractor. The mitigation measures are as follows:  • Water spraying was provided to the exposed surface.  • Several automatic sprinklers were provided at the outfall construction site for water spraying of the haul road.  • Water spraying was provided during dust generating works (e.g. rock breaking and soil nailing works).  Conclusion/Remedial Action Based on the site inspection and monitoring results,	Closed
					the complaint is considered not justifiable since no	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					action & limit level exceedance on construction dust are identified. Air quality mitigation measures as recommended in EIA have been implemented in order to control and minimise the air quality impact and nuisance arising from the construction activities. Nevertheless, in view of the recent dry and sunny weather, the haul road and the exposed area would be dry very quickly. The Contractor was recommended to provide more frequent water spraying especially in the dry and sunny weather.	
3	CIR-003	14 May 2009 at Outfall	Public through EPD	EPD has received a complaint (EPD ref: EP/RW/080206) regarding to daytime construction rock breaking at 7:15 am and dusty at the outfall construction site on 14 May 2009.	The closest date to the complaint for the 1-hour TSP monitoring & daytime construction noise monitoring was on 12, 18 and 27 May 2009 at Greenview Terrace, ASR9 and NSR9. Soil nailing, excavation, rock breaking, loading and unloading the materials were observed during monitoring period. The measured noise levels complied with the limit level in accordance with the EIAO-TM. All 1-hour TSP concentrations at ASR9 were below the established Action and Limit Levels. No 1-hour TSP exceedance was recorded.  The contractor and the environmental team were also undertaken site investigation on the subject area in response to the complaint. Air quality mitigation measures as recommended in EIA have been implemented by the Contractor. However, noise mitigation measures could be further improved.  Based on our site inspection and monitoring results, the complaint for dust is considered not justifiable since no action & limit level exceedance on construction dust is identified. Air quality mitigation measures as recommended in EIA have also been implemented in order to control and minimise the air	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					quality impact arising from the construction activities. In view of the recent dry and sunny weather, the haul road and the exposed area would be dry very quickly. The Contractor was recommended to enhance water spraying especially in the dry and sunny weather.  On the other hand, the complaint for noise is considered due to works and the Contractor was agreed to improve the on-site noise mitigation measures such as the following measures. ET's site inspection and the joint inspection with relevant parties was conducted on 29 May 2009 and 4 June 2009 respectively to confirm all the below measures have been implemented.  • For the idling plant, it should be switched off to reduce noise level generated.  • The sound insulation sheets and noise insulation materials should be placed to enclose the breaking tip tightly and also aside or surrounding the breaking activities as recommended in the following photos 1-3 in noise mitigation measures.  • Noise monitoring frequency was increased in order to check the effectiveness of the mitigation measures. The additional measurement was taken on 27 May, 8 June, 10 June and 12 June 2009 after all the measures implemented. The noise levels (L <sub>eq, 30 min</sub> ) were 70.9 dB (A), 70.5 dB (A), 70.3 dB (A) and 70.3 dB (A) respectively, which comply with the limit level in accordance with the EIAO-TM. Soil nailing, excavation and rock breaking were observed during monitoring period. The measures were well in place and seemed	

effective during the measurement.

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
4	CIR-004	10 July 2009 at Outfall	Public through EPD	EPD has received a complaint (EPD ref: EP3/N22/RW/15137-09) regarding to construction dust from the outfall construction site on 10 July 2009.	Findings/ Observations  1-hour TSP concentration monitoring was on 10 July 2009 at Greenview Terrace, ASR9. Soil nailing works, concrete breaking, excavation and loading & unloading excavated materials were observed during monitoring. All 1-hour TSP concentrations at ASR9 were below the established Action and Limit Levels. No exceedance was recorded on 10 July 2009. The contractor and the environmental team were also undertaken site investigation on the subject area in response to the complaint. It was confirmed that the air quality mitigation measures as recommended in EIA have been provided by the Contractor. The mitigation measures are as follows:  • Water spraying was provided to the exposed surface.  • Automatic sprinklers were provided at the outfall construction site for water spraying of the haul road.  • Water spraying was provided during dust generating works (e.g. rock breaking and soil nailing works).  • Tarpaulin was used for covering the dusty works in the Portal area.  Conclusion/Remedial Action The complaint is considered not justifiable since no action & limit level exceedance on construction dust are identified	Closed
5 & 6	CIR-005	29 July 2009 & 11 August 2009 at Outfall	Public through SOR	SOR has received two complaints (SOR ref: (DC/2007/12)/M45/500/02480, 02500) from Greenview Terrace	Findings/ Observations Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and August 2009. According to the noise monitoring results from	Same Case with Complaint No. 11

Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
			regarding to daytime construction noise exceedance recorded at NSR9 on 8, 22, 23, 27 and 29 July 2009 and a large amount dust generated at the outfall construction site. The complaint dates were corresponded to 29 July and 11 August 2009.	6 July 2009 to 31 August 2009 at NSR 9, the measured noise levels complied with the limit level in accordance with the EIAO-TM. All 1-hour TSP concentrations at ASR9 were below the established Action and Limit Levels from 6 July 2009 to 25 August 2009.  Conclusion/Remedial Action The dust complaint on 22 July 2009 was due to the soil nailing works. The Contractor was reminded enhance the dust mitigation measures during soil nailing works. A designated staff was provided to spray water continuously during soil nailing. A nylon bag was placed on the drilling hole and keeping wet to suppress dust. A sprinkler was added at the hillside of the site and water spraying was provided continuously during operation of drilling to suppress dust. The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures are proposed as follows:  • A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.  • The designated staff was reminded to record all the weather condition including raining and wind speed.  • Tools box talk for the Contractor's Team was carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.	
	Log Ref.	Log Ref. Date/Location	Log Ref. Date/Location Complainant	regarding to daytime construction noise exceedance recorded at NSR9 on 8, 22, 23, 27 and 29 July 2009 and a large amount dust generated at the outfall construction site. The complaint dates were corresponded to 29	regarding to daytime construction noise exceedance recorded at NSR9 on 8, 22, 23, 27 and 29 July 2009 and a large amount dust generated at the outfall construction site. The complaint dates were corresponded to 29 July and 11 August 2009.  Conclusion/Remedial Action The dust complaint on 22 July 2009 was due to the soil nailling works. The Contractor was reminded enhance the dust mitigation measures during soil nailling works. A designated staff was provided to suppress dust.  The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on-site noise mitigation measures continuously during operation of drilling to suppress dust. The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on-site noise mitigation measures are proposed as follows:  A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.  The designated staff was reminded to record all the weather condition including raining and wind speed.  Tools box talk for the Contractor's Team was carried out for reminding that the movable barrier should be placed to the breaking activities as much

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					<ul> <li>movable noise barriers were also modified.</li> <li>Existing 25 ton rock breaker had been replaced by the another breaker.</li> <li>The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.</li> <li>A joint filler wall was installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.</li> <li>From the additional monitoring data and monitoring data under regular EM&amp;A requirements, noise level (L<sub>eq, 30 min</sub>) between 6 July to 31 August 2009 was in the range of 71 to 74 dB(A) to the nearest integer. The noise monitoring frequency was maintained in twice per week to check whether the mitigation measures are effective. From the information of the Contractor, all the mitigation measures were implemented on 31 August 2009. Noise levels (L<sub>eq, 30 min</sub>) were also re-measured after the implementation of the mitigation measures. Noise level (L<sub>eq, 30 min</sub>) from 4 Sep to 28 Sep 2009 was in the range of 70 to 73 dB(A) to the nearest integer after the implementation of the mitigation measures. In our investigation, there was no exceedance of the measured noise level at Greenview Terrace.</li> </ul>	
7	CIR-006	12 August 2009 at Outfall	Public through SOR	SOR has received a complaint (SOR ref: (DC/2007/12)/M45/500/02527) from Greenview Terrace, via Apple Daily regarding to daytime construction noise level (L <sub>eq(30min)</sub> ) was sometimes more than 80 dB(A) and a large amount dust	Findings/ Observations Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and August 2009. According to the noise monitoring results from 6 July 2009 to 31 August 2009 at NSR 9, the measured noise levels complied with the limit level in accordance with the EIAO-TM. All 1-hour TSP concentrations at ASR9 were below the established	Closed

generated at the outfall construction site. The complaint date was corresponded to 12 August 2009.  August 2009.	Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
the another breaker.  • The breaking tap of the 25 ton rock breaker had					construction site. The complaint date was corresponded to 12	Conclusion/Remedial Action The dust complaint was considered not justifiable since no action & limit level exceedance on construction dust were identified. However, it was a recurrent case from Greenview Terrace. The Contractor was recommended to enhance water spraying continuously especially in rock breaking activities.  On the other hand, there was no noise levels (Leq(30min)) from the measurement taken from ET was more than 80 dB(A). However, it was a recurrent case from Greenview Terrace. The Contractor was reminded to enhance the on-site noise mitigation measures. The enhanced mitigation measures are proposed as follows:  • A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.  • The designated staff was reminded to record all the weather condition including raining and wind speed.  • Tools box talk for the Contractor's Team was carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.  • Movable noise barriers were placed on site and the movable noise barriers were also modified.  • Existing 25 ton rock breaker had been replaced by the another breaker.	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					<ul> <li>been replaced by another breaking tap.</li> <li>A joint filler wall was installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.</li> <li>From the additional monitoring data and monitoring data under regular EM&amp;A requirements, noise level (L<sub>eq, 30 min</sub>) from 6 July to 31 August 2009 was in the range of 71 to 74 dB(A) to the nearest integer. The noise monitoring frequency was maintained in twice per week to check whether the mitigation measures are effective. From the information of the Contractor, all the mitigation measures were implemented on 31 August 2009. Noise levels (L<sub>eq, 30 min</sub>) were also remeasured after the implementation of the mitigation measures. Noise level (L<sub>eq, 30 min</sub>) from 4 Sep to 28 Sep 2009 was in the range of 70 to 73 dB(A) to the nearest integer after the implementation of the mitigation measures.</li> </ul>	
8	CIR-007	14 August 2009 at Outfall	Public through EPD	EPD has received a complaint (EPD ref: EP3/N22/RW/17978-09) from Greenview Terrace regarding to daytime construction noise from the outfall construction site. The complaint date was corresponded to 14 August 2009.	Findings/ Observations Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and August 2009. According to the noise monitoring results from 6 July 2009 to 31 August 2009 at NSR 9, the measured noise levels complied with the limit level in accordance with the EIAO-TM.  Conclusion/Remedial Action This was a recurrent case from Greenview Terrace. The documented complaint for noise is considered to trigger the action level and the Contractor was reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures are proposed as follows:	Same Case with Complaint No. 11

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					<ul> <li>A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.</li> <li>The designated staff was reminded to record all the weather condition including raining and wind speed.</li> <li>Tools box talk for the Contractor's Team was carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.</li> <li>Movable noise barriers were placed on site and the movable noise barriers were also modified.</li> <li>Existing 25 ton rock breaker had been replaced by the another breaker.</li> <li>The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.</li> <li>A joint filler wall was installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.</li> <li>From the additional monitoring data and monitoring data under regular EM&amp;A requirements, noise level (Leq, 30 min) from 6 July to 31 August 2009 was in the range of 71 to 74 dB(A) to the nearest integer. The noise monitoring frequency would be maintained in twice per week to check whether the mitigation measures are effective. From the information of the Contractor, all the mitigation measures were implemented on 31 August 2009. Noise levels (Leq, 30 min) from 4 Sep to 28 Sep 2009 was in the range of 70 to 73</li> </ul>	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					dB(A) to the nearest integer after the implementation of the mitigation measures.	
9	CIR-008	17 August 2009 at Portion D of the Site	Public through SOR	SOR has received a complaint (SOR ref:(DC/2007/12)/M45/500/02546) from Long Bench Garden regarding to noise nuisance generated from the daytime construction work (rock-breaking) in Portion D of the Site. The complaint date was corresponded to 17 August 2009.	Findings/ Observations Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in August 2009. The monitoring results from 3 August 2009 to 31 August 2009 at NSR 8 showed the measured noise levels complied with the limit level in accordance with the EIAO-TM. The contractor and the environmental team were also undertaken site investigation on the subject area in response to the complaint. Noise mitigation measures should be enhanced continuously due to this complaint.  Conclusion/Proposed Action The documented complaint for noise is considered to trigger the action level and the Contractor was reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures are recommended as follows:  Movable noise barriers had been placed towards the direction of Long Bench Garden, particular for the pipe pile works in the portal.  Tools box talk for construction team was carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.  The existing noisy 25 ton rock breaker had been replaced by the other breaker.  A joint filler wall had been fixed on the vertical face of west bound to absorb the noise generated towards Long Beach Garden.  Noise monitoring frequency was increased twice per	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					week by ET due to this complaint. The measured noise levels were complied with the limit level in accordance with the EIAO-TM. No further complaint was received from Long Bench Garden within the reporting month.	
10	CIR-009	22 August 2009 at Outfall	Public through SOR	A complaint (SOR ref: (DC/2007/12)/M45/500/02628) was received from Greenview Terrace regarding to daytime construction noise level (Leq(30min)) was sometimes exceeded 75 dB(A) at the outfall construction site. The complaint date was corresponded to 22 August 2009.	Findings/ Observations Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and August 2009. The monitoring results from 6 July 2009 to 31 August 2009 at NSR 9 showed the measured noise levels complied with the limit level in accordance with the EIAO-TM. The contractor and the environmental team were also undertaken site investigation on the subject area in response to the complaint. Noise mitigation measures should be enhanced continuously due to this complaint.  Conclusion/Proposed Action The documented complaint for noise is considered to trigger the action level and the Contractor was reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures are recommended as follows:  A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.  The designated staff was reminded to record all the weather condition including raining and wind speed.  Tools box talk for the Contractor's Team was carried out for reminding that the movable barrier	Same Case with Complaint No. 11

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					<ul> <li>should be placed to the breaking activities as much as possible.</li> <li>Movable noise barriers were placed on site and the movable noise barriers were also modified.</li> <li>Existing 25 ton rock breaker had been replaced by the another breaker.</li> <li>The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.</li> <li>A joint filler wall was installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.</li> <li>From the additional monitoring data and monitoring data under regular EM&amp;A requirements, noise level (L<sub>eq, 30 min</sub>) from 6 July to 31 August 2009 was in the range of 71 to 74 dB(A) to the nearest integer. The noise monitoring frequency was maintained in twice per week to check whether the mitigation measures are effective. From the information of the Contractor, all the mitigation measures were implemented on 31 August 2009. Noise levels (L<sub>eq, 30 min</sub>) were also remeasured after the implementation of the mitigation measures. Noise level (L<sub>eq, 30 min</sub>) from 4 Sep to 28 Sep 2009 was in the range of 70 to 73 dB(A) to the nearest integer after the implementation of the mitigation measures. In our investigation, there was no exceedance of the measured noise level at Greenview Terrace.</li> </ul>	
11	CIR-010	24 September 2009 at Outfall	Public through SOR	A complaint (SOR ref: (DC/2007/12)/M45/500/02749) was received from Greenview Terrace regarding to daytime construction noise level	Findings/ Observations Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and September 2009. The monitoring results from 6 July 2009 to 29 October 2009 at NSR 9 showed the	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
				(Leq(30min)) was sometimes exceeded 75 dB(A) at the outfall construction site.	measured noise levels complied with the limit level in accordance with the EIAO-TM. The contractor and the environmental team were also undertaken site investigation on the subject area in response to the complaint. Noise mitigation measures have been enhanced continuously due to this complaint.  Conclusion/Proposed Action The documented complaint for noise is considered to trigger the action level and the Contractor was reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures were implemented as follows:  A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.  The designated staff was reminded to record all the weather condition including raining and wind speed.  Tools box talk for the Contractor's Team was carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.  Movable noise barriers were placed on site and the movable noise barriers were also modified.  Existing 25 ton rock breaker had been replaced by the another breaker.  The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.  A joint filler wall was installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.	

					From the additional monitoring data above and the regular monitoring under EM&A requirements, the measured noise levels were complied with the limit level in accordance with the EIAO-TM. From the noise level on 25 September 2009 and 2 October 2009, the trend of noise level seemed to be increased	
					since the decoration work at 14/F Greenview Terrace was the domain noise source during the monitoring. The noise level during that time would be considered for reference only. There was no exceedance of the measured noise level at Greenview Terrace in our investigation.	
12 CIR	-	2 October 2009 at I-3	Public through EPD	EPD has received a complaint (EPD ref: EP3/N22/RW/22016-09) regarding to construction dust at the Intake-3 on 2 October 2009.	Findings/ Observations  There is no representative air monitoring location as stated in the EM&A Manual. The contractor and the environmental team were undertaken site investigation on the subject area at 08-Oct-09 in response to the complaint. Air quality mitigation measures as recommended in EIA have been implemented by the Contractor. However, the dust impact by exposed area could be further improved. The mitigation measures during the site investigation were observed as follows:  • Water spraying was provided to the exposed surface.  • Wheel washing facilities for dump trucks was provided at the site exit.  • Water spraying was provided during excavation and loading/unloading works  Conclusion/Proposed Action	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					considered justifiable as it is due to windy erosion on the exposed surface. Air quality mitigation measures as recommended in EIA have also been implemented in order to control and minimise the air quality impact arising from the construction activities. In view of the recent dry season, the haul road and the exposed area would be dry very quickly. The Contractor was recommended to provide water spraying more frequently especially in the dry season.	
13	(DC/2007/12)/ M45/500/2923 & email on 11 November 2009 from MCSJV	9 November 2009 at Outfall	Greenview Terrace through EPD	Movable noise barrier was not placed close enough to the piling machine.	<ul> <li>Immediate Action         The rig was re-orientated and the barrier was placed closed to the drilling head.     </li> <li>Follow-up Action         <ul> <li>Training was conducted to the operator to ensure that the workers aware that the barrier should be placed closed not the drilling head not the machine itself.</li> <li>In order to prevent future occurrence, a permit to dig system was adopted. It should be checked by the Contractor and endorsed by the SOR before starting the drilling rig.</li> </ul> </li> <li>The follow up action was checked and a permit to dig system has been implemented.</li> </ul>	Closed
14	(DC/2007/12)/ M45/500/2978 & email on 19 November 2009 from MCSJV	18 November 2009 at Outfall	Greenview Terrace through EPD	Rock-breaking activity carried out in the eastern area of Portion D, closest to Greenview Terrace, was not totally screened and line of sight of the breaker was observed from the NSR.	Follow up Action  The bamboo scaffold was extended further away from stage 3 scaffold to further screen off the activities to the Greenview. The length of the extension was about 8 to 10 m.  A strong reminded was given to the relevant staff and sub-contractor and the barrier should be placed in the right orientation before breaking.	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					The mitigation measures were strictly followed as stated in the proposal.  The follow up action and relevant records was checked.	
15.	CIR-12	19 January 2010 at Intake-3 construction site	Public through EPD	EPD has received a public complaint (EPD ref: EP3/N22/RW/01270-10) regarding effluent discharge at Intake-3 construction site on 19 January 2010.	Findings/ Observations The effluent discharge on 19 January 2010 was due to the leakage of Gabion wall at I3. The water from the rock drilling work was flowing through the gap of the Gabion Wall to the watercourses at I3.  Immediate Action The contractor had sealed the gap at the Gabion Wall immediately after the incident.  Conclusion/Proposed Action Based on our site inspection, the complaint was due to leakage of Gabion wall. The area would be checked and maintained continuously to avoid recurrence case. The above identified mitigation measures have been implemented by the Contractor on 22 January 2010 and ET has also checked the implementation on 31 January 2010. The ET will closely inspect the watercourses during the routine site inspections and provide advice to the Contractor.	Closed.
16	CIR-13	19 January 2010 at Intake-3 construction site	Public through EPD	EPD has received a public complaint (EPD ref: EP3/N22/RW/01319-10) regarding daytime construction noise at Intake-3 construction site on 19 January 2010.	Findings/ Observations The monitoring station concerned is NSR6 (i.e. at Squatter facing to the construction site). Excavation, soil nailing, rock drilling and breaking, loading and unloading the materials were generally observed during monitoring period in mid-January 2010. The measured noise levels in January 2010 complied with the limit level in accordance with the EM&A Manual. These cases would also be treated as two action level exceedances on noise. The Contractor and the Environmental Team were also undertaken site	Closed.

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					<ul> <li>investigation on the subject area in response to complaint. The noise mitigation measures during the site investigation were recommended as follows:</li> <li>Sound insulation sheets were installed covering the working area during breaking and rock drilling in order to block the line of sight to the NSR.</li> <li>Noise insulation materials were used to enclose the drilling rig tightly.</li> <li>Conclusion/Proposed Action</li> <li>Based on the site inspection and monitoring results, the complaint was due to noise generated by rock breaking work. The identified mitigation measures have been discussed with the Contractor and the Contractor has submitted the remedial proposal. The proposal was implemented by the Contractor on 25 January 2010 and ET has also checked the implementation on 31 January 2010. The Contractor was also advised to review the mitigation measures from time to time near the NSR at I3. The ET will closely inspect the area during the routine site inspections and provide advice to the Contractor.</li> </ul>	
17	CIR-13	21 January 2010 at Intake-3 construction site	Public through EPD	EPD has received a public complaint (EPD ref: EP3/N22/RW/01444-10) regarding daytime construction noise at Intake-3 construction site on 21 January 2010.	Refers to Investigation /Mitigation Action for Complaint No. 16.	Closed
18	CIR-14	27 August 2010 near Intake-2 construction site	Public through DSD	DSD has received a public complaint regarding choked sewage manhole (MH1) at Lo Wai Road construction site on 27 August 2010.	Findings/ Observations During DSD inspection on 30 August 2010, improper discharge from the site to manhole, MH3, which is located downstream of MH1 was observed. ET had received those information from the Contractor on 09	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					September 2010. Site investigation was also carried out by SOR's representative with the Contractor on 01 September 2010. Checking with the site log, the construction activity at Lo Wai on 27 August 2010 was pipe jacking only. No site formation works was undertaken. The contractor and SOR's representative have undertaken site investigation on the subject area on 01 September 2010. On-site flow test at Portion G had conducted.  • Maeda works area is located at the lower section of Lo Wai Road and manhole MH3 is adjacent to the works area. MH1 (choked sewage manhole) is located at the upper section of Lo Wai Road. MH2 manhole is located middle section of Lo Wai Road. MH1 and MH2 are outside the works area.  • Water flow test for manhole MH2 and MH3 and no blockage was observed.  • Sewage overflow was found at MH1 during the joint site inspection on 01 September 2010  • It was reported that there were water pipes connected between the site and the MH3. Discharge was found in MH3 during DSD inspection.  • The contractor claimed that the purpose of the water pipes was to direct the storm water and underground water inside the concrete pipe "pipe jacking".  • There was no discharge license for that portion. The Contractor had stopped on 01 September 2010 the water pumping to MH3 and apply the discharge license for the Lo Wai site.	
					Conclusion/Proposed Action  Based on the joint site inspection, the choked manhole MH1 was not due to works activities. The Contractor had clean up the choked manhole MH1	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					and no sewage overflow from MH1 was observed. The Contractor was requested to divert the storm water to desilting system prior to discharge while no such discharge can be made until a valid discharge license is granted. The ET will closely inspect the vicinity area during the routine site inspections and provide advice to the Contractor as necessary.	
19&20	CIR-15	17 November 2010 at outfall construction site	Public through EPD	EPD has received a public complaint (EPD ref: EP3/N22/RW/24002-10 and EP3/N22/RW/24006-10) regarding daytime construction noise about derrick barge squeaking and rock breaking at Outfall construction site on 17 November 2010.	Findings/ Observations Drilling, excavation, marine mud dredging, rock breaking, mucking-out process and crane operation were observed during site inspections on 2 and 17 December 2010. The monitoring results measured on 15 November 2010 and 25 November at NSR 9 showed that the measured noise levels complied with the limit level (75 dB(A)) in accordance with the EIAO-TM. As part of the investigation of the noise complaints, the Contractor and the ET conducted additional site inspections and reviewed and audited the current noise mitigation practices and the Contractor's environmental performance on-site.  Conclusion / Proposed Action The documented complaints for noise triggered the action level of the noise monitoring. The Contractor had implemented the following on-site noise mitigation measures:  Erection of temporary noise insulation sheet at the rim of the spiral ramp construction site;  Moveable barriers for rock breaker;  Wrapping noise absorptive material at the rock breaker head;  Tailor made noise enclosure for drilling rig;  Semi-enclosed muck out process at muck hopper;	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					<ul> <li>Use of rock splitter (which is a relatively quieter method in contrast to rock breaker); and</li> <li>Noise insulation blanket enclosing the crane engine of derrick barge.</li> <li>Noise monitoring was increased to twice per week and the results were reported in the Complaint Investigation Report submitted on 24 December 2010. The measured noise level after implementation of the noise mitigation measures ranged from 69 to 73 dB(A) to the nearest integer and complied with the limit level in accordance with the EIAO-TM. The results showed that noise mitigation measures were effective. The contractor was advised to review the mitigation measures from time to time near the NSR 9. The ET would closely inspect the area during the routine site inspections and provide advice to the Contractor.</li> </ul>	
21	CIR-16	10 January 2011 at outfall construction site	Public through EPD	EPD has received a public complaint (EPD ref: EP3/N22/RW/00484-11) regarding dark smoke emission from derrick barge and construction noise and dust at Outfall construction site on 10 January 2011.	Findings/ Observations  1. Dark Smoke Emission from Derrick Barge Dark smoke emitted from the derrick barge was promptly investigated after the receipt of the complaint. The issue was found specific to the mechanical operation of the barge working at the site at that moment. The derrick barge being complained was then replaced by another barge without the relevant mechanical issue. No further complaint was received since then.  2. Construction Dust Regular 1-hour TSP monitoring, in accordance with EM&A Manual, was carried out by the Environmental Team (ET). The monitoring station concerned is ASR 9, located at the podium level of Greenview Terrace facing the construction site. In January, 1 hour TSP	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					concentration monitoring had been conducted on 4, 10, 14, 20 and 26 January 2011 at Greenview Terrace (ASR). Rock breaking, drilling and excavation were observed during monitoring. No exceedance was recorded.  The contractor and the environmental team were also undertaken site investigation at the subject area on 21 January 2011 in response to the complaint. It was confirmed that the air quality mitigation measures as recommended in EIA had been provided by the Contractor. The mitigation measures are as follows:  Water spraying surrounding the spiral ramp;  Water spraying for rock drilling and rock breaking;  Water spraying for C&D material before loading and unloading to derrick barge;  Water spraying for the exposed surface and the haul road;  Water spraying for trucks and vehicles at the site exit.  Construction Noise The documented complaints for noise triggered the action level of the noise monitoring. The Contractor had implemented the following on-site noise mitigation measures:  Extension of Temporary noise insulation barrier (made of noise blanket) at the rim of the spiral ramp construction site facing Greenview Terrace;  Movable noise barriers to surround the rock breaking activities at the spiral ramp where it is in safe ground condition;  Tailor made noise enclosure for rock drilling machine;	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					<ul> <li>Semi-enclosed muck out process at muck hopper (with noise curtain underneath);</li> <li>Use of temporary noise enclosure for piling work at Castle Peak Road;</li> <li>Noise insulation blanket enclosing the crane engine of derrick barge;</li> <li>Additional noise blanket along the railings of the spiral ramp; and</li> <li>Use of rock splitter (which is a relatively quieter method in contrast to rock breaker).</li> <li>Noise monitoring has been increased to twice per week and the results will be reported in the Complaint Investigation Report to be submitted in mid-February 2011. The measured noise level after implementation of the noise mitigation measures ranged from 71 to 74 dB(A) to the nearest integer and complied with the limit level in accordance with the EIAO-TM. The results showed that noise mitigation measures were effective. The contractor was advised to review the mitigation measures from time to time near the NSR 9. The ET would closely inspect the area during the routine site inspections and provide advice to the Contractor.</li> </ul>	
					Conclusion / Proposed Action  1. Dark Smoke Emission from Derrick Barge Dark smoke emitted from the derrick barge was considered a stand-alone incident and was specific to the derrick barge being complained. No further complaint was received after the barge was replaced by another.  2. Construction Dust Based on our site inspection and monitoring results,	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					the complaint was considered not justifiable since no action and limit level exceedance on construction dust were identified. Air quality mitigation measures as recommended in EIA were implemented in order to control and minimize the air quality impact and nuisance arising from the construction activities. Nevertheless, the Contractor was reminded to enhance the air quality mitigation measures such as increasing the water spraying frequency and ensure proper functioning of the automatic sprinklers at the Outfall construction site.  3. Construction Noise  Noise measurement results between 10 and 28 January 2011 were below the limit level (75 dB(A)) and complied with the noise criterion. The Contractor had implemented various mitigation measures on site to alleviate the construction noise impact. The ET will remind the Contractor to enhance and maintain the normal functioning of the measures continuously to minimize the impact. The Contractor should also closely liaise with the nearby residents and inform the progress of the construction and the implementation of the environmental mitigation measures at the Outfall construction site.	

			• •	ation and the implementation of ation measures at the Outfall	
Signed by Environmental Team Le	eader:	Harften Cheor	Date:	1 February 2011	