



Maeda-CRGL-SELI Joint Venture

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

Quarterly EM&A Report (January to March 2013)

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Report No EB000364R0941

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Executive Summary

- 1 This quarterly EM&A summary report under the Main Contract for the Design and Construction of Tsuen Wan Drainage Tunnel (hereafter referred to as the "Project") to Maeda-CRGL-SELI Joint Venture (MCSJV), which summarises the findings of environmental impact monitoring works during the period from January to March 2013.
- 2 In this reporting period, air-borne noise monitoring was performed at five monitoring stations (NSR1, NSR3, NSR6, NSR8 and NSR9). Air quality monitoring was carried out at four monitoring stations (ASR1, ASR3, ASR8 and ASR9). Water quality monitoring was carried out at four monitoring stations (Intake I-1, Intake I-2, Intake I-3 and Outfall O-1). Noise level was measured in terms of L_{eq (30 min)}, L₁₀ and L₉₀. Air quality was measured in terms of 1-hour Total Suspended Particulates (TSP). Water quality was measured in terms of Temperature, pH, Dissolved Oxygen (DO), Turbidity (Tby) and Suspended Solids (SS).

Type of Monitoring	Monitoring Station ID	Name of Premises	Status of Monitoring Works during the Reporting Period
Air Quality Monitoring	ASR1	Sik Sik Yuen Ho Fung College	Ongoing
	ASR3	Hong Hoi Chee Hong Temple	Ongoing
	ASR8	Beach Tower (Long Beach Garden)	Ongoing
	ASR9	Greenview Terrace (Block 1)	Ongoing
Air-borne Noise	NSR1	Sik Sik Yuen Ho Fung College	Ongoing
Monitoring	NSR3	Hong Hoi Chee Hong Temple	Ongoing
	NSR6	Squatters	Ongoing
	NSR8	Beach Tower (Long Beach Garden)	Ongoing
	NSR9	Greenview Terrace (Block 1)	Ongoing
Water Quality	I-1	Intake I-1	Ongoing
Monitoring	I-2	Intake I-2	Ongoing
	I-3	Intake I-3	Ongoing
	O-1	Outfall O-1	Ongoing

3 Details of all monitoring stations are summarized in the table below.

4 The major construction activities undertaken by the Contractor during the period from January to March 2013 include site cleaning and tidying at Outfall, I-1, I-2 and I-3, construction of reinforced concrete (RC) structure of cascade, tapered channel, box culvert and trellis beams at Outfall, construction of +24mPD platform concrete slab and surface drainage at Outfall, water proofing works on spiral ramp roof at Outfall, backfilling on top of box culvert and temporary tie back wall at Outfall, filling top soil for planters at Outfall, slope reinstatement at Outfall, installation of security fencing at open channel at Outfall, installation of penstock system at Outfall, excavation for main adit tunnel, additional boulder traps and 450mm step-channel at I-3, excavation for trapezoidal channel at I-3, construction of RC structure of main adit tunnel, vortex shaft (VS), air vent shaft, approach channel and additional boulder

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traps at I-3, construction of 450mm step channel, permanent access road, surface drainage and access ramp at I-3, construction of permanent access road and access ramp at I-3, repair and remedial works of vortex shaft, de-aeration chamber, approach channel and main adit at I-3; backfilling for air vent shaft at I-3, installation of side weir, trash grill, height adjustable weir, handrail on top of kiosk and vortex shaft cover, handrail for approach channel, railing and stone facing for approach channel at I-3, installation of lightning rod for kiosk at I-3, installation of wire mesh for 55° cut slope at I-3, installation of cable riser for man access shaft at I-3, finishing works for kiosk at I-3, casting of granular bedding at I-3, breaking and excavation for vortex shaft and existing concrete pavement under Lo Wai Bridge at I-2, construction of RC structure of upper man access shaft (UMAS), man access shaft (MAS), approach channel, lower man access adit (LMAA), main adit tunnel, lower man access shaft (LMAS), vortex shaft, kiosk, additional boulder traps, skin wall and L-shape retaining wall at I-2, excavation for approach channel and kiosk at I-2, construction of concrete platform under Lo Wai Bridge at I-2, remedial works at main adit, de-aeration chamber and air vent shaft at I-2, casting of granular bedding at I-2, installation of stone facing for approach channel, handrail at upper man access shaft and trash grill at I-2, finishing works for man access shaft and equipment room at I-2, installation of stop log, trash grill and handrail at I-1, excavation and construction of temporary concrete base slab at I-1, construction of surface drainage at I-1, construction of remaining retaining wall at I-1, backfilling for slope reinstatement works at I-1, repair and remedial works of box culvert and cascade at I-1, hydroseeding for slopes at I-1, tiling works for spiral ramp at I-1, dismantling of temporary access at I-1, segment repair works at Tunnel, PU grout for waterproofing at Tunnel, installation of kerbs, chainage marker and stainless steel cover at Tunnel, and Installation of radio communication system at Tunnel.

- 5 Closing formwork for vortex shaft external wall, site clearance in DAC, dismantling of formwork for DAC end wall at I-3, screeding at external wall of spiral ramp at I-1, and tiling works at spiral ramp at I-1 were undertaken during the restricted hours in the reporting period. As confirmed by the Contractor, no marine mud dredging works for basin scheme at Portion E was conducted in the reporting period.
- 6 No project related exceedance of air quality, noise and water quality monitoring was recorded. No complaint was received in the reporting period. The table below summarizes the exceedances of air quality, noise and water quality in the reporting period.

Parameter	Action Level Exceedance	Limit Level Exceedance
1-hour TSP	Nil	Nil
L _{eq (30 min)}	Nil	Nil
DO	Nil	Nil
Turbidity	Nil	Nil
SS	Three records at I-1 on 9 January 2013, 11 January 2013 and 20 March 2013.	Five records at I-1 on 4 January 2013, 18 January 2013, 30 January 2013, 1 February 2013 and 8 February 2013. One record at I-2 on 15 March 2013



7 Waste figures during the reporting period are summarized in the table below.

Status of Waste Management	Quantity	
Inert C&D Material Disposed of to Public Fill at Tuen Mun (m ³)	2133.6	
Inert C&D Material Reused in this Contract (m ³)	75.0	
Inert C&D Material Reused in other Contract (m ³)	0	
Metals Generated (kg)	12.0	
Paper / Cardboard Packaging (kg)	400.0	
Plastics (kg)	20.0	
Chemical Waste (kg)	0	
General Waste Disposed of to NENT Landfill (m ³)	319.6	

- 8 No complaint was received during the reporting period.
- 9 No Notification of Summons was received since the commencement of the Project.



1 Introduction

- 1.1.1 The Drainage Services Department (DSD) proposes to construct a tunnel of an internal diameter of 6.5 m and length 5.13 km, 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 was undertaken to provide information on the nature and extent of environmental impacts arising from the construction and operation of the proposed project and related activities taking place concurrently. From the EIA, the recommendations for monitoring contained herein are made.
- 1.1.3 The Maeda-CRGL-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 ET to implement an EM&A program 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 commenced in April 2008. This is the twentieth querterly EM&A report summarising the impact monitoring results and audit findings of the EM&A program during the reporting period between January and March 2013.

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 It is anticipated that the overall project programme from the detail design to completion of all civil works shall take approximately 64 months. The construction programme is presented in Appendix C.

The major construction activities undertaken in the reporting period were:

- Site cleaning and tidying at Outfall, I-1, I-2 and I-3;
- Construction of reinforced concrete (RC) structure of cascade, tapered channel, box culvert and trellis beams at Outfall;
- Construction of +24mPD platform concrete slab and surface drainage at Outfall;
- Water proofing works on spiral ramp roof at Outfall;
- Backfilling on top of box culvert and temporary tie back wall at Outfall;



- Filling top soil for planters at Outfall;
- Slope reinstatement at Outfall;
- Installation of security fencing at open channel at Outfall;
- Installation of penstock system at Outfall;
- Excavation for main adit tunnel, additional boulder traps and 450mm step-channel at I-3;
- Excavation for trapezoidal channel at I-3;
- Construction of RC structure of main adit tunnel, vortex shaft (VS), air vent shaft, approach channel and additional boulder traps at I-3;
- Construction of 450mm step channel, permanent access road, surface drainage and access ramp at I-3;
- Construction of permanent access road and access ramp at I-3;
- Repair and remedial works of vortex shaft, de-aeration chamber, approach channel and main adit at I-3;
- Backfilling for air vent shaft at I-3;
- Installation of side weir, trash grill, height adjustable weir, handrail on top of kiosk and vortex shaft cover, handrail for approach channel, railing and stone facing for approach channel at I-3;
- Installation of lightning rod for kiosk at I-3;
- Installation of wire mesh for 55° cut slope at I-3;
- Installation of cable riser for man access shaft at I-3;
- Finishing works for kiosk at I-3;
- Casting of granular bedding at I-3;
- Breaking and excavation for vortex shaft and existing concrete pavement under Lo Wai Bridge at I-2;
- Construction of RC structure of upper man access shaft (UMAS), man access shaft (MAS), approach channel, lower man access adit (LMAA), main adit tunnel, lower man access shaft (LMAS), vortex shaft, kiosk, additional boulder traps, skin wall and L-shape retaining wall at I-2;
- Excavation for approach channel and kiosk at I-2;
- Construction of concrete platform under Lo Wai Bridge at I-2;
- Remedial works at main adit, de-aeration chamber and air vent shaft at I-2;
- Casting of granular bedding at I-2;
- Installation of stone facing for approach channel, handrail at upper man access shaft and trash grill at I-2;
- Finishing works for man access shaft and equipment room at I-2;
- Installation of stop log, trash grill and handrail at I-1;
- Excavation and construction of temporary concrete base slab at I-1;
- Construction of surface drainage at I-1;



- Construction of remaining retaining wall at I-1;
- Backfilling for slope reinstatement works at I-1;
- Repair and remedial works of box culvert and cascade at I-1;
- Hydroseeding for slopes at I-1;
- Tiling works for spiral ramp at I-1;
- Dismantling of temporary access at I-1;
- Segment repair works at Tunnel;
- PU grout for waterproofing at Tunnel;
- Installation of kerbs, chainage marker and stainless steel cover at Tunnel; and
- Installation of radio communication system at Tunnel.

2.3 Mitigation Measures

- 2.3.1 The environmental mitigation measures that were implemented and their statuses are given in Appendix D.
- 3 EM&A Requirement

3.1 General

3.1.1 The EM&A requirements are stipulated in the EM&A Manual. The principal purposes of the EM&A program are to assess the compliance with applicable environmental legislation and associated regulations, to ensure the implementation of mitigation measures specified in the EM&A Manual, and to identify any remedial works necessary for redressing any unacceptable or unanticipated environmental impacts.

3.2 EM&A on Air Quality, Noise and Water Quality

Monitoring Parameters

3.2.1 The air quality, noise and water quality monitoring frequencies and parameters are shown in Table 3-1.

Type of Monitoring	Monitoring Station ID	Parameter	Frequency
Air Quality Monitoring	ASR1; ASR3; ASR8 and ASR9	1-hour TSP (μg/m ³)	Once every 6 days
Air-borne Noise Monitoring	NSR1; NSR3; NSR6; NSR8 and NSR9	L _{eq (30 min)} (dB(A))	Once every week
Water Quality Monitoring	I-1, I-1-C, I-2, I-2-C, I-3, I-3-C	, DO (mg/L)	Three days per week
		SS (mg/L)	_
		Turbidity (NTU)	-
		рН	_
		Temperature (°C)	

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Table 3-1 Frequency of Air Quality, Noise and Water Quality Monitoring

3.3 Monitoring Locations

3.3.1 The monitoring locations for air quality, noise and water quality are shown in Tables 3-2, 3-3, 3-4 and Appendix E.

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 Garden)	G/F
ASR9	Greenview Terrace (Block 1)	G/F

Table 3-2 Air Quality Monitoring Locations

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 Garden)	G/F
NSR9	Creenview Terrese (Pleck 1)	Podium (up to 6 July 2009)
	Greenview Terrace (Block 1)	Roof* (from 16 July 2009)

* The noise monitoring location of NSR9 had been relocated to the rooftop from 16 July 2009.

Table 3-3 Noise Monitoring Locations

Monitoring Station ID Name of Premises

Intake I-1
Control of Intake I-1
Intake I-2
Control of Intake I-2
Intake I-3
Control of Intake I-3

Note: *The upper stream location (I-3-C*) had been relocated from end of February 2009 due to coarse stone blockage.

Table 3-4 Water Quality Monitoring Locations

3.3.2 Referring to Section 4.4 of the approved Contract Specific EM&A Manual (Report No. EB000364R0273, dated 6 January 2010), while the construction of the Outfall requires minor dredging, water quality monitoring at the Outfall shall be undertaken during the period of the dredging works. As advised by the Contractor, all relevant marine works at Portion E of the

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site were completed in April 2012. As such, the ET submitted a proposal to EPD on 30 April 2012 to terminate the marine water quality monitoring effective from 1 May 2012. EPD had no objection to the proposal in their reply on 7 May 2012.

3.4 Performance Limits (AL Levels)

3.4.1 In accordance with the EM&A Manual, the appropriate Action and Limit Levels for air quality, air-borne noise and water quality were established. They are presented in Table 3-5, Table 3-6 and Table 3-7. Should non-compliance of the air quality, noise and water quality criteria occur, actions in accordance with the Event / Action Plan stipulated in contract specific EM&A Manual should be carried out.

Station	1-hr TSP Level in μg/m³		
	Action Level	Limit Level	
ASR1	307	500	
ASR3	327	500	
ASR8	337	500	
ASR9	329	500	

Table 3-5 Action & Limit Levels for Air Quality

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

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

Table 3-6 Action & Limit Levels for Air-borne Noise

Parameters	Action	Limit
DO in mg/L	Surface & Middle	Surface & Middle
(Surface, Middle & Bottom)	5%-ile of baseline data for surface and middle layer.	4 mg/L, except 5 mg/L for Fish Culture Zone (FCZ) or
		1%-ile of baseline data for surface and middle layer
	Bottom	Bottom
	5%-ile of baseline data for bottom layer.	2 mg/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 level at the same tide of the same day	99%-ile of baseline or 130% of upstream control station's SS level at the same tide of the same day and specific sensitive receiver water

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Parameters	Action	Limit
		quality requirements (e.g. required suspended solids levels for concerned sea water intakes)
Turbidity (Tby) in NTU (Depth-averaged)	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 limit occurs when monitoring result is lower than the limits.
- For SS and Tby, non-compliance of the water quality limit 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
- necessary.

Table 3-7 Action & Limit Levels for Water Quality



3.5 Monitoring Result

3.5.1 All measured air quality monitoring levels were complying with the Action and Limit Levels in the reporting period. A summary of air quality monitoring results is presented in Table 3-8 and Appendix F.

Monitoring	1	-hour TSP (μg/m	1 ³)	Action Level	Limit Level
Station		Range		(µg/m ³)	(µg/m ³)
ASR1	35.6	-	237.6	307	500
ASR3	37.4	-	244.2	327	500
ASR8	46.3	-	185.3	337	500
ASR9	53.2	-	253.7	329	500

Italic indicates the exceedances of *Action Levels* **Bold** indicates the exceedances of **Limit Levels**

Table 3-8 Summary of Air Quality Monitoring Results

- 3.5.2 All measured air-borne noise monitoring levels were complying with the Limit Level in the reporting period.
- 3.5.3 A summary of noise monitoring results is presented in Table 3-9 and Appendix F.

Monitoring Station	L	Limit Level		
		Range		dB(A)
NSR1	63	-	69	65/70 [#]
NSR3	62	-	72	75
NSR6	43	-	71	75
NSR8	63	-	66	75
NSR9	60	-	69	75

Note: Bold indicates the exceedances of Limit Levels

- Noise Limit Level was reduced to 65 dB(A) from 70 dB(A) during school examination period. The records above 65 dB(A) are not in that period.

Table 3-9 Summary of Impact Air-borne Noise Monitoring Results

- 3.5.4 A summary of water quality monitoring results is presented in Table 3-10 and Appendix F.
- 3.5.5 None of exceedance related to project construction activities was recorded during the reporting quarter but a total of <u>9</u> non-project related exceedances were recorded.

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River Water Quality Monitoring

3.5.6 A total of <u>5</u> non-project related exceedances were recorded in **January 2013**, including:

Suspended Solids

- One exceedance of SS limit level was recorded at I-1 on 4 January 2013. The measured SS level (4.40 mg/L) was lower than the baseline action / limit level, but higher than 130% of the SS level (3.20 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
- One exceedance of SS limit level was recorded at I-1 on 18 January 2013. The measured SS level (3.35 mg/L) was lower than the baseline action / limit level, but higher than 130% of the SS level (2.10 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
- One exceedance of SS limit level was recorded at I-1 on 30 January 2013. The measured SS level (2.70 mg/L) was lower than the baseline action / limit level, but higher than 130% of the SS level (<2.00 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.</p>
- One exceedance of SS action level was recorded at I-1 on 9 January 2013. The measured SS level (8.90 mg/L) was higher than the baseline action level, but lower than 120% of the SS level (8.75 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
- One exceedance of SS action level was recorded at I-1 on 11 January 2013. The measured SS level (3.05 mg/L) was lower than the baseline action level, but higher than 120% of the SS level (2.50 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
- 3.5.7 A total of <u>2</u> non-project related exceedances were recorded in **February 2012**, including:

Suspended Solids

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- One exceedance of SS limit level was recorded at I-1 on 1 February 2013. The measured SS level (2.70 mg/L) was lower than the baseline action / limit level, but higher than 130% of the SS level (<2.00 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.</p>
- One exceedance of SS limit level was recorded at I-1 on 8 February 2013. The measured SS level (4.35 mg/L) was lower than the baseline action / limit level, but higher than 130% of the SS level (2.95 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No wastewater directly discharged from the site was observed. Although the SS level at I-1 was about 47% higher than that at I-1-C, no direct sources of impact from the site were identified. Since the exceedance was non-project related, no further action was required.
- 3.5.8 A total of <u>2</u> non-project related exceedances were recorded in **March 2012**, including:

Suspended Solids

- One exceedance of SS limit level was recorded at I-1 on 20 March 2013. The measured SS level (2.40 mg/L) was lower than the baseline action / limit level, but higher than 120% of the SS level (<2.00 mg/L) of the upstream control station (I-1-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.</p>
- One exceedance of SS limit level was recorded at I-2 on 15 March 2013. The measured SS level (2.85 mg/L) was lower than the baseline action / limit level, but higher than 130% of the SS level (<2.00 mg/L) of the upstream control station (I-2-C). Details of the construction activities conducted on the monitoring day are given in Appendix G. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.</p>
- 3.5.9 The above mentioned exceedances were considered non-project related. However, proper mitigation measures had been implemented during measurements. Details of the above mentioned investigations can be referred to the Interim Notifications of Environmental Quality Limits Exceedances as enclosed in Appendix G.



Monitoring	Temperature (°C)	DO (mg/L)	рН	Turbid	ity (NTU)	Suspende	d Solid (mg/L)
Station	Range	Range	Action / Limit Level	Range	Range	Action / Limit Level	Range	Action / Limit Level
l-1	14.00 - 26.00	7.68 - 9.51	3.42/3.34	7.69-8.00	1.99 - 7.46	9.75 / 12.47	<2.00-8.90	8.85 / 10.17
I-1-C	14.00 - 26.00	7.61 - 9.44	-	7.69-8.00	2.11 - 7.70	-	<2.00-8.75	-
I-2	14.10 - 26.10	7.62 - 9.23	3.66/3.63	7.70-7.97	0.56 - 2.65	6.63 / 6.99	<2.00-2.85	7.68 / 8.34
I-2-C	14.20 - 26.10	7.71 - 9.34	-	7.70-7.97	0.62 - 2.60	-	<2.00-3.25	-
I-3	14.20 - 26.10	7.49 - 9.42	3.65/3.51	7.71 - 7.95	1.08 - 3.82	3.99 / 4.18	<2.00-2.75	6.13 / 7.23
I-3-C	14.30 - 26.10	7.56 - 9.31	-	7.71 - 7.95	1.06 - 3.83	-	<2.00-2.40	-

Note: Italic indicates the exceedances of Action Levels

Bold indicates the exceedances of Limit Levels

Table 3-10	Summary of Impact Water Quality Monitoring Results
------------	--



4 Quarterly Summary, Environmental Condition and Non-Compliance Records

4.1 Summary of Waste Disposal Records

4.1.1 According to the information provided by the Contractor, the quantities of C&D materials and other wastes in the reporting period are summarized in Table 4-1

Status of Waste Management	January 2013	February 2013	March 2013
Inert C&D Material Disposed of to Public Fill at Tuen Mun (m ³)	342.0	596.4	1195.2
Inert C&D Material Reused in this Contract (m ³)	0	75.0	0
Inert C&D Material Reused in other Contract (m ³)	0	0	0
Metals Generated (kg)	0	12.0	0
Paper / Cardboard Packaging (kg)	0	400.0	0
Plastics (kg)	0	20.0	0
Chemical Waste (kg)	0	0	0
General Waste Disposed of to NENT Landfill (m ³)	144.4	72.8	102.4

Table 4-1 Waste Generated from January to March 2013

4.2 Weather Conditions

4.2.1 The weather conditions during the period from January to March 2013 were mainly sunny and cloudy.

4.3 Summary of Project-Related Exceedances

4.3.1 Summary of exceedance results are summarized in Table 4-2. Appendix G shows the Interim Notifications of Environmental Quality Limits Exceedances issued in the reporting period.

Environmental Monitoring	Total No. of Measurement	Action Level Exceedance	% of Action Level Exceedance	Limit Level Exceedance	% of Limit Level Exceedance
Air Quality	192	0	0	0	0
Air-borne Noise	65	0	0	0	0
Water	216	0	0	0	0

Quarterly EM&A Report (January to March 2013)

Hyder Consulting Limited-Company Number 126012



Table 4-2 Summary of Project-Related Exceedances

5 Complaint

- 5.1.1 A complaint hotline at 9850 3241 of the Contractor has been established for the Project.
- 5.1.2 Cumulative statistics of environmental complaints are shown in Table 5-1. Complaints Received in the Reporting Period Cumulative Number of Complaints

0 26

Table 5-1 Cumulative Statistics of Environmental Complaints

6 Summary of Notification of Summons, Successful Prosecutions and Corrective Actions

- 6.1.1 No summons and successful prosecution was received during the reporting period.
- 6.1.2 Cumulative statistics of Notification of Summon, Successful Prosecutions and Convictions are shown in Table 6-1.

Notification of Summons		Successful Prosecution	
January – March 2013	Cumulative	January – March 2013	Cumulative
0	0	0	0

 Table 6-1
 Cumulative Statistics of Notification of Summons and Successful Prosecutions

7 Comments, Recommendations and Conclusion

- 7.1.1 During the reporting period, no project related exceedance of air quality monitoring and airborne noise monitoring was recorded. Details of the exceedance are given in Appendix H. Exceedances of water quality monitoring were recorded but none of these exceedances were related to Project's construction activities.
- 7.1.2 No Notification of Summon has been received since the commencement of the Project.
- 7.1.3 Waste management mitigation measures have been implemented by the Contractor within the reporting period. Waste figures during the reporting period are summarized in Table 7-1.

Status of Waste Management	Quantity
Inert C&D Material Disposed of to Public Fill at Tuen Mun (m ³)	2133.6
Inert C&D Material Reused in this Contract (m ³)	75.0
Inert C&D Material Reused in other Contract (m ³)	0

Quarterly EM&A Report (January to March 2013)

Hyder Consulting Limited-Company Number 126012



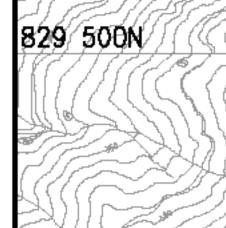
Status of Waste Management	Quantity
Metals Generated (kg)	12.0
Paper / Cardboard Packaging (kg)	400.0
Plastics (kg)	20.0
Chemical Waste (kg)	0
General Waste Disposed of to NENT Landfill (m ³)	319.6

 Table 7-1
 Total Wastes Generated From January to March 2013



Appendix A

Site Map and Works Area



829 000N

828 500N

828 000N

827 500N

827 000N

826 500N

826 000N

825 500N

APPROACH BEATH

825 000N

824 500N

SHEK LUNG KUNG

YAU KOM TAU

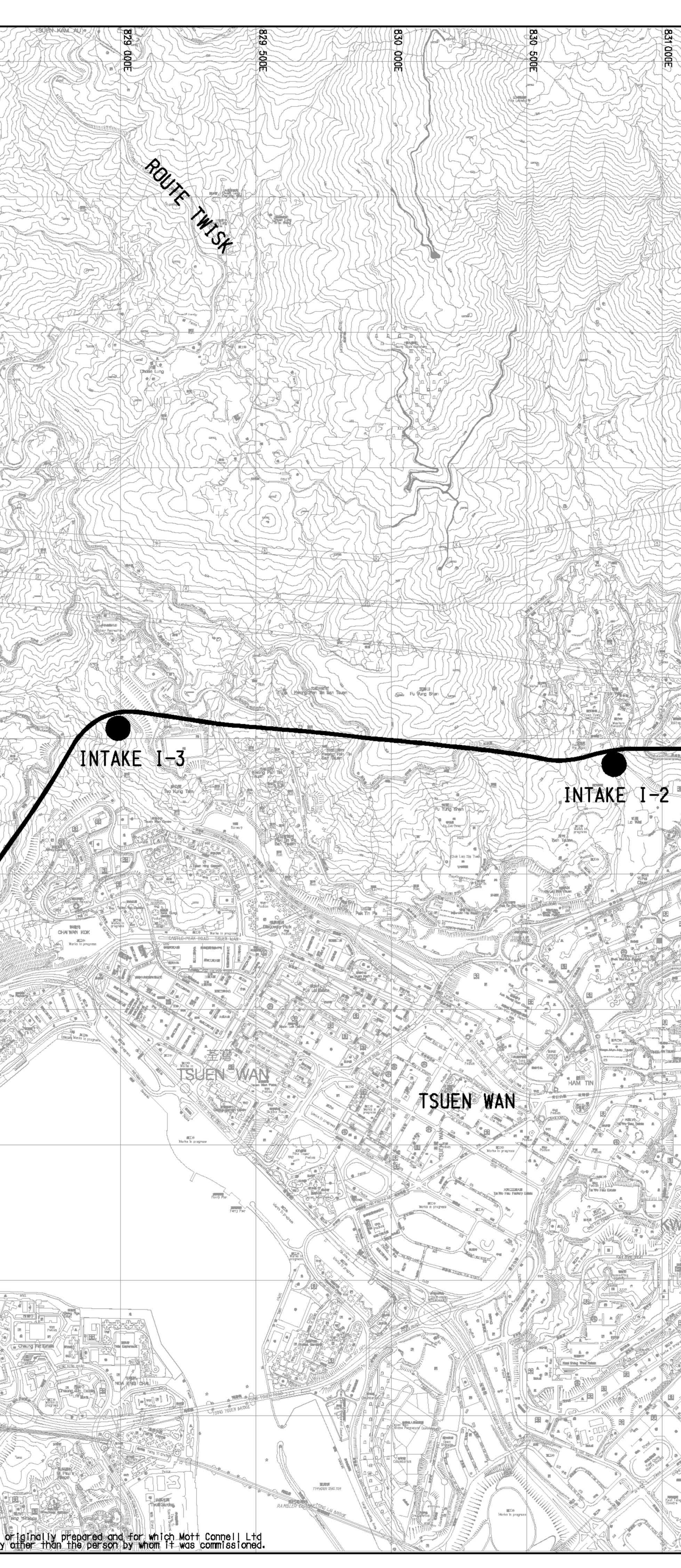
Pak Shek 194

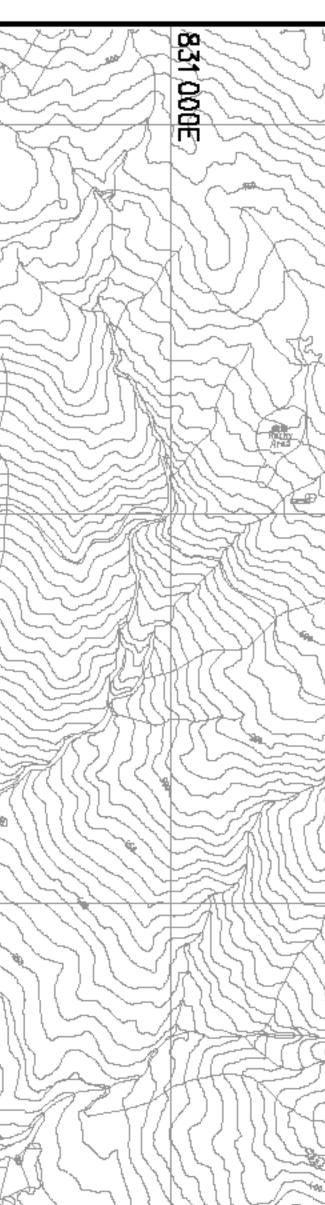
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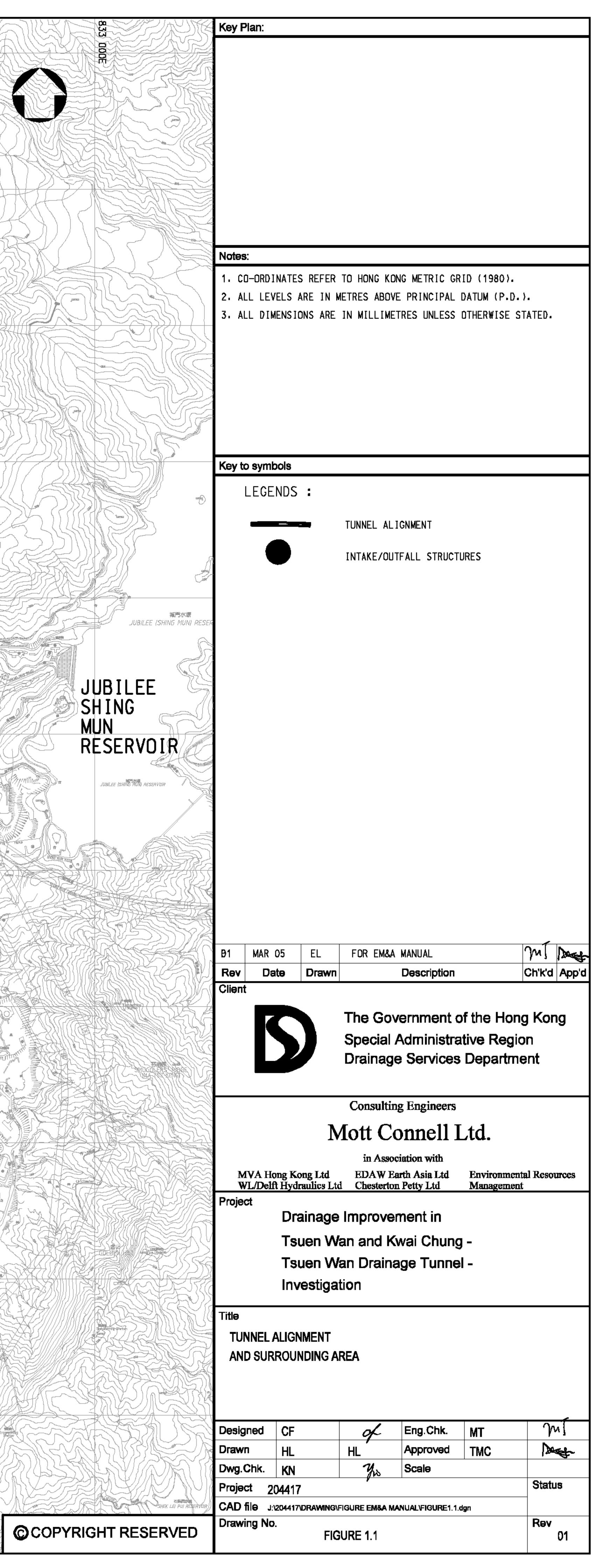
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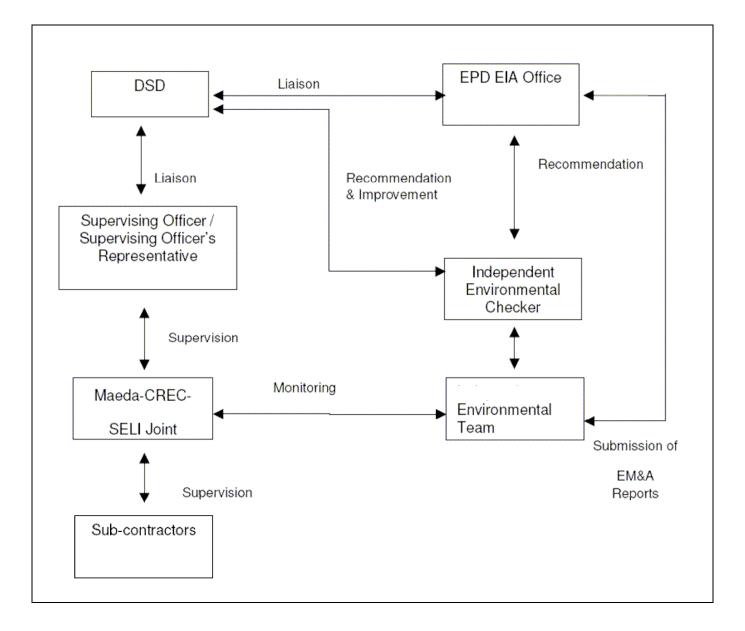
KWAI CHUNG





Appendix B

Organization Chart





Appendix C

Works Programme

ID	D	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% WP09 Comp Start	WP09 Finish	Total Float	2012 A S O N D J F M 3 64 65 66 67 68 69 70	2013 A M J J A S O N D 71 72 73 74 75 76 77 78 79	2014 J F M A M J J A S C 9 80 81 82 83 84 85 86 87 88 89	2015 NDJFMA 90 91 92 93 94 95
Preliminarie	es		, , , , , , , , , , , , , , , , , , ,										
Project Date	S												
	-												
01R0000002	Tender Issue Date		0	0	26JUN07A		100 26JUN07A						
01R0000004	Tender Closing Date		0	0	05OCT07A		100 05OCT07A						
01R0000006	Letter of Acceptance Iss	sued Date	0	0	14DEC07A		100 14DEC07A						
01R0000008	Contract Commenceme	ent Date	0	0	28DEC07A		100 28DEC07A						
01R0000010	Completion of Section 1	of the Works	0	0		28MAR14	0	29APR13	-836	Contract	completion date on 13	12/11	
01R0000012	Completion of Section 2	of the Works	0	0		06SEP11A	100	06SEP11A					
01R0000014	Completion of Section 3	of the Works	0	0		03AUG11A	100	03AUG11A					
01R0000016	Completion of Section 4	of the Works	0	0		11AUG11A	100	11AUG11A					
01R0000018	Completion of Section 5	of the Works	0	0		19SEP11A	100	19SEP11A					
01R0000020	Completion of Section 6	of the Works	0	0		16AUG12A	100	14SEP12	•	Contract comple	tion date on 29/07/11		
01R0000022	Completion of Section 7	of the Works	0	0		06NOV14	0	29APR14	-713		Contract com	pletion date on 23/11/12	•
Possession	of Area												
01R00A0102	Possession Portion A -	90d of DOC	0	0	27FEB08A		100 27FEB08A						
01R00A0104	Handover of Portion A		0	0		07MAR14	0	12DEC12	-815				
01R00B0102	Possession of Portion B	3 - 90d of DOC	0	0	07MAR08A		100 07MAR08A						
01R00B0104	Handover of Portion B		0	0		14MAR14	0	22MAR13	-822				
01R00C0102	Possession of Portion C	C - 90d of DOC	0	0	26MAR08A		100 26MAR08A						
01R00C0104	Handover of Portion C		0	0		14MAR14	0	16APR13	-822		•		
01R00D0102	Possession of Portion D) on DOC	0	0	28DEC07A		100 28DEC07A						
01R00D0104	Handover of Portion D		0	0		06NOV13	0	29APR13	-694		• •		
01R00E0102	Possession of Portion E	- 650d of DOC	0	0	09JUL09A		100 09JUL09A						
01R00E0104	Handover of Portion E		0	0		06NOV13	0	29APR13	-694		•		
01R00F0102	Possession of Portion F	on DOC	0	0	28DEC07A		100 28DEC07A						
01R00F0104	Handover of Portion F		0	0		28MAR14	0	09MAR13	-836	•		After Tunnel co	mmission
01R00G0102	Possession of Portion G	G - 700d of DOC	0	0	26NOV09A		100 26NOV09A						
01R00G0104	Handover of Portion G		0	0		07NOV12	0	14SEP12	857	•			
01R00I0102	Possession of Portion I	on DOC	0	0	28DEC07A		100 28DEC07A						
01R00I0104	Handover of Portion I		0	0		06NOV14	0	29APR14	0				•
01R00J0102	Possession of Portion J		0	0	15MAR15		0 29JUN14		0				•
01R00J0104	Handover of Portion J		0	0		23NOV11A	100	23NOV11A					
01R0H10102	Possession of Portion H	11 on DOC	0	0	28DEC07A		100 28DEC07A						
01R0H10104	Handover of Portion H1		0	0		05JAN15	0	28JUN14	0				•
01R0H20102	Possession of Portion H	12 - 300d of DOC	0	0	04NOV08A		100 04NOV08A						
Start Data	20 11 10 27			WP10		Maada CBF	C-SELI JV	Sheet 1 of 66			WP10		
Start Date	29JUN07		Early Bar				O. DC/2007/12		Date		Revision	Checked	Approved
Finish Date Data Date	14MAR15 28AUG12		Target Bar				onstruction of		05SEP11	WP8A			
Run Date	19SEP12 11:47		Progress Bar			ien Wan Dr	ainage Tunnel		09MAR12 13SEP12				
			Critical Activity			Works Pr	ogramme						
© Primaver	a Systems, Inc.												

-	•			14/17/14	1100		11/200	14/200			2012		2013			201	4		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	A S		JFMAN	IJJASC		JFM	AMJ.	JASO	NDJ	FMA
01R0H20104	Handover of Portion H2	0	0	Otart	05JAN15	0	oturt	28JUN14	0	63 64			2 73 74 75 76 7	18798		83 84 85 8	6 87 88 85		93 94 95
	orks - DOP to Completion		-							+									
Section of W																			
0101000000	04 Warks in Dertings A to E superstructure in 00.7	4.050	1.050	00050074	44140044	0.4	00050074	0040040	000						<u>III</u>				
01R1000202	S1-Works in Portions A to F except works in S2-7	1,950	1,950	28DEC07A	14MAR14		28DEC07A	29APR13	-839										
01R1000204	S1-Maintenance Period (365 days)	365	365	15MAR14	14MAR15		30APR13	29APR14	-839						HAA				
01R20A0206	S2-Slope Stabilization works within Portion A	1,288	1,288	27FEB08A	06SEP11A		27FEB08A	06SEP11A							HAA				<u> </u>
01R20A0208	S2-Maintenance Period (365 days)	365	365	07SEP11A	05SEP12		07SEP11A	05SEP12	0	7					HAA				<u> </u>
01R30B0210	S3-Slope Stabilization works within Portion B	1,245	,		03AUG11A		07MAR08A	03AUG11A							HAA				<u> </u>
01R30B0212	S3-Maintenance Period (365 days)	365	365	04AUG11A			04AUG11A	02AUG12							IAA				
01R40C0214	S4-Slope Stabilization works within Portion C	1,234	1,234	26MAR08A			26MAR08A	11AUG11A							IAA				
01R40C0216	S4-Maintenance Period (365 days)	365	365	12AUG11A	10AUG12A		12AUG11A	10AUG12							IAA				
01R50D0218	S5-Slope Stabilization works within Portion D	1,308	1,308	28DEC07A	19SEP11A		28DEC07A	19SEP11A							IAA				
01R50D0220	S5-Maintenance Period (365 days)	365	365	20SEP11A	18SEP12		20SEP11A	18SEP12	0										
01R60G0222	S6-Works within Portion G	1,023	,	27NOV09A	16AUG12A		27NOV09A	14SEP12		7					IAA				
01R60G0224	S6-Maintenance Period (365 days)	365			16AUG13		15SEP12	14SEP13	-385	-		XXXXX			IIA				
01R7000226	S7-Ladscape softworks & establishment works	2,315	2,315	28DEC07A	06NOV14	71	28DEC07A	29APR14	-745									inclu. p	reserv
01R7000228	S7-Maintenance Period (30 days)	30	30	07NOV14	06DEC14	0	30APR14	29MAY14	-745						<u>III</u>				
Facilities for	the SO as per ER 12														III				
															III				
01R0000302	Provide temporary accommodation	7	7	28DEC07A	15JAN08A	100	28DEC07A	15JAN08A							III				
01R0000304	Design the SO's principle office	95	95	28DEC07A	28AUG08A	100	28DEC07A	28AUG08A											
01R0000305	Erect Hoarding/Signboard/Gate/Fencing	35	35	28MAR08A	16MAR09A	100	28MAR08A	16MAR09A											
01R0000306	Erect SO's principle office in Portion H1/H2	100	100	19MAY08A	13SEP08A	100	19MAY08A	13SEP08A											
01R0000308	Provide secondary offices, directed by SO	64	64	14SEP08A	13JUN09A	100	14SEP08A	13JUN09A											
01R0000310	Provide transport for the SO as per App. ER,M	90	90	28DEC07A	02MAY08A	100	28DEC07A	02MAY08A											
01R0000311	Provide survey equipments as per App. ER,M	30	30	28DEC07A	19AUG08A	100	28DEC07A	19AUG08A											
01R0000314	Maintain & Service the Principle Office	2,084	2,084	14SEP08A	06DEC14	66	14SEP08A	29MAY14	0	-									
01R0000316	Maintain & service the Secondary Office	1,645	1,645	280CT08A	14MAR14		280CT08A	29APR13	0	-									
01R0000318	Maintain & Service the transportation	2,330	2,330	12JAN08A	06DEC14		12JAN08A	29MAY14	0	-									
01R0000319	Maintain & Service the survey equipments	2,293	2,293	18FEB08A	06DEC14	69	18FEB08A	29MAY14	0										
01R0000372	Demolish & removal of Principle Office	30	30	07DEC14	05JAN15		30MAY14	28JUN14	0										
	Accommodation as per ER.B																		
Contractor S	Accommodation as per LIX.D																		
010001402	Design Contractorle main office	20	20	04550004	101443/024	100	01FEB08A	19MAY08A							III				
01R0001402	Design Contractor's main office	30		01FEB08A										<u> </u>	<u> </u>				
01R0001406	Maintain & service Contractor's office	2,142		18JUL08A				29MAY14	0					- VIX	HAA				
01R0001408	Demolish & removal of Contractor's main office	30	30		05JAN15		30MAY14	28JUN14	0						HAA				
01R000141	Erect Contractor's main office in Portion H1	50*		19MAY08A				17JUL08A			$-\mathcal{U}$				HAA				
01R0001412	Construct base slab	10		19MAY08A			19MAY08A	30MAY08A							IAA				
01R0001413	Install steel frames	12		31MAY08A				21JUN08A		_					XXX				
01R0001414	Install wall/roof panels, windows etc	6					23JUN08A	30JUN08A							IAA				
01R0001415	Install & E& M/ceiling/floor panels	8	8	02JUL08A			02JUL08A	12JUL08A							IAA				
01R0001416	Site clearance	1	1	14JUL08A	17JUL08A	100	14JUL08A	17JUL08A				XXXXX		XX	XXX				

ID	Activity	WP10		WP10	WP10	%	WP09	WP09	Total	A S	2012 0 N	I D	JFMAM	2013 J J A S I	ONDJFN	20 1 A M J	14 JAS	OND	2015 J F M A
0100001417	Description Install furnitures/internet & move in	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	63 64	65 66	6 67 6	68 69 70 71 72 7	3 74 75 76 7	7 78 79 80 81 82	2 83 84 85	86 87 88 8	39 90 91 9	2 93 94 95
01R0001417		2	2	14JUL08A	17JUL08A	100	14JUL08A	17JUL08A				X							
Works Progr	amme & Monthly Report as per SCC 27											X							
												X							
01R0000502	Prepare/Submit draft Works Programme	7	7	14DEC07A			14DEC07A	21DEC07A				XX							
01R0000504	SO's review/comment on draft Works Programme	14	14	22DEC07A			22DEC07A	23JAN08A				XX							
01R0000505	Prepare/Submit draft Works Programme Rev. 1	28	28	24JAN08A	15FEB08A		24JAN08A	15FEB08A				XX							
01R0000506	Prepare/Submit 1st 3-Month Rolling Programme	14	14	14DEC07A			14DEC07A	03JAN08A				XX							
01R0000507	SO's approval on draft Works Programme	14	14	16FEB08A			16FEB08A	28MAR08A				XX							
01R0000508	Submit Revised Works Programme	14	14	28AUG08A			28AUG08A	30SEP08A				XX							
01R0000510	SO's Approval of Revised Works Programme	14	14	02OCT08A			02OCT08A	28FEB09A				XX							
01R0000512	Monthly update program	1,929	1,929	18JAN08A	14MAR14		18JAN08A	29APR13	0			XX				o be inc	luded in	the Mo	nthly Re
01R0000514	Contractor's Monthly Progress Report	1,925	1,925	22JAN08A	14MAR14	84	22JAN08A	29APR13	0			XX							
Safety Plan a	as per SCC 35											XX							
												XX							
01R0000602	Submit draft Safety Plan	14	14	14DEC07A	29DEC07A	100	14DEC07A	29DEC07A				XX							
01R0000604	Hold an ad hoc meeting with RE on Safety Plan	7	7	31DEC07A	09JAN08A	100	31DEC07A	09JAN08A				XX							
01R0000606	Submit 6 copies of the Safety Plan	35	35	14DEC07A	26FEB08A	100	14DEC07A	26FEB08A				XX							
01R0000608	Submit updated safety orgainiza. chart monthly	1,867	1,867	20MAR08A	14MAR14	84	20MAR08A	29APR13	0	-		XX							
17R0000602	Fulfill all relevant safety obligation	1,950	1,950	28DEC07A	14MAR14	84	28DEC07A	29APR13	0			XX							
Contractor's	All Insurances											XX							
												XX							
01R0000704	Submit documents for all insurances are effected	21	21	14DEC07A	02SEP08A	100	14DEC07A	02SEP08A	T			XX							
				TIBLOOM	02021 00/1	100	TIBEOUT	02021 00/1				X							
	em as per ER 9.3																		
						100			1										
01R0000802	Appoint a Quality Manager	14	14	28DEC07A			28DEC07A	02JAN08A				XX							
01R0000804	Submit proposed Quality System for SO's consent	28	28	14DEC07A			14DEC07A	22JAN08A				XX							
01R0000806	Submit QSSP for approval of the SO	28	28	28DEC07A			28DEC07A	14MAR08A	-			XX							
01R0000808	Maintain & update Quality System	1,922	1,922	25JAN08A	14MAR14	84	25JAN08A	29APR13	0			XX							
Environmen	t																		
												X							
01R0000902	Nominate Environmental Officer	14	14	14DEC07A	21DEC07A	100	14DEC07A	21DEC07A				XX							
01R0000903	Establish a billing account for disposal	21	21	14DEC07A	02JAN08A	100	14DEC07A	02JAN08A				XX							
01R0000904	Submit draft EMP	21		14DEC07A			14DEC07A					XX							
01R0000906	Revise draft EMP within 7 days of SO's notice	14	14	04JAN08A	21FEB08A	100	04JAN08A	21FEB08A				X							
01R0000908	Submit final version of EMP	45		14DEC07A			14DEC07A	21FEB08A				X							
01R0000910	Review/update/submit EMP monthly	1,919	1,919	28JAN08A	14MAR14			29APR13	0										
01R0000912	Employ IET	21	21	14DEC07A	02JAN08A		14DEC07A	02JAN08A				X							
01R0000914	Submit Baseline Monitoring Plan	21	21	28DEC07A	18JAN08A	100	28DEC07A	18JAN08A				XX							
01R0000915	Seek for EPD's Agreement on WQML & schedule	21	21	18JAN08A	31JAN08A	100	18JAN08A	31JAN08A				XX							
01R0000916	Carry out baseline monitoring	37	37	11FEB08A	20MAR08A	100	11FEB08A	20MAR08A				X							
01R0000918	Prepare/submit reports for baseline monitoring	20	20	21MAR08A	28MAR08A	100	21MAR08A	28MAR08A				X							
01R0000920	Impact monitoring & reporting	1,855	1,855	01APR08A	14MAR14	84	01APR08A	29APR13	0			XX							

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	20 A S C	12) N D	JFN	2013 1 A M J J A S	ONDJF	2 M A M J	014 J A S	6 O N C	2015 D J F M A
17R0000902	Description Fulfill all relevant environmental obligation	Dur 1,950	Dur 1,950	Start 28DEC07A	Finish 14MAR14	Comp	Start 28DEC07A	Finish	Float	63 64 6	5 66 67	68 69 7	1 A M J J A S 0 71 72 73 74 75 76	8 77 78 79 80 8 [.]	82 83 84 8	5 86 87 88	8 89 90 9	1 92 93 94 95
		1,900	1,950	ZODLCOTA		04	ZODLCOTA	29411113	0									
Excavation	Permit/Utilities per SCC 54 & SCC 83																	
		-		11050051	1 - 1 - 1	400		45.444.004	-									
01R0001002	Nominate IIUMS co-ordinator	7	1	14DEC07A			14DEC07A	15JAN08A										
01R0001004	SO approve IIUMS co-ordinator	14	14	16JAN08A			16JAN08A	29FEB08A	-									
01R0001006	Submit brand name of UGS detection equipment	7	7	28DEC07A			28DEC07A	18FEB08A										
01R0001008	Utilities detection & report to the SO	21	21	29FEB08A			29FEB08A	05APR08A	-									
01R0001010	Liaison with UUs	21	21	04JAN08A			04JAN08A	29FEB08A										
01R0001012	Apply XP for site entrance construction	7	7		08MAR08A		21JAN08A	08MAR08A										
01R0001014	HyD process XP for site entrance construction	20	20	10MAR08A			10MAR08A	28MAY08A										
01R0001016	HyD issue XP for site entrance construction	0	0		28MAY08A			28MAY08A										
01R0001018	Apply XP for GI works at I-1 & I-2	1	1		20MAY08A		22APR08A	20MAY08A										
01R0001020	HyD process XP for GI works at I-1 & I-2	30	30	23APR08A			23APR08A	26SEP08A										
01R0001022	HyD issue XP for GI works at I-1 & I-2	0	0		26SEP08A	100		26SEP08A										
01R0001024	Apply XP for trial grout at Fault F1	1	1		20MAY08A		22APR08A	20MAY08A										
01R0001026	HyD process XP for trial grout at Fault F1	30	30	23APR08A			23APR08A	22JUL08A										
01R0001028	HyD issue XP for trial grout at Fault F1	0	0		22JUL08A	100		22JUL08A										
Pre-constru	ction Condition Survey											VXX						
Preliminaries												VXX						
01R0001102	Appoint a Qualified Structural Engineer	30	30	28DEC07A	19MAR08A	100	28DEC07A	19MAR08A										
01R0001104	Submit nos. & extent of the affected EBS	30	30	28DEC07A	19MAR08A	100	28DEC07A	19MAR08A										
PCS Stage 1 b	etween I-1 & I-2					· · · · ·												
01R0001118	Carry out stg 1 PCS between I-1 & I-2	6	6	22APR08A	23APR08A	100	22APR08A	23APR08A										
01R0001120	Prepare/submit reports for stg 1 PCS bet I-1&I-2	60	60	24APR08A	22SEP08A	100	24APR08A	22SEP08A										
01R0001122	Review/accept reports for stg 1 PCS bet I-1&I-2	60	60	31MAY08A	20JAN09A	100	31MAY08A	20JAN09A										
PCS Stage 1 b	etween I-2 & I-3					· · · · ·												
01R0001130	Carry out stg 1 PCS between I-2 & I-3	5	5	25MAR08A	30APR08A	100	25MAR08A	30APR08A										
01R0001132	Prepare/submit reports for stg 1 PCS bet I-2&I-3	60	60	24APR08A	22SEP08A	100	24APR08A	22SEP08A										
01R0001134	Review/accept reports for stg 1 PCS bet I-2&I-3	60	60	24MAY08A	04FEB09A	100	24MAY08A	04FEB09A										
PCS Stage 1 b	etween I-3 & O-1								-									
01R0001142	Carry out stg 1 PCS between I-3 & O-1	5	5	25MAR08A	26MAR08A	100	25MAR08A	26MAR08A										
01R0001144	Prepare/submit reports for stg 1 PCS bet I-3&O-1	60	60					11SEP08A										
01R0001146	Review/accept reports for stg 1 PCS bet I-3&O-1	60	60	31MAY08A	04FEB09A		31MAY08A	04FEB09A										
	t vicinity of O-1							-										
01R0001106	Carry out stg 1 PCS at vicinity of O-1	5	5	25MAR08A	29MAR08A	100	25MAR08A	29MAR08A				XX						
01R0001108	Prepare/submit reports for stg 1 PCS at O-1	60	60	31MAR08A			31MAR08A	10SEP08A				XX.					+++	
01R0001110	Review/accept reports for stg 1 PCS at O-1	60		27MAY08A			27MAY08A					XX.					+++	
	etween I-1 & I-2		20		2200/1							HA.						++++
01R0001124	Carry out stg 2 PCS between I-1 & I-2	5	5	22APR08A	02JUN084	100	22APR08A	02JUN08A				XX						
01R0001124	Prepare/submit reports for stg 2 PCS bet I-1&I-2	60	60				24APR08A	10JUN08A				XX.					+++	+
01R0001128	Review/accept reports for stg 2 PCS bet I-1&I-2	60		11JUN08A			11JUN08A	09FEB09A				XX					+	+
0110001120		00	00	TICINOUA	DOI LOOK	100		COLEDORA	1			V X X						+

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	20	12		2013			201	1	20'	15
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	63 64 6	5 66 67 6	8 69 70 71	M J J A S	6 77 78 79	5 F M 80 81 82	83 84 85 8	6 87 88 89 9	0 91 92 93	94 95
PCS Stage 2 b	petween I-2 & I-3																		
01R0001136	Carry out stg 2 PCS between I-2 & I-3	5	5	30APR08A	07JUN08A	100	30APR08A	07JUN08A											
01R0001138	Prepare/submit reports for stg 2 PCS bet I-2&I-3	60	60	02MAY08A	12JUN08A	100	02MAY08A	12JUN08A							<u> </u>				
01R0001140	Review/accept reports for stg 2 PCS bet I-2&I-3	60	60	13JUN08A	09FEB09A	100	13JUN08A	09FEB09A											
PCS Stage 2 b	petween I-3 & O-1																		
01R0001148	Carry out stg 2 PCS between I-3 & O-1	5	5	09MAY08A	13JUN08A	100	09MAY08A	13JUN08A							M/				
01R0001150	Prepare/submit reports for stg 2 PCS bet I-3&O-1	60	60	04JUN08A	18JUN08A	100	04JUN08A	18JUN08A							M/				
01R0001152	Review/accept reports for stg 2 PCS bet I-3&O-1	60	60	19JUN08A	09FEB09A	100	19JUN08A	09FEB09A							<u> </u>				
PCS Stage 2 a	t Vicinity of O-1																		
01R0001112	Carry out stg 2 PCS at vicinity of O-1	12	12	01APR08A	06JUN08A	100	01APR08A	06JUN08A							MM				
01R0001114	Prepare/submit reports for stg 2 PCS at O-1	60	60	02JUN08A	16JUN08A	100	02JUN08A	16JUN08A							MM				
01R0001116	Review/accept reports for stg 2 PCS at O-1	60	60	17JUN08A	09FEB09A	100	17JUN08A	09FEB09A							MM				
Pre-const. cor	ndition structural survey; I-1														NN)				
01R0001154	Prepare/submit reports for EBS at I-1	28	28	28AUG08A	10JAN09A	100	28AUG08A	10JAN09A							NN)				
01R0001156	Review/accept reports for EBS at I-1	28	28	12JAN09A	24MAR09A	100	12JAN09A	24MAR09A											
Pre-const. cor	ndition structural survey; I-2																		
01R0001158	Prepare/submit reports for EBS at I-2	28	28	28AUG08A	10JAN09A	100	28AUG08A	10JAN09A							NN)				
01R0001160	Review/accept reports for EBS at I-2	28	28	12JAN09A	24MAR09A	100	12JAN09A	24MAR09A											
Pre-const. cor	dition structural survey; I-3																		
01R0001162	Prepare/submit reports for EBS at I-3	28	28	28AUG08A	10JAN09A	100	28AUG08A	10JAN09A							XXI				
01R0001164	Review/accept reports for EBS at I-3	28	28	12JAN09A	24MAR09A	100	12JAN09A	24MAR09A							M/				
Pre-const. cor	dition structural survey; O-1																		
01R0001166	Prepare/submit reports for EBS at O-1	28	28	28AUG08A	10JAN09A	100	28AUG08A	10JAN09A							XX				
01R0001168	Review/accept reports for EBS at O-1	28	28	12JAN09A	24MAR09A	100	12JAN09A	24MAR09A											
Pre-const. cor	ndition structural survey; Tunnel	1																	
01R0001170	Prepare/submit reports for EBS along Tunnel alig	346	346	28AUG08A	22SEP09A	100	28AUG08A	22SEP09A											
01R0001172	Review/accept reports for EBS along Tunnel align	207	207	16JAN09A	22APR10A	100	16JAN09A	22APR10A											
Traffic		1																	
01R0001202	Appoint Traffic Consultant/Traffic Engineer	14	14	14DEC07A	03JAN08A	100	14DEC07A	03JAN08A											
01R0001204	Eng's Approval of Traffic Consultant	7	7	28DEC07A	28FEB08A		28DEC07A	28FEB08A							HH)			++++	
01R0001206	Prepare/submit TTA Schemes (ingress & egress)	14	14		31JAN08A		04JAN08A	31JAN08A							HH)			++++	
01R0001216	Obtain endorsement of TTA schemes from TMLG	21	21		01APR08A		01FEB08A	01APR08A							HH)			++++	
01R0001234	Approval of TTA schemes by the Authorities	14		02APR08A	19APR08A		02APR08A	19APR08A										++++	
01R0001236	Approval of TTA schemes by the Authorities	14		02APR08A				19APR08A							HH)			++++	
				02/11/100/1	10/ 11 1100/ 1	100	02/11/100/1	10/ 11 100/ 1										+++++	
wanagemen	t of Sub-contractors as per SCC 44														XXI.				
010001303	Submit a Sub contractor Management Disa	20	20	14050074	12 14 100 4	100	14050074	12 14 100 4							XXI.				
01R0001302	Submit a Sub-contractor Management Plan	30		14DEC07A				12JAN08A									11 (12) (6)	+++	
01R0001304	Submit Quarterly the Updated SMP	1,762	1,762	03JUL08A	14MAR14	ზპ	03JUL08A	29APR13	0								44 (13) (b)	+++	
Trees															XXI				
	s a New Tree Transplanting Area	_							_						XXI				
VO028-02	Receive VO28 for new tree transplanting area	0	0		16AUG08A	100		16AUG08A							XXI				

ID	Artivity	14/040		WD40	14/040	0/		WD00	Tetel	201	12	2013		2014		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	A S C) N D	J F M A M J J A S 6869707172737475767	DNDJFMA	MJJAS	OND	JFMA
VO028-04	Preparation works for new T.T. area	20	20	18AUG08A	07SEP08A	•		07SEP08A		55 04 0.					00 00 01 0	2 00 04 00
01R0001502	Appoint Landscape Specialist Contractor	14	14	14DEC07A	14JAN08A	100	14DEC07A	14JAN08A								
01R0001504	SO's Approval of Landscape Contractor	7	7	15JAN08A	28FEB08A	100	15JAN08A	28FEB08A								
01R0001506	Nominate competent person to oversee tree works	45	45	14DEC07A	29JAN08A	100	14DEC07A	29JAN08A								
01R0001510	Obtain Tree Removal Permit by Others	90	90	28DEC07A	06MAR08A	100	28DEC07A	06MAR08A								
01R0001512	Remove / Transplant Trees start	0	0	08SEP08A		100	08SEP08A									
Survey																
01R0001602	Appoint Surveyors	14	14	28DEC07A	10JAN08A	100	28DEC07A	10JAN08A								
01R0001604	SO's Approval of Surveyor	7	7	11JAN08A	16APR08A		11JAN08A	16APR08A								
01R0001608	Initial Survey	28	28	18JAN08A	10MAR08A		18JAN08A	10MAR08A								
01R0001610	Maintain & carry out survey works	1,893		23FEB08A	14MAR14		23FEB08A	29APR13	0							
		1,000	.,	201 2200/1		0.1		20/ 11 11 10								
Smart Caru	System as per ER B.30															
010001802	Submit Smort Cord Sup for SOlo Approval	7	7	20050074	15 10 1000	100	20050074	15 10 1000								
01R0001802	Submit Smart Card Sys for SO's Approval	7		28DEC07A			28DEC07A	15JAN08A								
01R0001804	Install & start Operating Smart-Card System	60	60	28DEC07A			28DEC07A	23FEB08A								
01R0001806	Operate & Maintain Smart-Card System	2,256	2,250	25FEB08A	06NOV14	70	25FEB08A	29APR14	0							
Procuremen	t of Sub-contractor															
					1											
01R0001904	Spoil Disposal	60		28AUG08A			28AUG08A	27MAR09A								
01R0001906	Earthwork for Outfall O-1	60	60	14DEC07A			14DEC07A	05JUN08A								
01R0001910	Re-bar Supply	90	90				14DEC07A	30MAY08A								
01R0001912	Soil Nailing	60		28DEC07A	02APR08A		28DEC07A	02APR08A								
01R0001914	H-piling Works	90	90	14DEC07A	09MAY08A		14DEC07A	09MAY08A								
01R0001916	Fabrication of Pre-cast Lining	80	80	02JUN08A	05JAN09A		02JUN08A	05JAN09A								
01R0001920	Drainage/Road Works for Access Road at I-3	60		08AUG08A	03NOV08A		08AUG08A	03NOV08A								
01R0001922	Temp. steel decking over Shing Mun Nullah at I-1	90	90	14DEC07A	25APR08A		14DEC07A	25APR08A								
01R0001924	Design/Install Communication System	414	414	28JUN08A	31JUL09A		28JUN08A	31JUL09A								
01R0001936	Procurement & delivery of Communication System	120	120	09JUL12A	05NOV12		06MAY12A	25AUG12	-377							
01R0018A02	Supply TBM/Main Tunnel Construction	7	7	14DEC07A			14DEC07A	21DEC07A								
01R0018A04	Security	17		17DEC07A			17DEC07A	02JAN08A								
01R0018A06	Progress Photo/Vedio	25	25	29DEC07A			29DEC07A	22JAN08A								
01R0018A08	Webpage/Physical Model/3D Animation	48		14DEC07A			14DEC07A	14FEB08A								
01R0018A10	Hoarding/Fencing Erection	60		04JAN08A				03MAR08A								
01R0018A12	Erection of Contractor's Office	67		28DEC07A			28DEC07A	03MAR08A								+
01R0018A14	Remote Control CCTV	60		04JAN08A			04JAN08A	03MAR08A								+
01R0018A16	Concrete Supply	45		14DEC07A			14DEC07A	11MAR08A								+++
01R0018A18	Geotechnical Instrumentation	60		15JAN08A			15JAN08A	14MAR08A								+
01R0018A20	Drilling/Grouting for Geotchnical Instrumentat.	60		16JAN08A			16JAN08A	15MAR08A		+						
01R0018A22	Site Clearance	60		26JAN08A			26JAN08A	25MAR08A								+
01R0018A24	Erection of SOR's Office	95	95	02JAN08A	USAPRUSA	100	02JAN08A	05APR08A								

ID		MD40			MD40	0/	ME	MIDOO	Tetal	2	012		20	13			2014		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	TAISI	O N D	J F	MAMI	JASO	D N D J F 7 78 79 80 81	MAM		SON[
01R0018A26	Carry out Grout Trial at Fault F1	90	90	02APR08A	30JUN08A	100	02APR08A	30JUN08A				XX							
01R0018A28	Design/Fabricate Segmental Lining Mould	90	90	23APR08A	21JUL08A	100	23APR08A	21JUL08A				XX							
01R0018A30	Construction of Skin Walls	90	90	21JUL08A	03JAN09A	100	21JUL08A	03JAN09A											
01R0018A32	Design/Fabricate/Supply/Install Conveyor Belt	90	90	14JUL08A	05JAN09A	100	14JUL08A	05JAN09A											
01R0018A34	Supply of Locomotive	90	90	14JUL08A	10OCT08A	100	14JUL08A	100CT08A											
01R0018A36	Excavation Works at I-1	60	60	28AUG08A	21JAN09A	100	28AUG08A	21JAN09A				XX							
01R0018A38	Construction of Steel Platform at O-1	50	50	28AUG08A	14MAR09A	100	28AUG08A	14MAR09A				XII							
01R0018A40	Construction of Steel Platform at I-2	50	50	28AUG08A	27DEC08A	100	28AUG08A	27DEC08A				XX							
01R0018A42	Pre-excavation Grouting for Shaft Excavation	60	60	28AUG08A	11MAR09A	100	28AUG08A	11MAR09A											
01R0018A46	Excavation/Construction of TBM Launching Chamber	70	70	28AUG08A	18DEC08A	100	28AUG08A	18DEC08A				XX							
01R0018A48	Construction of Subgrade Structure at I-1	364	364	28AUG08A	26DEC09A	100	28AUG08A	26DEC09A				XX							
01R0018A50	Shaft Excavation by RCD at I-2	90	90	28AUG08A	26NOV08A	100	28AUG08A	26NOV08A				XX							
01R0018A52	Excavation/Construction of Shafts/Adits/Chambers	90	90	28AUG08A	26MAR09A	100	28AUG08A	26MAR09A				XX							
01R0018A54	Construction of Hopper at O-1	90	90	28AUG08A	31JAN09A	100	28AUG08A	31JAN09A				XX							
01R0018A56	Suttering of Spiral Ramp	364	364	28AUG08A	23JAN10A	100	28AUG08A	23JAN10A				XX							
01R0018A58	Open Cut Excavation & Construction at I-3	90	90	28AUG08A	02MAY09A	100	28AUG08A	02MAY09A				XX							
01R0018A60	Lining Formworks for Underground Structures	1,016	1,016	28AUG08A	270CT11A		28AUG08A					XX							
01R0018A61	Tunnel Data Management System (TDMS)	90	90	28AUG08A	03APR09A	100	28AUG08A	03APR09A				XX							
01R0018A62	Supply of Rail Track	90	90	28AUG08A	26MAR09A	100	28AUG08A	26MAR09A				XX							
01R0018A64	Supply of Aggregate	169	169			100		02NOV09A				XX							
01R0018A68	Construct Box Culvert/Cascade/Spiral Ramp at O-1	200	200	28FEB09A	27JUL10A	100	28FEB09A	27JUL10A				XX							
01R0018A70	Stainless steel Works	200	200	28FEB09A	14MAR11A	100	28FEB09A	14MAR11A				XX							
01R0018A72	Pipe Jacking Works at Lo Wai	250	250	28FEB09A	20NOV09A	100	28FEB09A	20NOV09A				XX							
01R0018A74	Finishing Works	980	980	28FEB09A	27JAN12A	100	28FEB09A	27JAN12A				XX							
Others																			
Off-site Fabric	ation of Trash Grill for Intakes																		
01R1BI2T02	Procure sub- contract	0	0		14MAR11A	100		14MAR11A											
01R1Bl2T12	Prepare shop drawing	157	157	15MAR11A	04AUG12A	100	15MAR11A	05MAR12				XII							
01R1Bl2T22	Procure stainless steel material	48	48	01AUG11A	11AUG12A	100	01AUG11A	14MAR12				XX							
01R1Bl2T32	Fabrication	60	60		130CT12	33	15MAR12	30MAY12	-357			XX							
01R1Bl2T42	Delivery	12	12	150CT12	290CT12	0	31MAY12	13JUN12	-357										
Fabrication of	Pre-cast Staircase at MAS/MAA																		
01RSC05	Prepare & material procurement	60	60	28FEB12A	09MAY12A	100	28FEB12	14MAY12											
01RSC15	Fabrication	60	60	17MAR12A	09OCT12	40	15MAY12	25JUL12	-281			XX							
Off-site Fabric	atio of Steel Gate for Outfall											XX							
01RSG02	Recieve VO#137 for Penstock	0	0		10SEP11A	100		10SEP11A				XX							
01RSG05	Obtain approval for shop drawing/technical subm	122	122			100	12SEP11A	11FEB12A				XII							
01RSG15	Fabrication & approval of inspection report	136	136	13FEB12A	27JUL12A	100	13FEB12A	28JUL12				XII							
01RSG25	Packup & Delivery	42	42	28JUL12A	12SEP12	67	30JUL12	15SEP12	742	 		XII							
Fabrication of	Steel Handrailing for MAS											XX							
01RSH05	Prepare shop drawing & material procurement	60	60	28JAN12A	21MAR12A	100		21MAR12				XX							
01RSH15	Fabrication	96	96	22MAR12A	02OCT12	69	22MAR12	20JUL12				XII			XXXI.				
01RSH25	Delivery	12	12	25SEP12	09OCT12	0	21JUL12	03AUG12	-311			XX							

ID	A set i star	WP10	WP09	14/04.0	14/040	0/	14/000	MD00	Tat	_1	2012		2013	3	2014		2015
ID	Activity Description	Dur	Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Tot Floa		S 0 1	ND	J F M A M J .	I A S C	N D J F M A M J J 7 78 79 80 81 82 83 84 85 86	A S O N D	J F M A
									1		0000			4 / 5 / 6 / 1		01 00 09 90 91	92 93 94 93
01R0001928	Submit Contractor's Management Team	0	0		10JAN08A	100		10JAN08A				XX					
01R0001930	Submit Photographer for Monthly Progress Photo	0	0	28JAN08A		100	28JAN08A					MX					1
01R0001932	Install Project Signboards at Potions A,B,C & D	30	30	28FEB09A	29MAY09A		28FEB09A	29MAY09A				XX					
01R0001934	Presentation of TDMS to SOR/ Employer; ER 4.4.6	6	6	27MAR09A	06MAY09A	100	27MAR09A	06MAY09A									
01R0001940	Prepare/submit Operation & Maintenance Manual	90	90	28FEB12A	08SEP12	87	28FEB12	27MAY12	-50	0	as pé	er ER	4.4.11				
01R0001942	Prepare/submit As-built Drawings	90	90	29DEC13	28MAR14	0	30APR13	28JUL13	35	51					as per ER	4.4.12	
01R0001944	Produce 2 documentary video for tunnel	30	30	29MAR14	27APR14	0	30APR13	29MAY13	32	21		IX			ER 4.4.	13	
Constructio	n Risk Assessment (CRA) as per ER 7											IX					
	ks at Portion A (I-1)											XX					
01R00PCRA2	Prepare/submit PCRA for works at I-1	21	21	07APR08A	20AUG08A	100	07APR08A	20AUG08A				X					
01R00PCRA4	DC review & certify PCRA for works at I-1	60		22MAY08A			22MAY08A	130CT08A				MX					
01R00PCRA6	SOR review & accept PCRA at works at I-1	60	60	12MAY08A	25SEP08A	100	12MAY08A	25SEP08A				M					
PCRA for Wor	ks at Portion B (I-2)																
01R00PCRB2	Prepare/submit PCRA for works at I-2	21	21	14APR08A	20AUG08A	100	14APR08A	20AUG08A									
01R00PCRB4	DC review & certify PCRA for works at I-2	60	60	22MAY08A	130CT08A	100	22MAY08A	130CT08A									
01R00PCRB6	SOR review & accept PCRA at works at I-2	60	60	22MAY08A	25SEP08A	100	22MAY08A	25SEP08A									
PCRA for Wor	ks at Portion C (I-3)																
01R00PCRC2	Prepare/submit PCRA for works at I-3	21	21	01APR08A	20AUG08A	100	01APR08A	20AUG08A				XX					
01R00PCRC4	DC review & certify PCRA for works at I-3	60	60	21MAY08A	130CT08A	100	21MAY08A	130CT08A				X					
01R00PCRC6	SOR review & accept PCRA at works at I-3	60	60	21MAY08A	25SEP08A	100	21MAY08A	25SEP08A				XX					
PCRA for Wor	ks at Portion D/E (O-1)											XX					
01R00PCRD2	Prepare/submit PCRA for works at O-1	21	21	01APR08A	20AUG08A	100	01APR08A	20AUG08A				XX					
01R00PCRD4	DC review & certify PCRA for works at O-1	60	60	21MAY08A	130CT08A	100	21MAY08A	13OCT08A									
01R00PCRD6	SOR review & accept PCRA at works at O-1	60	60	12MAY08A	25SEP08A	100	12MAY08A	25SEP08A				<u>IX</u>					
PCRA for Wor	ks at Portion F/J (Main Tunnel)																
01R00PCRF2	Prepare/submit PCRA for main tunnel works	21	21	09JUN08A	23APR09A	100	09JUN08A	23APR09A				<u>IX</u>					
01R00PCRF4	DC review & certify PCRA for main tunnel works	60	60	14JUL08A	08JUN09A		14JUL08A	08JUN09A				X					
01R00PCRF6	SOR review & accept PCRA for main tunnel works	60	60	16JUL08A	24JUL09A	100	16JUL08A	24JUL09A				<u>IÀ</u>					
	ks at Portion A (I-1)								_			XX					
01R00DCRA2	Prepare/submit DCRA for works at I-1	14					02OCT08A					X					
01R00DCRA4	DC review & certify DCRA for works at I-1	21						17FEB09A				XX					
01R00DCRA6	SOR review & accept DCRA at works at I-1	49	49	05NOV08A	26MAR09A	100	05NOV08A	26MAR09A				<u> </u>					
	ks at Portion B (I-2)																
01R00DCRB2	Prepare/submit DCRA for works at I-2	14		140CT08A	-		14OCT08A					XX					
01R00DCRB4	DC review & certify DCRA for works at I-2	21		05DEC08A			05DEC08A		_			IX.					
01R00DCRB6	SOR review & accept DCRA at works at I-2	49	49	10DEC08A	28AUG09A	100	10DEC08A	28AUG09A				///					
	ks at Portion C (I-3)	_							_			XX.					
01R00DCRC2	Prepare/submit DCRA for works at I-3	14		140CT08A		-	14OCT08A		-			XX					
01R00DCRC4	DC review & certify DCRA for works at I-3	21		310CT08A								XX					- -
01R00DCRC6	SOR review & accept DCRA at works at I-3	49	49	07NOV08A	24JUN09A	100	07NOV08A	24JUN09A				XX					

	A	14/240				0/	MIDAA	14/2000	Tatal	2012			2013			20)14		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	A S O	N D J	FM/	M J J A 1 1 72 73 74 75 7	SON	DJFN		I A S O	ND	IEMA
DCRA for Wo	rks at Portion D/E (O-1)					•							1121014101						2000400
01R00DCRD2	Prepare/submit DCRA for works at O-1	14	14	03NOV08A	03JUN09A	100	03NOV08A	03JUN09A			XXX				XXX				
01R00DCRD4	DC review & certify DCRA for works at O-1	21	21	15NOV08A			15NOV08A	10JUN09A			M	MA							
01R00DCRD6	SOR review & accept DCRA at works at O-1	285	285	15NOV08A	10NOV09A	100	15NOV08A	10NOV09A			M	MA			XXX				
DCRA for Wo	rks at Portion F/J (Main Tunnel)														XXXX				
01R00DCRF2	Prepare/submit DCRA for main tunnel works	142	142	14MAR09A	11AUG09A	100	14MAR09A	11AUG09A							XXX				
01R00DCRF4	DC review & certify DCRA for main tunnel works	21		11AUG09A		100	11AUG09A	13AUG09A											
01R00DCRF6	SOR review & accept DCRA for main tunnel works	49	49	12AUG09A	22APR10A	100	12AUG09A	22APR10A							XXX				
Physical Mo	odels & Other Material Display														XXX				
															XXX				
01R0002302	Prepare/submit a physical models	255	255	15FEB08A	27NOV08A	100	15FEB08A	27NOV08A			XX				XIII				
01R0002304	Prepare/submit a 3-D animation model	308		15FEB08A				27FEB09A			HA								
		000	000		ZITEBOOK	100		Enebook			HH								
internet we	bsite as per ER 4.4.7										XX				XIII				
0150000100	Descent the destruction of the second			00050074	005550004	100	00050074	005550004			XX								
01R0002402	Propose the design of web page	30	30				28DEC07A	09FEB08A			HÀ	HA			XXX				
01R0002404	Produce the web page for approval of SO	211	211	10MAR08A			10MAR08A	19FEB09A			XX	HA			XAA				
01R0002406	SO's approval of web page	30	30	02JUN08A			02JUN08A	24FEB09A			XX	<u>AA</u>			XXX.				
01R0002408	Submit updated web pages monthly	1,890	1,890	25FEB09A	06NOV14	65	25FEB09A	29APR14	0		AA							Juntil t	the expir
Schedule of	f Milestones for Cost Centre No. 1R										IN								
											XX				XXX				
01R0002501	1R 1; On provision of SO's Accommodation	0	0		13SEP08A	100		13SEP08A			IX				XXX				
01R0002502	1R 2; On providing documents of effected CWI	0	0		03JAN08A	100		03JAN08A			XX	M			XXX				
01R0002503	1R 3; On providing documents of effected TPI	0	0		03JAN08A	100		03JAN08A			XX	M			XXX				
01R0002504	1R 4; On Pproviding documents of effected PII	0	0		03JAN08A	100		03JAN08A			XX	MA			XXX				
01R0002505	1R 5; On delivery of all Land Transport for SO	0	0		02MAY08A	100		02MAY08A				MA			XXX				
01R0002506	1R 6; On install. of computer facilities for SO	0	0		13SEP08A	100		13SEP08A			XX	MA			XXX				
01R0002507	1R 7; On accept. of detailed CRA incl. PCS	0	0		22APR10A	100		22APR10A			<u> </u>	1A			XXX				
01R0002508	1R 8; On acceptance of Physical Model by the SO	0	0		27NOV08A	100		27NOV08A			<u> </u>	1A			XXX				
01R0002509	1R 9; On acceptance of 3-D Animation Model	0	0		27FEB09A	100		27FEB09A			<u> </u>	1A			XXX				
01R0002510	1R 10; On satisf. operation of CCTV for 3 mth	0	0		17JUN09A	100		17JUN09A							XXX				
01R0002511	1R 11; On acceptance of O&MM	0	0		08SEP12	0		27MAY12	917			////	d as per ER	×//	/ X / / / X /				
01R0002512	1R 12; On acceptance of as-built drwgs.	0	0		28MAR14	0		28JUL13	351	t	wilt dry	vgs. c	ompleted as	• (/)	X X X	2			
01R0002513	1R 13; On acceptance of T.R/Video/Brouchure	0	0		27APR14	0		29MAY13	321			1A	•		ER 4.4.	13 - tuni	nel report	& vede	eo & bro
01R0002514	1R 14; On complete all wks for 3 mth frm DOC	0	0		27MAR08A	100		27MAR08A			<u> </u>				XXX				
01R0002515	1R 15; On complete all wks for 6 mth frm DOC	0	0		27JUN08A	100		27JUN08A			<u> </u>	1A			XXX				
01R0002516	1R 16; On complete all wks for 9 mth frm DOC	0	0		25SEP08A	100		25SEP08A				$ \lambda $			XXX				
01R0002517	1R 17; On complete all wks for 12 mth frm DOC	0	0		27DEC08A	100		27DEC08A			X	\mathbb{A}			XXX				
01R0002518	1R 18; On complete all wks for 15 mth frm DOC	0	0		27MAR09A	100		27MAR09A			X	///			XXX				
01R0002519	1R 19; On complete all wks for 18 mth frm DOC	0	0		26JUN09A	100		26JUN09A			X	///			XXX				
01R0002520	1R 20; On complete all wks for 21 mth frm DOC	0	0		27SEP09A	100		27SEP09A			'IXA				XXX				
01R0002521	1R 21; On complete all wks for 24 mth frm DOC	0	0		26DEC09A	100		26DEC09A				1A			X///				
01R0002522	1R 22; On complete all wks for 27 mth frm DOC	0	0		27MAR10A	100		27MAR10A			<u> </u>				XXXX				

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	20	12	2013		20	14	20	015
	Description	Dur	Dur	Start	Finish	Comp	Start		Total Float	A S C	0 N D	J F M A M J J A S 68 69 70 71 72 73 74 75 76 7	ONDJFN	1 A M J	J A S O	N D J F	M A
01R0002523	1R 23; On complete all wks for 30 mth frm DOC	0	0		26JUN10A	100		26JUN10A								00 01 02 00	04 00
01R0002524	1R 24; On complete all wks for 33 mth frm DOC	0	0		25SEP10A	100		25SEP10A									
01R0002525	1R 25; On complete all wks for 36 mth frm DOC	0	0		27DEC10A	100		27DEC10A									
01R0002526	1R 26; On complete all wks for 39 mth frm DOC	0	0		27MAR11A	100		27MAR11A									
01R0002527	1R 27; On complete all wks for 42 mth frm DOC	0	0		26JUN11A	100		26JUN11A									
01R0002528	1R 28; On complete all wks for 45 mth frm DOC	0	0		25SEP11A	100		25SEP11A									
01R0002529	1R 29; On issuance of completion certificates	0	0		28MAR14	0		27FEB12	351			of completion exce	pt Section 7	•			
01R0002530	1R 30; On complete all wks for 3 mth frm CMP	0	0		13JUN14	0		29JUL13	274		of ai	obligations 3 mths frm	DOM excl. S	ec. 7🔶			
01R0002531	1R 31; On complete all wks for 6 mth frm CMP	0	0		12SEP14	0		280CT13	183			of all obligations 6 m	iths frm DON	excl. S	ec. 7🔶		
01R0002532	1R 32; On complete all wks for 9 mth frm CMP	0	0		12DEC14	0		27JAN14	92			of all obligati	ons 9 mths fr	m DOM	excl. Sec	. 7🔶	
01R0002533	1R 33; On issuance of maintenance certificate	0	0		14MAR15	0		29MAY14	0					•		certificate	•
Schedule of	Milestones for Cost Centre No. 16R																
16R7003001	16R 1; On completion of landscape wks; Portion A	0	0		17JAN13	0		10NOV12	786								
16R7003002	16R 2; On completion of landscape wks; Portion B	0	0		21MAY13	0		22MAR13	662								
16R7003003	16R 3; On completion of landscape wks; Portion C	0	0		040CT12	0		14AUG12	891	•							
16R7003004	16R 4; On completion of landscape wks; Portion D	0	0		21MAR13	0		11DEC12	723	Ť							
16R7003005	16R 5; On completion of establish wks; Portion A	0	0		17JAN14	0		10NOV13	421				•				
16R7003006	16R 6; On completion of establish wks; Portion B	0	0		21MAY14	0		22MAR14	297					•			
16R7003007	16R 7; On completion of establish wks; Portion C	0	0		19APR14	0		08MAR14	329								
16R7003008	16R 8; On completion of establish wks; Portion D	0	0		06NOV14	0		29APR14	128					•		\diamond	
	Milestones for Cost Centre No. 17R	Ű	0		00110111	U		20/ 11/11	120							·	
Schedule Of	Wilestones for Cost Centre No. 17K																
17R0003101	17D 1: On complet of all using for 2 mth from DOC				27MAR08A	100		27MAR08A	1								
	17R 1; On complet of all wks for 3 mth frm DOC	0	0			100											
17R0003102	17R 2; On complet of all wks for 6 mth frm DOC	0	-		27JUN08A	100		27JUN08A									
17R0003103	17R 3; On complet of all wks for 9 mth frm DOC	0	0		26SEP08A	100		26SEP08A									
17R0003104	17R 4; On complet of all wks for 12 mth frm DOC	0	0		27DEC08A	100		27DEC08A									
17R0003105	17R 5; On complet of all wks for 15 mth frm DOC	0	0		27MAR09A	100		27MAR09A									
17R0003106	17R 6; On complet of all wks for 18 mth frm DOC	0	-		15JUL09A	100		15JUL09A									
17R0003107 17R0003108	17R 7; On complet of all wks for 21 mth frm DOC	0	0		27SEP09A	100 100		27SEP09A 26DEC09A									
17R0003108	17R 8; On complet of all wks for 24 mth frm DOC	0	0		26DEC09A 13MAY10A												
17R0003109	17R 9; On complet of all wks for 27 mth frm DOC	0	0			100		13MAY10A									
17R0003110	17R 10; On complet all wks for 30 mth frm DOC	0	0		12AUG10A	100		12AUG10A									
17R0003111 17R0003112	17R 11; On complet all wks for 33 mth frm DOC	-	-		02OCT10A	100		02OCT10A 27DEC10A									
	17R 12; On complet all wks for 36 mth frm DOC	0	0		27DEC10A	100											
17R0003113	17R 13; On complet all wks for 39 mth frm DOC	0	0		02APR11A	100		02APR11A									
17R0003114	17R 14; On complet all wks for 42 mth frm DOC	0	0		02JUL11A	100		02JUL11A	-								
17R0003115	17R 15; On complet all wks for 45 mth frm DOC	0	0		30SEP11A	100		30SEP11A									
17R0003116	17R 16; On complet all wks for 48 mth frm DOC	0	0		28FEB12A	100		27FEB12							-f -ll - f		
17R0003117	17R 17; On complet of all wks for 3 mth frm CMP	0	0		13JUN14	0		29JUL13	274				///////////////////////////////////	<u> </u>		ety & env.	-
17R0003118	17R 18; On complet of all wks for 6 mth frm CMP	0	0		12SEP14	0		280CT13	183					//-		all safety	& en
17R0003119	17R 19; On complet of all wks for 9 mth frm CMP	0	0		13DEC14	0		28JAN14	91	ot all	safety	& env. obligations 9 m	itas trin DON	rexcludir	-		
17R0003120	17R 20; On issuance of maintenance certificate	0	0		14MAR15	0		29MAY14	0				XXXXXX			certificate	

ID	Activity	WP10	WP09	WP10	WP10	% WP09	WP09	Total		2012		2013			2014			2015
	Description	Dur	Dur	Start	Finish	Comp Start	Finish		A S	O N [J F M	A M J J A S O N 71 72 73 74 75 76 77 78 7	DJF	M A M	M J J	A S	OND	J F M A
Design/Des	sign Check for Permanent Works																	
Project -wid													XX					
													XX					
Project Desig	Employ Independent Designer	7	-	14DEC07A	20DEC07A	100 14DEC07A	20050074						XX					
			28		20DEC07A 26FEB08A	100 14DEC07A	20DEC07A 26FEB08A						XH	H				
02L10D0104	Prepare & submit Project Design Plan (PDP)	28											XH	H				
02L10D0106	SO's review & comment on PDP	28	28		18MAR08A		18MAR08A						XH					
	Provide further information of (PDP)	28	28		21AUG08A	100 19MAR08A							XH					
02L10D0110	SO approves PDP	14	14	14MAY08A 28DEC07A	04SEP08A 01FEB08A		-						XH					
02L10D0112	Employ Independent Design Checker	14	14			100 28DEC07A							XH					
02L10D0114	Approval of Design Checker by the SO	28	28	02FEB08A	28FEB08A	100 02FEB08A	28FEBU8A				XAA		XH	\longrightarrow				
	mmunication System			45101444				-					XX					
02L1FE0002	Receive VO# 180 for Digital Comm. Sys	0		15NOV11A		100 15NOV11A	0740040						XH					
02L1FE0012	AIP (Digital); Submit/approve from ICE & SOR	121		310CT11A	11JUN12A	100 310CT11A							XH					
02L1FE0102	Design preparation for the AIP submission	15	15	23NOV09A	10DEC09A	100 23NOV09A	10DEC09A				X		XH					
02L1FE0103	Design (AIP) submission for the DC's approval	1	1	11DEC09A	11DEC09A	100 11DEC09A	11DEC09A				XIII.		XH					
02L1FE0104	Design (AIP) certification by the Design Checker	28	28		26JAN10A	100 12DEC09A	26JAN10A				XIII.		XH					
02L1FE0106	Design (AIP) submission for the SO's approval	1	1	27JAN10A	27JAN10A		27JAN10A				XXXX		XH					
02L1FE0108	Design (AIP) review by the SO	60	60		24JUN10A	100 28JAN10A	24JUN10A				XXXX		XX					
02L1FE0110	AIP submission for rel. authorities' approval	1	1	05APR12A	17APR12A	100 30APR12	30APR12				XXX		XH					
02L1FE0112	Design (AIP) review by the rel. authorities	28	28	06APR12A	11JUN12A	100 01MAY12	28MAY12				XXX		XII					
02L1FE0114	Obtain rel. authorities's approval for AIP	0	1		11JUN12A	100 29MAY12	29MAY12				XXXX		XH					
02L1FE0116	Obtain SO's consent for design (AIP)	0	0		11JUN12A	100	24JUN10A						XX					
02L1FE0118	Design preparation for the DDA submission	30	30	28AUG12	26SEP12	0 28APR12	27MAY12	-406					XH					
02L1FE0119	Design (DDA) submission for the DC's approval	1	1	27SEP12	27SEP12	0 28MAY12	28MAY12	-331					XX					
02L1FE0120	Design (DDA) certification by the Design Checker	28	28	28SEP12	250CT12	0 29MAY12	25JUN12	-406					XX					
02L1FE0122	Design (DDA) submission for the SO's approval	1	1	27SEP12	27SEP12	0 28MAY12	28MAY12	-325					XX					
02L1FE0124	Design (DDA) review by the SO	60	60	05OCT12	03DEC12	0 05JUN12	03AUG12	-406					XX					
02L1FE0126	DDA submission for rel. authorities' approval	1	1	27SEP12	27SEP12	0 28MAY12	28MAY12	-299					XX					
02L1FE0128	Design (DDA) review by the rel. authorities	28	28	05OCT12	01NOV12	0 05JUN12	02JUL12	-374					XX					
02L1FE0130	Obtain rel. authorities's approval for DDA	1	1	02NOV12	02NOV12	0 03JUL12	03JUL12	-305					XX					
02L1FE0132	Obtain SO's consent for design (DDA)	0	0		04DEC12	0	04AUG12	-406	•				XH					
Design Pac	kages for Works in Portion A												XX					
	ecking Design Over Shing Mun Nullah												XX					
02L1AA0102	Design preparation by the Designer	14	14	22FEB08A	15MAY08A	100 22FEB08A	15MAY08A						XX					
02L1AA0104	Design certification by the Design Checker	14	14	16MAY08A	26MAY08A	100 16MAY08A	26MAY08A						XH					
02L1AA0106	Design submission for the SO's approval	1	1	26MAY08A							XXX/		XX			+++		
02L1AA0108	Design review by the SO	21	21	27MAY08A		100 27MAY08A							XX			++		
02L1AA0110	Obtain design approval from the SO	0	0		30JUN08A	100	30JUN08A						XX			++		
	or Spiral Ramp/Cascade/Box Culvert	Ĭ			1.200.000	····	1						XX			+++		
02L1AA0202	Design preparation for the DDA submission	158	158	02MAY08A	16FEB09A	100 02MAY08A	16FEB09A				XXX		XX					
02L1AA0203	Design submission for the DC's approval	2	2		17FEB09A	100 10JUL08A	17FEB09A						XH	*#		+++		
02L1AA0203	Design (DDA) certification by the Design Checker	30		11JUL08A	17FEB09A	100 1000L00A	17FEB09A						XH	*#		+++		
	Beerger (BBry Continuation By the Design Checker	00	50	TICCLOOA							XIXIXI		NNI					

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012		2013 2014	2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	ASON 3646566	D J F 67 68 69	A A M J J A S O N D J F M A M J J . 0 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 8	A S O N D J F M A 7 88 89 90 91 92 93 94 95
02L1AA0206	Design (DDA) submission for the SO's approval	2	2	12AUG08A	17FEB09A	100	12AUG08A	17FEB09A					
02L1AA0208	Design (DDA) review by the SO	68	68	13AUG08A	14MAR09A	100	13AUG08A	14MAR09A					
02L1AA0216	SO submit design (DDA) for review of GEO	1	1	03FEB09A	03MAR09A	100	03FEB09A	03MAR09A					
02L1AA0218	Design (DDA) review by the GEO	28	28	04MAR09A	280CT09A	100	04MAR09A	280CT09A					
02L1AA0238	Obtain SO's consent for design (DDA)	0	0		24MAR09A	100		24MAR09A					
Temp. Platfor	n Design for H-Piling		·										
02L1AA0302	Design preparation by the Designer	15	15	01FEB11A	19FEB11A	100	01FEB11A	19FEB11A					
02L1AA0303	Design submission for the DC's approval	1	1	21FEB11A	21FEB11A	100	21FEB11A	21FEB11A					
02L1AA0304	Design certification by the Design Checker	28	28	21FEB11A	24MAR11A	100	21FEB11A	24MAR11A					
02L1AA0306	Design submission for the SO's approval	1	1	21FEB11A	25MAR11A	100	21FEB11A	25MAR11A					
02L1AA0308	Design review by the SO	42	42	21FEB11A	01APR11A	100	21FEB11A	01APR11A					
02L1AA0310	Obtain design approval from the SO	0	0		06APR11A	100		06APR11A					
Cascade & Bo	x Culver Design for Portion A		· · · · ·			· · · · ·							
02L1AA0402	Design preparation for the AIP submission	30	30	02JUN08A	28FEB09A	100	02JUN08A	28FEB09A			XXX.		
02L1AA0403	Design (AIP) submission for the DC's approval	3	3	12JUL08A	02MAR09A	100	12JUL08A	02MAR09A					
02L1AA0404	Design (AIP) certification by the Design Checker	243	243	14JUL08A	18MAR09A	100	14JUL08A	18MAR09A					
02L1AA0406	Design (AIP) submission for the SO's approval	2	2	15JUL08A	19MAR09A	100	15JUL08A	19MAR09A			Ň		
02L1AA0408	Design (AIP) review by the SO	66	66	16JUL08A	20MAR09A	100	16JUL08A	20MAR09A			Ň		
02L1AA0410	AIP submission for rel. authorities' approval	1	1	14JUL08A	19AUG08A	100	14JUL08A	19AUG08A					
02L1AA0412	Design (AIP) review by the rel. authorities	28	28	15JUL08A	18NOV08A	100	15JUL08A	18NOV08A					
02L1AA0414	Obtain rel. authorities's approval for AIP	1	1	03NOV08A	18NOV08A	100	03NOV08A	18NOV08A					
02L1AA0420	Obtain SO's consent for design (AIP)	0	0		20MAR09A	100		20MAR09A					
02L1AA0422	Design preparation for the DDA submission	141	141	21MAR09A	30SEP10A	100	21MAR09A	30SEP10A			IN II.		
02L1AA0423	Design (DDA) submission for the DC's approval	2	2	02SEP09A	01SEP10A	100	02SEP09A	01SEP10A					
02L1AA0424	Design (DDA) certification by the Design Checker	28	28	03SEP09A	18NOV10A	100	03SEP09A	18NOV10A			XXX		
02L1AA0426	Design (DDA) submission for the SO's approval	2	2	07SEP09A	19NOV10A	100	07SEP09A	19NOV10A					
02L1AA0428	Design (DDA) review by the SO	66	66	08SEP09A	24NOV10A	100	08SEP09A	24NOV10A					
02L1AA0430	DDA submission for rel. authorities' approval	1	1	06DEC10A	06DEC10A	100	06DEC10A	06DEC10A					
02L1AA0432	Design (DDA) review by the rel. authorities	28	28	06DEC10A	03JAN11A	100	06DEC10A	03JAN11A					
02L1AA0434	Obtain rel. authorities's approval for DDA	1	1	03JAN11A	03JAN11A	100	03JAN11A	03JAN11A					
02L1AA0440	Obtain SO's consent for design (DDA)	0	0		24NOV10A	100		24NOV10A					
	sment on WSD Wo Yip Hop V. S. P. H.												
02L1AA0502	Design preparation for the DDA submission	30	30	02MAY08A	26FEB09A	100	02MAY08A	26FEB09A					
02L1AA0503	Design (DDA) submission for the DC's approval	1	1	26JUN08A	27FEB09A	100	26JUN08A	27FEB09A					
02L1AA0504	Design (DDA) certification by the Design Checker	60	60	27JUN08A				11MAR09A					
02L1AA0506	Design (DDA) submission for the SO's approval	2	2	14JUL08A				24MAR09A			XXX		
02L1AA0508	Design (DDA) review by the SO	66	66	15JUL08A			15JUL08A	31MAR09A					
02L1AA0510	DDA submission for rel. authorities' approval	2	2	10JUL08A			10JUL08A	14MAR09A			XXX		
02L1AA0512	Design (DDA) review by the rel. authorities	385	385	14JUL08A			14JUL08A	02NOV09A			XXXX XXXX		
02L1AA0514	Obtain rel. authorities's approval for DDA	1	1	03NOV09A			03NOV09A	03NOV09A			XXXX XXXX		
02L1AA0520	Obtain SO's consent for design (DDA)	0	0		31MAR09A	100		31MAR09A			<u>IXIA</u>		
	atform for Pipe Piling										<u> XXXX</u>		
02L1AA0602	Design preparation by the Designer	11	11	21JUL08A	23AUG08A	100	21JUL08A	23AUG08A			XXX		

ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish		2012 SON	D J	FMA	2013 M J J A S (NDJFN	2 1 A M 、	014 JJASO	2015 N D J F N	A
02L1AA0603	Design submission for the DC's approval	1	1	01AUG08A	25AUG08A		JAUG08A	25AUG08A	FIUAL 6	3 64 65 66 6	67 68	69 70 7 [.]	72 73 74 75 76 7	7 78 79 80 81 8	2 83 84 8	5 86 87 88 89	0 91 92 93 94	95
02L1AA0604	Design certification by the Design Checker	21	21	02AUG08A	26SEP08A		2AUG08A	26SEP08A			M							
02L1AA0606	Design submission for the SO's approval	1	1	08AUG08A	27SEP08A			27SEP08A			M							
02L1AA0608	Design review by the SO	28	. 28	09AUG08A	170CT08A		9AUG08A	170CT08A			M							
02L1AA0610	Obtain design approval from the SO	0	0	00,10000,1	170CT08A	100		170CT08A			M							
	rks Design for Retrieval of TBM		•								X							
02L1AA0702	Design preparation by the Designer	162	162	28FEB09A	12JAN11A	100 2	28FEB09A	12JAN11A			X							
02L1AA0703	Design submission for the DC's approval	1	1	13JAN11A	13JAN11A		3JAN11A	13JAN11A			M							
02L1AA0704	Design certification by the Design Checker	28	28		22MAR11A		8AUG09A	22MAR11A			X							
02L1AA0706	Design submission for the SO's approval	1	1		23MAR11A		3JAN11A	23MAR11A			X							
02L1AA0708	Design review by the SO	42	42		20JUN11A			20JUN11A			XX							
02L1AA0710	Obtain design approval from the SO	0	0		20JUN11A	100		20JUN11A			M	MA						
Temporary Dra	inage Management Plan for Portion A					I					X							
02L1AA0802	TDMP preparation by the Designer	208	208	18AUG08A	23MAY09A	100 1	8AUG08A	23MAY09A										
02L1AA0804	TDMP submission for the DC's approval	2	2	24SEP08A	25MAY09A	100 2	4SEP08A	25MAY09A			M							
02L1AA0806	TDMP certification by the Design Checker	80	80	240CT08A	02DEC09A		4OCT08A	02DEC09A			M							
02L1AA0808	TDMP submission for the SO's approval	5	5	05NOV08A	03DEC09A	100 0	5NOV08A	03DEC09A			M							
02L1AA0810	TDMP review by the SO	284	284	05NOV08A	05DEC09A		5NOV08A	05DEC09A			M							
02L1AA0812	TDMP submission for DSD's approval	1	1	03DEC09A	03DEC09A	100 0	3DEC09A	03DEC09A										
02L1AA0814	TDMP review by the DSD	60	60	23SEP09A	05DEC09A	100 2	3SEP09A	05DEC09A			X							
02L1AA0816	Obtain DSD's approval for DDA	1	1	07DEC09A	07DEC09A	100 0	7DEC09A	07DEC09A			X							
02L1AA0818	Obtain SO's consent for TDMP	0	0		07DEC09A	100		07DEC09A			Ň							
Temp. Design	For Exit. Channel Modification										\mathbb{N}							
02L1AA0902	Design preparation	25	25	25SEP09A	270CT09A	100 2	25SEP09A	270CT09A			X							
02L1AA0912	Design submission to Design Checker	1	1	280CT09A	280CT09A	100 2	28OCT09A	280CT09A			XX							
02L1AA0922	Design certification by Design Checker	18	18	290CT09A	15NOV09A	100 2	29OCT09A	15NOV09A			XX							
02L1AA0932	Design submission to SO	1	1	16NOV09A	16NOV09A	100 1	6NOV09A	16NOV09A			XX							
02L1AA0942	Design revew by SO	21	21	17NOV09A	07DEC09A	100 1	7NOV09A	07DEC09A			XX							
02L1AA0952	Obtain design approval from SO	0	0		07DEC09A	100		07DEC09A			M							
Temp. Design	for TBM Portal Strengtheing at I-1										\mathbb{N}							
02L1AA1002	Design preparation	18	18	02DEC09A	10JAN11A	100 0	2DEC09A	10JAN11A			M							
02L1AA1012	Design submission to Design Checker	1	1	11JAN11A	11JAN11A	100 1	1JAN11A	11JAN11A			X							
02L1AA1022	Design certification by Design Checker	7	7	12JAN11A	22MAR11A	100 1	2JAN11A	22MAR11A			X							
02L1AA1032	Design submission to SO	1	1	11JAN11A	23MAR11A	100 1	1JAN11A	23MAR11A										
02L1AA1042	Design review by SO	21	21	12JAN11A	01APR11A	100 1	2JAN11A	01APR11A			X							
02L1AA1052	Obtain design approval from SO	0	0		01APR11A	100		01APR11A										
Geotechnical I	nstrumentation Stg 1 for GL Works										X							
3DL1AAG102	Design preparation by the Designer	14	14	22FEB08A	28APR08A	100 2	2FEB08A	28APR08A			X							
3DL1AAG104	Design certification by the Design Checker	7	7	29APR08A	16JUN08A	100 2	29APR08A	16JUN08A			X							
3DL1AAG106	Design submission for the SO's approval	1	1	10MAY08A	10MAY08A	100 1	0MAY08A	10MAY08A			X							
3DL1AAG108	Design review by the SO	14	14	12MAY08A			2MAY08A	28AUG08A			XA							
3DL1AAG110	Obtain design approval from the SO	0	0		28AUG08A	100		28AUG08A			XA							
3DL1AAG112	Install Geotechnical Instruments	6	6	26MAY08A	26MAY08A	100 2	26MAY08A	26MAY08A			XA	XX						

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total		201	2	2013		2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A 63 6	S O	N D	J F M A M J J A 68 69 70 71 72 73 74 75	S O N D J F	A M J J 2 83 84 85 86	A S O N E) J F M A
3DL1AAG114	Baseline Monitoring	14	14	27MAY08A	31MAY08A	100	27MAY08A										
Geotechnical I	nstrumentation Stg 2 for Deep Exc.																
· · · · · · · · · · · · · · · · · · ·	Design preparation by the Designer	14	14	01DEC08A	24FEB09A	100	01DEC08A	24FEB09A									
3DL1AAG204	Design certification by the Design Checker	7	7	15DEC08A	25FEB09A	100	15DEC08A	25FEB09A									
3DL1AAG206	Design submission for the SO's approval	1	1	07JAN09A	25FEB09A	100	07JAN09A	25FEB09A									
3DL1AAG208	Design review by the SO	28	28	08JAN09A	24MAR09A	100	08JAN09A	24MAR09A									
3DL1AAG210	Obtain design approval from the SO	0	0		24MAR09A	100		24MAR09A									
3DL1AAG212	Install Geotechnical Instruments	28	28	09FEB09A	03NOV09A	100	09FEB09A	03NOV09A									
3DL1AAG214	Baseline Monitoring	6	6	18FEB09A	25MAR09A	100	18FEB09A	25MAR09A									
3DL1AAG216	Monitor/report Geotechnical Instrumentation	1,908	1,908	02JUN08A	30NOV13	76	02JUN08A	22AUG13	0	╞╪							
Design Pack	ages for Works in Portion B									Π							
	to Construct H-pile Wall																
02L1BB0202	Design preparation by the Designer	15	15	24MAR08A	09MAY08A	100	24MAR08A	09MAY08A									
02L1BB0204	Design certification by the Design Checker	14	14					08AUG08A									
02L1BB0206	Design submission for the SO's approval	1	1	21MAY08A				08AUG08A									
02L1BB0208	Design review by the SO	21	21	22MAY08A				25SEP08A									
02L1BB0210	Obtain design approval from the SO	0	0		25SEP08A	100		25SEP08A									
Temp. Platform	to Construct Drop Shafts	-	-														-
02L1BB0302	Design preparation by the Designer	22	22	04AUG08A	11DEC08A	100	04AUG08A	11DEC08A									
02L1BB0303	Design submission for the DC's approval	2	2	11DEC08A	12FEB09A		11DEC08A	12FEB09A									
02L1BB0304	Design certification by the Design Checker	14	14	12DEC08A			12DEC08A	25FEB09A									_
02L1BB0306	Design submission for the SO's approval	2	2	12DEC08A				25FEB09A									_
02L1BB0308	Design review by the SO	21	21	13DEC08A	11MAR09A			11MAR09A									
02L1BB0310	Obtain design approval from the SO	0	0		11MAR09A	100		11MAR09A									
Temporary Dra	inage Management Plan																
02L1BB0402	TDMP preparation by the Designer	313	313	05MAY08A	21MAR09A	100	05MAY08A	21MAR09A									
02L1BB0403	TDMP submission for the DC's approval	2	2	05AUG08A	23MAR09A	100	05AUG08A	23MAR09A									
02L1BB0404	TDMP certification by the Design Checker	213	213	06AUG08A	13APR09A		06AUG08A	13APR09A									_
02L1BB0406	TDMP submission for the SO's approval	2	2	24SEP08A	14APR09A	100	24SEP08A	14APR09A									-
02L1BB0408	TDMP review by the SO	90	90	25SEP08A	280CT09A			280CT09A									
02L1BB0410	TDMP submission for DSD's approval	1	1	23SEP08A	23SEP08A	100	23SEP08A	23SEP08A									
02L1BB0412	TDMP review by the DSD	90	90		02NOV09A			02NOV09A									
02L1BB0414	Obtain DSD's approval for DDA	1	1	03NOV09A	03NOV09A	100	03NOV09A	03NOV09A									
02L1BB0416	Obtain SO's consent for TDMP	0	0		03NOV09A	100		03NOV09A									
Temp. Support	Design for MAA/MAS/VDS/DC																
	Design preparation for the AIP submission	272	272	02JUN08A	19MAR09A	100	02JUN08A	19MAR09A									
02L1BB0503	Design (AIP) submission for the DC's approval	2	2	11JUL08A	20MAR09A	100	11JUL08A	20MAR09A									
02L1BB0504	Design (AIP) certification by the Design Checker	60	60	12JUL08A	04APR09A	100	12JUL08A	04APR09A									
02L1BB0506	Design (AIP) submission for the SO's approval	2	2	24JUL08A	06APR09A	100	24JUL08A	06APR09A									
02L1BB0508	Design (AIP) review by the SO	66	66	25JUL08A	06JUN09A			06JUN09A		11							
02L1BB0510	AIP submission for rel. authorities' approval	1	1	12JUL08A	12JUL08A	100	12JUL08A	12JUL08A									
02L1BB0512	Design (AIP) review by the rel. authorities	28	28	14JUL08A	10NOV08A	100	14JUL08A	10NOV08A									
02L1BB0514	Obtain rel. authorities's approval for AIP	1	1	11NOV08A	11NOV08A	100	11NOV08A	11NOV08A									
	· · ·				1	-		1	1	1		$\parallel / / /$			Z		

ID	Activity	WP10		WP10	WP10	%	WP09	WP09	Total	20 [.] A S C	12) N D	JFM	2013 A M J J A S O N C	JFN	20 I A M J	14 J A S O	N D J	2015 J F M A
02L1BB0516	Description SO submit design (AIP) for review of GEO	Dur 1	Dur	Start 29MAY09A	Finish 29MAY09A	Comp	Start 29MAY09A	Finish 29MAY09A	Float	63 64 6	5 66 67	68 69 70	1 72 73 74 75 76 77 78 7	9 80 81 82	2 83 84 85	86 87 88 89	90 91 92	2 93 94 95
02L1BB0518	Design (AIP) review by the GEO	28	28	30MAY09A	26AUG09A		30MAY09A	26AUG09A				HHH		XHH				
02L1BB0520	Obtain SO's consent for design (AIP)	0	20	301VIA 1 03A	26706097 06JUN09A	100		20A0009A 06JUN09A				HHH		XHH				
02L1BB0522	Design preparation for the DDA submission	30	30	04MAY09A	28MAY09A		04MAY09A	28MAY09A				HH		XXXX				
02L1BB0523	Design (DDA) submission for the DC's approval	1	1	01JUN09A	16JUL09A		01JUN09A	16JUL09A				HHA		XHH				
02L1BB0524	Design (DDA) submission for the Design Checker	80	80	02JUN09A	28DEC09A		02JUN09A	28DEC09A				HHH		XHH				
02L1BB0526	Design (DDA) certification by the Design Checker	2	200	07JUL09A	28DEC09A		07JUL09A	28DEC09A				HHA		XHH				
02L1BB0528	Design (DDA) submission for the SO's approval Design (DDA) review by the SO	66	66	07JUL09A 08JUL09A	16DEC09A		07JUL09A	16DEC09A				HH		XIII				
02L1BB0530	DDA submission for rel. authorities' approval	1	1	07NOV09A	07NOV09A			07NOV09A				HH		XIII				
02L1BB0532	Design (DDA) review by the rel. authorities	28	28	09NOV09A	06DEC09A		09NOV09A	06DEC09A				HH		XIII				
02L1BB0534	Obtain rel. authorities's approval for DDA	1	20	07DEC09A	07DEC09A			07DEC09A				HH		XIII				
02L1BB0536	SO submit design (DDA) for review of GEO	1	1	05DEC09A	05DEC09A		05DEC09A	05DEC09A				HH		XIII				
02L1BB0538	Design (DDA) review by the GEO	28	28	06DEC09A	09JAN10A			09JAN10A				HH		XXX				
02L1BB0540	Obtain SO's consent for design (DDA)	0	20	UUDLCUJA	16DEC09A	100	UDLCUJA	16DEC09A				HH		XIII				
Temp. Suppor	0, ,	0	0		TODECUSA	100		TUDECUSA						XXX				
02L1BB0602	Design preparation for the AIP submission	110	110	09JUN08A	08NOV09A	100	09JUN08A	08NOV09A						XXX				
02L1BB0603	Design (AIP) submission for the DC's approval	2	2	18MAY09A				09NOV09A				HH		XHH				
02L1BB0604	Design (AIP) submission of the Design Checker	28	28	19MAY09A	25NOV09A			25NOV09A				HH		XHH				
02L1BB0606	Design (AIP) submission for the SO's approval	1	20	09NOV09A	09NOV09A		09NOV09A	09NOV09A				HH		XHH				
02L1BB0608	Design (AIP) submission for the SO's approval Design (AIP) review by the SO	66	66	10NOV09A	10MAY10A		10NOV09A	10MAY10A				HH		XXX				
02L1BB0616	SO submit design (AIP) for review of GEO	1	1	11MAY10A	11MAY10A		11MAY10A	11MAY10A				HH		XHH				
02L1BB0618	Design (AIP) review by the GEO	28	28	12MAY10A	28JUN10A		12MAY10A	28JUN10A				HH		XHH				
02L1BB0620	Obtain SO's consent for design (AIP)	0	0		10JUN10A	100		10JUN10A				HH		XHH				
02L1BB0622	Design preparation for the DDA submission	30	30	28JUN10A	24AUG10A		28JUN10A	24AUG10A				HH		XHH				
02L1BB0623	Design (DDA) submission for the DC's approval	1	1	25AUG10A			25AUG10A	06DEC10A				HH		XHH				
02L1BB0624	Design (DDA) submission for the Design Checker	28	28	26AUG10A			26AUG10A	20DEC10A				HH		XHH				
02L1BB0626	Design (DDA) submission for the SO's approval	1	1	25AUG10A				20DEC10A				HHH		XHH				
02L1BB0628	Design (DDA) review by the SO	66	66					05JAN11A				HH		XHH				
L	sign for MAA/MAS/VDS/DC	00	00	20/10/10/1	000/ (1111/	100	20/10/010/1	000/ 111/1						XHH				
02L1BB0702	Design preparation for the AIP submission	285	285	02JUN08A	02JUN09A	100	02JUN08A	02JUN09A						XXX				
02L1BB0702	Design submission for the DC's approval	200	200	03JUL08A	06JUL09A		03JUL08A	06JUL09A				HH		XHH				
02L1BB0704	Design (AIP) certification by the Design Checker	60	60	24JUL08A	21JUL09A		24JUL08A	21JUL09A						XHH				
02L1BB0704	Design (AIP) submission for the SO's approval	2	2	04JUL08A	22JUL09A		04JUL08A	22JUL09A				- AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		XHH				
02L1BB0708	Design (AIP) review by the SO	66	66	05JUL08A	09DEC09A		05JUL08A	09DEC09A				HH		XHH				
02L1BB0710	AIP submission for rel. authorities' approval	1	1	03JUL08A	03JUL08A		03JUL08A	03JUL08A				HH		XHH				
02L1BB0712	Design (AIP) review by the rel. authorities	28	28	04JUL08A				280CT09A				HH		XHH				
02L1BB0714	Obtain rel. authorities's approval for AIP	1	1	0.002007	10DEC09A	100		10DEC09A				MM		XHH				
02L1BB0720	Obtain SO's consent for design (AIP)	0	0		10DEC09A	100		10DEC09A				MM		XXX				
02L1BB0722	Design preparation for the DDA submission	30	30	04JAN10A			04JAN10A	11AUG11A				MM		XXX				
02L1BB0723	Design submission for the DC's approval	1	1	14MAY10A				24MAR11A				MM		XXX				
02L1BB0724	Design (DDA) certification by the Design Checker	28	28					11AUG11A				MM		XXX				
02L1BB0726	Design (DDA) submission for the SO's approval	1	1	24MAY10A				11AUG11A				MM		XXX				
02L1BB0728	Design (DDA) review by the SO	66	66	25MAY10A			25MAY10A					MM		XXX				
														XIXIXI	4		<u> </u>	

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012			2013 2014 2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	ASO 1 364656	VDJ 66768	F M A	2013 2014 2015 A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A S O N D J F M A S O N D J F M A S
02L1BB0730	DDA submission for rel. authorities' approval	1	1	19JAN12A	19JAN12A	100	19JAN12A	19JAN12A					
02L1BB0732	Design (DDA) review by the rel. authorities	28	28	20JAN12A	29FEB12A	100	20JAN12A	18MAR12			XX		
02L1BB0734	Obtain rel. authorities's approval for DDA	0	1		29FEB12A	100	19MAR12	19MAR12					
02L1BB0740	Obtain SO's consent for design (DDA)	0	0		29FEB12A	100		19MAR12					
Permanent De	sign for MA and MA/MT Connection										XX		
02L1BB0802	Design preparation for AIP submission	90	90	09JUN08A	14NOV09A	100	09JUN08A	14NOV09A			XX.		
02L1BB0803	Design (AIP) submission for the DC's approval	2	2	30JUN08A	16NOV09A	100	30JUN08A	16NOV09A			XX		
02L1BB0804	Design (AIP) certification by the Design Checker	28	28	24JUL08A	02DEC09A	100	24JUL08A	02DEC09A					
02L1BB0806	Design (AIP) submission for the SO's approval	2	2	25JUL08A	03DEC09A	100	25JUL08A	03DEC09A					
02L1BB0808	Design (AIP) review by the SO	66	66	26JUL08A	28JUN10A	100	26JUL08A	28JUN10A					
02L1BB0810	AIP submission for rel. authorities' approval	1	1	200CT08A	17JUN10A	100	200CT08A	17JUN10A					
02L1BB0820	Obtain SO's consent for design (AIP)	0	0		28JUN10A	100		28JUN10A					
02L1BB0822	Design preparation for the DDA submission	30	30	28JUN10A	12APR12A	100	28JUN10A	01MAR12					
02L1BB0823	Design (DDA) submission for the DC's approval	1	1	31MAY11A	13APR12A	100	31MAY11A	02MAR12					
02L1BB0824	Design (DDA) certification by the Design Checker	28	28	01JUN11A	20APR12A	100	01JUN11A	12MAR12					
02L1BB0826	Design (DDA) submission for the SO's approval	1	1	31MAY11A	13APR12A	100	31MAY11A	13MAR12					
02L1BB0828	Design (DDA) review by the SO	66	66	01JUN11A	21APR12A	100	01JUN11A	11APR12					
02L1BB0830	DDA submission for rel. authorities' approval	1	1	05MAY12A	05MAY12A	100	12APR12	12APR12					
02L1BB0832	Design (DDA) review by the rel. authorities	28	28	07MAY12A	07JUN12A	100	13APR12	10MAY12					
02L1BB0834	Obtain rel. authorities's approval for DDA	0	1		08JUN12A	100	11MAY12	11MAY12			XX		
02L1BB0840	Obtain SO's consent for design (DDA)	0	0		08JUN12A	100		11MAY12					
ELS for L-sha	oped Retaining Wall							1					
02L1BB0902	Design preparation by the Designer	14	14	05JUL10A	31AUG10A	100	05JUL10A	31AUG10A			XX.		
02L1BB0903	Design submission for the DC's approval	1	1	01SEP10A	01SEP10A	100	01SEP10A	01SEP10A					
02L1BB0904	Design certification by the Design Checker	28	28	02SEP10A	04NOV10A	100	02SEP10A	04NOV10A					
02L1BB0906	Design submission for the SO's approval	1	1	05OCT10A	05OCT10A	100	05OCT10A	050CT10A					
02L1BB0908	Design review by the SO	42	42	06OCT10A	17NOV10A	100	06OCT10A	17NOV10A					
02L1BB0910	Obtain design approval from the SO	0	0		17NOV10A	100		17NOV10A					
Platform for R	CD Operation (Air Vent Shaft)												
02L1BB1602	Prepare design/method statement	6	6	22NOV08A	01DEC08A	100	22NOV08A	01DEC08A			XX		
02L1BB1604	Submit design/method statement to Design Checker	1	1	02DEC08A	23DEC08A	100	02DEC08A	23DEC08A			XX		
02L1BB1606	Certify design/m.s. by Design Checker	7	7	03DEC08A	24DEC08A	100	03DEC08A	24DEC08A			XX		
02L1BB1608	Submit design/m.s. to SO	1	1	24DEC08A	24DEC08A	100	24DEC08A	24DEC08A			XX		
02L1BB1610	Design/m.s. review by SO	14	14	25DEC08A	11MAR09A	100	25DEC08A	11MAR09A			XX		
02L1BB1612	Obtain design/m.s. approval from the SO	0	0		11MAR09A	100		11MAR09A			XX		
Temporary W	orks for Air Vent Shaft Construction										XX/		
02L1BB1702	Prepare design/method statement	21	21	03NOV08A	16DEC08A	100	03NOV08A	16DEC08A			XX		
02L1BB1704	Submit design/method statement to Design Checker	1	1	17DEC08A	17DEC08A	100	17DEC08A	17DEC08A			XX		
02L1BB1706	Certify design/m.s. by Design Checker	14	14	18DEC08A	23JAN09A	100	18DEC08A	23JAN09A			XX		
02L1BB1708	Submit design/m.s. to SO	1	1	23JAN09A	23JAN09A	100	23JAN09A	23JAN09A			XX		
02L1BB1710	Design/m.s. review by SO	7	7	24JAN09A	23MAR09A	100	24JAN09A	23MAR09A			XX		
02L1BB1712	Obtain design/m.s. approval from the SO	0	0		23MAR09A	100		23MAR09A			XX		
	н								· 1	4 1			

ID	A stitute .	WD40	MDOO		WD40	0/		14/DOO	Tatal	2	012		201	3			2014			2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	A S	O N D	J F M	A M J . 71 72 73 7	IASC	NDJ	F M A	MILL	A S O	N D J	FMA
Permanet Desi	gn for Air Vent Shaft								1	03 04				4/15/10/1			040000	07 00 09	30 31 32	33 34 33
02L1BB1802	Prepare design/method statement	60	60	05NOV08A	24NOV09A	100	05NOV08A	24NOV09A				////								
02L1BB1804	Submit design/method statement to Design Checker	2	2	12DEC08A				25NOV09A												
02L1BB1806	Certify design/m.s. by Design Checker	28	28	13DEC08A	02DEC09A			02DEC09A				////								
02L1BB1808	Submit design/m.s. to SO	2	2	17DEC08A	03DEC09A	100		03DEC09A												
02L1BB1810	Design/m.s. review by SO	42	42	18DEC08A	04FEB10A			04FEB10A												
02L1BB1812	Submit design to rel. authorities	1	1	25MAR09A	25MAR09A	100	25MAR09A	25MAR09A												
02L1BB1814	Obtain design approval from rel. authorities	28	28	01MAR09A	08DEC09A	100	01MAR09A	08DEC09A												
02L1BB1816	Obtain design/m.s. approval from the SO	0	0		04FEB10A	100		04FEB10A												
ELS Design for	r Construction of Vortex Shaft																			
02L1BB1902	Design preparation by the Designer	25	25	23FEB09A	02JUN09A	100	23FEB09A	02JUN09A												
02L1BB1904	Design submission for the DC's approval	1	1	03JUN09A	03JUN09A	100	03JUN09A	03JUN09A												
02L1BB1906	Design certification by the Design Checker	28	28	04JUN09A	10NOV09A	100	04JUN09A	10NOV09A												
02L1BB1908	Design submission for the SO's approval	1	1	12JUN09A	12JUN09A	100	12JUN09A	12JUN09A												
02L1BB1910	Design review by the SO	42	42	13JUN09A	09DEC09A	100	13JUN09A	09DEC09A												
02L1BB1912	Obtain design approval from the SO	0	0		09DEC09A	100		09DEC09A												
Blasting Asses	ssment Report (BAR)																			
02L1BBAR02	Prepare submit BAR Feasibiliti Study Report	31	31	03MAY10A	08JUN10A	100	03MAY10A	08JUN10A				////								
02L1BBAR12	Prepare/submit BAR to SOR	83	83	09JUN10A	15SEP10A	100	09JUN10A	15SEP10A												
02L1BBAR22	Prepare/submit BAR to CEDD	94	94	09JUN10A	29SEP10A	100	09JUN10A	29SEP10A												
02L1BBAR32	Obtain Blasting Permit From Rel. Authorities	183	183	30SEP10A	22JUL11A	100	30SEP10A	22JUL11A				IM								
Geotechnical I	nstrumentation Stg 1 for GL Works																			
3DL1BBG102	Design preparation by the Designer	14	14	22FEB08A	05MAY08A	100	22FEB08A	05MAY08A				////								
3DL1BBG104	Design certification by the Design Checker	7	7	06MAY08A	29AUG08A	100	06MAY08A	29AUG08A				XX								
3DL1BBG106	Design submission for the SO's approval	1	1	10MAY08A	10MAY08A	100	10MAY08A	10MAY08A				<u>IM</u>								
3DL1BBG108	Design review by the SO	14	14	12MAY08A	14JUL08A	100	12MAY08A	14JUL08A												
3DL1BBG110	Obtain design approval from the SO	0	0		14JUL08A	100		14JUL08A												
3DL1BBG112	Install Geotechnical Instruments	6	6	11JUN08A	19JUL08A	100	11JUN08A	19JUL08A												
3DL1BBG114	Baseline Monitoring	14	14	21JUL08A	26JUL08A	100	21JUL08A	26JUL08A												
· · · · · · · · · · · · · · · · · · ·	nstrumentation Stg 2 for Deep Exc.																			
3DL1BBG202	Design preparation by the Designer	40		31AUG08A				240CT08A												
3DL1BBG204	Design certification by the Design Checker	14	14	240CT08A				22JUL09A												
3DL1BBG206	Design submission for the SO's approval	1	1	05NOV08A				23JUL09A												
3DL1BBG208	Design review by the SO	28		06NOV08A			06NOV08A					////				IA-				
3DL1BBG210	Obtain design approval from the SO	0	0		04AUG09A			04AUG09A				////				IA-				
3DL1BBG212	Install Geotechnical Instruments	12		14MAR09A			14MAR09A					////				IA-				
3DL1BBG214	Baseline Monitoring	14		11JUN09A			11JUN09A					////				IA-				
3DL1BBG216	Monitor/report Geotechnical Instrumentation	2,040	2,040	28JUL08A	01APR14	73	28JUL08A	28FEB14	0			1444 1444								
Design Pack	ages for Works in Portion C																			
	for H-pile Wall A																			
02L1CC0002	Design preparation by the Designer	15		12MAY08A		100	12MAY08A	27JUN08A												
02L1CC0004	Design certification by the Design Checker	14	14	22MAY08A	03JUL08A		22MAY08A	03JUL08A												
02L1CC0006	Design submission for the SO's approval	1	1	04JUL08A	04JUL08A	100	04JUL08A	04JUL08A				IXX			(XXX)					

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total		2012	2013	3 2014	2015
	Description	Dur	Dur	Start	Finish	Comp	Start				O N D		A S O N D J F M A M J J 4 75 76 77 78 79 80 81 82 83 84 85 86	A S O N D J F M A
02L1CC0008	Design review by the SO	14	14	05JUL08A	29JUL08A		05JUL08A	29JUL08A		00 04				
02L1CC0010	Obtain design approval from the SO	0	0		29JUL08A	100		29JUL08A						
Temporary W	orks for Formation of Access Road													
02L1CC0102	Design preparation by the Designer	40	40	29SEP08A	01DEC08A	100	29SEP08A	01DEC08A						
02L1CC0103	Design submission for the DC's approval	1	1	02DEC08A		100	02DEC08A	02DEC08A						
02L1CC0104	Design certification by the Design Checker	14	14	03DEC08A	08DEC08A	100	03DEC08A	08DEC08A						
02L1CC0106	Design submission for the SO's approval	1	1	09DEC08A	09DEC08A	100	09DEC08A	09DEC08A						
02L1CC0108	Design review by the SO	28	28	10DEC08A	23MAR09A		10DEC08A	23MAR09A						
02L1CC0110	Obtain design approval from the SO	0	0		23MAR09A	100		23MAR09A						
Piling Platfor	m for H-pile Wall B		· · · ·											
02L1CC0202	Design preparation by the Designer	30	30	01SEP09A	02NOV09A	100	01SEP09A	02NOV09A						
02L1CC0203	Design submission for the DC's approval	1	1	03NOV09A			03NOV09A							
02L1CC0204	Design certification by the Design Checker	28	28	04NOV09A	01DEC09A	100	04NOV09A	01DEC09A						
02L1CC0206	Design submission for the SO's approval	2	2	03NOV09A	03NOV09A	100	03NOV09A	03NOV09A						
02L1CC0208	Design review by the SO	42	42	04NOV09A	06MAR10A	100	04NOV09A	06MAR10A						
02L1CC0210	Obtain design approval from the SO	0	0		06MAR10A	100		06MAR10A						
Temp. Suppo	rt Design for MAA/MAS/VDS/DC/AVS													
02L1CC0302	Design preparation for the AIP submission	103	103	26JUN08A	09MAY09A	100	26JUN08A	09MAY09A						
02L1CC0303	Design (AIP) submission for the DC's approval	2	2	23DEC08A	15MAY09A	100	23DEC08A	15MAY09A						
02L1CC0304	Design (AIP) certification by the Design Checker	28	28	24DEC08A	19MAY09A	100	24DEC08A	19MAY09A						
02L1CC0306	Design (AIP) submission for the SO's approval	2	2	23DEC08A	19MAY09A	100	23DEC08A	19MAY09A						
02L1CC0308	Design (AIP) review by the SO	66	66	24DEC08A	05JUN09A	100	24DEC08A	05JUN09A						
02L1CC0310	AIP submission for rel. authorities' approval	1	1	16JUN09A	16JUN09A	100	16JUN09A	16JUN09A						
02L1CC0312	Design (AIP) review by the rel. authorities	28	28	17JUN09A	14NOV09A	100	17JUN09A	14NOV09A						
02L1CC0314	Obtain rel. authorities's approval for AIP	1	1	16NOV09A	16NOV09A	100	16NOV09A	16NOV09A						
02L1CC0316	SO submit design (AIP) for review of GEO	1	1	280CT09A	280CT09A	100	280CT09A	280CT09A						
02L1CC0318	Design (AIP) review by the GEO	28	28	290CT09A	25NOV09A	100	290CT09A	25NOV09A						
02L1CC0320	Obtain SO's consent for design (AIP)	0	0		05JUN09A	100		05JUN09A						
02L1CC0322	Design preparation for the DDA submission	30	30	07JUN09A	24NOV09A	100	07JUN09A	24NOV09A						
02L1CC0323	Design (DDA) submission for the DC's approval	2	2	07JUL09A	25NOV09A	100	07JUL09A	25NOV09A						
02L1CC0324	Design (DDA) certification by the Design Checker	28	28	08JUL09A	02DEC09A	100	08JUL09A	02DEC09A						
02L1CC0326	Design (DDA) submission for the SO's approval	1	1	07JUL09A	03DEC09A	100	07JUL09A	03DEC09A						
02L1CC0328	Design (DDA) review by the SO	66	66	08JUL09A	22FEB10A	100	08JUL09A	22FEB10A						
02L1CC0330	DDA submission for rel. authorities' approval	1	1		07JUL09A	100		07JUL09A						
02L1CC0332	Design (DDA) review by the rel. authorities	28	28	25NOV09A	22FEB10A	100	25NOV09A	22FEB10A						
02L1CC0334	Obtain rel. authorities's approval for DDA	1	1	22FEB10A	22FEB10A	100	22FEB10A	22FEB10A						
02L1CC0336	SO submit design (DDA) for review of GEO	1	1	10DEC09A	10DEC09A	100	10DEC09A	10DEC09A						
02L1CC0338	Design (DDA) review by the GEO	28	28	11DEC09A	22FEB10A	100	11DEC09A	22FEB10A						
02L1CC0340	Obtain SO's consent for design (DDA)	0	0		22FEB10A	100		22FEB10A						
Temp. Suppo	rt Design for MA and MA/MT Connection													
02L1CC0402	Design preparation for the AIP submission	110	110	18AUG08A	200CT09A	100	18AUG08A	200CT09A]				
02L1CC0403	Design (AIP) submission for the DC's approval	2	2	05MAY09A	210CT09A	100	05MAY09A	210CT09A						
02L1CC0404	Design (AIP) certification by the Design Checker	28	28	06MAY09A	270CT09A	100	06MAY09A	270CT09A						

ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	2012 A S O M	NDJF	2013 2014 M A M J J A S O N D J F M A M J J A S O N 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90	2015 D J F M A
02L1CC0406	Design (AIP) submission for the SO's approval	1	1	270CT09A	270CT09A		270CT09A	270CT09A	liout	03 04 05 0	001010809		91 92 93 94 95
02L1CC0408	Design (AIP) review by the SO	66	66	280CT09A	10MAY10A		280CT09A	10MAY10A					
02L1CC0416	SO submit design (AIP) for review of GEO	1	1	11MAY10A	11MAY10A	100	11MAY10A	11MAY10A					
02L1CC0418	Design (AIP) review by the GEO	28	28	12MAY10A	28JUN10A	100	12MAY10A	28JUN10A			XX		
02L1CC0420	Obtain SO's consent for design (AIP)	0	0		28JUN10A	100		28JUN10A			XX		
02L1CC0422	Design preparation for the DDA submission	30	30	29JUN10A	30NOV10A	100 2	29JUN10A	30NOV10A			XXII		
02L1CC0423	Design submission for the DC's approval	1	1	01DEC10A	01DEC10A			01DEC10A			XX		
02L1CC0424	Design (DDA) certification by the Design Checker	28	28	02DEC10A	21DEC10A	100 (02DEC10A	21DEC10A					
02L1CC0426	Design (DDA) submission for the SO's approval	1	1	22DEC10A	22DEC10A	100 2	22DEC10A	22DEC10A			XXII		
02L1CC0428	Design (DDA) review by the SO	66	66	23DEC10A	05JAN11A	100 2	23DEC10A	05JAN11A			XXII		
Permanent De	sign for MAA/MAS/VDS/DC/AVS										XXX		
02L1CC0502	Design preparation for the AIP submission	103	103	26JUN08A	04MAY09A	100	26JUN08A	04MAY09A			XXX		
02L1CC0503	Design submission for the DC's approval	2	2	110CT08A	05MAY09A	100	110CT08A	05MAY09A			XX		
02L1CC0504	Design (AIP) certification by the Design Checker	28	28	130CT08A	19MAY09A	100	13OCT08A	19MAY09A			XX		
02L1CC0506	Design (AIP) submission for the SO's approval	4	4	05NOV08A	20JUL09A	100 (05NOV08A	20JUL09A			XXI		
02L1CC0508	Design (AIP) review by the SO	66	66	06NOV08A	23DEC09A	100 (06NOV08A	23DEC09A			XX		
02L1CC0510	AIP submission for rel. authorities' approval	1	1	28FEB09A	28FEB09A	100	28FEB09A	28FEB09A			XX		
02L1CC0512	Design (AIP) review by the rel. authorities	28	28	01MAR09A	28MAY09A	100 (01MAR09A	28MAY09A			XXX		
02L1CC0514	Obtain rel. authorities's approval for AIP	1	1	29MAY09A	29MAY09A	100 2	29MAY09A	29MAY09A			XXX		
02L1CC0516	SO submit design (AIP) for review of GEO	1	1	28FEB09A	28FEB09A	100	28FEB09A	28FEB09A			XXI		
02L1CC0518	Design (AIP) review by the GEO	28	28	01MAR09A	28MAY09A	100 (01MAR09A	28MAY09A			XXI		
02L1CC0520	Obtain SO's consent for design (AIP)	0	0		23DEC09A	100		23DEC09A					
02L1CC0522	Design preparation for the DDA submission	60	60	09MAR09A	11AUG11A	100 (09MAR09A	11AUG11A					
02L1CC0523	Design submission for the DC's approval	1	1	08JUN11A	11AUG11A	100 (08JUN11A	11AUG11A					
02L1CC0524	Design (DDA) certification by the Design Checker	28	28	19JUN10A	11AUG11A	100	19JUN10A	11AUG11A					
02L1CC0526	Design (DDA) submission for the SO's approval	1	1	18JUN10A	11AUG11A	100	18JUN10A	11AUG11A					
02L1CC0528	Design (DDA) review by the SO	66	66	19JUN10A	28DEC11A	100	19JUN10A	28DEC11A					
02L1CC0530	DDA submission for rel. authorities' approval	1	1	14JAN12A	14JAN12A	100	14JAN12A	14JAN12A					
02L1CC0532	Design (DDA) review by the rel. authorities	28	28	15JAN12A	29FEB12A	100	15JAN12A	13MAR12					
02L1CC0534	Obtain rel. authorities's approval for DDA	0	1		29FEB12A	100	14MAR12	14MAR12					
02L1CC0540	Obtain SO's consent for design (DDA)	0	0		29FEB12A	100		14MAR12			XXII		
Permanent De	sign for MA and MA/MT Connection		·										
02L1CC0602	Design preparation for the AIP submission	84	84	01JUL08A	200CT09A	100 (01JUL08A	200CT09A			XX		
02L1CC0603	Design (AIP) submission for the DC's approval	2	2	25JUL08A	210CT09A	100	25JUL08A	210CT09A					
02L1CC0604	Design (AIP) certification by the Design Checker	28	28	26JUL08A	270CT09A	100	26JUL08A	270CT09A					
02L1CC0606	Design (AIP) submission for the SO's approval	2	2	26JUL08A	280CT09A	100	26JUL08A	280CT09A					
02L1CC0608	Design (AIP) review by the SO	66	66	28JUL08A	14JUL10A	100	28JUL08A	14JUL10A					
02L1CC0620	Obtain SO's consent for design (AIP)	0	0		14JUL10A	100		14JUL10A					
02L1CC0622	Design preparation for the DDA submission	30	30	15JUL10A	06AUG11A	100	15JUL10A	06AUG11A			XXII		
02L1CC0623	Design (DDA) submission for the DC's approval	1	1	08AUG11A	12APR12A	100 (08AUG11A	28FEB12			XXII		
02L1CC0624	Design (DDA) certification by the Design Checker	28	28	09AUG11A	13APR12A	100 (09AUG11A	04MAR12			XXII		
02L1CC0626	Design (DDA) submission for the SO's approval	1	1	09AUG11A	13APR12A	100 (05MAR12	05MAR12			XXII		
02L1CC0628	Design (DDA) review by the SO	66	66	09AUG11A	21APR12A	100 (09AUG11A	11APR12			XXXII		

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012	2013 2014 2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S O N D J F M 3 64 65 66 67 68 69 70	2013 2014 2015 A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A S O N D J F M A S O N D J F M A S O N D J F M A S O N D J F M A S O N D J F M A S O N D J F M A S O N D D
02L1CC0630	DDA submission for rel. authorities' approval	1	1	05MAY12A	05MAY12A	100	12APR12	12APR12			
02L1CC0632	Design (DDA) review by the rel. authorities	28	28	07MAY12A	07JUN12A	100	13APR12	10MAY12			
02L1CC0634	Obtain rel. authorities's approval for DDA	0	1		08JUN12A	100	11MAY12	11MAY12			
02L1CC0640	Obtain SO's consent for design (DDA)	0	0		08JUN12A	100		11MAY12			
Boulder Asses	sment & Design for Stabili. Measure										
02L1CC0702	Boulder Surevey	30	30	02JUN08A	15AUG08A	100	02JUN08A	15AUG08A			
02L1CC0704	Prepare/submit boulder surevey report	25	25	14JUL08A	05SEP08A	100	14JUL08A	05SEP08A			
02L1CC0706	SO review boulder survey report	14	14	06SEP08A	19SEP08A	100	06SEP08A	19SEP08A			
Temporary Dra	inage Management Plan										
02L1CC0802	TDMP preparation by the Designer	14	14	04AUG08A	03SEP08A	100	04AUG08A	03SEP08A			
02L1CC0803	TDMP submission for the DC's approval	1	1	08SEP08A	08SEP08A	100	08SEP08A	08SEP08A			
02L1CC0804	TDMP certification by the Design Checker	28	28	09SEP08A	10DEC08A	100	09SEP08A	10DEC08A			
02L1CC0806	TDMP submission for the SO's approval	2	2	200CT08A	11DEC08A	100	200CT08A	11DEC08A			
02L1CC0808	TDMP review by the SO	90	90	210CT08A	08JAN09A	100	210CT08A	08JAN09A			
02L1CC0810	TDMP submission for DSD's approval	1	1	210CT08A	210CT08A	100	210CT08A	210CT08A			
02L1CC0812	TDMP review by the DSD	90	90	220CT08A	08JAN09A	100	22OCT08A	08JAN09A			
02L1CC0814	Obtain DSD's approval for DDA	1	1	08JAN09A	08JAN09A	100	08JAN09A	08JAN09A			
02L1CC0816	Obtain SO's consent for TDMP	0	0		08JAN09A	100		08JAN09A			
Geotechnical I	nstrumentation Stg 1 for GL Works										
3DL1CCG102	Design preparation by the Designer	14	14	22FEB08A	29APR08A	100	22FEB08A	29APR08A			
3DL1CCG104	Design certification by the Design Checker	7	7	30APR08A	26MAY08A	100	30APR08A	26MAY08A			
3DL1CCG106	Design submission for the SO's approval	1	1	10MAY08A	26MAY08A	100	10MAY08A	26MAY08A			
3DL1CCG108	Design review by the SO	14	14	12MAY08A	14JUL08A	100	12MAY08A	14JUL08A			
3DL1CCG110	Obtain design approval from the SO	0	0		14JUL08A	100		14JUL08A			
3DL1CCG112	Install Geotechnical Instruments	19	19	24JUN08A	09AUG08A	100	24JUN08A	09AUG08A			
3DL1CCG114	Baseline Monitoring	14	14	26JUL08A	16AUG08A	100	26JUL08A	16AUG08A			
	nstrumentation Stg 2 for Deep Exc.										
3DL1CCG202	Design preparation by the Designer	60		28AUG08A		100	28AUG08A	04NOV08A			
3DL1CCG204	Design certification by the Design Checker	14	14	11NOV08A			11NOV08A	01DEC08A			
3DL1CCG206	Design submission for the SO's approval	2	2		02DEC08A		04NOV08A	02DEC08A			
3DL1CCG210	Design review by the SO	28	28	05NOV08A	24NOV09A		05NOV08A	24NOV09A			
3DL1CCG212	Obtain design approval from the SO	0	0		24NOV09A	100		24NOV09A			
3DL1CCG214	Install Geotechnical Instruments	18	18	14MAR09A	18JUN09A		14MAR09A	18JUN09A			
3DL1CCG215	Install additional Geotechnical instruments	30	30	06OCT09A	10NOV09A		06OCT09A	10NOV09A			
3DL1CCG216	Baseline Monitoring	14	14		13NOV09A		19JUN09A	13NOV09A			
3DL1CCG218	Monitor/report Geotechnical Instrumentation	2,014	2,014	18AUG08A	28APR14	73	18AUG08A	22FEB14	0		
Design Pack	ages for Works in Portion D										
Temp. Access	Rd Design at P. D; +14mPD to +69mPD										
02L1DD0102	Design preparation by the Designer	14				100	17JAN08A	16APR08A			
02L1DD0104	Design certification by the Design Checker	150	150	17APR08A	13SEP08A	100	17APR08A	13SEP08A			
02L1DD0106	Design submission for the SO's approval	2	2	25APR08A	24SEP08A	100	25APR08A	24SEP08A			
02L1DD0108	Design review by the SO	90		26APR08A			26APR08A	04FEB09A			
02L1DD0110	Design review by GEO	28	28	23JUN08A	29NOV08A	100	23JUN08A	29NOV08A			

ID	Activity		WP09	WP10	WP10	%	WP09	WP09	Total	2012 A S O N	D	2013 J F M A M J J	ASO	N D J F M	2014 A M J J	ASON	2015 D J F M A
02L1DD0112	Description Obtain design approval from the SO	Dur 0	Dur 0	Start	Finish 04FEB09A	Comp 100	Start	Finish 04FEB09A	Float	63 64 65 66	67 (68 69 70 71 72 73 74	75 76 77	78 79 80 81 82	83 84 85 86	87 88 89 90	91 92 93 94 95
	ssment & Design for Stabili. Measure	0			041 EB03A	100					H						
02L1DD0302	Boulder Surevey	14	14	03APR08A		100	03APR08A	11APR08A	1								
02L1DD0304	Prepare/submit boulder surevey report	25	25	12APR08A			12APR08A	26MAY08A			X						
02L1DD0306	SO review boulder survey report	14		27MAY08A			27MAY08A				X						
		1.4	14	ZINATOOA	TOJONOOA	100	ZIMATOOA	TOSCINOOA	I								
Site Formatio	n Design; +69mPD to +40mPD Design preparation by the Designer	14	14	17JAN08A	16APR08A	100	17JAN08A	16APR08A	1								
02L1DD0402		14	14	17JAN08A 17APR08A	14NOV08A		17APR08A	14NOV08A			X			HANN AN			
02L1DD0404	Design certification by the Design Checker	2	150	25APR08A	14NOV08A		25APR08A	14NOV08A			\mathcal{H}						
02L1DD0408	Design submission for the SO's approval	90	90	26APR08A	04DEC08A			04DEC08A			X			HANN AN			
02L1DD0408	Design review by the SO	0	90	ZUAPRUOA	04DEC08A	100	ZUAPRUOA	04DEC08A			X						
	Obtain design approval from the SO	0	0		04DEC08A	100		U4DEC08A			H						
Site Formatio		100	100	44400004	001443/004	100		001443/004	-								
02L1DD0502	Design preparation by the Designer	120		14APR08A				09MAY09A			X						
02L1DD0504	Design certification by the Design Checker	145	145	05MAY08A			05MAY08A	15MAY09A			X						
02L1DD0506	Design submission for the SO's approval	2	2	10MAY08A			10MAY08A	29MAY09A			X						
02L1DD0508	Design review by the SO	90	90	12MAY08A			12MAY08A	14AUG09A			X						
02L1DD0512	Obtain design approval from the SO	0	0		14AUG09A	100		14AUG09A			X						
Site Formatio									-								
02L1DD0602	Design preparation by the Designer	60	60		23APR09A			23APR09A	-		X						
02L1DD0603	Design submission for the DC's approval	2	2		24APR09A		16JAN09A	24APR09A			X						
02L1DD0604	Design certification by the Design Checker	28	28		03AUG09A		19JAN09A	03AUG09A			X						
02L1DD0606	Design submission for the SO's approval	2	2	02FEB09A	04AUG09A		02FEB09A	04AUG09A			X						
02L1DD0608	Design review by the SO	63		03FEB09A	24JUN09A		03FEB09A	24JUN09A			X						
02L1DD0612	Obtain design approval from the SO	0	0		24JUN09A	100		24JUN09A			X						
	ng Chamber Design	1									X						
02L1DD0702	Design (AIP) preparation by the Designer	381	381	21APR08A	11MAY09A		21APR08A	11MAY09A			X						
02L1DD0703	Design (AIP) submission for the DC's approval	3	3	28JUL08A	12MAY09A		28JUL08A	12MAY09A			X						
02L1DD0704	Design (AIP) certification by the Design Checker	37	37	21AUG08A	13MAY09A		21AUG08A	13MAY09A			X						
02L1DD0706	Design (AIP) submission for the SO's approval	3	3	28JUL08A	13MAY09A		28JUL08A	13MAY09A			X						
02L1DD0708	Design (AIP) review by the SO	280	280	29JUL08A	19MAY09A		29JUL08A	19MAY09A			X						
02L1DD0710	AIP submission for rel. authorities' approval	1	1	28AUG08A			28AUG08A	28AUG08A			X						
02L1DD0712	Design (AIP) review by the rel. authorities	28	28	28FEB09A	27MAR09A	100	28FEB09A	27MAR09A			X						
02L1DD0714	Obtain rel. authorities's approval for AIP	0	0		19MAY09A	100		19MAY09A			X						
02L1DD0716	SO submit Design (AIP) for review of GEO	1	1				28FEB09A	28FEB09A			X						
02L1DD0718	Design (AIP) review by the GEO	28	28	01MAR09A		100	01MAR09A	28MAY09A			Δ						
02L1DD0720	Obtain SO's consent for design (AIP)	0	0		19MAY09A	100		19MAY09A			X						
02L1DD0722	Design preparation for the DDA submission	30	30	07MAR09A				05JUN09A			X						
02L1DD0723	Design (DDA) submission for the DC's approval	1	1	06JUN09A				06JUN09A			X						
02L1DD0724	Design (DDA) certification by the Design Checker	28		07JUN09A				04AUG09A			X						
02L1DD0726	Design (DDA) submission for the SO's approval	2		06JUN09A				280CT09A			X			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			
02L1DD0728	Design (DDA) review by the SO	66		07JUN09A			07JUN09A				XX.						
02L1DD0730	DDA submission for rel. authorities' approval	1		280CT09A			280CT09A				X						
02L1DD0732	Design (DDA) review by the rel. authorities	28	28	290CT09A	25NOV09A	100	290CT09A	25NOV09A			X			<u> XXXXXX</u>			

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2	012	20 J J F M A M J	13		2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start			A S 63 64	O N 1 65 66 6	J F M A M J 7 68 69 70 71 72 73	J A S O 74 75 76 77	N D J F M A 78 79 80 81 82 83	M J J 3	A S O N 37 88 89 90	D J F M A 91 92 93 94 95
02L1DD0734	Obtain rel. authorities's approval for DDA	1	1	26NOV09A	26NOV09A	100	26NOV09A	26NOV09A									
02L1DD0736	SO submit design (DDA) for review of GEO	0	0	270CT09A	270CT09A	100	270CT09A	270CT09A									
02L1DD0738	Design (DDA) review by the GEO	28	28	280CT09A	24NOV09A	100	280CT09A	24NOV09A									
02L1DD0740	Obtain SO's consent for design (DDA)	0	0		04NOV09A	100		04NOV09A									
Hopper Desig	n																
02L1DD0802	Design preparation by the Designer	119	119	28FEB09A	13AUG09A	100	28FEB09A	13AUG09A									
02L1DD0803	Design submission for the DC's approval	1	1	14AUG09A	14AUG09A	100	14AUG09A	14AUG09A									
02L1DD0804	Design certification by the Design Checker	28	28	17AUG09A	13NOV09A	100	17AUG09A	13NOV09A									
02L1DD0806	Design submission for the SO's approval	1	1	14AUG09A	14NOV09A	100	14AUG09A	14NOV09A									
02L1DD0808	Design review by the SO	42	42	15AUG09A	01DEC09A	100	15AUG09A	01DEC09A									
02L1DD0810	Obtain design approval from the SO	0	0		01DEC09A	100		01DEC09A									
Steel Platform	n Design																
02L1DD0902	Design preparation by the Designer	82	82	02JAN09A	24MAR09A	100	02JAN09A	24MAR09A									
02L1DD0903	Design submission for the DC's approval	1	1	25MAR09A	25MAR09A	100	25MAR09A	25MAR09A									
02L1DD0904	Design certification by the Design Checker	28	28	26MAR09A	18JUL09A	100	26MAR09A	18JUL09A									
02L1DD0906	Design submission for the SO's approval	1	1	23JUN09A	18JUL09A	100	23JUN09A	18JUL09A									
02L1DD0908	Design review by the SO	42	42	24JUN09A	24JUL09A	100	24JUN09A	24JUL09A									
02L1DD0910	Obtain design approval from the SO	0	0		24JUL09A	100		24JUL09A									
Overhead Ga	ntry Support & Noise Enclosure Design																
02L1DD1002	Design preparation by the Designer	82	82	02JAN09A	02NOV09A	100	02JAN09A	02NOV09A									
02L1DD1003	Design submission for the DC's approval	2	2	15JUN09A	03NOV09A	100	15JUN09A	03NOV09A									
02L1DD1004	Design certification by the Design Checker	28	28	16JUN09A	13OCT09A	100	16JUN09A	130CT09A									
02L1DD1006	Design submission for the SO's approval	2	2	15JUN09A	13OCT09A	100	15JUN09A	130CT09A									
02L1DD1008	Design review by the SO	42	42	16JUN09A	17NOV09A	100	16JUN09A	17NOV09A									
02L1DD1010	Obtain design approval from the SO	0	0		17NOV09A	100		17NOV09A									
ELS Design fo	or Spiral Ramp																
02L1DD1102	Design preparation for the AIP submission	30	30	28MAY09A	16SEP09A	100	28MAY09A	16SEP09A									
02L1DD1103	Design (DDA) submission for the DC's approval	1	1	22JUN09A	16SEP09A	100	22JUN09A	16SEP09A									
02L1DD1104	Design (DDA) certification by the Design Checker	28	28	23JUN09A	07OCT09A	100	23JUN09A	07OCT09A									
02L1DD1106	Design (DDA) submission for the SO's approval	1	1	080CT09A	080CT09A	100	080CT09A	080CT09A									
02L1DD1108	Design (DDA) review by the SO	66	66	09OCT09A	07JUN10A	100	09OCT09A	07JUN10A									
02L1DD1114	Obtain rel. authorities's approval for DDA	1	1	26NOV09A	26NOV09A	100	26NOV09A	26NOV09A									
02L1DD1116	SO submit design (DDA) for review of GEO	0	0		12MAY10A	100		12MAY10A									
02L1DD1118	Design (DDA) review by the GEO	28	28	13MAY10A	04JUN10A	100	13MAY10A	04JUN10A									
02L1DD1120	Obtain SO's consent for design (DDA)	0	0		07JUN10A	100		07JUN10A									
Temp. Design	for Box Culvert Opon Cut																
02L1DD1202	Design preparation for the DDA submission	80	80	27JUN09A	28FEB10A	100	27JUN09A	28FEB10A									
02L1DD1203	Design (DDA) submission for the DC's approval	1	1	01MAR10A	27JUL10A	100	01MAR10A	27JUL10A									
02L1DD1204	Design (DDA) certification by the Design Checker	28	28	02MAR10A	06DEC10A	100	02MAR10A	06DEC10A									
02L1DD1206	Design (DDA) submission for the SO's approval	1	1	19MAR10A	07DEC10A	100	19MAR10A	07DEC10A									
02L1DD1208	Design (DDA) review by the SO	66	66	20MAR10A	16DEC10A	100	20MAR10A	16DEC10A									
02L1DD1220	Obtain SO's consent for design (DDA)	0	0		16DEC10A	100		16DEC10A									

ID	A _41:	WD40	14/D00	14/04.0	WD40	0/	14/000	14/000	Tatal	2012	2	20	13		2014		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	A S O	N D	J F M A M J 68 69 70 71 72 73	J A S C	N D J F M	A M J J	A S O N	D J F M A
Temporary Dra	inage Management Plan								1	03 04 03			14 13 10 11		05 04 05 00	07 00 09 90	91 92 93 94 93
02L1DD1302	TDMP preparation by the Designer	225	225	05MAY08A	27MAR09A	100	05MAY08A	27MAR09A									
02L1DD1303	TDMP submission for the DC's approval	2	2	08AUG08A				29MAY09A									
02L1DD1304	TDMP certification by the Design Checker	28	28	09AUG08A	06JUN09A	100	09AUG08A	06JUN09A			$\langle \rangle \rangle$						
02L1DD1306	TDMP submission for the SO's approval	2	2	08AUG08A		100	08AUG08A	08JUN09A									
02L1DD1308	TDMP review by the SO	90	90	08AUG08A	16AUG11A	100	08AUG08A	16AUG11A									
02L1DD1316	Obtain SO's consent for TDMP	0	0		16AUG11A	100		16AUG11A									
Geotechnical Ir	nstrumentation Stg 1 for GL Works								-								
3DL1DDG102	Design preparation by the Designer	14	14	22FEB08A	24APR08A	100	22FEB08A	24APR08A									
3DL1DDG104	Design certification by the Design Checker	7	7	25APR08A	16JUN08A	100	25APR08A	16JUN08A									
3DL1DDG106	Design submission for the SO's approval	1	1	25APR08A	16JUN08A	100	25APR08A	16JUN08A									
3DL1DDG108	Design review by the SO	14	14	26APR08A	14JUL08A	100	26APR08A	14JUL08A									
3DL1DDG110	Obtain design approval from the SO	0	0		14JUL08A	100		14JUL08A									
3DL1DDG112	Install Geotechnical Instruments	10	10	04JUN08A	05JUL08A	100	04JUN08A	05JUL08A									
3DL1DDG114	Initial reading	14	14	18JUN08A	09JUL08A	100	18JUN08A	09JUL08A									
Geotechnical Ir	nstrumentation Stg 2 for Deep Exc.																
3DL1DDG202	Design preparation by the Designer	14	14	28MAY09A	310CT09A	100	28MAY09A	310CT09A									
3DL1DDG204	Design certification by the Design Checker	14	14	11JUN09A	04DEC09A	100	11JUN09A	04DEC09A									
3DL1DDG206	Design submission for the SO's approval	2	2	11JUN09A	04DEC09A	100	11JUN09A	04DEC09A									
3DL1DDG208	Design review by the SO	28	28	12JUN09A	16DEC10A	100	12JUN09A	16DEC10A									
3DL1DDG210	Obtain design approval from the SO	0	0		16DEC10A	100		16DEC10A									
3DL1DDG212	Install Geotechnical Instruments	18	18	09MAR10A	25MAR11A	100	09MAR10A	25MAR11A									
3DL1DDG214	Baseline Monitoring	14	14	24MAR10A	26MAR11A	100	24MAR10A	26MAR11A									
3DL1DDG216	Monitor/report Geotechnical Insturmentatation	2,098	2,098	10JUL08A	220CT14	69	10JUL08A	10APR14	0								
Design Packa	ages for Works in Portion F																
Main Tunnel De																	
	Design preparation for the AIP submission	414	414	08FEB08A	27MAR09A	100	08FEB08A	27MAR09A									
02L1FF0103	Design (AIP) submission for the DC's approval	2	2	02MAY08A	27MAR09A		02MAY08A	27MAR09A									
02L1FF0104	Design (AIP) certification by the Design Checker	28	28	03MAY08A	27MAR09A	100	03MAY08A	27MAR09A									
02L1FF0106	Design (AIP) submission for the SO's approval	1	1	10JUL08A	27MAR09A	100	10JUL08A	27MAR09A									
02L1FF0108	Design (AIP) review by the SO	66	66	11JUL08A	16JUN09A	100	11JUL08A	16JUN09A									
02L1FF0110	AIP submission for rel. authorities' approval	1	1	08JUL08A	08JUL08A	100	08JUL08A	08JUL08A									
02L1FF0112	Design (AIP) review by the rel. authorities	28	28	09JUL08A	05MAR09A	100	09JUL08A	05MAR09A									
02L1FF0114	Obtain rel. authorities's approval for AIP	1	1	06MAR09A	06MAR09A	100	06MAR09A	06MAR09A									
02L1FF0116	SO submit design (AIP) for review of GEO	1	1	16MAY09A	16JUN09A	100	16MAY09A	16JUN09A									
02L1FF0118	Design (AIP) review by the GEO	28	28	30MAY09A	03NOV09A	100	30MAY09A	03NOV09A									
02L1FF0120	Obtain SO's consent for design (AIP)	0	0		16JUN09A	100		16JUN09A									
02L1FF0122	Design preparation for the DDA submission	30	30	04NOV08A	10SEP09A	100	04NOV08A	10SEP09A									
02L1FF0123	Design (DDA) submission for the DC's approval	2	2	08JUN09A	11SEP09A	100	08JUN09A	11SEP09A									
02L1FF0124	Design (DDA) certification by the Design Checker	28	28	09JUN09A	17SEP09A	100	09JUN09A	17SEP09A									
02L1FF0126	Design (DDA) submission for the SO's approval	2	2	30JUN09A	18SEP09A	100	30JUN09A	18SEP09A									
02L1FF0128	Design (DDA) review by the SO	56	56	02JUL09A	10NOV09A	100	02JUL09A	10NOV09A									
02L1FF0130	DDA submission for rel. authorities' approval	1	1	25SEP09A	25SEP09A	100	25SEP09A	25SEP09A									
02L1FF0130	DDA submission for rel. authorities' approval	1	1	25SEP09A	25SEP09A	100	25SEP09A	25SEP09A									

ID	Activity	WP10	WP09	WP10	WP10	0/	\M/D00	WP09	Total	2012		2013		2014		2015
ID	Description	Dur	Dur	Start	Finish	% Comp	WP09 Start	Finish	Total Float	SON	D J F M	A M J J A S O N 71 72 73 74 75 76 77 78	D J F M A	M J J A S	OND	J F M A
02L1FF0132	Design (DDA) review by the rel. authorities	28	28	26SEP09A	22NOV09A	100	26SEP09A	22NOV09A								
02L1FF0134	Obtain rel. authorities's approval for DDA	1	1	23NOV09A	23NOV09A	100	23NOV09A	23NOV09A					XXXX			
02L1FF0136	SO submit design (DDA) for review of GEO	1	1	280CT09A	280CT09A	100	280CT09A	280CT09A					XXXX			
02L1FF0138	Design (DDA) review by the GEO	28	28	290CT09A	25NOV09A	100	290CT09A	25NOV09A								
02L1FF0140	Obtain SO's consent for design (DDA)	0	0		27NOV09A	100		27NOV09A					XXX			
Impact Assess	ment on WSD Yau Kam Tau WTW		İ			· · · · ·							XXXX			
02L1FF0202	Design preparation for the DDA submission	60	60	29APR08A	30JUN08A	100	29APR08A	30JUN08A								
02L1FF0203	Design (DDA) submission for the DC's approval	1	1	03JUL08A	03JUL08A	100	03JUL08A	03JUL08A					XXXX			
02L1FF0204	Design (DDA) certification by the Design Checker	260	260	04JUL08A	18MAR09A	100	04JUL08A	18MAR09A					XXXX			
02L1FF0206	Design (DDA) submission for the SO's approval	1	1	15JUL08A	18MAR09A	100	15JUL08A	18MAR09A					XXXX			
02L1FF0208	Design (DDA) review by the SO	66	66	16JUL08A	31MAR09A	100	16JUL08A	31MAR09A					XXXX			
02L1FF0210	DDA submission for rel. authorities' approval	1	1	10JUL08A	02APR09A	100	10JUL08A	02APR09A					XXXX			
02L1FF0212	Design (DDA) review by the rel. authorities	28	28	11JUL08A	30OCT09A	100	11JUL08A	30OCT09A					XXXX			
02L1FF0214	Obtain rel. authorities's approval for DDA	1	1	310CT09A	310CT09A	100	310CT09A	310CT09A					XXXX			
02L1FF0220	Obtain SO's consent for design (DDA)	0	0		31MAR09A	100		31MAR09A					XXXX			
Impact Assess	ment on WSD Tai Lam Chung WT No. 3		İ			· · · · ·							XXXX			
02L1FF0302	Design preparation for the DDA submission	32	32	14APR08A	27JUN08A	100	14APR08A	27JUN08A								
02L1FF0303	Design submission for the DC's approval	1	1	27JUN08A	27JUN08A	100	27JUN08A	27JUN08A			XXXX		XXXX			
02L1FF0304	Design (DDA) certification by the Design Checker	285	285	28JUN08A	30MAY09A	100	28JUN08A	30MAY09A			XXXX		XXXX			
02L1FF0306	Design (DDA) submission for the SO's approval	1	1	15JUL08A	01JUN09A	100	15JUL08A	01JUN09A			XXXX		XXXX			
02L1FF0308	Design (DDA) review by the SO	66	66	16JUL08A	04DEC10A	100	16JUL08A	04DEC10A			XXXX		XXXX			
02L1FF0310	DDA submission for rel. authorities' approval	1	1	280CT09A	280CT09A	100	280CT09A	280CT09A					XXXX			
02L1FF0312	Design (DDA) review by the rel. authorities	28	28	290CT09A	11DEC10A	100	290CT09A	11DEC10A			XXXX		XXXX			
02L1FF0314	Obtain rel. authorities's approval for DDA	0	0		11DEC10A	100		11DEC10A					XXXX			
02L1FF0320	Obtain SO's consent for design (DDA)	0	0		11DEC10A	100		11DEC10A					XXXX			
Impact Assess	ment on KCRC West Rail Tunnel							•					XXXX			
02L1FF0402	Design preparation for the DDA submission	30	30	28APR08A	26JUN08A	100	28APR08A	26JUN08A								
02L1FF0403	Design submission for the DC's approval	1	1	26JUN08A	26JUN08A	100	26JUN08A	26JUN08A					XXXX			
02L1FF0404	Design (DDA) certification by the Design Checker	90	90	27JUN08A	02APR09A	100	27JUN08A	02APR09A					XXXX			
02L1FF0406	Design (DDA) submission for the SO's approval	2	2	15JUL08A	03APR09A	100	15JUL08A	03APR09A					XXXX			
02L1FF0408	Design (DDA) review by the SO	267	267	16JUL08A	04JAN10A	100	16JUL08A	04JAN10A					XXXX			
02L1FF0410	DDA submission for rel. authorities' approval	1	1	14JUL08A	14JUL08A	100	14JUL08A	14JUL08A			XXX		XXXX			
02L1FF0412	Design (DDA) review by the rel. authorities	28	28	15JUL08A	23DEC09A	100	15JUL08A	23DEC09A					XXXX			
02L1FF0414	Obtain rel. authorities's approval for DDA	1	1	23DEC09A	23DEC09A	100	23DEC09A	23DEC09A			XXX		XXXX			
02L1FF0420	Obtain SO's consent for design (DDA)	0	0		05JAN10A	100		05JAN10A			XXX		XXXX			
Impact Assess	ment on WSD Tsuen Wan Reservoir G.												XXXX			
02L1FF0502	Design preparation for the DDA submission	30	30	05MAY08A	02JUL08A	100	05MAY08A	02JUL08A								
02L1FF0503	Design submission for the DC's approval	1	1	03JUL08A	03JUL08A	100	03JUL08A	03JUL08A					XXXX			
02L1FF0504	Design (DDA) certification by the Design Checker	260	260	04JUL08A	24AUG09A	100	04JUL08A	24AUG09A					XXXX			
02L1FF0506	Design (DDA) submission for the SO's approval	2	2	15JUL08A	15SEP09A	100	15JUL08A	15SEP09A					XXXX			
02L1FF0508	Design (DDA) review by the SO	60	60	16JUL08A	02OCT09A	100	16JUL08A	02OCT09A					XXXX			
02L1FF0510	DDA submission for rel. authorities' approval	1	1	10JUL08A	10JUL08A	100	10JUL08A	10JUL08A					XXXX			
02L1FF0512	Design (DDA) review by the rel. authorities	28	28	11JUL08A	11NOV09A	100	11JUL08A	11NOV09A					XXXX			
•		• • •									- 4 - 6 - 8 - 6					+

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012		
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	3 64 65 66	67 68 69 7	M A M J J J A S O N D J F M A M J J A S O N D J F M A 70 71 72 73 74 75 76 77 78 79 80 81 82 88 84 85 86 87 88 89 90 91 92 93 94 95
02L1FF0514	Obtain rel. authorities's approval for DDA	1	1	12NOV09A	12NOV09A		12NOV09A	12NOV09A				
02L1FF0520	Obtain SO's consent for design (DDA)	0	0		02OCT09A	100		02OCT09A				
Grout Trial at												
02L1FF0602	MS preparation for the DDA submission	12	12	02MAY08A				20MAY08A				
02L1FF0606	Ms (DDA) submission for the SO's approval	1	1	21MAY08A				21MAY08A			XXX	
02L1FF0608	MS (DDA) review by the SO	24	24	22MAY08A	17JUL08A	100	22MAY08A	17JUL08A			<u> </u>	
02L1FF0620	Obtain SO's consent for MS (DDA)	0	0		17JUL08A	100		17JUL08A				
Geotechniuca	I Instrumentation											
3DL1FFGI02	Design preparation by the Designer	60	60	28AUG08A	23JAN09A	100	28AUG08A	23JAN09A			XXX	
3DL1FFGI04	Design certification by the Design Checker	14	14	24JAN09A	310CT09A	100	24JAN09A	310CT09A			XXX	
3DL1FFGI06	Design submission for the SO's approval	2	2	24JAN09A	28NOV09A	100	24JAN09A	28NOV09A			XXX	
3DL1FFGI08	Design review by the SO	56	56	24JAN09A	08APR10A	100	24JAN09A	08APR10A			IXXX	
3DL1FFGI10	DDA submission for rel. authorities' approval	1	1	14MAR09A	14MAR09A	100	14MAR09A	14MAR09A			IXXX.	
3DL1FFGI12	Design (DDA) review by the rel. authorities	56	56	15MAR09A	11DEC09A	100	15MAR09A	11DEC09A				
3DL1FFGI14	Obtain rel. authorities's approval for DDA	1	1	12DEC09A	12DEC09A	100	12DEC09A	12DEC09A			IXXX.	
3DL1FFGI16	Obtain design approval from the SO	0	0		08APR10A	100		08APR10A				
3DL1FFGI18	Install geotechnical instrumentsation	90	90	03MAR10A	31JAN11A	100	03MAR10A	31JAN11A				
3DL1FFGI20	Baseline Monitoring	14	14	06MAR10A	05FEB11A	100	06MAR10A	05FEB11A				
3DL1FT0208	Maintain/monitor geotechnical instrumentation	1,196	1,196	28APR10A	170CT13	66	28APR10A	06AUG13	-328			
Design Pack	ages for Works in Portion G											
	act Assessment											
02L1GG0115	Information for catchment area by SOR	21	21	09OCT09A	03NOV09A	100	09OCT09A	03NOV09A				
02L1GG0125	Prepare DIA report	32	32	09OCT09A		100	09OCT09A	24NOV09A			<u> </u>	
02L1GG0135	Submission of DIA report to SOR/DSD	1	1	25NOV09A			25NOV09A	25NOV09A			XXXX	
02L1GG0145	SOR/DSD review/comment DIA report	28	28	25NOV09A			25NOV09A	24DEC09A			XXXX	
02L1GG0155	Revise DIA incorporating comments	12	12	28DEC09A	29JAN10A		28DEC09A	29JAN10A			XXXX	
02L1GG0165	SOR/DSD review/approve DIA report	28	28	30JAN10A	16SEP11A		30JAN10A	16SEP11A			XXXX	
02L1GG0175	Obtain consent from SOR and DSD	0	0		16SEP11A	100		16SEP11A			XXXX	
	n Design for H-Piling at Portion G	-	-								HAN A	
02L1GG0202	Design preparation for the DDA submission	53	53	05OCT09A	03DEC09A	100	05OCT09A	03DEC09A			IXXX	
02L1GG0203	Design (DDA) submission for the DC's approval	1	1	15DEC09A			15DEC09A	15DEC09A			XXXX	
02L1GG0204	Design (DDA) certification by the Design Checker	14	14	16DEC09A			16DEC09A	14JAN10A			IXXX IXXX	
02L1GG0206	Design (DDA) submission for the SO's approval	1	1	15JAN10A	15JAN10A		15JAN10A	15JAN10A			XXXX	
02L1GG0208	Design (DDA) review by the SO	40	40	16JAN10A			16JAN10A	23JUN10A			IXXX IXXX	
02L1GG0228	Obtain design (DDA) approval from the SO	0	0	100/ 1110/ 1	23JUN10A			23JUN10A			IXXX IXXX	
	r Pipe Jacking at Portion G	Ű			20001110/1	100		20001110/1				
02L1GG0302	Design preparation for the DDA submission	15	15	21NOV09A	23 JAN10A	100	21NOV09A	23 JAN10A			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
02L1GG0302	Design (DDA) submission for the DC's approval	15	10	25JAN10A				25JAN10A 25JAN10A	+ +		INN.	
	Design (DDA) submission for the DC's approval Design (DDA) certification by the Design Checker		1.	26JAN10A				25JAN 10A 28APR10A			HAA.	
02L1GG0304	Design (DDA) certification by the Design Checker Design (DDA) submission for the SO's approval	14	14								HAA.	
02L1GG0306		1	1	29APR10A				29APR10A			HAAAAAAAAA MAAAAA MAAAAAA MAAAAAAAAAA MAAAAAA	
02L1GG0308	Design (DDA) review by the SO	28	28		04JUN10A 04JUN10A			04JUN10A			INAA.	
02L1GG0318	Obtain design (DDA) approval from the SO	0	0		04JUN IUA	100		04JUN10A			<u>VXXX</u>	

ID	Activity	W/D10	WP09	WP10	WP10	%	WP09	WP09	Total	2012		201	3		2014	2015
	Description	Dur	Dur	Start	Finish	Comp	Start		Float	A S O N D	J F M	AMJ.	J A S O N D 4 75 76 77 78 79	J F M A M	J J A S O	N D J F M A
Schedule of	Milestones for Cost Centre No. 2L	1				•						112101				
02L10D1002	2L 1; On submission of PDP to the SO	0	0		10JAN08A	100		10JAN08A								
02L10D1004	2L 2; On acception of PDP by the SO	0	0		04SEP08A	100		04SEP08A								
02L10D1006	2L 3; On submission of AIP to the SO; Portion A	0	0		12MAY09A	100		12MAY09A								
02L10D1008	2L 4; On acceptance of AIP by the SO; Portion A	0	0		25JUL09A	100		25JUL09A								
02L10D1010	2L 5; On subumission of DDA to the SO; Portion A	0	0		19NOV10A	100		28MAY12								
02L10D1012	2L 6; On acceptance of DDA by the SO; Portion A	0	0		24NOV10A	100		04AUG12	•							
02L10D1014	2L 7; On submission of AIP to the SO; Portion B	0	0		07JUL09A	100		07JUL09A								
02L10D1016	2L 8; On acceptance of AIP by the SO; Portion B	0	0		060CT10A	100		060CT10A								
02L10D1018	2L 9; On submission of DDA to the SO; Portion B	0	0		13APR12A	100		28MAY12								
02L10D1020	2L 10; On acceptance of DDA by the SO; Portion B	0	0		08JUN12A	100		11MAY12								
02L10D1022	2L 11; On submission of AIP to the SO; Portion C	0	0		25JUL09A	100		25JUL09A								
02L10D1024	2L 12; On acceptance of AIP by the SO; Portion C	0	0		06OCT10A	100		06OCT10A								
02L10D1026	2L 13; On submission of DDA to the SO; Portion C	0	0		13APR12A	100		28MAY12								
02L10D1028	2L 14; On acceptance of DDA by the SO; Portion C	0	0		08JUN12A	100		11MAY12								
02L10D1030	2L 15; On acceptance of AIP by the SO; Portion D	0	0		25JUL09A	100		25JUL09A								
02L10D1032	2L 16; On acceptance of DDA by the SO; Portion D	0	0		30JUL11A	100		30JUL11A								
02L10D1034	2L 17; On submission of AIP to the SO; Portion F	0	0		13JUL09A	100		13JUL09A								
02L10D1036	2L 18; On acceptance of AIP by the SO; Portion F	0	0		24JUN10A	100		24JUN10A								
02L10D1038	2L 19; On submission of DDA to the SO; Portion F	0	0		31JUL09A	100		28MAY12								
02L10D1040	2L 20; On acceptance of DDA by the SO; Portion F	0	0		280CT09A	100		04AUG12	•							
02L10D1042	2L 21; On acceptance of AIP by the SO; Portion G	0	0		11JAN10A	100		11JAN10A								
02L10D1044	2L 22; On acceptance of DDA by the SO; Portion G	0	0		16SEP11A	100		27FEB12								
02L10D1046	2L 23; On completion of all works under this CC	0	0		08JUN12A	100		27FEB12								
Constructio	on of Main Tunnel															
Trial Grout a	t Fault Zone F1															
3AL1FT0002	HyD issue XP	0	0		23JUL08A	100		23JUL08A								
3AL1FT0004	Adavance notice to HyD/Road advice	6	6	24JUL08A	30JUL08A		24JUL08A	30JUL08A								
3AL1FT0006	Trial pit excavation	4	4	31JUL08A	04AUG08A		31JUL08A	04AUG08A								
3AL1FT0010	Scaffolding, mobilize & set up	7	7	05AUG08A	13AUG08A		05AUG08A	13AUG08A								
3AL1FT0012	Drill & test for 2m Arrangement Test	45	45	14AUG08A	15NOV08A		14AUG08A	15NOV08A								
3AL1FT0014	Backfill drilled holes, demobilization & Tidy up	6	6	17NOV08A	22NOV08A	100	17NOV08A	22NOV08A								
3AL1FT0016	Drill & test for single hole arrangement test	17	17	11AUG08A	04SEP08A	100	11AUG08A	04SEP08A								
3AL1FT0018	Backfill drilled hole, demobilization & tidy up	1	1	05SEP08A	05SEP08A			05SEP08A								
TBM Manufa	acture/Testing/Delivery															
	of TBM & Back-ups															
3AL1FT0302	TBM & Excavation Sys Procurement	30	30	14DEC07A	12JAN08A	100	14DEC07A	12JAN08A			VXX					
3AL1FT0304	TBM design & manufacturing	252		21DEC07A			21DEC07A	28SEP08A			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					
3AL1FT0306	TBM workshop tests	7		040CT08A				080CT08A								
3AL1FT0308	TBM workshop tests TBM dismounting & packing	21		090CT08A				24DEC08A			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					
		· - ·									VIVNA					

		14/540	14/200	14/540		0/	14/200	MIDOO	T . (.)	2012			2013			2014		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Float	A S O	N D J	FMA	2013 M J J A S (1 72 73 74 75 76 7) N D J	F M A M	JJAS		JFMA
Delivery of TE	•	- Dui		oturt		comp	oturt	- Thion	1.1041	3 04 03 0			1 12 13 14 13 10 1		51 62 63 64	00 00 00 00	59 90 91	92 93 94 95
3AL1FT0105	TBM shipment to Hong Kong	30	30	06JUL09A	10AUG09A	100	06JUL09A	10AUG09A			XX							
3AL1FT0110	TBM arriving Portion I	3	3	10AUG09A			10AUG09A	12AUG09A				HA						
3AL1FT0115	Destuffing Containers/Cleaning & lubrication	24	24	08SEP09A			08SEP09A	100CT09A			H)	HA						
	mbly/Test & Commis. at Portion I	24	24	00021 0071	1000100/(100		1000100/(
3AL1FT0215	Backup # 1	12	12	09SEP09A	225ED00A	100	09SEP09A	22SEP09A										
3AL1FT0215	Backup # 2	8	12	15SEP09A			15SEP09A	223EP09A 23SEP09A			H H	HA						
3AL1FT0225	Backup # 2 Backup # 3	4	0	21SEP09A			21SEP09A	233EP09A 24SEP09A			H H	HA						
3AL1FT0223	Backup # 3	3	4	24SEP09A			24SEP09A	243EP09A			H H	HA						
3AL1FT0230	Baackup # 5	2	3	243EP09A 28SEP09A			285EP09A	203EP09A 29SEP09A			H H	HA						
3AL1FT0240	Backup # 6	3	2	29SEP09A			29SEP09A	020CT09A			H H	HA						
3AL1FT0245	Backup # 0 Backup # 7	3	3	30SEP09A			30SEP09A	020CT09A 050CT09A			H H	1 A A						
3AL1FT0255	Backup # 7	4	3	050CT09A			050CT09A	080CT09A			H H	1 A A						
3AL1F10255 3AL1FT0260	•		4	050CT09A 070CT09A				150CT09A			XX.	///						
3AL1F10260	Backup # 9	5		070CT09A 090CT09A	15OCT09A		07OCT09A	150CT09A			XX.	///						
3AL1F10365 3AL1FT0370	Backup # 10	6	0	100CT09A	15OCT09A		09OCT09A 10OCT09A	150CT09A			HA H	///						
3AL1F10370	Backup # 11	6	0	130CT09A	15OCT09A			150CT09A			XX.	///						
	Backup # 12	6	0		15OCT09A		130CT09A				H)	///						
3AL1FT0377	Backup conveyor	5	5	170CT09A	16JAN10A		17OCT09A	16JAN10A			HA .	HA.						
3AL1FT0379 3AL1FT0381	Ventilation duct into cassette and scaffolding	3	3	04NOV09A			04NOV09A	26JAN10A			HA .	AA.						
3AL1FT0381 3AL1FT0383	Wheels	5	5	16OCT09A			16OCT09A	11JAN10A			HA .	AA.						
	Testing for compressor	3	3	16OCT09A	19JAN10A		16OCT09A	19JAN10A			HA .	AA.						
3AL1FT0385	Testing for hosereels	3	3	280CT09A	19JAN10A		280CT09A	19JAN10A			HA .	HA.						
3AL1FT0387	Testing for peagravel system	3	3	12NOV09A	19JAN10A		12NOV09A	19JAN10A			HA .	HA.						
3AL1FT0389	Erector	4	4	22OCT09A			22OCT09A	20JAN10A			HA I	AA.						
3AL1FT0391	Segment hoisting crane	3	3	22OCT09A				27NOV09A			HA .	AA.						
3AL1FT0393	Shields	7	/	290CT09A			290CT09A	07JAN10A			HA)	1A						
3AL1FT0395	Pre-testing for hydraulic & electric system	4	4	22SEP09A				23JAN10A			HA)	1A						
3AL1FT0397	Holding cylinder heads	8	8	16NOV09A			16NOV09A	23NOV09A			HA)	1A						
3AL1FT0399	Walkways	12	12	22SEP09A			22SEP09A	23JAN10A			HX I	1A						
3AL1FT0401	Ventilation pipes supports	16					05NOV09A	02JAN10A			I A A	///						
3AL1FT0403	Cutterhead, welding & testing	37	37	30OCT09A	22JAN10A	100	30OCT09A	22JAN10A			<u>AA</u>	<u>AA</u>			<u> </u>			
	t from Portion I to Outfall										XX							
3AL1FT0405	Bottm shield 1 piece	1	1	19FEB10A	19FEB10A		19FEB10A	19FEB10A			I A A	XA						
3AL1FT0415	Outer telescopic shield bottom	0	0		22FEB10A	100		22FEB10A			<u> </u>	XA						
3AL1FT0425	Main bearing	0	0		19FEB10A	100		19FEB10A			<u> </u>							
3AL1FT0435	Side shield balance 2 pieces	1	1	22FEB10A				23FEB10A			<u> </u>							
3AL1FT0455	Bottom inner telescopic shield	1	1	22FEB10A				22FEB10A			X	XA						
3AL1FT0465	Main thrust rams	1	1	23FEB10A				23FEB10A			X	$ \lambda $						
3AL1FT0475	Side gripper shield balance 2 pieces	1	1	22FEB10A				22FEB10A			X							
3AL1FT0495	Electric motors for maindrive	1	1	25FEB10A				25FEB10A			XXI.							
3AL1FT0505	Cutterhead centre	1	1	02MAR10A				02MAR10A			<u> </u>							
3AL1FT0515	Cutterhead balance 4 pieces	1	1	02MAR10A				02MAR10A			<u> </u>							
3AL1FT0525	Gripper cylinders	1	1	22FEB10A	22FEB10A	100	22FEB10A	22FEB10A			XX							

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012		E M 4	2013 A M J J A S O N E 1 72 73 74 75 76 77 78 73		2014		2015 N.D.J.E.M	
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	3 64 65 6	6 67 68	69 70 7	1 72 73 74 75 76 77 78 79	9 80 81 82	83 84 85 86	5 87 88 89 9	0 91 92 93 94	95
3AL1FT0535	Tail shield	1	1	20MAR10A	20MAR10A		20MAR10A	20MAR10A			<u> </u>	\square		XXX				
3AL1FT0545	Erector	1	1	22FEB10A	22FEB10A		22FEB10A	22FEB10A			IAA	1A		XXXX				
3AL1FT0555	TBM conveyor	1	1	25FEB10A	25FEB10A		25FEB10A	25FEB10A			IAA	1A		XXXX				
3AL1FT0565	Probe drill	1	1	25FEB10A	25FEB10A		25FEB10A	25FEB10A			IAA	1A		XXXX				
3AL1FT0604	Backup # 1	1	1		09MAR10A			09MAR10A			XXX	1A		XXXA				
3AL1FT0606	Backup # 2	1	1	09MAR10A	09MAR10A			09MAR10A			XXX	1A		XXXA				
3AL1FT0608	Backup # 3	1	1		22MAR10A		22MAR10A	22MAR10A			XX			XXXX				
3AL1FT0610	Backup # 4	1	1	16MAR10A	16MAR10A		16MAR10A	16MAR10A			XX			XXXX				
3AL1FT0612	Backup # 5	1	1	16MAR10A	16MAR10A		16MAR10A	16MAR10A			XX			XXXX				
3AL1FT0614	Backup # 6	1	1	22MAR10A	22MAR10A			22MAR10A			XX	1A		XXXX				
3AL1FT0616	Backup # 7	1	1	19MAY10A			19MAY10A				XXX	M		XXXX				
3AL1FT0618	Backup # 8	1	1	19MAY10A	19MAY10A	100	19MAY10A	19MAY10A			XXX			XXXX				
3AL1FT0620	Backup # 9	1	1	08JUN10A	08JUN10A	100		08JUN10A			XXX			XXXX				
3AL1FT0622	Backup # 10	1	1	08JUN10A	08JUN10A	100	08JUN10A	08JUN10A			XXX			XXXX				
3AL1FT0624	Backup # 11	1	1	24JUN10A	24JUN10A	100	24JUN10A	24JUN10A			XX			XXXX				
3AL1FT0628	Backup # 12	1	1	24JUN10A	24JUN10A	100	24JUN10A	24JUN10A						XXXX				
Manufacture	Pre-cast Lining/Delivery										XXX							
Segmental Lin	ing Mould										XX							
3AL1FTSM02	Procure sub-contract for segmental mould	0	0		21JUL08A	100		21JUL08A			XXX							
3AL1FTSM04	Prepare shop drwgs for segmental mould	60	60	02FEB09A	05MAR09A	100	02FEB09A	05MAR09A			XXX	M		XXX				
3AL1FTSM06	Fabrication of segmental mould	90	90	06MAR09A	16MAY09A	100	06MAR09A	16MAY09A			XXX	M		XXX				
3AL1FTSM08	Inspection in Korea	7	7	18MAY09A	20MAY09A	100	18MAY09A	20MAY09A			XXX	M		XXX				
3AL1FTSM10	Painting & packing	7	7	21MAY09A	27MAY09A	100	21MAY09A	27MAY09A			XXX	XX		XXXX				
3AL1FTSM12	Delivery of segmental moulds to HKG	7	7	28MAY09A	03JUN09A	100	28MAY09A	03JUN09A			XXX			XXXX				
Pre-cast Segm	ental Lining										XXX							
3AL1FT0404	Prepare/submit QA/QC System	30	30	12JAN09A	04MAR09A	100	12JAN09A	04MAR09A			XXX							
3AL1FT0410	SO approve QA/QC system	28	28	05MAR09A	06JUN09A	100	05MAR09A	06JUN09A			XX			XXXX				
3AL1FT0412	Approval of Tunnel Linig Design	0	0		25NOV09A	100		25NOV09A			XXX			XXXX				
3AL1FT0416	Manufactur of segments	330	330	30NOV09A	04MAY11A	100	30NOV09A	04MAY11A			XXX			XXX				
3AL1FT0418	Delivery of Segments	813	813	05MAR10A	26NOV11A	100	05MAR10A	26NOV11A			XXX			XXX				
3AL1FTSL02	Procure sub-contract for segment lining	0	0		05JAN09A	100		05JAN09A			XX			XXX				
Geotechnica	I Instrumetation at WSD Tunnel																	
	nent to Install G.I. Works										<u> </u>							
	Prepare method statement	69	69	12MAR09A	26MAR09A	100	12MAR09A	26MAR09A										
3AL1FTMS04	Method statement endorsement by ICE & APRE	30		29MAY09A			29MAY09A				1X)			XXX				
3AL1FTMS06	Method statement endorsement by SOR	60	60				30JUN09A				1X)			XXX				
3AL1FTMS14	Method statement endorsement by WSD	24	24					11AUG10A			XX			XXXX			+	
	Pre-construction Condition Survey				1													\square
3AL1WT3A02	Prepare method statement for air sampling	12	12	02NOV09A	14NOV09A	100	02NOV09A	14NOV09A			XXX			XXXX				
3AL1WT3A04	Submit method statement for air sampling	1	1	16NOV09A			16NOV09A				XXX XXX	MA		XIIII		+	+	
3AL1WT3A06	Approval of method statement for air sampling	29	20	17NOV09A			17NOV09A				HAA M	MA		XHH		+	+	
3AL1WT3A08	WSD Tunnel Shutdown for Air Sample/Cond'n Survey	23	23				15DEC09A				HA	'AA		XHH		+	+	
	to a number of a down for Air outpic/out an outvey	-	2	100L000A	LEDECOUR	100	10020004	LEDLOUGA			XIX/X			XIXIXII				

Internation Description Dur Dur <thdur< th=""> Dur Dur</thdur<>	ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	201	2		2013	2	014	2015
SAL WITCH Curry out at sampling & condition survey 9 9 10 2107C03A 2207C0AA AL WITSAC Curry out at sampling & condition survey 6 0 27FERIA 2004C0AA 100 27FERIA 2004C0AA 2004C0AA 2004C0AA 2004C0AA 2004C0AA 2004C0A 2004C0A </th <th></th> <th>-</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Float</th> <th>A S O</th> <th>N D J</th> <th>F M A</th> <th>A M J J A S O N D</th> <th>J F M A M J</th> <th>J A S O N</th> <th>D J F M A</th>		-								Float	A S O	N D J	F M A	A M J J A S O N D	J F M A M J	J A S O N	D J F M A
SAL 1917-320 Commerces 02 ad information of WSD Tunnel 1 1 25FEB10A 100 25FEB10A	3AL1WT3A10	Carry out air sampling & condition survey	9	9	21DEC09A	22DEC09A		21DEC09A	22DEC09A		00 04 00						
Programments Number of All Numbe	3AL1WT3A20		1	1	25FEB10A	25FEB10A	100	25FEB10A	25FEB10A								
SAL10710802 Avange WSD loopen the volve house 1 1 SULU 10A 100 3ULU 10A 100 3ULU 10A SAL107178212 Semme the volve house (mask semme time) solve (SAL100A SOLVE 10A SOLVE 10	3AL1WT3A30	Carry out air sampling & condition survey	8	8	27FEB10A	02MAR10A	100	27FEB10A	02MAR10A								
SAL 1972812 Set up ensure trave are up ensure lange (DNR20) 2 2 14AUG10A 1000 03AUG10A 14AUG10A SAL 1972842 Remove Renow Tee up ensure lange (DNR20) 1	Preparation W	orks at Ting Kau Air Valve House															
SAL WT382 Remove the arrow toppe (DA200) 2 2 1 ALUCT0A 100 1 ALUCT0A 1 SAL WT382 Connect exhaust fun to valve shaft 5 5 1 7 ALUCT0A 1 ALUCT0A 1 ALUCT0A SAL WT382 Connect exhaust fun to valve shaft 5 5 1 7 ALUCT0A 1 7 AL	3AL1WT3B02	Arrange WSD to open the valve house	1	1	30JUL10A	30JUL10A	100	30JUL10A	30JUL10A								
SAL1WT3842 Remove connection fange (NARDI) 1 1 14.04/GAA 14.04/GAAA 14.04/GAA 14.04/GAA	3AL1WT3B12	Set up exhaust fans & arrange temp. electricity	3	3	03AUG10A	03AUG10A	100	03AUG10A	03AUG10A								
SALL YU392 Connect exhaust fan to vave shaft 5 17/L UG10A 17/L UG10A 17/L UG10A 17/L UG10A Preparation Works at Chai Wan Kok Shaft C 1 12/L UG10A	3AL1WT3B32	Remove the air vent pipe (DN250)	2	2	14AUG10A	14AUG10A	100	14AUG10A	14AUG10A								
Programmenton Works at Chair Wank Kole Shaft	3AL1WT3B42	Remove connection flange (DN900)	1	1	14AUG10A	14AUG10A	100	14AUG10A	14AUG10A								
3AL1FTC702 Install featurely take off, switch board & 5 6 12AUG10A 12UG10A 12UG10A <td>3AL1WT3B52</td> <td>Connect exhaust fan to valve shaft</td> <td>5</td> <td>5</td> <td>17AUG10A</td> <td>17AUG10A</td> <td>100</td> <td>17AUG10A</td> <td>17AUG10A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	3AL1WT3B52	Connect exhaust fan to valve shaft	5	5	17AUG10A	17AUG10A	100	17AUG10A	17AUG10A								
SAL FFCT22 Install initiational shower 3 3 12AUG10A 100 12AUG10A <	Preparation W	orks at Chai Wan Kok Shaft															
34.1 FTC123 Set us generation and two unler pumps 2 2 24.04010.4 120.1010.4 120	3AL1FTCT02	Install electricity take off, switch board &	5	5	12AUG10A	12AUG10A	100	12AUG10A	12AUG10A								
SAL FTCV/16 WSD Tunnel Shut Down Period 112 112 112 12AUG10A 23DEC10A 100 12AUG10A <	3AL1FTCT22	Install toilet and shower	3	3	12AUG10A	12AUG10A	100	12AUG10A	12AUG10A								
3AL IFTOW16 WSD Tunnel #3 commences shut down 1 1 12AUG10A 12DE10A 1	3AL1FTCT32	Set up generatior and two water pumps	2	2	12AUG10A	12AUG10A	100	12AUG10A	12AUG10A								
ALI-FTC-W22 Pug DN1200 pipe at the face near valve house 1 1 23AUG10A 23EU10A 100 23EU10A 100 23EU10A 100 23EU10A 100 23EU10A 100 23EU10A 100 20EU10A 100 20EU10A 100 20EU10A 100 20EU10A 100 20EU10A	3AL1FTCW16	WSD Tunnel Shut Down Period	112*	112*	12AUG10A	23DEC10A	100	12AUG10A	23DEC10A								
Works in Aquectuct 26 26 26A UG10A 03SEP10A 100 26AUG10A 03SEP10A 02DEC10A 03SEP10A 02DEC10A 03SEP10A 02DEC10A 03SEP10A 02DEC10A 03SEP10A 02DEC10A 03SEP10A 03SEP10A 0	3AL1FTCW18	WSD Tunnel #3 commences shut down	1	1	12AUG10A	12AUG10A	100	12AUG10A	12AUG10A								
3AL FTAD04 Install instruments 26 26 26AUG10A 03SEP10A 100 27SEP10A 100 20DEC10A 10DEC10A	3AL1FTCW22	Plug DN1200 pipe at the face near valve house	1	1	23AUG10A	23AUG10A	100	23AUG10A	23AUG10A								
3AL IFTAD06 Inspection 2 2 27SEP10A 18DEC10A 12DEC10A 12DEC10A 12DEC10A 12DEC10A 12DEC10A 12DEC10A 100 20DEC10A	Works in Aque	duct															
3AL1FTAD10 TBM crossing affected 210m section 16 16 30N0V10A 16DEC10A 100 30N0V10A 16DEC10A 100 17DEC10A 19DEC10A 22DEC10A	3AL1FTAD04	Install instruments	26	26	26AUG10A	03SEP10A	100	26AUG10A	03SEP10A								
3AL1FTAD10 De-install instruments 3 3 17DEC10A 19DEC10A 19DEC10A 19DEC10A 19DEC10A 19DEC10A 19DEC10A 19DEC10A 19DEC10A 19DEC10A 10D 19DEC10A 10D 10DEC10A 20DEC10A 20DEC10	3AL1FTAD06	Inspection	2	2	27SEP10A	27SEP10A	100	27SEP10A	27SEP10A								
Demobilisation 3AL FTAE04 Remove dewatering system 1 1 20DEC10A 22DEC10A 100 22DEC10A 22DEC10A 3AL 1FTAE04 Remove the plug at Chai Wan Kok 1 1 20DEC10A 20DEC10A 20DEC10A 20DEC10A 30DEC10A 30LEC10A 30DEC10A 20DEC10A 20DEC10A 30DEC10A 30DEC10A <td>3AL1FTAD08</td> <td>TBM crossing affected 210m section</td> <td>16</td> <td>16</td> <td>30NOV10A</td> <td>16DEC10A</td> <td>100</td> <td>30NOV10A</td> <td>16DEC10A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	3AL1FTAD08	TBM crossing affected 210m section	16	16	30NOV10A	16DEC10A	100	30NOV10A	16DEC10A								
3AL1FTAE14 Remove dewatering system 1 1 20DEC10A 22DEC10A 100 20DEC10A 22DEC10A 20DEC10A	3AL1FTAD10	De-install instruments	3	3	17DEC10A	19DEC10A	100	17DEC10A	19DEC10A								
3AL1FTAE14 Remove the plug at Chai Wan Kok 1 1 20DEC10A 20DEC10A <td>Demobilisatio</td> <td>1</td> <td></td>	Demobilisatio	1															
3AL1FTAE24 Reinstate vent pipe Y falange at T.K. 1 1 21DEC10A 21DEC10A 21DEC10A 21DEC10A 21DEC10A 21DEC10A 21DEC10A 23DEC10A 22DEC10A 22DEC10A 22DEC10A 22DEC10A 22DEC10A 23DEC10A 22FEB10A 22FEB1	3AL1FTAE04	Remove dewatering system	1	1	20DEC10A	22DEC10A	100	20DEC10A	22DEC10A								
3AL1FTAE34 Remove ventilation fan 1 1 23DEC10A 100 23DEC10A 22DEC10A 22DEC10A 22DEC10A 22DEC10A 22DEC10A 22DEC10A 22DEC10A 23DEC10A 23	3AL1FTAE14	Remove the plug at Chai Wan Kok	1	1	20DEC10A	20DEC10A	100	20DEC10A	20DEC10A								
Reinstate opening at Chai Wan Kok 1 1 22DEC10A 22DEC10A 22DEC10A 22DEC10A 32DEC10A 32EE10A 32EE10A 32EE10A 32EE10A 32EE10A 32EE10A 32EE	3AL1FTAE24	Reinstate vent pipe Y falange at T.K.	1	1	21DEC10A	21DEC10A	100	21DEC10A	21DEC10A								
3AL1FTRS02 Reinstate opening at Chai Wan Kok 1 1 1 22DEC10A 100 22DEC10A 22DEC10A 23DEC10A 3AL1FTRS04 WSD Tunnel #3 re-operates 1 1 23DEC10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 23DEC10A 23DEC10A <t< td=""><td>3AL1FTAE34</td><td>Remove ventilation fan</td><td>1</td><td>1</td><td>23DEC10A</td><td>23DEC10A</td><td>100</td><td>23DEC10A</td><td>23DEC10A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	3AL1FTAE34	Remove ventilation fan	1	1	23DEC10A	23DEC10A	100	23DEC10A	23DEC10A								
3AL1FTRS04 WSD Tunnel #3 re-operates 1 1 23DEC10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 23FEB10A	Reinstatement	Works															
TBM Assembly & Initial Driving; Day Time Work TBM AssemblyTest & Commiss. at Outfail 3AL1F70605 Mobilization & setup 300 ton crane 1 1 22FEB10A 22FEB10A 22FEB10A 3AL1F70607 Bottom fornt shield 1 1 22FEB10A 22FEB10A 22FEB10A 22FEB10A 3AL1F70609 Outer telescopic shield bottom 1 1 22FEB10A 100 22FEB10A 23FEB10A 33MAR10A 3AL1F70611 Main bearing 2 2 23FEB10A 23FEB10A 100 23FEB10A 23FEB10A 34L1F70613 Side shield balance (2 pieces) 2 2 23FEB10A 22FEB10A 22FEB10A 24FEB10A	3AL1FTRS02	Reinstate opening at Chai Wan Kok	1	1	22DEC10A	22DEC10A	100	22DEC10A	22DEC10A								
TBM Assembly/Test & Commiss. at Outfall 3AL1FT0605 Mobilization & setup 300 ton crane 1 1 22FEB10A 22FEB10A 22FEB10A 22FEB10A 23FEB10A 23FEB10A 23FEB10A 22FEB10A 22FEB10A 22FEB10A 23FEB10A 22FEB10A 22FEB10A 23FEB10A 23FEB10A 23FEB10A 23FEB10A 22FEB10A 23FEB10A 23FEB10A 23FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A	3AL1FTRS04	WSD Tunnel #3 re-operates	1	1	23DEC10A	23DEC10A	100	23DEC10A	23DEC10A								
TBM Assembly/Test & Commiss. at Outfall 3AL1FT0605 Mobilization & setup 300 ton crane 1 1 22FEB10A 22FEB10A 22FEB10A 22FEB10A 23FEB10A 23FEB10A 23FEB10A 22FEB10A 22FEB10A 22FEB10A 23FEB10A 22FEB10A 22FEB10A 23FEB10A 23FEB10A 23FEB10A 23FEB10A 22FEB10A 23FEB10A 23FEB10A 23FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A	TBM Assem	bly & Initial Driving: Day Time Work															
3AL1FT0605 Mobilization & setup 300 ton crane 1 1 22FEB10A 23FEB10A 23FEB10A 23FEB10A 23FEB10A 23FEB10A 23FEB10A 23FEB10A 23FEB10A 22FEB10A 22FEB10A<																	
3AL1FT0607 Bottom fornt shield 1 1 22FEB10A 22FEB10A 22FEB10A 22FEB10A 22FEB10A 23FEB10A 23FEB10A 13MAR10A 100 22FEB10A 13MAR10A 1 1 22FEB10A 13MAR10A 100 22FEB10A 13MAR10A 1 1 22FEB10A 13MAR10A 100 22FEB10A 13MAR10A 1 1 1 1 22FEB10A 13MAR10A 100 23FEB10A 13MAR10A 1 1 1 1 22FEB10A 13MAR10A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 23FEB10A 1 1 23FEB10A 1 1 22FEB10A 1 1 22FEB10A 1 24FEB10A 1 24FEB10A 24FEB10A 24FEB10A 1 1 1 22FEB10A 1 1 22FEB10			1	1	22FEB10A	22FEB10A	100	22FEB10A	22FEB10A								
3AL1FT0609 Outer telescopic shield bottom 1 1 22FEB10A 13MAR10A 100 22FEB10A 13MAR10A 1 13MAR10A 13MAR10A 1 13MAR10A 13MAR10A 1 13MAR10A	3AL1FT0607	Bottom fornt shield	1	1	22FEB10A	22FEB10A	100	22FEB10A	22FEB10A								
3AL1FT0611Main bearing22223FEB10A23FEB10A10023FEB10A24FEB10A </td <td>3AL1FT0609</td> <td>Outer telescopic shield bottom</td> <td>1</td> <td>1</td> <td>22FEB10A</td> <td>13MAR10A</td> <td></td> <td></td> <td>13MAR10A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	3AL1FT0609	Outer telescopic shield bottom	1	1	22FEB10A	13MAR10A			13MAR10A								
3AL1FT0613Side shield balance (2 pieces)22223FEB10A24FEB10A10023FEB10A24FEB10A24FEB10A24FEB10A24FEB10A24FEB10A24FEB10A24FEB10A24FEB10A22FEB10A<	3AL1FT0611	•	2	2	23FEB10A	23FEB10A	100	23FEB10A	23FEB10A								
3AL1FT0615Bottom gripper shield1122FEB10A22FEB10A22FEB10A22FEB10A23AL1FT0617Inner telescopic shield1122FEB10A09MAR10A10022FEB10A09MAR10A03AL1FT0619Main thrust rams2224FEB10A02MAR10A10024FEB10A02MAR10A03AL1FT0621Side gripper shield balance (2 pieces)2223FEB10A25FEB10A10023FEB10A25FEB10A02MAR10A03AL1FT0625Cutterhead centre2202MAR10A10002MAR10A04MAR10A002MAR10A03AL1FT0626Electric motors for maindrive3325FEB10A02MAR10A10025FEB10A02MAR10A002MAR10A0				2								UX.	XXX				
3AL1FT0617Inner telescopic shield1122FEB10A09MAR10A10022FEB10A09MAR10A03AL1FT0619Main thrust rams2224FEB10A02MAR10A10024FEB10A02MAR10A13AL1FT0621Side gripper shield balance (2 pieces)2223FEB10A25FEB10A10023FEB10A25FEB10A113AL1FT0625Cutterhead centre2202MAR10A10002MAR10A04MAR10A11 <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>UX.</td> <td>XXX</td> <td></td> <td></td> <td></td> <td></td>				1								UX.	XXX				
3AL1FT0619Main thrust rams2224FEB10A02MAR10A10024FEB10A02MAR10A03AL1FT0621Side gripper shield balance (2 pieces)2223FEB10A25FEB10A10023FEB10A25FEB10A03AL1FT0625Cutterhead centre2202MAR10A10002MAR10A04MAR10A03AL1FT0626Electric motors for maindrive3325FEB10A10025FEB10A02MAR10A0			1	1					09MAR10A								
3AL1FT0621 Side gripper shield balance (2 pieces) 2 2 23FEB10A 25FEB10A 25FEB10A 25FEB10A 2 2 23FEB10A 25FEB10A 25FEB10A 2 0 <th< td=""><td></td><td></td><td>2</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>			2	2													
3AL1FT0625Cutterhead centre2202MAR10A04MAR10A10002MAR10A04MAR10A3AL1FT0626Electric motors for maindrive3325FEB10A02MAR10A10025FEB10A02MAR10A		Side gripper shield balance (2 pieces)		2													
3AL1FT0626 Electric motors for maindrive 3 3 25FEB10A 02MAR10A 100 25FEB10A 02MAR10A 4 <th< td=""><td>3AL1FT0625</td><td>Cutterhead centre</td><td>2</td><td>2</td><td>02MAR10A</td><td>04MAR10A</td><td></td><td></td><td>04MAR10A</td><td></td><td></td><td></td><td>XXX</td><td></td><td></td><td></td><td></td></th<>	3AL1FT0625	Cutterhead centre	2	2	02MAR10A	04MAR10A			04MAR10A				XXX				
	3AL1FT0626	Electric motors for maindrive	3	3	25FEB10A	02MAR10A											
3AL1FT0627 Cutterhead balance (4 pieces) 3 3 03MAR10A 12MAR10A 100 03MAR10A 12MAR10A 1	3AL1FT0627	Cutterhead balance (4 pieces)	3	3	03MAR10A	12MAR10A	100	03MAR10A	12MAR10A				XXX				

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012	IDJF	2013 2014 2015 M A M J J A S O N D J F M A M J J J A S O N D J F M A J A S O N D J F M A J J A S O N D J F M A 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 S O N D J F M A S O N D J F M A
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float 6	3 64 65 6	6 67 68 69	70 71 72 73 74 75 76 77 78 79 80 8182 83 84 85 86 87 88 89 90 91 92 93 94 95
3AL1FT0629 3AL1FT0631	Gripper cylinders Tail shield	2	2	23FEB10A 22FEB10A	27FEB10A		23FEB10A 22FEB10A	27FEB10A 23FEB10A				
3AL1FT0633	Erector	2	2		02MAR10A		22FEB10A 22FEB10A	02MAR10A			XXX	
3AL1FT0635	TBM conveyor	2	2	25FEB10A			25FEB10A	15MAR10A			XXXX	
3AL1FT0637	Probe drill	2	2		08MAR10A		26FEB10A	08MAR10A			XXXX	
3AL1FT0649	Connect hydraulic & electric for main shield	6	1		10APR10A		27FEB10A	10APR10A			XXXX	
3AL1FT0651		2	0	10MAR10A				27MAR10A			XXXX	
3AL1F10651 3AL1FT0653	Back-up #1 TBM launch to excavation face (30m)	2	2	06MAR10A			06MAR10A	12APR10A			XXX	
		2		12MAR10A				08APR10A			XXX	
3AL1FT0655	Backup # 2			20MAR10A				13APR10A			XXX	
3AL1FT0657	Backup # 4; put aside & connect	2		20MAR10A 20MAR10A			20MAR10A	14APR10A			XXX	
3AL1FT0659	Backup # 5; put aside & connect	-		20MAR10A 23MAR10A			20MAR10A	14APR 10A 15APR 10A			XXX	
3AL1FT0661	Backup # 6; put aside & connect	3					23MAR10A				<u> </u>	
3AL1FT0663	Backup # 3	2		23MAR10A			23MAR10A	10APR10A			<u> </u>	
3AL1FT0665	Complete balance electric & hydraulic/test 1	6		07APR10A				24APR10A			<u> </u>	
3AL1FT0669	TBM advances 36m into tunnel (Ch. 5084 to 5048)	12	12	27APR10A				02JUN10A			<u> </u>	
3AL1FT0671	Install Backup # 4	2	2	19MAY10A	-			22MAY10A			<u> </u>	
3AL1FT0673	Install Bakcup # 5	2	2	24MAY10A				25MAY10A			<u> </u>	
3AL1FT0675	Install Backup # 6	3	3	26MAY10A				28MAY10A			<u> </u>	
3AL1FT0677	Backup #7	2	2	08JUN10A				08JUN10A			<u> </u>	
3AL1FT0679	Backup #8	2	2	08JUN10A			08JUN10A	08JUN10A				
3AL1FT0681	Backup #9	2	2	14JUN10A			14JUN10A	17JUN10A			<u> </u>	
3AL1FT0683	Backup #10	2	2	14JUN10A			14JUN10A	17JUN10A				
3AL1FT0685	Backup #11	2	2	25JUN10A				26JUN10A			<u> </u>	
3AL1FT0687	Backup #12	2	2	26JUN10A				28JUN10A			<u> </u>	
3AL1FT0689	Complete balance electric & hydraulic/ test 2	3	3	27AUG10A	27AUG10A	100	27AUG10A	27AUG10A				
	vacing; Day Time Work					100		00 11 11 10 1				
3AL1FT0708	TBM advances; CH5048-4957	42		03JUN10A				23JUL10A				
3AL1FT0720	TBM stop to install rem. items	35	35	24JUL10A	02SEP10A	100	24JUL10A	02SEP10A				
	Works; Day & Night Work											
TBM Advancir	g upto Crossing WSD Tunnel # 3											
3AL1FT0816	TBM advances; CH4957-4460 (to WSD Tunnel # 3)	72	72	03SEP10A	29NOV10A	100	03SEP10A	29NOV10A			XXX	
3AL1FT0818	TBM crossing WSD Tunnel # 3; CH4460- 4250	15	15	30NOV10A	16DEC10A	100	30NOV10A	16DEC10A			<u> XXXX</u>	
TBM Advancir	ig upto Breakthrough											
3AL1FT0819	TBM advances; P6 CH4250-4220	3	3	20DEC10A	22DEC10A	100	20DEC10A	22DEC10A				
3AL1FT0820	TBM advances; CH4220-3940	23	23	22DEC10A	20JAN11A	100	22DEC10A	20JAN11A				
3AL1FT0821	TBM advances; CH3940-3560	25	25	20JAN11A	21FEB11A	100	20JAN11A	21FEB11A				
3AL1FT0822	TBM advances CH3560-2970	48	48	21FEB11A	18APR11A	100	21FEB11A	18APR11A				
3AL1FT0823	TBM advances; WSD T.W.S. R. G. CH2970-2860	8	8	18APR11A	29APR11A	100	18APR11A	29APR11A			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
3AL1FT0824	TBM advances; CH2860-1827	64	64	29APR11A	15JUL11A	100	29APR11A	15JUL11A			XXXX	
3AL1FT0825	TBM advances; CH1827-1564	16	16	15JUL11A	02AUG11A	100	15JUL11A	02AUG11A			XXXX	
3AL1FT0826	TBM advances; CH1564-1449	7	7	02AUG11A	11AUG11A	100	02AUG11A	11AUG11A			XXX	
3AL1FT0827	TBM advances; CH1449-1295 (Intake I-2)	13	13	11AUG11A	24AUG11A	100	11AUG11A	24AUG11A			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
3AL1FT0828	TBM advances; CH1295-955	19	19	24AUG11A	20SEP11A	100	24AUG11A	20SEP11A			<u>IXIX</u>	

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	201	12		2013		2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S C 63 64 65	N D 5 66 67 6	J F M 7 58 69 70 7	A M J J A S O 1 72 73 74 75 76 77	N D J F N 78 79 80 81 8	1 A M J . 2 83 84 85 8	A S O N 6 87 88 89 90	D J F M A 91 92 93 94 95
3AL1FT0829	TBM advances; CH955-250	36	36	20SEP11A	16NOV11A	100	20SEP11A	16NOV11A									
3AL1FT0831	TBM advances; Faoult F1 CH250-150	10	10	16NOV11A	21NOV11A	100	16NOV11A	21NOV11A									
3AL1FT0832	TBM advances; Fault F1 CH150-0	82	82	21NOV11A	28FEB12A	100	21NOV11A	28FEB12									
3AL1FT0890	Remov framework/demobilization of TBM& BU	47*	48*	29FEB12A	27APR12A	100	29FEB12	30APR12									
3AL1FT0891	Removal of TBM services from tunnel	24	24	02MAR12A	30APR12A		02MAR12	29MAR12									
3AL1FT0892	Back grouting; CH5100-00	562	562	20APR10A	30APR12A	100	20APR10A	29MAY12									
3AL1FT0893	Secondary grouting	231	231	26AUG11A	260CT12	91	26AUG11A	16AUG12	-324								
3AL1FT0894	Segment bolt pocket filling/repair segment crack	200	200	16APR12A	15DEC12	62	02APR12	01DEC12	-324								
3AL1FT0895	Install kerb for dry weathe channel	60	60	06OCT12	15DEC12	0	21SEP12	01DEC12	-324	-	- ar	nd insta	II Chainage Marl	ter Plates			
3AL1FT0896	Install anchorages for radio comm. system	42	60	04OCT12	22NOV12	0	21SEP12	01DEC12	-322	-	S nch	ude for	I-1 & O-1				
3AL1FT0897	Lay cable for radio comm. system	18	0	05DEC12	27DEC12	0			-332		A						
3AL1FT0898	Testing & Commissioning	28	28	01MAR14	28MAR14	0	10FEB13	09MAR13	-836								
3AL1FT0904	Handover of Portion F	0	0		28MAR14	0		09MAR13	-677						>		
Schedule of	Milestones for Cost Centre No. 6aR																
6AR1FT0902	6aR 1; On completion of grouting at P7	0	0		20JUL10A	100		20JUL10A									
6AR1FT0904	6aR 2; On completion of grouting at F6c	0	0		30SEP10A	100		30SEP10A									
6AR1FT0906	6aR 3; On completion of grouting at F6b	0	0		09OCT10A	100		09OCT10A									
6AR1FT0908	6aR 4; On completion of grouting at F6a	0	0		24NOV10A	100		24NOV10A									
6AR1FT0910	6aR 5; On completion of grouting at WSD T. 3	0	0		14DEC10A	100		14DEC10A									
6AR1FT0912	6aR 6; On completion of 20% grout by Ith at P6	0	0		20DEC10A	100		20DEC10A									
6AR1FT0914	6aR 7; On completion of 40% grout by Ith at P6	0	0		20DEC10A	100		20DEC10A									
6AR1FT0916	6aR 8; On completion of 60% grout by Ith at P6	0	0		21DEC10A	100		21DEC10A									
6AR1FT0918	6aR 9; On completion of 80% grout by Ith at P6	0	0		21DEC10A	100		21DEC10A									
6AR1FT0920	6aR 10; On completion of grouting works at P6	0	0		22DEC10A	100		22DEC10A									
6AR1FT0922	6aR 11; On completion of grouting wks at P5	0	0		29JAN11A	100		29JAN11A									
6AR1FT0924	6aR 12; On completion of grouting wks at P4	0	0		21FEB11A	100		21FEB11A									
6AR1FT0926	6aR 13; On completion of grouting wks at P3	0	0		04APR11A	100		04APR11A									
6AR1FT0928	6aR 14; On completion of grouting wks at WSD's	0	0		29APR11A	100		29APR11A									
6AR1FT0930	6aR 15; On completion of grouting wks at F5	0	0		11MAY11A	100		11MAY11A									
6AR1FT0932	6aR 16; On completion of grouting wks at F4	0	0		20MAY11A	100		20MAY11A									
6AR1FT0934	6aR 17; On completion of grouting wks at F3	0	0		13JUN11A	100		13JUN11A									
6AR1FT0936	6aR 18; On completion of grouting wks at F2	0	0		29AUG11A	100		29AUG11A									
6AR1FT0938	6aR 19; On completion of grouting wks at P2	0	0		040CT11A	100		040CT11A									
6AR1FT0940	6aR 20; On completion of grouting wks at P1	0	0		240CT11A	100		240CT11A									
6AR1FT0942	6aR 21; On completion of 10% grout by Ith at F1	0	0		21NOV11A	100		21NOV11A									
6AR1FT0944	6aR 22; On completion of 20% grout by Ith at F1	0	0		22NOV11A	100		22NOV11A				XXX		XXXXX			
6AR1FT0946	6aR 23; On completion of 30% grout by Ith at F1	0	0		22NOV11A	100		22NOV11A						XXXX			
6AR1FT0948	6aR 24; On completion of 40% grout by Ith at F1	0	0		23NOV11A	100		23NOV11A						XXXX			
6AR1FT0950	6aR 25; On completion of 50% grout by Ith at F1	0	0		24NOV11A	100		24NOV11A						XXXX			
6AR1FT0952	6aR 26; On completion of 60% grout by Ith at F1	0	0		10JAN12A	100		10JAN12A						XXXX			
6AR1FT0954	6aR 27; On completion of 70% grout by Ith at F1	0	0		30JAN12A	100		30JAN12A						XXXX			
6AR1FT0956	6aR 28; On completion of 80% grout by Ith at F1	0	0		14FEB12A	100		14FEB12A				IXA		IXXXX.			

ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total	2012 A S O N	D J F M	2013 A M J J A	2014 2015 S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A S O N D J F M A S O N D J F M A S S O N D J F M A S S S O S D J A S O S A S O S D J S A S D D S </th
6AR1FT0958	6aR 29; On completion of 90% grout by Ith at F1	0	0	Start	16FEB12A	100	Start	16FEB12A	Tioat	3 64 65 66	67 68 69 70	71 72 73 74 75	76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 9
6AR1FT0960	6aR 30; On completion of grouting works at F1	0	0		20FEB12A	100		20FEB12A					
6AR1FT0970	6aR 31; On completion of all works under this CC	0	0		28FEB12A			06MAR12					
	Milestones for Cost Centre No. 3aL	Ĵ				100							
3AL1FT1002	3aL 1; On providing evidence of procuring TBM	0	0		19JAN08A	100		19JAN08A					
3AL1FT1004	3aL 2; On providing evidence of TBM Factory Test	0	0		080CT08A	100		080CT08A					
3AL1FT1006	3aL 3; On delivery of all parts of TBM to the Si	0	0		12AUG09A	100		12AUG09A					
3AL1FT1008	3aL 4; On completion of site comm. & test. of TB	0	0		27SEP10A	100		27SEP10A					
3AL1FT1010	3aL 5; On completion of 5% perm. tunnel lining	0	0		020CT10A	100		020CT10A					
3AL1FT1012	3aL 6; On completion of 10% perm. tunnel lining	0	0		03NOV10A	100		03NOV10A					
3AL1FT1014	3aL 7; On completion of 15% perm. tunnel lining	0	0		26NOV10A	100		26NOV10A					
3AL1FT1016	3aL 8; On completion of 20% perm. tunnel lining	0	0		08JAN11A	100		08JAN11A					
3AL1FT1018	3aL 9; On completion of 25% perm. tunnel lining	0	0		27JAN11A	100		27JAN11A					
3AL1FT1020	3aL 10; On completion of 30% perm. tunnel lining	0	0		21FEB11A	100		21FEB11A					
3AL1FT1022	3aL 11; On completion of 35% perm. tunnel lining	0	0		12MAR11A	100		12MAR11A					
3AL1FT1024	3aL 12; On completion of 40% perm. tunnel lining	0	0		11APR11A	100		11APR11A					
3AL1FT1026	3aL 13; On completion of 45% perm. tunnel lining	0	0		05MAY11A	100		05MAY11A					
3AL1FT1028	3aL 14; On completion of 50% perm. tunnel lining	0	0		23MAY11A	100		23MAY11A					
3AL1FT1030	3aL 15; On completion of 55% perm. tunnel lining	0	0		08JUN11A	100		08JUN11A					
3AL1FT1032	3aL 16; On completion of 60% perm. tunnel lining	0	0		27JUN11A	100		27JUN11A					
3AL1FT1034	3aL 17; On completion of 65% perm. tunnel lining	0	0		11JUL11A	100		11JUL11A					
3AL1FT1036	3aL 18; On completion of 70% perm. tunnel lining	0	0		08AUG11A	100		08AUG11A					
3AL1FT1038	3aL 19; On completion of 75% perm. tunnel lining	0	0		25AUG11A	100		25AUG11A					
3AL1FT1040	3aL 20; On completion of 80% perm. tunnel lining	0	0		16SEP11A	100		16SEP11A					
3AL1FT1042	3aL 21; On completion of 85% perm. tunnel lining	0	0		050CT11A	100		050CT11A					
3AL1FT1044	3aL 22; On completion of 90% perm. tunnel lining	0	0		270CT11A	100		270CT11A					
3AL1FT1046	3aL 23; On completion of 95% perm. tunnel lining	0	0		16NOV11A	100		16NOV11A					
3AL1FT1048	3aL 24; On completion of perm. tunnel lining	0	0		08MAR12A			06MAR12					
3AL1FT1050	3aL 25; On completion of maint. access/flow chan	0	0		15DEC12	0		01DEC12	819			ther flow ch	anne
3AL1FT1052	3aL 26; On completion of provision of communic.	0	0		22NOV12	0		01DEC12	842				
3AL1FT1054	3aL 27; On completion of all works under this CC	0	0		28MAR14	0		09MAR13	351				within this cost centre
	Milestones for Cost Centre No. 3dL				2010 4 111								
											XXX		
3DL10T1202	3dL 1; On complet. of install geo instrrument.	0	0		27MAY11A	100		27MAY11A			IXXXII		
3DL10T1204	3dL 2; Maint./monit. geo. inst. for 12 mth	0	0		27DEC08A	100		27DEC08A			IXXXI.		
3DL10T1206	3dL 3; Maint./monitor geo. inst. for 24	0	0		26DEC09A	100		26DEC09A			IXXXI.		
3DL10T1208	3dL 4; Maint./monitor geo. inst. for 36	0	0		27DEC10A	100		27DEC10A			IXXXI.		
3DL10T1210	3dL 5; Maint./monitor geo. inst. for 48	0	0		26DEC11A	100		26DEC11A			IXXXI.		
3DL10T1212	3dL 6; On completion of maint. & monit. of geo.	0	0		170CT13	0		06AUG13	513		IXXXI.	•	monitoring for installed instruments
3DL10T1224	3dL 12; On completion of all works under this CC	0	0		170CT13	0		06AUG13	513		IXXXII	•	 under this Cost Centre
1	· ·							-					

ID	Activity		WP09	WP10	WP10	%	WP09	WP09	Total	20 A S	12 D N D	JF	MAM	2013 J J A 3 73 74 75 7	SON	D J	FM	2 A M 、	014 JJA	S O	ND.	2015 J F M A
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	63 64 6	5 66 67	68 69	70 71 72	73 74 75 7	76 77 78	79 80	81 82	83 84 8	5 86 87	88 89 9	90 91 9	2 93 94 95
	n of Intake I-1															X	\square					
Preliminary \																						
	erant Hoarding at I-1																\square					
VO007-02	Receive VO7 for transparent hoarding	0	0		19MAY08A	100		19MAY08A									\square					
VO007-04	Procure/prepare/install transparent hoarding	70	70	20MAY08A	11AUG08A	100	20MAY08A	11AUG08A									<u>II</u>					
01R1AI1102	Possession of site	0	0	19MAR08A			19MAR08A									X						
01R1AI1104	Obtain TTA (ingress & egress) approval	0	0	19APR08A			19APR08A									X	IA					
01R1AI1106	Site clearance	30	30	21APR08A	26MAY08A	100	21APR08A	26MAY08A								X						
01R1AI1108	Obtain tree	6	6	13MAY08A			13MAY08A	31JUL08A								X						
01R1AI1110	Hoarding erection enclosing the Site	18	18	23MAY08A			23MAY08A	11AUG08A								X						
01R1AI1112	Site entrance construction	6	6	23JUN08A	25JUL08A		23JUN08A	25JUL08A								X						
01R1AI1114	Install wheel wahing facilities	7	7	03JUN08A	07JUN08A		03JUN08A	07JUN08A								X						
01R1AI1116	Erect SOR's secondary site office	6	6	28AUG08A	03SEP08A		28AUG08A	03SEP08A								X						
01R1AI1118	Footing for temp. bridge span over Shing M. Nul.	26	26		16JUL08A		10JUN08A	16JUL08A								X						
01R1AI1120	Decking for temp. bridge span over Shing M. Nul.	13	13		01AUG08A		17JUL08A	01AUG08A								X						
01R1AI1122	Install remote control CCTV as per ER 4.4.10	12	12	04SEP08A	18SEP08A		04SEP08A	18SEP08A								X						
16R1AI1101	Tree Identification & Report	14	14		01APR08A		14MAR08A	01APR08A								X						
16R7AI1102	1st tree pruning for small 3 nos. trees	1	1	03JUN08A	03JUN08A		03JUN08A	03JUN08A								X						
16R7AI1104	2nd tree pruning for small 3 nos. trees	1	1	04JUL08A	04JUL08A		04JUL08A	04JUL08A								X						
16R7AI1106	Final pruning & uplifting of 3 nos. small trees	2	2	08SEP08A	09SEP08A	100	08SEP08A	09SEP08A								X						
16R7AI1108	Confirm location for trees to be transplanted	51	51	02APR08A			02APR08A	27AUG08A								X						
16R7AI1114	One stg transplant for big 4 nos. big trees	9	9	11FEB09A	19FEB09A	100	11FEB09A	19FEB09A					4			<u>IX</u>						
Permanent S	oil Nailing Works																					
11R2AI1302	Erect working platform & mobilization	8	8	17MAY08A	24MAY08A	100	17MAY08A	24MAY08A														
11R2AI1304	Install test nails & proof loading test; 2 nos.	8	8	24JUN08A	08JUL08A	100	24JUN08A	08JUL08A								X						
11R2AI1306	Soil nailing for A to C rows; 69 nos.	16	16	02JUL08A	14JUL08A	100	02JUL08A	14JUL08A								X						
11R2AI1308	Soil nailing for D to F rows; 71 nos.	29	29	15JUL08A	05SEP08A	100	15JUL08A	05SEP08A								X	\square					
11R2AI1310	Constrcut soil nail heads; 140 nos.	22	22	19JUL08A	06SEP08A	100	19JUL08A	06SEP08A								X	\square					1
11R2AI1312	Demobilization	3	3	08SEP08A	10SEP08A	100	08SEP08A	10SEP08A								X	\square					1
Construction	of Spiral Ramp & Cascade																					
	Voks to Fnalize Design															X	\square					
	Drill for 5 nos. additional GI works	21	21	09SEP08A	04OCT08A	100	09SEP08A	04OCT08A								X	\square					
Temp. Pipe-pil				0002.00.1			0002.00.1									X	H					
04L1AI1202	Erect piling platform	43	43	220CT08A	24DEC084	100	220CT08A	24DEC08A								X						
04L1AI1202	Mobilization & set up piling rig	3					300CT08A	01NOV08A				(A))			$+ \ell$	X	HA					+++
04L1AI1203	Install 273 mm dia. temp. pipe piles; 144 nos.	43		08NOV08A			08NOV08A	05JAN09A				(A)			$+ \ell$	X	HA					+++
04L1AI1226	Demobilize all plant and materials	6					06JAN09A	13JAN09A				(A))			$+ \ell$	X	HA					+++
	.0 to +100.5mPD; Row 7	, v	0	500, 1100A	1.00/ 1100A	100	0.00/ 11 100/ 1		-			HA.			$+\ell$	HX)	HA					+++
04L1AI1402	Mobilization	1	1	23FEB09A	23FER00A	100	23FEB09A	23FEB09A								X						
04L1AI1402	Bulk excavation; soil (155m3)	4	4	23FEB09A 24FEB09A				27FEB09A				(IA)			+	XA	HA					+++
0421711404		4	4	24FEDU9A	ZIFEDUSA	100	24FEDU9A	LIFEDUSA				X IX IX				VX/	V K I A					

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012	DJFM	2013 2014 2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	3 64 65 66	67 68 69 70	A M J J A S O N D J F M A M J J A S O N D J F M 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94
04L1AI1406	Install test tie-back & proof load test	4	4	28FEB09A	04MAR09A		28FEB09A	04MAR09A			<u> </u>	
04L1AI1408	Install tie backs/wailing & shortcrete	4	4	03MAR09A	06MAR09A	100	03MAR09A	06MAR09A			<u>AAA</u>	
	.5 to +99.0mPD; Rows 1 & 8											
04L1AI1410	Bulk excavation; soil (219m3)	2		07MAR09A				09MAR09A				
04L1AI1412	Install tie backs/wailing & shorcrete	6	6	10MAR09A	16MAR09A	100	10MAR09A	16MAR09A				
Excavate +99.) to +96.5mPD; Rows 2, 9 & 18											
04L1AI1414	Bulk excavation; soil (710m3)	3	3	17MAR09A	19MAR09A	100	17MAR09A	19MAR09A				
04L1AI1416	Install test tie-back & proof load test	4	4	26MAR09A	01APR09A	100	26MAR09A	01APR09A				
04L1AI1418	Install tie backs/wailing & shortcrete	6	6	23MAR09A	28MAR09A	100	23MAR09A	28MAR09A				
Excavate +96.	5 to +95.0mPD; Rows3, 10 & 19										XXX	
04L1AI1420	Bulk excavation; soil (721m3)	3	3	30MAR09A	04APR09A	100	30MAR09A	04APR09A				
04L1AI1422	Install tie backs/wailing & shortcrete	4	4	02APR09A	20APR09A	100	02APR09A	20APR09A				
Excavate +95.	0 to +94.0 mPD; Rows 4, 11 & 20					·					XXX	
04L1AI1424	Bulk excavation; soil (701m3)	3	3	06APR09A	18APR09A	100	06APR09A	18APR09A				
04L1AI1426	Install tie backs/wailing & shorcrete	5	5	03APR09A	30APR09A	100	03APR09A	30APR09A				
Excavate +94.	0 to + 93.0mPD; Rows 5,12,16,21&24											
04L1AI1428	Bulk excavation; soil (818m3)	4	4	20APR09A	27APR09A	100	20APR09A	27APR09A				
04L1AI1430	Install test tie-back & proof load test	4	4	21APR09A			21APR09A	16MAY09A				
04L1AI1432	Install tie backs/wailing & shorcrete	5	5	21APR09A			21APR09A	16MAY09A				
) to +92.5mPD; Row 22	-	-									
04L1AI1434	Bulk excavation; soil (423m3) & rock (52m3)	3	3	04MAY09A	18MAY09A	100	04MAY09A	18MAY09A				
04L1AI1436	Install tie backs/wailing & shorcrete	2		19MAY09A			19MAY09A					
	5 to 91.1mPD; Rows 6,13,16,17&23	-	-	1010/1100/1	2110/11/00/1	100	1010// (100/ (21101/11/00/1				
04L1AI1438	Bulk excavation; soil (1002m3) & rock (342m3)	8	8	06MAY09A	23114 2004	100	06MAY09A	23MAY09A				
04L1AI1440	Install test tie-back & proof load test	4	0	08MAY09A			08MAY09A	25MAY09A				
04L1AI1440	Install tie backs/wailing & shorcrete	4	4	18MAY09A			18MAY09A					
		4	4	TOMATUSA	271111A 1 09A	100	TONIATUSA	27101A109A			<u> </u>	
	1 to 89.5mPD; Rows 14, 17 & 25	40	40	401443/004		100	401443/004	04.11.10.00.4				
04L1AI1444	Bulk excavation; soil (724m3) & rock (811m3)	12	12	18MAY09A				01JUN09A				
04L1AI1446	Install tie backs/wailing & shorcrete	4	4	02JUN09A	05JUN09A	100	02JUN09A	05JUN09A				
	5 to 88.5mPD; Rows 15 & 26		-						-			
04L1AI1448	Bulk excavation; soil (269m3) & rock (690m3)	9	9				06JUN09A	16JUN09A			XXX	
04L1AI1450	Install tie backs/wailing & shorcrete	3	3	17JUN09A	19JUN09A	100	17JUN09A	19JUN09A				
	5 to 71.5mPD; Rows 27 to 31	-							_		XXXI	
07R1AI1442	Set up for dewatering	8		20JUN09A			20JUN09A				XXXII	
07R1AI1444	Rock excavation/mucking out/temp. support	168	168	30JUN09A	30JAN10A	100	30JUN09A	30JAN10A			<u>XXX</u>	
Ground Treatm	nent for Fault F1										XXX	
07R1AI1G02	Erection of scaffolding platform	8	8	24JUN10A	03JUL10A	100	24JUN10A	03JUL10A			XXXII	
07R1AI1G04	Mobilization & setup of horizontal drilling rig	11	11	05JUL10A	16JUL10A		05JUL10A	16JUL10A			XXXII	
07R1AI1G06	Drill & grout hoizontally	87	87				17JUL10A	01FEB11A			XXXII	
07R1AI1G08	Dewater, dismantle & re-erection of platform	46	46	23JUL10A	020CT10A	100	23JUL10A	02OCT10A			XXXI	
07R1AI1G10	Repair of drilling rig & re-setting up	45	45	23AUG10A	150CT10A	100	23AUG10A	150CT10A			XXXI	

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012	2013 2014 2015
10	Description	Dur	Dur	Start	Finish	Comp	Start	Finish		A S O N D J F M A I 63 64 65 66 67 68 69 70 71 7	M J J A S O N D J F M A M J J A S O N D J F M A 2 73 74 75 76 77 78 99 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
Strengthening	of Portal for TBM Breakthrough										
07R1AI1452	Form working platform	5	5	25FEB11A	05MAR11A	100	25FEB11A	05MAR11A			
07R1AI1462	Mobilization & setup plants	1	1	07MAR11A	09MAR11A	100	07MAR11A	09MAR11A			
07R1AI1472	strengthening of portal	25	25	10MAR11A	24MAY11A	100	10MAR11A	24MAY11A			
07R1AI1492	Demobilization/remove working platform	2	2	25MAY11A	27MAY11A	100	25MAY11A	27MAY11A			
Construcion o	f Vehiucular Access										
04L1AI1452	Cast base slab	6	6	05MAR11A	16MAR11A	100	05MAR11A	16MAR11A			
04L1AI1456	Cast wall & roof slab	24	24	17MAR11A	04APR11A	100	17MAR11A	04APR11A			
Base for Spira	l Ramp										
07R1AI1402	Cast base slab	14	14	24FEB10A	11MAR10A	100	24FEB10A	11MAR10A			
Spiral Ramp fr	om +73.56mPD to 76.65mPD										
07R1AI1S02	Cast spiral ramp; pour 1	12	12	12MAR10A	08APR10A	100	12MAR10A	08APR10A			
Spiral Ramp fr	om 76.65mPD to 80.95mPD				· · ·						
07R1AI1S04	Cast spiral ramp; pour 2	20	20	09APR10A	03MAY10A	100	09APR10A	03MAY10A			
07R1AI1S06	Cast spiral ramp; pour 3	13	13	26APR10A	11MAY10A	100	26APR10A	11MAY10A			
07R1AI1S08	Cast spiral ramp; pour 4	10	10	08MAY10A	19MAY10A	100	08MAY10A	19MAY10A			
Spiral Ramp fr	om +80.95 to +85.25mPD										
07R1AI1S10	Cast spiral ramp; pour 5	12	12	13MAY10A	27MAY10A	100	13MAY10A	27MAY10A			
07R1AI1S12	Cast spiral ramp; pour 6	12	12	20MAY10A	03JUN10A	100	20MAY10A	03JUN10A			
07R1AI1S14	Cast spiral ramp; pour 7	15	15	24MAY10A	09JUN10A	100	24MAY10A	09JUN10A			
Spiral Ramp fr	om 85.25mPD to 89.55mPD										
07R1AI1S16	Cast spiral ramp; pour 8	16	16	28MAY10A	15JUN10A	100	28MAY10A	15JUN10A			
07R1AI1S18	Cast spiral ramp; pour 9	16	16	04JUN10A	23JUN10A	100	04JUN10A	23JUN10A			
07R1AI1S20	Cast spiral ramp; pour 10	14	14	14JUN10A	30JUN10A	100	14JUN10A	30JUN10A			
Spiral Ramp fr	om 89.55 to 93.85mPD										
07R1AI1S24	Cast spiral ramp; pour 11	18	18	17JUN10A	08JUL10A	100	17JUN10A	08JUL10A			
07R1AI1S26	Cast spiral ramp; pour 12	16	16	25JUN10A	14JUL10A	100	25JUN10A	14JUL10A			
07R1AI1S28	Cast spiral ramp; pour 13	16	16	02JUL10A	20JUL10A	100	02JUL10A	20JUL10A			
Spiral Ramp fr	om +93.85mPD to 98.15mPD										
07R1AI1S30	Cast spiral ramp; pour 14	19	19	09JUL10A	06SEP10A	100	09JUL10A	06SEP10A			
07R1AI1S32	Cast spiral ramp; pour 15	14	14	02SEP10A	17SEP10A	100	02SEP10A	17SEP10A			
07R1AI1S34	Cast spiral ramp; pour 16	8	8	20SEP10A	29SEP10A	100	20SEP10A	29SEP10A			
Spiral Ramp fr	om 98.15mPD to 102.45mPD										
07R1AI1S36	Cast spiral ramp; pour 17	11	11	22SEP10A	06OCT10A	100	22SEP10A	06OCT10A			
07R1AI1S38	Cast spiral ramp; pour 18	11	11	020CT10A	140CT10A	100	02OCT10A	140CT10A			
07R1AI1S40	Cast spiral ramp; pour 19	11	11	120CT10A	250CT10A			250CT10A			
Spiral Ramp fr	om 102.45mPD to 108.50mPD										
07R1AI1S42	Cast spiral ramp; pour 20	10	10	220CT10A	02NOV10A	100	220CT10A	02NOV10A			
07R1AI1S44	Cast spiral ramp; pour 21	11	11	290CT10A	10NOV10A	100	290CT10A	10NOV10A			
07R1AI1S46	Cast spiral ramp; pour 22	14	14	08NOV10A	23NOV10A	100	08NOV10A	23NOV10A			
07R1AI1S48	Cast spiral ramp; pour 23	14	14	20NOV10A	06DEC10A	100	20NOV10A	06DEC10A			
07R1AI1S50	Preparation & fill for central void; 2700m3	18	18	07DEC10A	19FEB11A	100	07DEC10A	19FEB11A			
07R1AI1S52	Cast spiral ramp roof	8	8	26FEB11A	07MAR11A	100	26FEB11A	07MAR11A			

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total		2012		2013			2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S 63 64	O N 65 66 6	D J 67 68	2013 F M A M J J 69 70 71 72 73 74	A S O 75 76 77	N D J F M 78 79 80 81 82 8	A M J J 33 84 85 86	A S O N 87 88 89 90	D J F M A 91 92 93 94 95
Construction o	f Cascade Structure																	
04L1AI1472	Cast base slabs	12	12	21JAN11A	21MAR11A	100	21JAN11A	21MAR11A				X						
04L1AI1474	Cast walls 1st lift	18	18	22MAR11A	20APR11A	100	22MAR11A	20APR11A				\mathbb{N}						
04L1AI1476	Cast walls 2nd lift, 200mm down from soffit	18	18	21APR11A	27MAY11A	100	21APR11A	27MAY11A				X			XXXX			
04L1AI1478	Cast roof slabs	18	18	28MAY11A	11JUN11A	100	28MAY11A	11JUN11A				X						
04L1AI1488	Cast side walls	18	18	13JUN11A	08JUL11A	100	13JUN11A	08JUL11A				X			XXXX			
Dismantle & Re	emoval of TBM											X						
04L1AI1D02	Form cranage platform	52	52	27JUN11A	24AUG11A	100	27JUN11A	24AUG11A				N						
04L1AI1D03	Mobilization & setup- piling rig	6	6	24AUG11A	27AUG11A	100	24AUG11A	27AUG11A				Ň						
04L1AI1D04	Construct 2# temporary H-piles	6	6	29AUG11A	05SEP11A	100	29AUG11A	05SEP11A				Ň						
04L1AI1D05	Demobilze piling rig	6	6	06SEP11A	08SEP11A	100	06SEP11A	08SEP11A				\mathbb{N}						
04L1AI1D06	Install H-beam frameworks	24	24	09SEP11A	07OCT11A	100	09SEP11A	070CT11A				Ň						
04L1AI1D08	Construct cradle	12	12	080CT11A	150CT11A	100	080CT11A	150CT11A				\mathbb{N}						
04L1AI1D09	Obtain CNP for TBM dismantle	0	0		16NOV11A	100		16NOV11A				\mathbb{N}						
04L1AI1D12	Remove debris/steel frame & TBM push to cradle	5	5	29FEB12A	05MAR12A	100	29FEB12	05MAR12				\mathbb{N}						
04L1AI1D13	Mobilization & setup 400t crane	4	4	07MAR12A	10MAR12A	100	07MAR12	10MAR12				\mathbb{N}						
04L1AI1D14	Dissembly & demobiliseTBM/BU	38	38	12MAR12A	27APR12A	100	12MAR12	30APR12				\mathbb{N}						
04L1AI1D16	Remove H-beam frame & cradle	12	12	18APR12A	21JUL12A	100	02MAY12	15MAY12				M			<u> </u>			
Construction o	f Box Culvert Structure											\mathbb{N}						
04L1AI1463	Cast base	6	6	23JUL12A	04AUG12A	100	16MAY12	22MAY12				\mathbb{N}						
04L1AI1464	Cast walls	24	18	06AUG12A	05SEP12	67	23MAY12	12JUN12	-428			\mathbb{N}						
04L1AI1468	Cast roof slabs	18	18	06SEP12	26SEP12	0	13JUN12	05JUL12	-428			\mathbb{N}						
04L1AI1470	Backfill & compation, 1st 13m; 4000m3	26	26	12OCT12	12NOV12	0	06JUL12	04AUG12	-428			\mathbb{N}						
Slope Reinstate	ement											\mathbb{N}						
04L1AI1S10	Prepare slope reinstatement report	42	42	28JUL11A	19AUG11A	100	28JUL11A	19AUG11A				X						
04L1AI1S20	Obtain consent from SOR & GEO	170	170	20DEC11A	26MAY12A	100	20DEC11A	17APR12				\mathbb{X}						
04L1AI1S30	Backfill & compaction, remain. 8m; 900m3	24	24	13NOV12	10DEC12	0	06AUG12	01SEP12	-428	-	4	X						
Modification	of Existing Channel in Dry Season											\mathbb{N}						
	ication (Varied)Works (Civil Works)																	
	Demolish WYHN wall, weir and SMN weir	10	10	08DEC09A	28DEC09A	100	08DEC09A	28DEC09A				X						
07R1AI1504	Demolish WYHN slab	4	4	29DEC09A				28JAN10A				X						
07R1AI1506	Excavation for WYH channel wall under slab	18	18	30DEC09A				12FEB10A				Ň						
07R1AI1508	Construct WYHN wall under slab;1st layer wall	5	5	29MAR10A		100	29MAR10A	08APR10A				ÍX)						
07R1AI1510	Construct WYHN wall under slab; 2nd layer wall	5	5	09APR10A	22APR10A		09APR10A	22APR10A				ÍX)						
07R1AI1512	Install 26# 11m pipe piles	7	7	22DEC09A	13JAN10A	100	22DEC09A	13JAN10A				X						
07R1AI1514	Demolish WYHN interface wall and SMN	23		14JAN10A		100	14JAN10A	12FEB10A				X						
07R1AI1518	Construct WYHN and SMN slab	4		01MAR10A			01MAR10A					\mathbb{X}			XXXX			
07R1AI1520	Construct SMN wall (1st)	9		15MAR10A			15MAR10A	30MAR10A				\mathbb{X}			XXXX			
07R1AI1522	Construct SMN wall (2nd) and weir	8		01APR10A			01APR10A	20APR10A				X						
07R1AI1524	Construct WYHN wall	8		21APR10A			21APR10A					\mathcal{N}			XXXX			
Channel Modifi	ication Works (Steel Works)											\mathcal{X}						
07R1AI1628	Construct WYH clolumn	9	9	04NOV11A	09DEC11A	100	04NOV11A	09DEC11A				X.						
07R1AI1638	Construct R.C. frame for stop log	18		04NOV11A			04NOV11A					Ň.			XXXX			
0.1111.1000	Contract rates internet for stop log	10	10		SOBLOTIA	100	STICVITA	USECTIA				////			IXIXIXIA			

ID	Activity	WP10	WP09	WP10	WP10	% WP09	WP09	Total	201	12			2013		20	14		2015
	Description	Dur	Dur	Start	Finish	Comp Start	Finish	Float	S 0	N D) J F	M A I	M J J A S 2 73 74 75 76	ONDJF	M A M J	J A S C	ND	J F M A
07R1AI1648	Install stop log A	12	12	29NOV13*	12DEC13	0 01NOV12*	14NOV12	-629			XX							
07R1AI1658	Install trash grill	72	18	29NOV13	28FEB14	0 15NOV12	05DEC12	-677			XX							
07R1AI1668	Remove TDMP	24	12	01NOV13*	28NOV13	0 170CT12	310CT12	-677	•	•///	XX							
07R1AI1678	Install stop log B	12	12	14DEC13*	30DEC13	0 01NOV12*	14NOV12	-629			XX							
Piling Works	S		, , , , , , , , , , , , , , , , , , , ,				1											
	long Crest Plarform										XX							
11R2AI1000	Implement TTA at Shing Mun Road	0	0		01APR11A	100	01APR11A				XX							
11R2AI1010	Implement XP	0	0		01APR11A	100	01APR11A				XX							
11R2AI1200	Erect piling platform for upper piles	24	24	02APR11A	05MAY11A	100 02APR11A	05MAY11A				XX							
11R2AI1204	Mobilize piling rig & set up	6	6	11MAY11A	16MAY11A	100 11MAY11A	16MAY11A				XII							
11R2AI1206	350mm dia. pre-bored H-piles (upper); 36 nos.	54	54	17MAY11A	01JUN11A	100 17MAY11A	01JUN11A				XII							
11R2AI1208	Demobilize piling rig	3	3	02JUN11A	04JUN11A	100 02JUN11A	04JUN11A				XII							
Skin Wall & C											XX							
11R2AI1210	Remove piling platform/Excavate & hack off grout	18	18	07JUN11A	05JUL11A	100 07JUN11A	05JUL11A				XX							
11R2AI1212	Construct abutment	18	18	06JUL11A		100 06JUL11A	26JUL11A				XX							
11R2AI1214	Construct skin wall & capping beam	12	12		09AUG11A	100 27JUL11A	09AUG11A				XH							
11R2AI1216	Relocation of gully & construct catchpit; VO#067	14	14	10AUG11A		100 10AUG11A	15AUG11A				XX							
11R2AI1217	Construct run-in	7	7	15AUG11A		100 15AUG11A	17AUG11A				XX							
11R2AI1218	Reinstatement of masonry wall	14	14	18AUG11A		100 18AUG11A	19SEP11A				XX							
11R2AI1219	Reinstatement of carriageway	6	6	20SEP11A		100 20SEP11A	180CT11A				XX							
	Above Inclined Access Ramp		I I								XX							
11R2AI1220	Mobilize piling rig & set up	6	6	170CT11A	200CT11A	100 17OCT11A	200CT11A				XX							
11R2AI1222	350mm dia. pre-bored H-piles (lower); 22 nos.	22	22			100 200CT11A	04NOV11A				XH							
11R2AI1224	Demobilize piling rig	3	3	05NOV11A							XH							
L	clined Access Ramp	-	-								XX							
11R2AI1226	Excavate & hack off grout	16	6	07AUG12A	24AUG12A	100 03SEP12	08SEP12		•		XX							
11R2AI1228	Construct skin wall & ramp	18	30	24AUG12A	13SEP12	50 10SEP12	150CT12	-288	<u></u>		XH							
11R2AI1232	Temporary backfill with pre-cast conc. blocks	4	4	14SEP12	18SEP12	0 160CT12	190CT12	-288			XH							
11R2AI1242	Remove pre-cast concrete block	6	0	11DEC12	17DEC12	0		-348			XH							
11R2AI1252	Construct ramp & additiona drainage works	21	0	18DEC12	14JAN13	0		-348										
	Works Prior to Handover		_								XX							
											XX							
Finishing Wor	Water proofing work at Spiral Ramp	105	24	22MAY12A	24SEP12	72 02MAY12	29MAY12	-345			XX							
			48								XH							
07R1AI1F12 07R1AI1F22	Tiling works; stage 1	28			15SEP12	65 30MAY12 100 27JUL12	26JUL12 14AUG12	-345			XH			- XXXII			+	+++
07R1AI1F22 07R1AI1F32	Install hand rails at Spiral Ramp Install GRP	16 29	16 29		30JAN13	0 15AUG12	14A0G12 17SEP12	420						- XXXII			+	+++
07R1AI1F32 07R1AI1F42	Reinstate retaining wall	29	29	04DEC12	03JAN13	0 15AUG12 0 27AUG12	22SEP12	-428 -339						- XXXII			+	+++
07R1AI1F42 07R1AI1F52		18	24 18	11DEC12	03JAN13 03JAN13	0 27A0G12 0 200CT12	10NOV12	-339	F.		X/I			- XXXII			+	+++
07R1AI1F52 07R1AI1F62	Construct drainage	-	18		24DEC12	0 03SEP12	15SEP12	-			X/I			- UXU				+
	Tiling works; stage 2	12					15SEP12 24NOV12	-428			X			- VIXII			$\left \right $	+++
07R1AI1F72 PVO-TR-30	Remove temp. bridge	12	12		28JAN13 03APR13	0 12NOV12	24INUV 12	-348			X			- VIXII			$\left \right $	+++
FVU-1K-30	Vertical greening & water points at Spiral Ramp	48	0	31JAN13	UJAPRIJ	U		-428			XA			VXXXX/				

										2012		2012	2014 2015
ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012 A S O N C	JF	2013 M A M J J A S	2014 0 N D J F M A M J J A S O N D J F M A 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	FIDAL	3 64 65 66 6	7 68 69	70 71 72 73 74 75 76	77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
07R1AI1608	Pre-handover inspections and remedial works	30	30	29JAN14	07MAR14	0	08NOV12	12DEC12	-673				
16R7AI1602	Landscaping works at Portion A	30	30	11DEC12	17JAN13		060CT12	10NOV12			630	or trees 2072ng	s shrubs, 3670nos. ground c
16R7AI1602	Establishment Works at Portion A	365	365	18JAN13	17JAN13 17JAN14		11NOV12	10NOV12	-452	woodianioc		03. 11263, 2072110	s sindus, deronos, ground c
		305	305	10JAN 13	17JAN 14	0	1110012	1010013	-452		XAA		
Schedule of	Milestones for Cost Center No. 4L												
		-						1			XX		
04L1AI1802	4L 1; On completion of 50% excavation	0	0		29JUN09A	100		29JUN09A			XIA		
04L1AI1804	4L 2; On completion of excavation	0	0		30JAN10A	100		30JAN10A			XAA		
04L1AI1806	4L 3; On completion of 25% concreting	0	0		20APR11A	100		20APR11A			XAA		
04L1AI1808	4L 4; On completion of 50% concreting	0	0		27MAY11A	100		27MAY11A			XIA		
04L1AI1810	4L 5; On completion of 75% concreting	0	0		11JUN11A	100		11JUN11A			XXX		
04L1AI1812	4L 6; On completion of Cascade	0	0		26SEP12	0		05JUL12	899	♦at Int.	ake 1-		
04L1AI1814	4L 7; On completion of connecting BC	0	0		26SEP12	0		05JUL12	899	♦box c	uivert	at Intake I-1	
04L1AI1816	4L 8; On completion of all works under this CC	0	0		07MAR14	0		12DEC12	372	>	XXX		within this Cost Centre
Schedule of	Milestones for Cost Centre No. 7R										XX		
											XX		
07R1AI1902	7R 1; On completion of trash grills	0	0		28FEB14	0		05DEC12	379	•	XX		and stop log at Intake I-1
07R1AI1904	7R 2; On completion of 25% excavation	0	0		29JUN09A	100		29JUN09A			XXX		
07R1AI1906	7R 3; On completion of 50% excavation	0	0		27JUL09A	100		27JUL09A			XXX		
07R1AI1908	7R 4; On completion of 75% excavation	0	0		240CT09A	100		240CT09A			XXX		
07R1AI1910	7R 5; On completion of all excavation	0	0		26DEC09A	100		26DEC09A			XXX		
07R1AI1912	7R 6; On completion of spiral ramp to +80mPD	0	0		19MAY10A	100		19MAY10A			XII		
07R1AI1914	7R 7; On completion of spiral ramp to +90mPD	0	0		30JUN10A	100		30JUN10A			XII		
07R1AI1916	7R 8; On completion of spiral ramp to +100mPD	0	0		29SEP10A	100		29SEP10A			XXX		
07R1AI1918	7R 9; On completion of spiral access ramp	0	0		07MAR11A	100		07MAR11A			XXX		
07R1AI1920	7R 10; On completion of all works under this CC	0	0		07MAR14	0		12DEC12	372		XXX		Junder this Cost Centre
Schedule of	Milestones for Cost Centre No. 11R		· · · · · ·								XX		
11R2AI1R02	11R 1; On completion of soil nailing works	0	0		06SEP08A	100		06SEP08A			XII		
11R2AI1R04	11R 2; On completion of piling at platform	0	0		01JUN11A	100		01JUN11A			XIII		
11R2AI1R06	11R 3; On completion of piling at branch access	0	0		04NOV11A	100		04NOV11A			XII		
11R2AI1R08	11R 4; On completion of all works under this CC	0	0		13SEP12	0		150CT12	912	♦ under	this C	ost Centre	
	n of Intake I-2					-					XI		
Preliminary													
	Works to Finalize Design										XX		
AGIB-02	Erect platform/mibilization & set up GI rig	3	3	12SEP08A	16SEP08A	100	12SEP08A	16SEP08A			XXX		
AGIB-02 AGIB-04	Drill 3 nos. GI holes for Intake Structures	22	Ŭ	17SEP08A			17SEP08A	03NOV08A			XHA		
AGIB-04 AGIB-06	Drill 1 hole for Intersection with Main Tunnel	12		17SEP08A 11NOV08A				24NOV08A			XXX		
		12	12		24INO V 00A	100					XAA		
01R1BU0102	LP Overhead Cable Temporary diversion of CLP overhead cable	20	20	02SEP08A	17007004	400	02850004	170CT08A			XXX		
		30	30	023EP08A		100	UZSEPUØA				XAA		
	00mm Watermain	0.1*		0000 T 00:	0505000	100		05050000			XX		
01R1BU0202	Temporary Diversion of 100mm dia. Watermain	64*	64*	03OCT08A	U5DEC08A	100	U3OCT08A	05DEC08A			XXX		

ID	Activity	WP10	WP09	WP10	WP10	% ١	WP09	WP09	Total	2012		
	Description	Dur	Dur	Start	Finish	•	Start		Float 6	3 64 65 66	67 68 69 7	M A M J J A S O N D J F M A M J J A S O N D J F M A M 7 J J A S O N D J F M 7 A M
01R1BU0204	Issue VO35 for temp. diversion	1	1	03OCT08A	03OCT08A	100 03C		03OCT08A			XXX XXX	
01R1BU0206	Preparation works	26	26					04NOV08A			XXXX	
01R1BU0208	Install steel support	3	3	05NOV08A				07NOV08A			XXXX	
01R1BU0210	Lay new watermain	2	2	08NOV08A			NOV08A	18NOV08A				
01R1BU0212	Obtain ICE certificate for temp. support	0	0		19NOV08A			19NOV08A			<u> </u>	
01R1BU0214	Pressure test	2	2	20NOV08A				21NOV08A			<u> </u>	
01R1BU0216	Sterilise new pipe & take water sample	3	3	22NOV08A		100 22N		25NOV08A			XXXX	
01R1BU0218	Watermain connection by WSD	10	10	26NOV08A	05DEC08A	100 26N	NOV08A	05DEC08A				
· · · · · · · · · · · · · · · · · · ·	perant Hoarding at I-2											
VO011-02	Receive VO11 for transparent hoarding	0	0		14JUL08A			14JUL08A				
VO011-04	Procure/prepare/install transparent hoarding	51	51	15JUL08A	13SEP08A	100 15J	JUL08A	13SEP08A				
VO#32; Repla	ce Hoarding by Chain Link Fence				I							
VO032-I202	Receive VO-32 for replacing hoarding by CLF	0	0		16SEP08A			16SEP08A				
VO032-I204	Procure/prepare/install transparent hoarding	51	51	17SEP08A	17NOV08A	100 17S	SEP08A	17NOV08A				
01R1BI2102	Possession of Portion B -90d of DOC	0	0	26MAR08A		100 26N	MAR08A				XXX	
01R1BI2104	Obtain TTA (ingress & egress) approval	0	0		19APR08A	100		19APR08A			XXX	
01R1BI2108	Site clearance	30	30	02MAY08A	05SEP08A	100 02N	A80YAN	05SEP08A			XXX	
01R1Bl2112	Erect hoarding	30	30	05JUN08A	16MAR09A	100 05J	JUN08A	16MAR09A			XXX	
01R1Bl2116	Install remote contorl CCTV as per ER 4.4.10	12	12	28FEB09A	13MAR09A	100 28F	EB09A	13MAR09A			XXX	
16R7BI2002	Tree transplanting; 1 no.	72	72	10DEC08A	23APR09A	100 10D	DEC08A	23APR09A			XXX	
Stream Dive	ersion/Approach Channel/H-Pile Wall											
Revised Layo	ut of Pile Wall at I-2											
VO022-02	Received VO22 for revised layout of pile wall	0	0		10JUL08A	100		10JUL08A				
VO022-04	SOR confirmed to demolish exit. ret. wall	38	38	11JUL08A	21AUG08A	100 11J	JUL08A	21AUG08A				
VO022-06	Demolish existing retaining wall	1	1	13SEP08A	13SEP08A	100 13S	SEP08A	13SEP08A				
VO022-16	Reinstate piling platform	2	2	16SEP08A	17SEP08A	100 16S	SEP08A	17SEP08A				
Phase 1; Cons	struct 550 dia. H-pile Wall											
12R3BI2202	Form temp. access ramp along west side of stream	44	44	10JUN08A	31JUL08A	100 10J	JUN08A	31JUL08A			INN.	
12R3BI2204	Additional SI & engineering works	26	26	25AUG08A	24SEP08A	100 25A	AUG08A	24SEP08A			XXX	
12R3BI2206	Mobilize piling rig & set up	5	5	25SEP08A	30SEP08A	100 25S	SEP08A	30SEP08A			XXX	
12R3BI2208	Construct piles 1 to 18	13	13	02OCT08A	170CT08A	100 02C	OCT08A	170CT08A			XXX	
12R3BI2210	Piling works stopped by the SOR	8	8	180CT08A	270CT08A	100 18C	OCT08A	270CT08A			XXX	
12R3BI2212	Construct piles 19-58	28	28	280CT08A	26NOV08A	100 28C	OCT08A	26NOV08A			XXX	
12R3BI2214	SOR's instruction to delet pile 59	0	0		02DEC08A	100		02DEC08A			XXX	
12R3BI2216	Demobilize piling rig	4	4	03DEC08A	06DEC08A	100 03D	DEC08A	06DEC08A			XXXX	
12R3BI2218	Construct skin wall/caping beam/u-channel	155*	155*	27JUL09A	29JAN10A	100 27J	JUL09A	29JAN10A			XXXX	
12R3BI2220	Excavate for skin wall; 4 bays	18	18	27JUL09A	27AUG09A	100 27J	JUL09A	27AUG09A			XXXX	
12R3BI2222	Construct for skin wall; 4 bays	24	24	05OCT09A	12NOV09A	100 05C	OCT09A	12NOV09A			XXXX	
12R3BI2224	Construct capping beam	16	16	13NOV09A	01DEC09A	100 13N	A60VOA	01DEC09A			XXXXXX	
12R3BI2226	Construct drainage	12	12	02DEC09A	29JAN10A	100 020	DEC09A	29JAN10A			XXXXXX	
Phase 1; Cons	struct Dry Weather Flow Channel											
08R1BI2202	Excavate for new low flow channel	6	6	27MAR09A	03APR09A	100 27N	MAR09A	03APR09A			XXXX	
1		1			1				. 1		KIXIXIX.	

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total			FMAM	2013 J J A S		FMA	2014 M .I .I	AISIOI		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	3 64 65 66 67	7 68	69 70 71 72	73 74 75 76	77 78 79 80	81 82 83	84 85 86 8	7 88 89 9	0 91 9	2 93 94 95
08R1BI2204	Construct new low flow channel	6	6		17JUN09A		11JUN09A	17JUN09A			XA								
08R3BI2208	Remove bloock wall/excavate for gantry footing	12	12		22JUL09A		18JUN09A	22JUL09A			XA								
08R3BI2212	Construct PC bund wall to protect gantry footing	6	6	23JUL09A	27JUL09A	100	23JUL09A	27JUL09A			XA	44			44				
	truct Approach Channel West				1						X								
08R1BI2218	Construct temp. concrete block bund	12	12				16DEC09A	11JAN10A			XA								
08R1BI2220	Excavate for western portion guide wall & slab	12	12				16DEC09A	20JAN10A			XA								
08R1BI2222	Construct western portion of guide wall & slab	50	50		13APR10A		21JAN10A	13APR10A			XA								
08R1BI2224	Remove concrete block bund	6	6	14APR10A	17APR10A	100	14APR10A	17APR10A			XA								
Phase 3; Cons	truct Approach Channel North				1						X								
08R1BI2226	Construct temp. concrete block bund	6	6	01NOV11A	05NOV11A			05NOV11A			XA								
08R1BI2228	Excavate for L-shaped retaining wall; VO#113	50	50			100	01NOV10A	07JAN12A			XA								
08R1BI2229	Formation & place blinding layer	11	11	19JAN12A	03FEB12A	100	19JAN12A	03FEB12A			XA								
08R1BI2230	Construct L-shaped retaining wall; VO#113	26	26	04FEB12A	05MAR12A	100	04FEB12A	05MAR12			XA								
08R1BI2234	Construct H piles 7# for boulder trap	12	12	09JAN12A	18JAN12A	100	09JAN12A	18JAN12A			XA								
08R1BI2236	Construct eastern portion of guide wall & slab	16	16	06MAR12A	31MAR12A		06MAR12	23MAR12			X								
08R1BI2240	Construct temp. concrete blcok bund	6	6	26MAR12A	31MAR12A	100	24MAR12	30MAR12			X								
Phase 3a; Stor	e Pitching Works										X								
08R1BI2260	Channel modification & stone pitching	24	24	01NOV12*	28NOV12	0	01NOV12*	28NOV12	-341		X								
08R1BI2270	Stone Pitching to Guide Wall	24	24	29NOV12	28DEC12	0	29NOV12	28DEC12	-341										
08R1BI2280	Stone pitching to closing guide wall	12	12	08APR13	20APR13	0	02MAR13	15MAR13	-418		X								
Phase 4 - Cons	struct Remaining Appr. Channel										X								
08R1BI2238	Boulder traps; 7 nos.	12	12	28FEB13	13MAR13	0	16JAN13	29JAN13	-443										
08R1BI2242	Remove noise enclosure/gantry crane/steel deck	25	25	130CT12	12NOV12	0	30NOV12	31DEC12	-466										
08R1BI2244	Excavation for remaining approach channel	25	12	13NOV12	11DEC12	0	02JAN13	15JAN13	-466										
08R1BI2246	Construct Vortex & remaining approach channel	84	30	12DEC12	26MAR13	0	16JAN13	22FEB13	-466		1//								
08R1BI2248	Close out last section of guide wall	12	12	27MAR13	13APR13	0	23FEB13	08MAR13	-466		X	- 1							
08R1BI2249	Removal of TDMP	24	0	01NOV13*	28NOV13	0			-679		X			Z X/					
08R1BI2250	Construct trash grill	72	18	29NOV13	28FEB14	0	16JAN13	05FEB13	-679		X								
PVOABT2-10	Additional boulder traps	48	0	29DEC12	27FEB13	0			-443										
PVOMLRW-10	Modif. to L-shap ret. wall & ground profile	48	0	01NOV12*	28DEC12	0			-443										
Excavate & 0	Construct Vortex/Drop Shaft										X								
Steel Deck & G	antry Crane/Noise Enclosure										X								
05L1BI2300	Construct 8 nos. mini piles	24	24	20JAN09A	21FEB09A	100	20JAN09A	21FEB09A			X								
05L1BI2301	Erect timber platform for mini piling	4	4	23FEB09A	26FEB09A	100	23FEB09A	26FEB09A			X								
05L1BI2302	Construct 6 nos. mini piles	12	12	27FEB09A	12MAR09A	100	27FEB09A	12MAR09A			X								
05L1BI2303	Excavation for footing/pile caps	12	12	13MAR09A	26MAR09A	100	13MAR09A				X								
05L1BI2304	Construction of footing/pile caps	12	12	27MAR09A	18APR09A	100	27MAR09A	18APR09A			XX								
05L1BI2305	Install steel deck	25		04MAY09A			04MAY09A	15AUG09A			XX								
05L1BI2316	Construct footing for gantry crane	12	12	09SEP09A	150CT09A	100	09SEP09A	15OCT09A			XX								
05L1BI2318	Install gantry crane	42	42	280CT09A	01MAR10A		280CT09A				XX						+++		
05L1BI2328	Install noise enclosure	24		22MAR10A			22MAR10A				XX						+++		
Ground Treatm	ent Works for Vortex Shaft										XX								
05L1BI2306	Setting up	2	2	16JUL09A	16JUL09A	100	16JUL09A	16JUL09A			X								
1		1							-		×//	1818		V / V / V / .	<i>(///</i>		والمسالم الم		

ID Activity WP10 WP09 WP10 % WP09 WP09 Total 2012 Description Dur Dur Start Finish Comp Start Finish Finish	JJASONDJFMAMJJASONDJFMA
	73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
05L1BI2308 Probing & curtain grouting around shaft 37 37 17JUL09A 08SEP09A 100 17JUL09A 08SEP09A	
Excavation and Construction of Vortex Shaft	
05L1BI2319 Construct collar 6 6 02MAR10A 13MAR10A 100 02MAR10A 13MAR10A	
05L1BI2320 Excavate by conventional method; +99~+68mPD 337 337 30MAR10A 01AUG11A 100 30MAR10A 01AUG11A	
05L1BI2321 Set up for lining construction 6 6 06OCT12 12OCT12 0 09OCT12 15OCT12 -466	
05L1BI2322 Construct permanent lining; 30m @ 6m/ 5days 30 38 13OCT12 17NOV12 0 16OCT12 29NOV12 -466	
Excavate & Construct Air Vent Shaft	
05L1BI2418 Enlarge the platform for RCD operation 15 15 08DEC08A 27DEC08A 100 08DEC08A 27DEC08A	
05L1BI2420 Mobilize & set up RCD for excavation 6 6 29DEC08A 06JAN09A 100 29DEC08A 06JAN09A	
05L1BI2422 Bore shaft with RCD; 37.5m @1m/day 54 54 07JAN09A 13MAR09A 100 07JAN09A 13MAR09A	
05L1BI2424 Demobilize RCD rig 5 5 14MAR09A 19MAR09A 100 14MAR09A 19MAR09A	
05L1BI2426 Install permanent steel liner 3 3 20MAR09A 23MAR09A 100 20MAR09A 23MAR09A	
05L1BI2427 Preparation works for casting concrete 1 1 21MAR09A 25APR09A 100 21MAR09A 25APR09A	
05L1BI2428 Damage found on installed steel liner 0 0 0 25APR09A 100 25APR09A 0	
05L1BI2429 Removal of steel liner 31 31 27APR09A 04JUN09A 100 27APR09A 04JUN09A 0	
05L1BI2430 Remove RCD platform 17 17 05JUN09A 24JUN09A 100 05JUN09A 24JUN09A	
05L1BI2432 Construct PC bund wall 12 12 25JUN09A 15JUL09A 100 25JUN09A 15JUL09A	
05L1BI2434 Divert channel to West 0 0 0 15JUL09A 100 15JUL09A 0	
05L1BI2436 Footing for lifting frame 12 12 22JAN10A 12FEB10A 100 22JAN10A 12FEB10A 100 22JAN10A 12FEB10A	
05L1BI2438 Erection of lifting frame 18 18 09FEB10A 05MAR10A 100 09FEB10A 05MAR10A	
05L1BI2446 Install steel casing 36 36 09MAR10A 22MAR10A 100 09MAR10A 22MAR10A 0	
05L1BI2448 Survey checking & capping concrete 3 3 23MAR10A 29MAR10A 100 23MAR10A 29MAR10A	
05L1BI2450 Preparation & concreting 3 3 30MAR10A 19APR10A 100 30MAR10A 19APR10A	
05L1BI2452 Construct upstand wall 24 24 12DEC12 11JAN13 0 02JAN13 29JAN13 -376	
Excavate & Construct Man Access Shaft	
Ground Treatment for Man Access Shaft	
05L1BI2502 Probing & curtain grouting around shaft 31 31 12AUG09A 15SEP09A 100 12AUG09A 15SEP09A	
Gantry Crane & Noise Enclosure at M. A. Shaft	
05L1BI2504 Excavate & construct 4 nos. gantry footings 12 12 30SEP09A 19NOV09A 100 30SEP09A 19NOV09A	
05L1BI2505 Install gantry crane 18 18 08JAN10A 24MAR10A 100 08JAN10A 24MAR10A	
05L1BI2515 Install noise enclosure 18 18 06MAY10A 27AUG10A 100 06MAY10A 27AUG10A	
ELS and Excavation upto Rock Head Level at M.A.	
05L1BI2503 Install sheet piles 6 6 28OCT09A 03NOV09A 100 28OCT09A 03NOV09A	
05L1BI2506 Excavation/wailing to rock head level 36 36 04NOV09A 11JAN10A 100 04NOV09A 11JAN10A 0	
Excavation & Construction of Man Access Shaft	
05L1BI2508 Excavate by conventional method; +102~ +70mPD 356 356 12JAN10A 16JUL11A 100 12JAN10A 16JUL11A	
05L1BI2510 Obtain Blasting Permit 0 0 22JUL11A 100 22JUL11A I	
05L1BI2511 Preparation works prior to 1st blast 13 13 13 18JUL11A 01AUG11A 100 18JUL11A 01AUG11A	
05L1BI2518 Excavate;+70~68.0mPD 12 12 12 10AUG11A 07SEP11A 100 10AUG11A 07SEP11A	
05L1BI2522 Cleaning,blinding & base construction 11 6 18JUN12A 30JUN12A 100 05JUL12 11JUL12	
05L1Bl2524 Set up for 37m shaft construction (wall only) 6 6 03JUL12A 07JUL12A 100 05JUL12 11JUL12	

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	201	2	2013	}		20	14	2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish		ASO	N D	J F M A M J J 68 69 70 71 72 73 74	A S O	NDJFN 78 79 80 81 8	A M J	J A S O N	D J F M A
05L1BI2526	Construct wall & dismante mould; 3.6m/4day	61	48	09JUL12A	17SEP12	67	12JUL12	05SEP12									
05L1BI2527	Construct stairs; Precast & insitu stich concret	30	54	08OCT12	12NOV12	0	08NOV12	12JAN13	-315		700	27 landings					
05L1BI2528	Removal of noise enclosure & gantry crane	16	16	18SEP12	06OCT12	0	22DEC12	12JAN13	-315								
05L1BI2530	Construct wall above ground level	9	9	13NOV12	22NOV12	0	14JAN13	23JAN13	-315	1							
05L1BI2532	Construct shaft roof	15	15	23NOV12	10DEC12	0	24JAN13	09FEB13	-315								
05L1BI2542	Install steel handrailing incl. at MAA	18	18	28JAN13	20FEB13	0	29DEC12	19JAN13	-377	1				IXXXX			
Excavate & (Construct Deaeration Chamber	1												XXXX			
														XXXX			
05L1BI2602	Excavate by drill & blasting	148	148	08AUG11A	23MAR12A	100	08AUG11A	14MAR12						XXXX			
05L1BI2607	Wall between Chamber & MA Adit; 20m3	14	14	24JUL12A	15AUG12A		21AUG12	05SEP12		Ļ				HXXXX.			
05L1BI2608	Wall/Crown inclined section	17	14	30AUG12	18SEP12		06SEP12	21SEP12	-466					HXXXX.			
05L1Bl2612	Wall/Crown beneath Vortex	14	19	13AUG12A	29AUG12		22SEP12	150CT12	-466	-							
05L1BI2614	Wall/Crown middle section	14	43	19SEP12	050CT12		080CT12	27NOV12	-466								
05L1BLR002	Obtain Blasting Permit	0	0		22JUL11A	100		22JUL11A									
05L1BLR012	Cleaning & blinding	6	-	28MAR12A	11APR12A		09MAY12	15MAY12									
05L1BLR022	Construct base slab	41	12	16APR12A	05JUN12A		16MAY12	29MAY12						HXH			
05L1BLR032	Construct walls up 7m	38		06JUN12A			30MAY12	29JUN12						HXH			
	Construct Main Adit Tunnel	00	20	00001112/1	2000212/(100		LOODITIE						HXXXXX			
		10	10	00555104	04550404	100	00550404	04550404									
3BL1BI2101	Initial 4 # heading blast	19	19	03FEB12A			03FEB12A	24FEB12A	_					HXXXX			
3BL1BI2102	Excavate by drill & blasting	110	110	28FEB12A	07JUL12A		28FEB12	13JUL12	000					HXXX			
3BL1BI2104	Mucking out cleaning & blinding	6	6	27SEP12	04OCT12		14JUL12	20JUL12	-363					HXXX			
3BL1BI2110	Construct invert; 6mx8 bays (3 pours)	21	21	15OCT12	08NOV12		21JUL12	14AUG12	-363					HXXX			
3BL1BI2114	Construct wall & crown; 8 bays	39	39	09NOV12	24DEC12	0	15AUG12	28SEP12	-363	— —				HAHH.			
	Construct Man Access Adit																
Upper Horizon																	
05L1BI2806	Excavate by drill & blasting	102		02AUG11A			02AUG11A	05DEC11A						<u> XXXX</u>			
05L1BI2807	Cleaning & blinding incl. MAS	6		15MAR12A			15MAR12	21MAR12						<u> XXXX</u>			
05L1BI2808	Construct invert; 4 bays; 2 pourx6days	12	12	22MAR12A	21APR12A	100	22MAR12	05APR12						IXXXX			
05L1BI2830	Set up steel mould fwk	10	10	23APR12A	05MAY12A	100	10APR12	20APR12						IXXXX			
05L1BI2834	Construct wall & crown	24	24	07MAY12A	16JUN12A	100	21APR12	21MAY12									
Vertical Sectio	n													XXXXX			
05L1BI2810	Excavate by drill & blasting	84	84	01DEC11A	14MAR12A	100	01DEC11A	14MAR12						XXXX.			
05L1BI2822	Construct base & junction of raise shaft	18	18	270CT12	16NOV12		26JUL12	15AUG12	-377					XXXX.			
05L1Bl2824	Set up for raise stairway const. (wall only)	6	6	10NOV12	16NOV12		09AUG12	15AUG12	-377 •					XXX			
05L1BI2826	Construct wall only;	28	28	17NOV12	19DEC12		16AUG12	17SEP12	-377	+				XXX			
05L1BI2836	Dismantle remove moulds	6	6	20DEC12	28DEC12	0	18SEP12	24SEP12	-377	•				XXX			
05L1Bl2846	Insitu stairs (6 pours) @ 6 days/pour	36	36	29DEC12	09FEB13	0	25SEP12	07NOV12	-377	-				<u>XXXII</u>			
Lower Horizon	tal Section													XXXX.			
05L1Bl2814	Excavate by blasting; 4 # blasts	18	18	07FEB12A	02MAY12A	100	14JUL12	03AUG12						XXXX.			
05L1Bl2815	Excavate rem. (0.5m) by mech./clean & blinding	18	0	04SEP12	24SEP12	0			-377					XXXX.			
05L1Bl2816	Construct invert	6	6	25SEP12	02OCT12	0	04AUG12	10AUG12	-377 -	8				XXXX.			
										• •							

ID	A - the idea	MD40	14/200		14/040	0/	14/000	14/000	Tetel	201	12		2013				2014		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	ASO	N D	JFMA	MJJ	A S C	NDJ	FMA	MJJA	SON	D J F M A 91 92 93 94 95
05L1BI2818	Construct wall & crown	20	20	030CT12	260CT12		11AUG12	03SEP12	-377		17770		1 12 13 14	10/0/1	18/9 80		00 00 0	00009990	31 92 93 94 95
	tween Main Tunnel & Adit Tunnel																		
Sunction De																			
3BL1BI2100	Remove TBM services/delivery of steel arches	0	0		24APR12A	100		03MAY12											
3BL1BI2106	Install steel arches from main tunnel	19	24	25APR12A	18MAY12A		04MAY12	31MAY12				HAA							
3BL1BI2107	Excavate (breathrough);2m	69	32	09JUL12A	26SEP12		14JUL12	20AUG12	-377										_
3BL1BI2108	Construct invert	8	8	050CT12	130CT12		21AUG12	29AUG12	-363										_
3BL1BI2118	Construct wall & crown	34	34	150CT12	23NOV12		30AUG12	090CT12	-343										_
3BL1BI2128	Remove steel arches	6	6	24NOV12	30NOV12		100CT12	160CT12	-343	•	R.								
	Vorks Prior to Handover																		
	nication System																		
VO180I205	Construct equipment room	18	18	20NOV12	10DEC12	0	03DEC12	22DEC12	-345										
VO180I210	Lay tiles on equipment room	12	12	11DEC12	24DEC12		24DEC12	09JAN13	-345										
VO180I215	Install radio comminication system	18	18	27DEC12	17JAN13		10JAN13	30JAN13	-345										
		1 10	10	1.52012	110,000	J		000, 1110	0-0										
08R1BI2102	Finishing & reinstatement works; Portion B	36	36	22JAN14	07MAR14	0	30JAN13	15MAR13	-679										
08R1BI2103	Pre-handover inspections and remedial works	30	30	08FEB14	14MAR14		16FEB13	22MAR13	-679										_
16R7BI2102	Landscaping works at Portion B	30	30	15APR13	21MAY13		16FEB13	22MAR13	-466										_
16R7BI2104	Establishment Works at Portion B	365	365	22MAY13	21MAY14		23MAR13	22MAR14	-576										_
	Milestones for Cost Centre No. 3bL			-															
3BL1BI2A02	3bL 1; On establishing tunnelling equipments	0	0		20FEB12A	100		20FEB12A											
3BL1BI2A02	3bL 2; On completion of 12.5% perm. tunnel linin	0	0		200CT12	0		27JUL12	875		for A	dit Tunn	el at Inta	ake I-2					
3BL1BI2A06	3bL 3; On completion of 25% perm. tunnel lining	0	0		290CT12	0		03AUG12	866			dit Tunr							_
3BL1BI2A08	3bL 4; On completion of 37.5% perm. tunnel linin	0	0		05NOV12	0		10AUG12	859	•	INA	Adit Tun			<u> </u>				_
3BL1BI2A10	3bL 5; On completion of 50% perm. tunnel lining	0	0		12NOV12	0		17AUG12	852	<u>ہ</u>		Adit Tur			/////				_
3BL1BI2A12	3bL 6; On completion of 62.5% perm. tunnel linin	0	0		19NOV12	0		24AUG12	845	•	1///	Adit Tu			1111111				
3BL1BI2A14	3bL 7; On completion of 75% perm. tunnel lining	0	0		26NOV12	0		31AUG12	838	•	1///	r Adit Tu			1111111				
3BL1BI2A16	3bL 8; On completion of 87.5% perm. tunnel linin	0	0		03DEC12	0		07SEP12	831	•	1///	or Adit Ti			1111111				
3BL1BI2A18	3bL 9; On completion of perm. tunnel lining	0	0		24DEC12	0		28SEP12	810	•		for Adit	Tunnel a	at Intak	e 1-2				
3BL1BI2A20	3bL 10; On completion of all works under this CC	0	0		24DEC12	0		160CT12	810	•	•	under th	is Cost	Centre					
Schedule of	Milestones for Cost Centre No. 5L					· · · · · ·													
05L1BI2M02	5L 1; On completion of 25% of excavation	0	0		27MAY11A	100		27MAY11A											
05L1BI2M04	5L 2; On completion of 50% of excavation	0	0		27DEC11A			27DEC11A				MA							
05L1BI2M06	5L 3; On completion of 75% of excavation	0	0		14MAR12A			14MAR12				MM							
05L1BI2M08	5L 4; On completion of all excavation	0	0		26SEP12	0		20AUG12	899	• 🔶t	below	G.L. exc	ept for A	Adit Inta	ke 1-2				
05L1BI2M10	5L 5; On completion of drop shaft & vortex shaft	0	0		17NOV12	0		29NOV12	847		Vo	tex shat	t at Inta	ke I-2					
05L1BI2M12	5L 6; On completion of de-aeration chamber	0	0		05OCT12	0		27NOV12	890	•	chamt	per at ini	ake I-2						
05L1BI2M14	5L 7; On completion of air vent shaft	0	0		11JAN13	0		29JAN13	792			shaft a	t Intake	I-2					
05L1BI2M16	5L 8; On completion of man access shaft	0	0		10DEC12	0		09FEB13	824			shaft at I	ntake I-2	2					
05L1BI2M18	5L 9; On completion of man access adit	0	0		09FEB13	0		21MAY12	763			Adit	at Intak	e I-2					
		1			1			1			- <u>K 4 / 4</u>				<u> </u>	1818			

ID ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012	2013	2014 2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float			O N D J F M A M J J A S O N D J F M A 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
05L1BI2M20 5l	L 10; On completion of all works under this CC	0	0		14MAR14	0		22MAR13	365			Junder this Cost Centre
Schedule of M	ilestones for Cost Centre No. 8R											
08R1BI2R02 8F	R 1; On completion of approach channel	0	0		13APR13	0		08MAR13	700		channel and	assiciated decking at Intake I-2
08R1Bl2R04 8F	R 2; On completion of trash grill	0	0		28FEB14	0		05FEB13	379		•	🔷 at Intake I-2
08R1BI2R06 8F	R 3; On completion of all works under this CC	0	0		14MAR14	0		22MAR13	365			Junder this Cost Centre
Schedule of M	ilestones for Cost Centre No. 12R											
12R3BI2S02 12	2R 1; On completion of 50% pile retain. wall	0	0		06NOV08A	100		06NOV08A				
12R3BI2S04 12	2R 2; On completion of pile retain. wall	0	0		26NOV08A	100		26NOV08A				
12R3BI2S06 12	2R 3; On completion of boulder traps	0	0		13MAR13	0		29JAN13	731		• Otraps at Intake	1-2
12R3BI2S08 12	2R 4; On completion of all works under this CC	0	0		14MAR14	0		22MAR13	365			under this Cost Centre
Construction	of Intake I-3							1				
Preliminary Wo												
	rks To Finalize Design											
	rect platform/mibilization & set up GI rig	3	3	03NOV08A	05NOV08A	100	03NOV08A	05NOV08A				
	rill 3 nos. GI holes for Intake Structures	12		06NOV08A			06NOV08A	19NOV08A				
	Hoarding by Chain Link Fence											
	eceived VO-32 for replacing hoarding by CLF	0	0		16SEP08A	100		16SEP08A				
	rocure/prepare/install transparent hoarding	80	80	17SEP08A	06MAR09A		17SEP08A	06MAR09A				
01R1Cl3102 P	ossession of Portion C -90d of DOC	0	0	26MAR08A		100	26MAR08A					
01R1Cl3104 Si	ite clearance	40	40	22APR08A	20SEP08A	100	22APR08A	20SEP08A				
01R1Cl3106 H	aording at slope crest	48	48	03JUN08A	30JUL08A	100	03JUN08A	30JUL08A				
01R1Cl3110 Se	et-up wheel washing facilities	6	6	30JUN08A	03JUL08A	100	30JUN08A	03JUL08A				
01R1Cl3118 In	stall remote contorl CCTV as per ER 4.4.10	12	12	280CT08A	10NOV08A	100	280CT08A	10NOV08A				
Tree Transplar	nting Works											
16R7Cl3202 Tr	ree inspection & report	7	7	01APR08A	26APR08A	100	01APR08A	26APR08A				
	ree transplant for upper parts; 8 nos.	86*	86*	04JUN08A	13SEP08A	100	04JUN08A	13SEP08A				
	st stg tree pruning	2	2	04JUN08A	21JUN08A	100	04JUN08A	21JUN08A				
16R7CI3208 2r	nd stg tree pruning	2	2	04JUL08A	04JUL08A	100	04JUL08A	04JUL08A				
16R7Cl3210 Fi	inal stg. tree pruning & tree uplifting	6	6	08SEP08A	13SEP08A	100	08SEP08A	13SEP08A				
16R7Cl3212 Tr	ree transplanting at Ch250-Ch200); 20 nos.	214*	214*	21JUN08A	09MAR09A	100	21JUN08A	09MAR09A				
16R7Cl3214 1s	st stg tree pruning	3	3	21JUN08A	15JUL08A	100	21JUN08A	15JUL08A				
16R7Cl3216 2r	nd stg tree pruning	3	3	15JUL08A	12SEP08A	100	15JUL08A	12SEP08A				
16R7Cl3218 Fi	inal stg tree pruning & tree uplifting	8	8	28FEB09A	09MAR09A	100	28FEB09A	09MAR09A				
16R7Cl3220 Tr	ree transplanting at Ch100-Ch0	437*	437*	21JUN08A	07DEC09A	100	21JUN08A	07DEC09A				
16R7Cl3222 1s	st stg tree pruning	4	4	21JUN08A	01DEC08A	100	21JUN08A	01DEC08A				
	nd stg tree pruning	4	4	05JAN09A	280CT09A	100	05JAN09A	280CT09A				
16R7Cl3226 Fi	inal stg tree pruning & tree uplifting	10	10	10FEB09A	07DEC09A	100	10FEB09A	07DEC09A				

	A		14/200	14/240		0/	14/200	14/2000	T . (.)	2012			20	13			201	4		2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total -	ASON		J F M		J A S (74 75 76 7	0 N D	J F M		IAS	6 O N	
H-Pilo Potair	ing Wall for Wall A	1 2 4	2 0.1			comp				53 04 05 0			11/2/3	14 15 10 1			03 04 03 0	50 07 00	09 90	91 92 93 94 93
											XX					III				
Piling Works 13R4Cl3400	Mobilize & set up piling rig	6	6	11AUG08A	16AUG08A	100	11AUG08A	16AUG08A			XX					IIA				
13R4Cl3401	Drill 28 nos. grout (partially) 11 nos. piles	1	1	18AUG08A				28AUG08A			HÀ	\mathbb{H}				HAA				
13R4Cl3402	Piling stopped due to accessive grout loss	1	1	29AUG08A				220CT08A			H					HHA				
13R4Cl3403	Piling resumed date	1	1	26NOV08A				26NOV08A			HX					HHA				
13R4Cl3405	Complete all H-piles, Wall A; 347nos.	70	70	18AUG08A			18AUG08A				HX					HHA		_		
Skin Wall				10/10/000/1	_		10,10000,1									HH				
13R4Cl3406	Excavate for skin wall construction; 2130m3	60	60	14JAN09A	02MAR09A	100	14JAN09A	02MAR09A												
13R4Cl3408	Hack off piles; piles 1 to 347	48	48					02APR09A			HX					HH				
13R4Cl3410	Construct skin wall;	60	60				28FEB09A	19MAY09A			HX					HH				
13R4Cl3414	Construct for capping beams;	24	24					04JUN09A			M					HA				
13R4Cl3416	Construct U-channels	37		06MAY09A			06MAY09A				M					HA				
Soil Nailing			0.		1000110011						HX.					HHA				
																IIA				
13R1Cl3502	Itside Excavation Area	10	40	08SEP08A		100	00050004	20007004								IIA				
13R1Cl3502	Scaffolding platform for soil nailing	18	18	12SEP08A				280CT08A			HÀ					HAA				
	Mobilize & set up drilling & grouting plants	4	4				12SEP08A	17SEP08A			HÀ					HAA				
13R1Cl3506	Install & grout soil nails; 193 nos. + 8 Test N.	69	69	18SEP08A	U9DEC08A	100	18SEP08A	09DEC08A			<u>AA</u>					HA		_		
	ithin Excavation; Ch. 270-210	0.01	0.0*	00.0110.000.0	17101/004	100	00.0110.000.0	17101/004			XX					III				
13R1CI3508	Install & grout soil nails	89*	89^	03AUG09A	17NOV09A	100	03AUG09A	17NOV09A			<u>AA</u>	AAA				HAA				
	thin Excavation; Ch. 210-130										XX					III				
13R1Cl3510	Install & grout soil nails	117*	117*	12DEC08A	11MAY09A	100	12DEC08A	11MAY09A			<u> </u>					HA		_		
	ithin Excavation; Ch.130-0										XX					III				
13R1Cl3512	Install & grout soil nails	644*	644*	270CT09A	24DEC11A	100	27OCT09A	24DEC11A			<u>IA</u>					IAA				
	ng Outside Excavation										XX					III				
13R1Cl3522	Scoffolding platform for soil nailing	12	12					03NOV09A			XX					IAA				
13R1Cl3532	Install & grout soil nails; 261 no.s + 3 Test N.	100	100	21JUL09A	12DEC09A	100	21JUL09A	12DEC09A								IAA				
Access Road	I Construction										XX					IIA				
Concrete Pave	ment; Ch. 0-20										XX					IIA				
09R1Cl3706	Concrete pavement; Ch. 0 to 20 (6 bays)	18	0	18SEP12	09OCT12	0			-333		XX					IIA				
Concrete Pave	ment; Ch. 20-160										XX					\overline{M}				
09R1Cl3714	Road formation	14	11	03APR13	19APR13	0	21JAN13	01FEB13	-473		XX					III				
09R1Cl3724	Lay sub-base & kerb	7	11	20APR13	27APR13	0	02FEB13	18FEB13	-473		XX					TIN				
09R1Cl3734	Concrete paving	7	11	29APR13	07MAY13	0	19FEB13	02MAR13	-473		XX		8			TIN				
Concrete Pave	ment; Ch. 160-300															\overline{M}				
09R1Cl3647	Road formation	11	12	08MAY13*	21MAY13	0	01NOV12*	14NOV12	-473							IXXX				
09R1Cl3648	Lay sub-base and kerb	6	12	22MAY13	28MAY13	0	15NOV12	28NOV12	-473				1			TIN				
09R1Cl3654	Concrete paving	5	12	29MAY13	03JUN13	0	04MAR13	16MAR13	-473		XX		8			TXX.				
Concrete Pave	ment; Ch. 300-420															TXX				
09R1Cl3674	Road formation	8	16	04JUN13	13JUN13	0	15NOV12	03DEC12	-473							KXX				
09R1Cl3684	Lay sub-base and kerb	5	16		19JUN13	0	04JAN13	22JAN13	-473							TXXX.				
09R1Cl3694	Concrete paving; 190m @ 12m/day	7	16	20JUN13	27JUN13			09APR13	-473		XX					TX A				
		-	-						-		NIN	//////			K / X / X	LNIXIX				

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012		2013		2014	2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float 6	SONE 36465666	D J F M 7 68 69 70 7	A M J J A S 1 72 73 74 75 76	ONDJFMA 77 78 79 80 81 82 83	M J J A S C 84 85 86 87 88 8	0 N D J F M 9 90 91 92 93 94
VO-095-02	Green slope arrangement as per VO# 095	24	24	15MAY13	13JUN13	0	04DEC12	03JAN13	-473						
Preliminary W	orks for Works included VO#043														
VO043-010	Receive VO for revising design	0	0		02FEB09A	100		02FEB09A							
VO043-020	Recieve amendment to VO#043	0	0		05MAY09A	100		05MAY09A							
VO043-030	Procurement of lean mix concrete	12	12	06MAY09A	14MAY09A	100	06MAY09A	14MAY09A							
VO043-040	Testing & approval of lean mix concrete	18	18	15MAY09A	06JUN09A	100	15MAY09A	06JUN09A							
Mass Wall to	Protect Retained Trees; VO #043														
VO043-120	Setting out at site	69	69	03FEB09A	28APR09A	100	03FEB09A	28APR09A							
VO043-130	Excavate & muck out manually; 50m @ 4m/day	2	2	29APR09A	30APR09A	100	29APR09A	30APR09A							
VO043-140	Erect formwork; 70m2 @ 14m2/day	5	5	04MAY09A	08MAY09A	100	04MAY09A	08MAY09A							
VO043-150	Set up for conreting	2	2	08MAY09A	09MAY09A	100	08MAY09A	09MAY09A							
VO043-160	Pour concrete & removal of formwork	2	2	09MAY09A	11MAY09A	100	09MAY09A	11MAY09A							
Ch.460 to 370	; VO# 043														
VO043-060	Bulk excavation for benching;1061 @ 45m3/day	12	12	29MAY09A	09JUL09A	100	29MAY09A	09JUL09A							
VO043-070	Fill & compaction; 39 layers @ 1 day/layer	39	39	08JUN09A	09JUL09A	100	08JUN09A	09JUL09A							
Ch. 370 to Ch	. 270; VO #043														
VO043-090	Excavation for access road Ch. 370 to 310	4	4	07AUG09A	15AUG09A	100	07AUG09A	15AUG09A							
VO043-100	Bulk excavation for benching; Ch. 310 to 270	7	7	28AUG09A	05SEP09A	100	28AUG09A	05SEP09A							
VO043-110	Fill & compaction lean mix concerete; 15 layers	7	7	07SEP09A	09SEP09A	100	07SEP09A	09SEP09A							
Works On & A	Above Access Road; Ch. 460-270														
09R1CI3610	Temporary concrete paving & curing	16	16	21AUG09A	11SEP09A	100	21AUG09A	11SEP09A							
09R1Cl3620	Excavation of slope batter above access road	135	135	13JUL09A	19DEC09A		13JUL09A	19DEC09A							
Ch. 270 to Ch						1 1		1							
09R1Cl3624	Excavation & soil nailing	54	54	03AUG09A	17NOV09A	100	03AUG09A	17NOV09A							
09R1Cl3626	Backfill (grade 200) & compaction	3	3					20NOV09A							
Ch. 210 to Ch		-	_												
09R1Cl3630	Excavation as per conforming design	48	48	12DEC08A	11MAY09A	100	12DEC08A	11MAY09A							
09R1Cl3632	Temporary road paving from Ch. 270 to 100	7		11MAR10A			11MAR10A	12MAR10A							
VO-084-02	VO#084 revising the design received	0	0	12MAY09A			12MAY09A								
VO-084-12	Works resumed as per VO #084	0	0	16MAY09A			16MAY09A								
VO-084-22	Excavate slope profile as per VO#084	34	34	16MAY09A	25JUN09A		16MAY09A	25JUN09A			XXXX				
VO-084-26	Remove excavated material off site; 6000m3	18	-				07OCT09A	290CT09A			XXXX				
VO-084-32	Soil nailing at Ch. 198 to 210	4	4	13NOV09A			13NOV09A	17NOV09A			XXXX				
VO-084-42	Excavate to access road formation	26	26	23NOV09A	10MAR10A		23NOV09A	10MAR10A			XXXX				
VO-127-02	VO#127 received	0	0	2011010011	26NOV09A			26NOV09A							
VO-127-12	Excavation & formation	24	-	30NOV09A			30NOV09A	29DEC09A							
VO-127-22	Permanent soil nailing #24	18		30DEC09A				22JAN10A			XXX				
VO-127-32	Placing grade 200 rockfill	6		23JAN10A				26JAN10A			XXXX				
Ch. 130 to Ch		, v	5	100. 1110/1											
09R1Cl3634	55 deg. cut slope & soil nailing	62	62	270CT09A	27MAR104	100	2700.7094	27MAR10A							
09R1Cl3636	Temporary access to wall PB	15						27MAR10A							
09R1Cl3646	10# additional soil nails instructed by SOR	0	0		25JAN10A			25JAN10A							
00111010040		0	0		LUCANIOA	100		LOOKINIOA			V X X X		K/X/X/X/X/X		

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total		2012	2013 J F M A M J J			2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	63 64	65 66 6	68 69 70 71 72 73 74	1 75 76 77 78 79	80 81 82 83 84	85 86 87 88	39 90 91 9	92 93 94 95
	0; below Temp. Access to Wall PB																
09R1CI3638	55 deg. cut slope & soil nailing	41	41	12NOV11A			12NOV11A										
09R1CI3640	80 deg cut slope +68.5 to +63mPD; 1900m3	100	100	28DEC11A				03MAY12									
09R1CI3642	Rock excavation around edge of MAS; 100m3	10	10	17MAR12A	18JUL12A	100	04MAY12	15MAY12									
	e; Ch. 460 to Ch. 270																
09R1CI3664	Construct 375UC; 250m	50	50	26MAR12A	03JUN13	90	03APR12	06JUN12	-473								
Road Drainag	e; Ch. 270 to Ch. 100								_								
09R1CI3644	Construct 375UC; along slope toe (outer curve)	44	44				23NOV11A										
09R1CI3645	Construct 375UC; along inner curve	44	44	01JUN12A	17SEP12	59	07JUN12	30JUL12	-325								
	e; Ch. 100 to Ch. 0																
09R1CI3704	Construct 900mm dia. & UC inner side	100	100	26MAR12A	17SEP12		16MAY12	11SEP12	-347								
09R1CI3710	Construct 450mm dia. drainage & outer UC	18	60	19MAR13	12APR13	0	12SEP12	22NOV12	-473	•							
H-Pile Retai	ning Wall for Wall B																
Additional lan	d for Construction of Wall PB																
13R4CI3P02	Possession of additional land	0	0		01DEC09A	100		01DEC09A									
13R4CI3P12	Internal transplant for 11# trees	55	55	02DEC09A	04MAR10A	100	02DEC09A	04MAR10A									
13R4CI3P18	Form piling platform for Wall B	80	80	11MAR10A	19JUN10A	100	11MAR10A	19JUN10A									
13R4CI3P20	Reconstruct piling platform	77	77	28JUN10A	27SEP10A	100	28JUN10A	27SEP10A									
13R4CI3P22	Removal of piling platform	93	93	24MAR11A	270CT11A	100	24MAR11A	270CT11A									
13R4CI3P32	Slope reinstament	93	93	01APR11A	09NOV11A	100	01APR11A	09NOV11A									
13R4CI3P42	Planting 13# trees	4	4	10NOV11A	12NOV11A	100	10NOV11A	12NOV11A									
VO#188; Inter	nal Transplant of Tree T765																
13R4CI3726	Issue VO #188	0	0		24MAY11A	100		24MAY11A									
13R4CI3736	Construct planter wall	28	28	25MAY11A	27JUN11A	100	25MAY11A	27JUN11A									
13R4CI3746	Tree pruning	1	1	28JUN11A	28JUN11A	100	28JUN11A	28JUN11A									
13R4CI3756	Tree removal	1	1	03AUG11A	03AUG11A	100	03AUG11A	03AUG11A									
Piling Works																	
13R4CI3700	Demolish existing ret. wall/slope protection	28	28	15SEP10A	200CT10A	100	15SEP10A	200CT10A									
13R4CI3702	Mobilize & set up piling rig	6	6	220CT10A	290CT10A	100	220CT10A	290CT10A									
13R4CI3704	350mm dia. pre-bored H-piles, Wall B; 93 nos.	49	49	30OCT10A	11DEC10A	100	300CT10A	11DEC10A									
13R4CI3705	Demobilize piling rig	6	6	13DEC10A	18DEC10A	100	13DEC10A	18DEC10A									
Skin Wall																	
13R4CI3706	Extension of piles	18	18	20DEC10A	08JAN11A	100	20DEC10A	08JAN11A									
13R4CI3708	Excavate & hack off piles	24	24	10JAN11A	22JAN11A	100	10JAN11A	22JAN11A									
13R4CI3710	Construct skin wall & capping beams; 6 bays	24	24	24JAN11A	08MAR11A	100	24JAN11A	08MAR11A									
13R4CI3714	Construct end walls	6	6	09MAR11A	15MAR11A	100	09MAR11A	15MAR11A									
13R4Cl3716	Backfill/reinstatement/U-channel	18	18	16MAR11A	31JUL12A	100	16MAR11A	07MAR12									
Channel Mo	dification Works (Dry Season)																
River Diversio	n for Underground Works																
09R1CI3802	Form a temporay plant access to stream	60	60	12DEC08A	04FEB09A	100	12DEC08A	04FEB09A]							
09R1CI3804	Break boulders	78	78	05FEB09A	24FEB09A	100	05FEB09A	24FEB09A		1							
09R1CI3806	Concrete bedding for bund wall (gabion)	11	11	25FEB09A	09MAR09A	100	25FEB09A	09MAR09A									
									-					and the second second			

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	20	012		2013		2)14	2015
10	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S 63 64 6	OND 656667	J F M 68 69 70	A M J J A S 71 72 73 74 75 76	ONDJF 77 78 79 80 81 8	A M J 2 83 84 85	J A S O N 86 87 88 89 90	D J F M A 91 92 93 94 95
09R1CI3808	Construct bund wall (gabion)	22	22	10MAR09A	30APR09A	100	10MAR09A	30APR09A									
09R1CI3810	Divert channel to south west	0	0		30APR09A	100		30APR09A									
Channel Modif	fication Works																
09R1CI3812	Breaking of large boulders	54	54	02NOV09A	24MAR10A	100	02NOV09A	24MAR10A									
09R1CI3814	Excavate stream bed & make good upper part	24	24	25JAN10A	24MAR10A	100	25JAN10A	24MAR10A									
09R1CI3816	Laying of rock armour	24	24	07DEC09A	15DEC09A	100	07DEC09A	15DEC09A									
09R1CI3818	Construct bund wall for approch channel const.	14	14	22MAR10A	17APR10A	100	22MAR10A	17APR10A									
09R1CI3820	Divert channel to south west	0	0		17APR10A	100		17APR10A									
Boulder Traps																	
09R1C22002	Mobilization setup	6	6	23FEB11A	28FEB11A	100	23FEB11A	28FEB11A									
09R1C22012	Construction of boulder trap; 7 nos.	24	24	29MAR11A	12APR11A	100	29MAR11A	12APR11A									
Stone Pitching) & Trash Grill																
09R1C3T010	Remove concrete bund wall	24	4	01NOV13*	28NOV13	0	10NOV12*	14NOV12	-679								
09R1C3T020	Stone pitching to channel bed & wall	72	36	29NOV13	28FEB14	0	15NOV12	28DEC12	-679								
09R1C3T040	Install trash grill & adjustable wire	72	36	29NOV13	28FEB14	0	15NOV12	28DEC12	-679								
PVOABT3-10	Additional boulder traps	48	0	01NOV12*	28DEC12	0			-407								
Excavation	for AVS/VS/DC/MAS/MAA																
	ion for Underground Structures																
06L1CI3906	Mobilize drilling rig, backhoes	1	1	11DEC09A	11DEC09A	100	11DEC09A	11DEC09A									
06L1CI3908	Excavation	571	571	04JAN10A				24DEC11A									
Excavation 8	& Construction of Main Adit																
3CL1CI3101	Probe drill	6	6	09SEP11A	10SEP11A	100	09SEP11A	10SEP11A									
3CL1Cl3102	Excavation for 2m buffer zone	62	30	29JUN12A	05SEP12		14JUL12	17AUG12	-473								
3CL1Cl3103	Cleaning & place blinding	4	4	06SEP12	10SEP12		18AUG12	22AUG12	-473	• 8							
3CL1Cl3104	Construct wall & crown (1 bay)	14	8	120CT12	290CT12		120CT12	200CT12	-473								
3CL1CI3105	Construct wall & crown (2 bays)	18	14	300CT12	19NOV12		220CT12	07NOV12	-473		-						
3CL1CI3111	Trial excavation (2m)	60	60	03DEC11A				27FEB12A									
3CL1Cl3121	Excavation (11m)	110	110	28FEB12A	28JUN12A		28FEB12	13JUL12									
	n of Man Access Adit (MAA)																
06L1CI3112	Construct invert:	7	7	01FEB12A	10FFB12A	100	01FEB12A	10FEB12A									
06L1Cl3116	Construct wall & crown	19	19	24FEB12A			24FEB12A	16MAR12									
Construction	n of Man Access Shaft (MAS)																
06L1Cl3122	Construct base	9	9	14JAN12A	19JAN12A	100	14JAN12A	19JAN12A									
06L1CI3122	Set up formworks	6	9	23MAR12A			17MAR12	23MAR12				(J))		- UXXXX			
06L1Cl3124	Construct wall; 5 lifts, 3.6m per lift	36	36				24MAR12	11MAY12				(J))					
06L1Cl3120	Install pre-cast stair with insitu stitch	27	40	07JUN12A			27JUL12	11SEP12				(J))					
06L1Cl3127	Construct shaft roof	15	40 15		27A0G12A 29SEP12		2730L12 22SEP12	100CT12	-304			(J))		- UXXXX			
06L1Cl3129	Install steel hadraining	12	12					250CT12	-304			(J))		- UXXXX			
0021013139		12	12	1000112	2400112	0	1100112	2300112	-511		- ///	K/K/K/		V N N N N			

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	20	12 0 0		3 A S O N D J F M 4 75 76 77 78 79 80 81 82 1	2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish		3 64 6	5 66 67	68 69 70 71 72 73 74	4 75 76 77 78 79 80 81 82 i	33 84 85 86 8	7 88 89 90 9	1 92 93 94 95
Constructio	n of Deaerarion Chamber (DC)															
	ound Drop Shaft															
06L1CI3E02	Clean & place blinding for all area	6	6	28DEC11A			28DEC11A	03JAN12A								
06L1CI3E12	Construct base; 95m3	8	8	30MAR12A			17MAR12	26MAR12								
06L1CI3E22	Construct walls; 100m3	13					27MAR12	14APR12								
06L1CI3E32	Construct crown; 150m3	25	25	11MAY12A	09JUN12A	100	16APR12	16MAY12								
	onnecting to Main Adit							-	_							
06L1CI3W12	Construct base; 95m3	6	9	16JUN12A	22JUN12A		23AUG12	01SEP12		1						
06L1CI3W22	Construct walls	20	11	18SEP12	110CT12	-	03SEP12	14SEP12	-469	-88						
06L1CI3W32	Construct crown stage 1	14	22	120CT12	290CT12	0	15SEP12	110CT12	-469							
06L1CI3W42	Construct crown stage 2	22	0	15NOV12	10DEC12	0			-473							
Constructio	n of Vortex Shaft (VS)															
Vortex; East S	3ide															
06L1CIE010	Construct Vortex; base	12	11	03NOV12	16NOV12	0	220CT12	03NOV12	-469		•					
06L1CIE020	Construct Vortex; wall stg 1	23	11	17NOV12	13DEC12	0	05NOV12	16NOV12	-469							
06L1CIE030	Construct Vortex; wall stg 2 with roof	18	11	14DEC12	07JAN13	0	17NOV12	29NOV12	-469							
06L1CIE040	Construct Vortex; planter wall	11	0	08JAN13	19JAN13	0			-383							
Vortex, West	Side															
06L1CIW010	Construct Vortex; base	12	11	06AUG12A	18AUG12A	100	12JUN12	25JUN12								
06L1CIW020	Construct Vortex; wall stg 1	23	11	20AUG12A	14SEP12	30	26JUN12	09JUL12	-419							
06L1CIW030	Construct Vortex; wall stg 2 with roof	18	11	15SEP12	06OCT12	0	10JUL12	21JUL12	-419							
06L1CIW040	Construct Vortex; planter wall	11	0	08OCT12	19OCT12	0			-319	E						
06L1CI3142	Construct drop shaft	12	12	16JUN12A	14JUL12A	100	17MAY12	30MAY12								
Constructio	n of Air Vent Shaft Shaft (AVS)															
06L1CI3152	Install pre-cast #1 & construct collar ring	4	8	30OCT12	02NOV12	0	120CT12	200CT12	-469	•	• 8					
06L1CI3514	Temp. works & granular fill	8	8	03NOV12	12NOV12	0	220CT12	310CT12	-445	1	-					
06L1CI3515	Install pre-cast #2 & granular fill	8	8	13NOV12	21NOV12	0	01NOV12	09NOV12	-445		-					
06L1CI3516	Install pre-cast #3 to #6 & granular fill	12	2	27DEC12	10JAN13	0	10NOV12	12NOV12	-472							
06L1CI3526	Construct insitu (top of AVS)	8	0	11JAN13	19JAN13	0			-383			8				
Backfill Aro	und Structure															
06L1CI3162	Granular fill at east of DC up to base of Vortex	10	10	17JUL12A	04AUG12A	100	31MAY12	11JUN12								
06L1CI3164	Granular fill at west of AVS below bay 6 of A.C.	12	6	11DEC12	24DEC12	0	23JUL12	28JUL12	-473							
06L1Cl3174	Granular fill for bay 7 of A.C.	12	13	11JAN13	24JAN13	0	18JAN13	01FEB13	-472							
Constructio	n of Approach Channel															
Excavation &																
09R1Cl3172	Excavation for Approach Channel	40	40	28SEP10A	21FEB11A	100	28SEP10A	21FEB11A								
Tower Crane																
09R1C17002	Construction of base for tower crane	10	10	21DEC10A	24DEC10A	100	21DEC10A	24DEC10A								
			-		1	-		1	1							

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012	2013		2014	2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	3 64 65 66	D J F M A M J J A S O 57 68 69 70 71 72 73 74 75 76 77 7	78 79 80 81 82 83 84	85 86 87 88 89 90	91 92 93 94 95
09R1C17012	Erection and T&C of tower crane	6	6	03JAN11A	05JAN11A		03JAN11A	05JAN11A						
09R1C17022	Removal of tower crane	4	4	28FEB13	04MAR13		18JAN13	22JAN13	-473					
09R1C17032	Construct approach channel at TC location	24	24	05MAR13	05APR13	0	23JAN13	22FEB13	-473					
Bays 1-4; Base	e and 1st Lift Wall							1						
09R1C18002	Construction of Approach Channel	32	32		25MAR11A		02FEB11A	25MAR11A						
09R1C18012	Modification of temporary bund wall	18	18	15MAR11A			15MAR11A	12APR11A						
09R1C18022	Nullah widening works	32	32	14FEB11A	26MAR11A	100	14FEB11A	26MAR11A						
	aining) & bay 5													
09R1C19002	Remove concrete bund wall	10	10	12NOV11A	19NOV11A	100	12NOV11A	19NOV11A						
09R1C19004	Construct remaining sections of bays 1-4	66	66	21NOV11A	18JAN12A	100	21NOV11A	18JAN12A						
09R1C19006	Construct base, walls & roof of bay 5	36	36	19JAN12A	17MAR12A	100	19JAN12A	09MAR12						
09R1C19008	Erect concrete bund wall	12	12	19MAR12A	31MAR12A	100	10MAR12	23MAR12						
Bays 6 & 7														
09R1C2102	Construct bay 6	25	50	27DEC12	25JAN13	0	17NOV12	17JAN13	-473					
09R1C2112	Construct bay 7	25	0	26JAN13	27FEB13	0			-473					
Junction Bet	tween Main Tunnel & Adit Tunnel													
3CL1CI3100	Install steel arches at I-2 Junction	0	0		18MAY12A	100		29MAR12						
3CL1CI3106	Install steel arches from main tunnel	24	24	19MAY12A			30MAR12	03MAY12						
3CL1CI3108	Construct invert including for main adit	12	8	11SEP12	24SEP12		03OCT12	110CT12	-473	8.				
3CL1CI3118	Construct wall & crown	14	34	25SEP12	110CT12		220CT12	30NOV12	-473	8				
3CL1CI3128	Remove steel arches	6	6	120CT12	180CT12		01DEC12	07DEC12	-367					
	Vorks Prior to Handover to Client							-						
	nication System													
VO180CI305	Lay CLP power cable	36	36	13NOV12	24DEC12	0	01AUG12	11SEP12	-361					
VO180CI303	Construct equipment room	18	18	27DEC12	17JAN13		12SEP12	030CT12	-361					
VO180CI310	Lay tiles on equipment room	12	12	18JAN13	31JAN13		040CT12	170CT12	-361					
VO180CI340	Install radio communication system	12	18	01FEB13	25FEB13		180CT12	08NOV12	-361					
VO180CI340		10	10	UIFEBIJ	ZJFEDIJ	0	1800112	0011012	-301					
09R1CI3142	Einiching & reinstatement works: Dertien C	36	36	22JAN14	07MAR14	0	22FEB13	09APR13	-679					
09R1Cl3142	Finishing & reinstatement works; Portion C Pre-handover inspections and remedial works	30	30	08FEB14	14MAR14		08MAR13	16APR13	-679					
16R7CI3142		108		14MAY12A	040CT12	-	02APR12	14AUG12	-283					
16R7CI3142	Landscaping works Planting works at Aprroach Channel	108	108 12	06APR13	19APR13		23FEB13	08MAR13	-203					
16R7CI3143	Establishment Works at Portion C	365	365	20APR13	19APR13 19APR14		23FEB13 09MAR13	08MAR13	-441					
		305	305	ZUAPRIS	I9APK 14	0	U9IVIAR 15	UOIVIAR 14	-044					
Schedule of	Milestones for Cost Centre No. 3cL													
3CL1CI3A02	3cL 1; On establishing tunnelling equipments	0	0		27JUN12A	100		20JUL12						
3CL1CI3A04	3cL 2; On completion of 12.5% perm. tunnel linin	0	0		27AUG12	0		30JUL12	929		nnel at Intake I-3			
3CL1CI3A06	3cL 3; On completion of 25% perm. tunnel lining	0	0		27AUG12	0		08AUG12	929		nnel at Intake I-3			
3CL1CI3A08	3cL 4; On completion of 37.5 perm. tunnel lining	0	0		27AUG12	0		17AUG12	929		nnel at Intake I-3			
3CL1CI3A10	3cL 5; On completion of 50% perm. tunnel lining	0	0		27AUG12	0		27AUG12	929		nnel at Intake I-3			
3CL1CI3A12	3cL 6; On completion of 62.5% perm. tunnel linin	0	0		180CT12	0		180CT12	877	♦Åd	t Funnel at Intake I-3			

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2012 2013 2014 2015 A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float 6	3 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
3CL1CI3A14	3cL 7; On completion of 75% perm. tunnel lining	0	0		290CT12	0		29OCT12	866	Adit Tunnel at Intake I-3
3CL1CI3A16	3cL 8; On completion of 87.5% perm. tunnel linin	0	0		29OCT12	0		200CT12	866	Adit Tunnel at Intake I-3
3CL1CI3A18	3cL 9; On completion of perm. tunnel lining	0	0		110CT12	0		30NOV12	884	Adit Tunnel at Intake I-3
3CL1CI3A20	3cL 10; On completion of all works under this CC	0	0		110CT12	0		30NOV12	884	
Schedule of	Milestones for Cost Centre No. 6L									
06L1CI3M02	6L 1; On completion of 50% of excavation	0	0		27MAY10A	100		27MAY10A		
06L1CI3M04	6L 2; On completion of excavation works	0	0		24DEC11A	100		24DEC11A		
06L1CI3M08	6L 3; On completion of vortex shaft	0	0		06OCT12	0		21JUL12	889	♦at Intake 1-3
06L1CI3M10	6L 4; On completion of de-aeration chamber	0	0		29OCT12	0		110CT12	866	Chamber at Intake I-3
06L1CI3M12	6L 5; On completion of vent shaft	0	0		10JAN13	0		12NOV12	793	et intake I-3
06L1CI3M14	6L 6; On completion of man access shaft	0	0		29SEP12	0		100CT12	896	◆shaft at Intake I-3
06L1CI3M16	6L 7; On completion of man access adit	0	0		21MAR12A	100		16MAR12		
06L1CI3M18	6L 8; On completion of all works under this CC	0	0		06OCT12	0		21JUL12	889	♦ under this Cost Centre
Schedule of	Milestone for Cost Centre No. 9R									
09R1CI3R02	9R 1; On completion of access road	0	0		27JUN13	0		09APR13	625	◆ ◆at Intake 1-3
09R1Cl3R04	9R 2; On completion of 25% of excavation at G.L	0	0		11JUN09A	100		11JUN09A	020	
09R1Cl3R06	9R 3; On completion of 50% of excavation at G.L	0	0		15AUG09A	100		15AUG09A		
09R1Cl3R08	9R 4; On completion of 75% of excavation at G.L	0	0		27MAR10A	100		27MAR10A		
09R1Cl3R10	9R 5; On completion of excavation at G.L.	0	0		07JUL12A	100		03MAY12		
09R1Cl3R12	9R 6; On completion of 50% of approach channel	0	0		18JAN12A	100		18JAN12A		
09R1Cl3R14	9R 7; On completion of approach channel	0	0		25JAN13	0		17JAN13	778	Channel and associated decking at Intake I-3
09R1Cl3R16	9R 8; On completion of trash grill	0	0		28FEB14	0		28DEC12	379	at Intake I-3
09R1Cl3R18	9R 9; On completion of all works under this CC	0	0		14MAR14	0		16APR13	365	• • • • • • • • • • • • • • • • • • •
	Milestones for Cost Centre No. 13R		-			-				
Schedule of	Wilestones for Cost Centre No. 13R									
13R4CI3S01	12D 1: On completion of 20% soil poiling				26SEP09A	100		26SEP09A	_	
	13R 1; On completion of 30% soil nailing	0	0					_		
13R4Cl3S02	13R 2; On completion of 60% soil nailing	0	0		12DEC09A 24DEC11A	100 100		12DEC09A		
13R4Cl3S03	13R 3; On completion of all soil naing works	0	0		05DEC08A			24DEC11A		
13R4CI3S04	13R 4; On completion of 10% piles by number	0	0			100 100		05DEC08A		
13R4CI3S05 13R4CI3S06	13R 5; On completion of 20% piles by number	0	0		13DEC08A			13DEC08A		
13R4Cl3S06	13R 6; On completion of 30% piles by number 13R 7; On completion of 40% piles by number	0	0		18DEC08A 23DEC08A	100 100		18DEC08A 23DEC08A		
13R4Cl3S07	13R 8; On completion of 50% piles by number	-			02JAN09A	100		02JAN09A		
		0	0							
13R4CI3S09 13R4CI3S10	13R 9; On completion of 60% piles by number 13R 10; On completion of 70% piles by number	0	0		09JAN09A 16JAN09A	100 100		09JAN09A 16JAN09A		
		0	0			100		21JAN09A		
13R4Cl3S11 13R4Cl3S12	13R 11; On completion of 80% piles by number 13R 12; On completion of 90% piles by number	0	0		21JAN09A 04DEC10A	100		04DEC10A		
								-		
13R4Cl3S13	13R 13; On completion of all piling works	0	0		11DEC10A	100		11DEC10A		
13R4Cl3S14	13R 14; On completion of boulder traps	0	0		12APR11A	100		12APR11A		
13R4CI3S15	13R 15; On completion of all work under this CC	0	0		24DEC11A	100		24DEC11A		

ID	Activity	WD10	WP09	WP10	WP10	%	WP09	WP09	Total	20)12	201	13		2	014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish		A S 63 64 6	OND	J F M A M J 68 69 70 71 72 73 7	J A S O	N D J F	MAM.	JAS	OND 899091	J F M A 92 93 94 95
Constructio	on of Outfall O-1				1													
Preliminary	Works																	
VO # 06; Tran	sperant Hoarding at Outfall																	
01R1D00106	Receive VO6 for transperant hoarding	0	0		16APR08A	100		16APR08A										
01R1DO0108	Procurement for transperent hoarding	21	21	17APR08A	20MAY08A	100	17APR08A	20MAY08A										
01R1DO0110	Erect hoarding	18	18	21APR08A	02JUL08A	100	21APR08A	02JUL08A										
VO #16; Chair	Link Fence at O-1	1			1	· · · ·										-		
V01602	Issue VO16 for chain link fence	0	0		02JUL08A	100		02JUL08A										
V01612	Preparation works for chain link fence	1	1	03JUL08A	18AUG08A	100	03JUL08A	18AUG08A										
V01622	Erect chain link fence; 460m	38	38	19AUG08A	19SEP08A	100	19AUG08A	19SEP08A										
Temporary CL	P Power Supply for TBM Operation	1																
01R1DCLP02	Application/approval for temp. CLP Power Supply	200	200	07MAR08A	01AUG08A	100	07MAR08A	01AUG08A										
01R1DCLP14	Appoint sub-contractor for design & build TX Rm	67	67	14JUL08A	07NOV08A	100	14JUL08A	07NOV08A										
01R1DCLP24	Design for transformer room	24	24	08NOV08A	11MAR09A	100	08NOV08A	11MAR09A										
01R1DCLP34	Constuct transformer room	60	60	12MAR09A	14MAY09A	100	12MAR09A	14MAY09A										
01R1DCLP44	CLP inspection & defect rectification	14	14	15MAY09A	10JUN09A	100	15MAY09A	10JUN09A										
01R1DCLP54	CLP cabling to TX room & commissioning	32	32	11JUN09A	30OCT09A	100	11JUN09A	30OCT09A										
01R1DCLP74	CLPE cabling from TX room to 24mPD platform	18	18	280CT09A	17NOV09A	100	280CT09A	17NOV09A										
VO#25: Revise	ed Fencig Details at O-1 Next to GVT	1																
V025-02	Receive VO16 for revised details next to GVT	0	0		17SEP08A	100		17SEP08A										
V025-12	Preparation works	24	24	22JAN09A	07FEB09A	100	22JAN09A	07FEB09A										
V025-22	Erect proposed transparent hoarding	4	4	09FEB09A	02MAR09A	100	09FEB09A	02MAR09A										
V055-02	Receive VO#55 in lieu of VO#25	0	0		21JAN09A	100		21JAN09A										
· · · · · · · · · · · · · · · · · · ·		1				· · · · ·										-		
01R1D00102	Obtain TTA (ingress & egress) approval	0	0		18APR08A	100		18APR08A										
01R1DO0103	Implment TTA for diverting footpath	1	1	19APR08A	19APR08A	100	19APR08A	19APR08A										
01R1D00104	Obtain excavation permit	0	0		29MAY08A	100		29MAY08A										
01R1D00112	Erect catch fencing	10	10	26MAY08A	02JUL08A	100	26MAY08A	02JUL08A										
01R1D00114	Site establishment	30	30	21APR08A	15JUL08A	100	21APR08A	15JUL08A										
01R1DO0116	Site clearance	30	30	21APR08A	05SEP08A	100	21APR08A	05SEP08A										
01R1DO0118	Install remote contorl CCTV as per ER 4.4.10	12	12	280CT08A	10NOV08A	100	280CT08A	10NOV08A										
16R1DO0110	Tree inspection & report	7	7	13MAR08A	28MAR08A	100	13MAR08A	28MAR08A										
Form Temp	orary Access/Tree Felling																	
Works Suspe	nsion Due to Obstruct. from Villagers																	
WSO02	Works suspension due to obstruct. frm villagers	24	24	19JUL08A	10AUG08A	100	19JUL08A	10AUG08A										
'																		
10R1DO0202	Form temp. access road from +14mPD to +69mPD	158*	158*	19JUN08A	24DEC08A	100	19JUN08A	24DEC08A										
10R1DOAR04	Const. temp. steel decking over exist Outfall W	11		26AUG08A				06SEP08A						(XXX)				
10R1DOAR08	Form temp. access road from 14mPD to 28mPD	12		19JUN08A	18JUL08A			18JUL08A						(XXX)				
10R1DOAR12	Preparation works for transplanting T160	53		11AUG08A	250CT08A			250CT08A						(XXX)				
10R1DOAR42	Mobilze & set up crane for tree transplant	1	1	270CT08A				270CT08A										
10R1DOAR44	Crown pruning for T160	2	2	280CT08A				290CT08A						UXXXX				
			-						1		r///			1//////////////////////////////////////				

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Tota		2012		201: J F M A M J 、	3		2	2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Floa	at 63 64	4 65 66	D 67 6	J F M A M J S 58 69 70 71 72 73 7	4 75 76 7	7 78 79 80 81	M A M 3 82 83 84 8	5 86 87 8	S 0 N 88 89 90	D J F M 91 92 93 94
10R1DOAR46	Cut root & uplift T160	1	1	30OCT08A	30OCT08A	100	300CT08A	300CT08A				X							
10R1DOAR54	Crown pruning/Cut root & uplift T142	10	10	21FEB09A	21FEB09A	100	21FEB09A	21FEB09A				X							
10R1DOAR56	Construct access road from +43 to +55mPD	30	30	310CT08A		100	310CT08A	24DEC08A				X							
16R7DO0202	Tree transplant at Outfall O-1	105	105	02JUN08A	06MAR09A	100	02JUN08A	06MAR09A				\square							
16R7DO0204	Tree transplant above +62mPD	11	11	310CT08A	12NOV08A	100	310CT08A	12NOV08A				X							
Form Temp	orary Launching Platform											X							
Slope Cut & S	oil Nailing; +71mPD to +40mPD											X							
10R1DO030	+71 to +40mPD (rows to A to P)	217*	217*	13NOV08A	08AUG09A	100	13NOV08A	08AUG09A				X							
10R1DO031	Remove boulder/Cut slope for rows A to D	9	9	13NOV08A	06DEC08A	100	13NOV08A	06DEC08A											
10R1DO032	Erect scaffold & Drill/install/grout/P1at row C	12	12	02DEC08A	16DEC08A	100	02DEC08A	16DEC08A				X							
10R1DO033	Drill/install/grout rows B to C; 18 nos.	14	14	17DEC08A	06JAN09A	100	17DEC08A	06JAN09A											
10R1DO034	Drill/install/grout/testing for P2 at row D	8	8	30DEC08A	06JAN09A	100	30DEC08A	06JAN09A											
10R1DO035	Drill/install/grout D1 to D11	7	7	07JAN09A	16JAN09A	100	07JAN09A	16JAN09A											
10R1DO036	Cut slope for E1 to G20; soil 620m3	2	2	15JAN09A	20JAN09A	100	15JAN09A	20JAN09A				X							
10R1DO037	Drill/install/grout E1 to G20: 51 nos.	19	19	20JAN09A	11FEB09A	100	20JAN09A	11FEB09A				X							
10R1DO038	Construct nail heads/remove platform; rows B-G	10	10	02FEB09A	17FEB09A	100	02FEB09A	17FEB09A				X							
10R1DO039	Erosion mat, wire mesh & hydroseed; rows B-G	10	10	21FEB09A	24FEB09A	100	21FEB09A	24FEB09A				X							
10R1DO040	Cut slope for H1 to I25; soil 1819m3	12	12	02FEB09A	17FEB09A	100	02FEB09A	17FEB09A				X							
10R1DO041	Drill/install/grout H1 to I25; 47 nos.	13	13	18FEB09A	04MAR09A	100	18FEB09A	04MAR09A				X							
10R1DO042	Cut slope for J1 to M37; soil 5834m3	20	20	19FEB09A	13MAR09A	100	19FEB09A	13MAR09A				X							
10R1DO043	Erect working platform for rows J to M	14	14	28FEB09A	16MAR09A	100	28FEB09A	16MAR09A											
10R1DO044	Test nails for P3, P4, P5 & P10	12	12	05MAR09A	07APR09A	100	05MAR09A	07APR09A											
10R1DO045	Drill/install/grout J1 to M37; 134 nos.	20	20	12MAR09A	07APR09A	100	12MAR09A	07APR09A											
10R1DO047	Construct nail heads/remove platform; rows H-M	20	20	14MAR09A	18APR09A	100	14MAR09A	18APR09A											
10R1DO048	Erosion mat, wire mesh & hydroseed; rows H-M	6	6	29MAY09A	04JUN09A	100	29MAY09A	04JUN09A											
10R1DO049	Excavate soil 5600m3 & boulde 229m3; Rows N to P	22	22	14MAR09A	18APR09A	100	14MAR09A	18APR09A											
10R1DO050	Erect working platform for rows N to P	10	10	20APR09A	24APR09A	100	20APR09A	24APR09A											
10R1DO051	Drill/install/grout N1 to P31; 111 nos.	20	20	23APR09A	13MAY09A	100	23APR09A	13MAY09A											
10R1DO053	Construct nail heads/remove platform; row N to P	14	14	14MAY09A	02JUN09A	100	14MAY09A	02JUN09A											
10R1DO054	Erosion mat, wire mesh & hydroseed; rows N to P	6	6	03JUN09A	09JUN09A	100	03JUN09A	09JUN09A				X							
Slope Cut & S	oil Nailing; +40mPD to +24mPD																		
10R1DO130	+40 to +24mPD (rows Q to X)	180*	180*	20APR09A	23NOV09A	100	20APR09A	23NOV09A											
10R1DO131	Excavation; 40 to 30mPD; soil 8291m3/rock 2778m3	43	43	20APR09A	18AUG09A	100	20APR09A	18AUG09A											
10R1DO132	Reinstate temp. access	30	30	21APR09A	27MAY09A	100	21APR09A	27MAY09A											
10R1DO133	Erect working platfrom for rows Q to U	22	22	11MAY09A	15AUG09A	100	11MAY09A	15AUG09A				X							
10R1DO134	Test nails for P4, P5, P6 and P12	12		21MAY09A			21MAY09A					X							
10R1DO135	Drill/install/grout Q1 to U7; 96 nos.	13		12MAY09A			12MAY09A					X							
10R1DO136	Excavation; 30 to 24mPD; soil 4197m3/rock 7592m3	95	95	27MAY09A	23NOV09A	100	27MAY09A	23NOV09A				X							
TBM Launchin	ng Chamber				·						TV.								
10R1DO1305	Pipe pile roof support	9	9	08SEP09A	30SEP09A	100	08SEP09A	30SEP09A				X							
10R1DO1310	Excavate/construct TBM launching chamber	63		170CT09A			170CT09A	11JAN10A				X							
10R1DO1315	Form launching chamber cradle	12	12	13JAN10A	27FEB10A	100	13JAN10A	27FEB10A											
		1			1			1				1///							

ID	A =4116	WD40	WD00	WD40	WD40	0/		14/000	Tetel	2012			2013			2014			2015
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	A S O N	D J	M A M	J J A S (D N D	J F M	AMJJ	A S O	NDJ	J F M A
Slope Cut & T	BM Access Road; +24 to +14mPD				-			-		0040000			13 14 13 10 1			5 04 05 00	01 00 03	30 31 3	2 00 04 00
10R1DO230	+24 to +14mPD	252*	252*	08JUN09A	13APR10A	100	08JUN09A	13APR10A			XX								
10R1DO240	Relocate sedimentation tank	0	0		06JUN09A	100		06JUN09A			XX								
10R1DO250	Form access for big breaker	12	12	08JUN09A	20JUN09A	100	08JUN09A	20JUN09A			XX								
10R1DO260	Mobilization of big breaker	0	0		20JUN09A	100		20JUN09A											
10R1DO270	Form new TBM access western section	40	40	08SEP09A	19NOV09A	100	08SEP09A	19NOV09A											
10R1DO272	Form new TBM access eastern section (bend)	32	32	09NOV09A	23DEC09A	100	09NOV09A	23DEC09A											
10R1DO274	From TBM access remaining section incl. paving	18	18	09DEC09A	16JAN10A	100	09DEC09A	16JAN10A											
10R1DO280	Demobilze 300T mobile crane	0	0		10MAR10A	100		10MAR10A											
10R1DO290	Demolish masonry & ret. wall at +14mPD	45	45	20JUL09A	13APR10A	100	20JUL09A	13APR10A											
TBM Assembl	y Area at +24mPD																		
10R1DO185	Construct drainage & slab at west	6	6	24NOV09A	30NOV09A	100	24NOV09A	30NOV09A											
10R1DO195	Construct drainage & slab at east & middle	12	12	25JAN10A	20FEB10A	100	25JAN10A	20FEB10A											
3AL1DO0314	Commence TBM initial assembly	0	0	22FEB10A		100	22FEB10A												
Tower Crane																			
3AL1DO2005	Foundation	40	40	28DEC09A	25FEB10A	100	28DEC09A	25FEB10A			<u>IX</u>								
3AL1DO2010	Erection	3	3	26FEB10A	01MAR10A	100	26FEB10A	01MAR10A											
3AL1DO2015	Test & commissioning	1	1	01MAR10A	02MAR10A	100	01MAR10A	02MAR10A											
TBM Platform								1											
3AL1DO2505	Pre-fabrication	40	40	18JUN09A	04NOV09A	100	18JUN09A	04NOV09A			XX								
3AL1DO2515	Foundation	24	24	20NOV09A	24DEC09A	100	20NOV09A	24DEC09A			XX								
3AL1DO2525	Erect steel framework	18	18	28DEC09A	18FEB10A	100	28DEC09A	18FEB10A			XX								
3AL1DO2535	Install platform	9	9	20JAN10A	23APR10A	100	20JAN10A	23APR10A											
3AL1DO2545	ICE certification	3	3	19FEB10A	19FEB10A	100	19FEB10A	19FEB10A			XX								
Noise Enclosu	re		·																
3AL1DO3005	Pre-fabrication	42	42	22JUN09A	270CT09A	100	22JUN09A	270CT09A											
3AL1DO3015	Foundation	12	12	210CT09A	17NOV09A	100	210CT09A	17NOV09A											
3AL1DO3025	Erect steel framework	18	18	01DEC09A	10FEB10A	100	01DEC09A	10FEB10A											
3AL1DO3035	Cladding	22	22	12MAY10A	27SEP10A	100	12MAY10A	27SEP10A			XX								
3AL1DO3045		1	0	210CT09A	27SEP10A	100					XX								
3AL1FT0802	Apply to EPD for CNP for 24 hrs. tunnel work	11	11	190CT10A	25OCT10A	100	190CT10A	250CT10A			<u>IN</u>								
3AL1FT0804	EPD process/approve CNP application	12	12	200CT10A	29NOV10A	100	200CT10A	29NOV10A			<u>IN</u>								
3AL1FT0812		1	0	190CT10A	29NOV10A	100													
105 Ton Gantr	· · · · · · · · · · · · · · · · · · ·										1XXX								
3AL1DO3505	Manufacture	99	99	29MAY09A	03SEP09A	100	29MAY09A	03SEP09A			XX								
3AL1DO3515	Shipping to Hong Kong	6	6	14SEP09A	21SEP09A	100	14SEP09A	21SEP09A			XX								
3AL1DO3525	Assembly	8	8	29DEC09A	23JAN10A	100	29DEC09A	23JAN10A			XXX				XXA				
3AL1DO3535	Install rails	4	4	05JAN10A	12FEB10A	100	05JAN10A	12FEB10A			XXX				XXA				
3AL1DO3545	Test & commission	3	3	17FEB10A	19FEB10A		17FEB10A	19FEB10A			XXX				XXA				
3AL1DO3555	Receive initial segments and stock	6	6	06MAR10A	27MAR10A	100	06MAR10A	27MAR10A			XXX				<u> XXA</u>				
Muck Hopper											XX				XXA				
3AL1DO4005	Pre-fabrication	75		22JUN09A			22JUN09A	13MAR10A			XX				XXA				
3AL1DO4015	Foundation incl. piles for steel platform	31	31	15MAR10A	25MAY10A	100	15MAR10A	25MAY10A			XXX				XXA				

ID Activity										2010			2015
Description	Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total Float	A S O N	2013 J F M A M J J A S 768 69 70 71 72 73 74 75 76	ONDJFM	A M J J A S O	N D J F M A 90 91 92 93 94 95
3AL1DO4025 Erect steelwork	18	18	26MAY10A	19JUN10A	100	26MAY10A	19JUN10A						
3AL1DO4035 Erect hopper	18	18	21JUN10A	29JUL10A	100	21JUN10A	29JUL10A						
3AL1DO4045 Install transfer conveyor	4	4	30JUL10A	04AUG10A	100	30JUL10A	04AUG10A						
3AL1DO4055 M&E works	6	6	05AUG10A	21AUG10A	100	05AUG10A	21AUG10A						
3AL1DO4065 Test & commissioning	3	3	23AUG10A	02OCT10A	100	23AUG10A	02OCT10A						
Marti Conveyor													
3AL1DO4505 Engineering	50	50	29MAY09A	240CT09A	100	29MAY09A	240CT09A						
3AL1DO4515 Pre-fabrication	60	60	17AUG09A	30NOV09A	100	17AUG09A	30NOV09A						
3AL1DO4525 Delivery to Hong Kong	25	25	01DEC09A	17DEC09A	100	01DEC09A	17DEC09A						
3AL1DO4535 Pre-assembly at Portion I	6	6	11JAN10A	16JAN10A	100	11JAN10A	16JAN10A						
3AL1DO4555 Install winch & extension towers	24	24	29MAY10A	24JUN10A	100	29MAY10A	24JUN10A						
3AL1DO4565 Install transfer conveyor	1	1	29JUL10A	29JUL10A	100	29JUL10A	29JUL10A						
3AL1DO4575 Install belt conveyor stage 2	16	16	09AUG10A	24AUG10A	100	09AUG10A	24AUG10A						
3AL1DO4585 M&E works	2	2	25AUG10A	27AUG10A	100	25AUG10A	27AUG10A						
3AL1DO4595 Test & commission	1	1	28AUG10A	28AUG10A	100	28AUG10A	28AUG10A						
LV Station													
3AL1DO5005 Delivery & install containers 1/2/3	4	4	08DEC09A	11DEC09A	100	08DEC09A	11DEC09A						
3AL1DO5015 M&E works	12	12	12DEC09A	14JAN10A	100	12DEC09A	14JAN10A						
3AL1DO5025 Test & commision	12	12	15JAN10A	25JAN10A	100	15JAN10A	25JAN10A						
Cooling Water System													
3AL1DO5505 Pre-fabrication	53	53	18JUL09A	07DEC09A	100	18JUL09A	07DEC09A						
3AL1DO5515 Foundation	10	10	08DEC09A	31DEC09A	100	08DEC09A	31DEC09A						
3AL1DO5525 Erect cooling system	12	12	09JAN10A	20FEB10A	100	09JAN10A	20FEB10A						
3AL1DO5535 M&E works	4	4	22FEB10A	27FEB10A	100	22FEB10A	27FEB10A						
3AL1DO5545 Test & commission	2	2	26APR10A	28APR10A	100	26APR10A	28APR10A						
Grout System													
3AL1DO6005 Pre-fabrication	90	90	22JUN09A	12DEC09A	100	22JUN09A	12DEC09A						
3AL1DO6015 Erect system	6	6	02AUG10A	10AUG10A	100	02AUG10A	10AUG10A						
3AL1DO6025 M&E works	3	3	11AUG10A	13AUG10A	100	11AUG10A	13AUG10A						
3AL1DO6035 Test & commission	1	1	14AUG10A	14AUG10A	100	14AUG10A	14AUG10A						
Pea Gravel Plant													
3AL1DO7505 Pre-fabrication	36	36	22JUN09A	29APR10A	100	22JUN09A	29APR10A						
3AL1DO7515 Install hopper	4	4	02AUG10A	04SEP10A	100	02AUG10A	04SEP10A						
3AL1DO7525 Erect conveyor	2	2	07AUG10A	13AUG10A	100	07AUG10A	13AUG10A						
3AL1DO7535 M&E works	4	4	25AUG10A		100		04SEP10A						
3AL1DO7545 Test & commission	0	0		04SEP10A	100		04SEP10A						
3AL1DO7555 Install conveyor connecting to TBM	4	4	18AUG10A	04SEP10A	100	18AUG10A	04SEP10A						
Ventilation System													
3AL1DO8005 Pre-fabrication	72	72	29MAY09A			29MAY09A							
3AL1DO8015 Erect system	2	2	24JUL10A				06AUG10A						
3AL1DO8025 M&E works	1	1	07AUG10A				07AUG10A						
3AL1DO8035 Test & commission	1	1	09AUG10A	09AUG10A	100	09AUG10A	09AUG10A						

ID	Activity	W/D10	WP09	WP10	WP10	%	WP09	WP09	Total		2012	2013	3		2014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish		A S	OND	J F M A M J J 68 69 70 71 72 73 7	A S O	N D J F M	A M J J 83 84 85 86	A S O N	D J F M A
Micsellaneou	s																0.02000.00
3AL1DO8502	Install transformer & hormonic filter	2	2	07JUN10A	10JUL10A	100	07JUN10A	10JUL10A									
3AL1DO8512	Remove invert segments	2	2	24JUL10A	06AUG10A	100	24JUL10A	06AUG10A									
3AL1DO8522	Make good slab	3	3	06AUG10A	07AUG10A	100	06AUG10A	07AUG10A									
3AL1DO8532	Install rail switch	1	1	23AUG10A	24AUG10A	100	23AUG10A	24AUG10A									
VO # 49 & 53;	Additional Drainage & Stairway		· · · · ·														
VO-04910	Received Variation orders	0	0		26FEB09A	100		26FEB09A									
VO-04920	Preparation works for varied works	14	14	27FEB09A	14MAR09A	100	27FEB09A	14MAR09A									
VO-04930	Construct u-channel & stairway; +71mPD to +55mPD	60	60	16MAR09A	29MAY09A	100	16MAR09A	29MAY09A									
VO-04940	Construct u-channel & stairway;+55mPD to +47mPD	27	27	05JUN09A	07JUL09A	100	05JUN09A	07JUL09A									
VO-04950	Construct u-channel & stairway; +47mPD to +41mPD	40	40	08JUL09A	08AUG09A	100	08JUL09A	08AUG09A									
VO-04960	Construct u-channel & stairway at middle portion	60	60	01NOV12*	12JAN13	0	30MAR12	14JUN12	-365								
VO #88/#094/#	#103; Revised Slope Design																
VO-088000	Received VO #088	0	0		27MAY09A	100		27MAY09A						XXXII			
VO-088005	Excavate from 38.5mPD to 36.5mPD	6	6	29MAY09A	04JUN09A	100	29MAY09A	04JUN09A									
VO-088010	Procure and prepare materials	9	9	29MAY09A	08JUN09A	100	29MAY09A	08JUN09A						XXXX			
VO-088015	SOR confirm soil nails location	2	2	05JUN09A	06JUN09A	100	05JUN09A	06JUN09A						XXXX			
VO-088020	Drill/install/grout soil nails; rows AA-AB	7	7	09JUN09A	16JUN09A	100	09JUN09A	16JUN09A						XXXX			
VO-088025	Install wire mesh & shorcrete 150mm	3	3	17JUN09A	19JUN09A	100	17JUN09A	19JUN09A						XXXX			
VO-088030	Excavate from +36.5 mPD to 34.5mPD	6	6	20JUN09A	26JUN09A		20JUN09A	26JUN09A									
VO-088035	SOR confirm soil nails location	2	2	27JUN09A	29JUN09A	100	27JUN09A	29JUN09A						<u> </u>			
VO-088040	Drill/install/grout soil nails; rows AC-AD	7	7	30JUN09A	08JUL09A	100	30JUN09A	08JUL09A						<u> </u>			
VO-088045	Install wire mesh & shorcrete 150mm	3	3	09JUL09A	11JUL09A	100	09JUL09A	11JUL09A									
VO-088050	Excavate from +34.5 mPD to 32.5mPD	6	6	13JUL09A	18JUL09A	100	13JUL09A	18JUL09A						<u> </u>			
VO-088055	SOR confirm soil nails location	2	2	20JUL09A	21JUL09A	100	20JUL09A	21JUL09A						<u> </u>			
VO-088060	Drill/install/grout soil nails; rows AE-AF	7	7	22JUL09A	29JUL09A	100	22JUL09A	29JUL09A						<u> </u>			
VO-088065	Install wire mesh & shorcrete 150mm	3	3	30JUL09A	01AUG09A		30JUL09A	01AUG09A									
VO-088070	Excavate from +34.5 mPD to 32.5mPD	6	6	03AUG09A	18AUG09A		03AUG09A	18AUG09A									
VO-088075	SOR confirm soil nails location	2	2	17AUG09A	18AUG09A	100	17AUG09A	18AUG09A									
VO-088080	Drill/install/grout soil nails; row AG	5	5	19AUG09A													
VO-088085	Install wire mesh & shorcrete 150mm	3	3	25AUG09A				28AUG09A									
VO-10302	Drill & install rock dowels below +30 to 24mPD	6	6	06OCT09A	19NOV09A	100	06OCT09A	19NOV09A									
	om SOR/VO#093 Add. Noise Barriers								_								
SORI-10	Suspension of rock drilling & breaking	1	1	20JUN09A				20JUN09A									
SORI-20	Erection/relocation of noise bearriers	30	30	22JUN09A	10NOV09A	100	22JUN09A	10NOV09A					-				
Construct S	piral Ramp																
ELS & Excava	tion for Spiral Ramp																
10R1DELS02	Install pipe piles/slope trim & protection works	104		01JUN10A		100	01JUN10A	040CT10A						XXXX			
10R1DELS12	Pre-drilling for rock breaking & splitting	26	26	20AUG10A	18SEP10A	100	20AUG10A	18SEP10A						XXXIII			
10R1DELS22	Excavate to +13.5mPD & construct capping beam	24	24	20SEP10A	260CT10A	100	20SEP10A	26OCT10A						XXXXII			
10R1DELS32	Excavate/rock dowels/ring beam/shotcete; 11.5mPD	30	30	270CT10A	06DEC10A	100	270CT10A	06DEC10A						XXXXII			
10R1DELS42	Excavate/rock dowels/ring beam/shotcrete; 9.5mPD	33	33	07DEC10A	13JAN11A	100	07DEC10A	13JAN11A						XXXXII			
10R1DELS52	Excavate/rock dowels/ring beam/shotcrete; 7.5mPD	37	37	14JAN11A	01MAR11A	100	14JAN11A	01MAR11A						<u> XXXIII</u>			

ID	A stituite :	MD40		WD40	WD40	0/	WD00	14/DOO	Tetel	2012			2013			2014	1	20	15
ID	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Float	ASON 364656	D J F	M A M	2013 J J A S 73 74 75 76	O N D	J F M	AMJ.	A S O	NDJF	M A
10R1DELS62	Excavate/rock dowels/ring beam/shotcre;3.2mPD	82	82	02MAR11A	08JUN11A	100	02MAR11A	08JUN11A					10141010					0010200	04 00
Base for Spira	Ramp		· · · · ·								INI								
10R1DO0414	Construct base	14	14	09JUN11A	20JUN11A	100	09JUN11A	20JUN11A			XX								
Spiral Ramp fr	om +4.30mPD to +28.43mPD																		
10R1DO0S02	Cast bay 1A	28	28	21JUN11A	23JUL11A	100	21JUN11A	23JUL11A											
10R1DO0S03	Cast bay 1B	11	11	25JUL11A	04AUG11A	100	25JUL11A	04AUG11A											
10R1DO0S04	Cast bay 2	11	11	05AUG11A	30AUG11A	100	05AUG11A	30AUG11A											
10R1DO0S06	Cast bay 3	11	11	27AUG11A	08SEP11A	100	27AUG11A	08SEP11A											
10R1DO0S08	Cast bay 4	8	8	05SEP11A	20SEP11A	100	05SEP11A	20SEP11A											
10R1DO0S10	Cast bay 5	8	8	09SEP11A	04OCT11A	100	09SEP11A	04OCT11A											
10R1DO0S12	Cast bay 6	8	8	06OCT11A	180CT11A	100	06OCT11A	180CT11A											
10R1DO0S14	Cast bay 7	8	8	240CT11A	08NOV11A	100	240CT11A	08NOV11A											
10R1DO0S16	Cast bay 8	8	8	07NOV11A	16NOV11A	100	07NOV11A	16NOV11A			XXX.								
10R1DO0S18	Cast bay 9	8	8	14NOV11A	24NOV11A	100	14NOV11A	24NOV11A			XX								
10R1DO0S20	Cast bay 10	8	8	25NOV11A	02DEC11A	100	25NOV11A	02DEC11A			XX								
10R1DO0S22	Cast bay 11	8	8	01DEC11A	12DEC11A	100	01DEC11A	12DEC11A			XXX								
10R1DO0S24	Cast bay 12	8	8	09DEC11A	22DEC11A	100	09DEC11A	22DEC11A			XX								
10R1DO0S26	Cast bay 13	8	8	19DEC11A	16JAN12A	100	19DEC11A	16JAN12A			XX								
10R1DO0S28	Cast bay 14	8	8	03JAN12A	20JAN12A	100	03JAN12A	20JAN12A			XX								
10R1DO0S29	Cast bay 15	31	31	16JAN12A	21FEB12A	100	16JAN12A	21FEB12A			XX								
10R1DO0S30	Preparation & fill central void;	11	11	23APR12A	27JUL12A	100	29MAR12	14APR12			XX								
10R1DO0S32	Construct spiral ramp top; Outfall O-1	8	8	28JUL12A	04AUG12A	100	16APR12	24APR12			<u> XXX</u>								
Finishing Worl	ks on Spiral Ramp										XX								
10R1DO0F10	Install handrails	16	16	01NOV12*	19NOV12	0	25APR12	15MAY12	-512	É									
10R1DO0F20	Water proofing works	24	24	20NOV12	17DEC12	0	16MAY12	12JUN12	-512		\$ }///								
10R1DO0F30	Tiling works	48	48	18DEC12	18FEB13	0	13JUN12	09AUG12	-512										
10R1DO0F40	Install GRP	29	29	19FEB13	23MAR13	0	10AUG12	12SEP12	-512	+	<u> XXX</u>								
PVO-TR-20	Vertical greening & water points at Spiral Ramp	48	0	25MAR13	25MAY13	0			-512										
Lower Part E	Box Culvert/Open Channel by Open Cut																		
Approval for T	ТА & ХР																		
10R1DOD102	Prepare TTA scheme	100	100	28FEB09A	30MAY09A	100	28FEB09A	30MAY09A											
10R1DOD104	Obtain TTA approval from rel. authorities/SOR	60	60	02JUN09A	17NOV09A	100	02JUN09A	17NOV09A											
10R1DOD106	Obtain XP from HyD	60	60	28SEP09A	04DEC09A	100	28SEP09A	04DEC09A											
10R1DOD108	Preparatory works prior to implement TTA	59	59	04JAN10A	15JUN10A	100	04JAN10A	15JUN10A											
Stage 1 TTA; F	ast Lane Closure of E/B C'way																		
10R1DOD202	Trial run to close one lane of E/B C'way	1	1	13JUL10A	13JUL10A	100	13JUL10A	13JUL10A			XX								
10R1D0D212	Trial pit excavation	28	28	17JUN10A	07AUG10A	100	17JUN10A	07AUG10A			XX								
10R1D0D222	Install stage 1(32#) pipe piles	60	60	09AUG10A	20OCT10A	100	09AUG10A	200CT10A			XXII				XXXXX				
10R1D0D224	Drainage & traffic diversion to close fast lane	13	13	210CT10A	04NOV10A	100	210CT10A	04NOV10A			XXII				XXXXX				
10R1DOD226	Install stg 2 (25# pipe piles) & 10# king posts	42	42	17NOV10A	26JAN11A	100	17NOV10A	26JAN11A			XXII				XXXXX				
10R1DOD232	Excavation & temp. support to exist. services	149	149	29NOV10A	29JUN11A	100	29NOV10A	29JUN11A			XXII				XXXXX				
10R1DOD330	Construct box culvert incl upstand wall	47	47	27JUN11A	20AUG11A	100	27JUN11A	20AUG11A			XXXI.				XXXXX				
10R1DOD430	Backfill up to base of retain. wall & blinding	11	11	22AUG11A	03SEP11A	100	22AUG11A	03SEP11A			<u>XX</u>				XIII				

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	201	2	2013			2014	2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S O 63 64 65	N D J F	2013 M A M J J 9 70 71 72 73 74 7	A S O N D	J F M A M 9 80 81 82 83 84 8	J J A S O N 5 86 87 88 89 9	I D J F M A 0 91 92 93 94 95
10R1DOD440	Construct base for L-shapped retaining wall	14	14	02SEP11A	22SEP11A	100 (02SEP11A	22SEP11A								
10R1DOD442	Reinst. sewer pipe/modify supports to watermain	12	12	170CT11A	270CT11A	100	170CT11A	270CT11A								
10R1DOD444	Construct wall for L-shapped retaining wall	23	23	12SEP11A	220CT11A	100 '	12SEP11A	220CT11A								
10R1DOD450	Backfill to top & remove temp. supports	24	24	070CT11A	30NOV11A	100 (070CT11A	30NOV11A								
10R1DOD460	Road works	12	12	01DEC11A	19DEC11A	100 (01DEC11A	19DEC11A								
10R1DOD470	Re-open fast lane of E/B C'way	1	1	21DEC11A	21DEC11A	100 2	21DEC11A	21DEC11A								
Open Channel	Between Box Culvert & Seawall; East															
10R1DOE005	Formation & blinding	6	6	05SEP11A	15SEP11A	100 (05SEP11A	15SEP11A								
10R1DOE015	Base inside Arch Bridge	7	7	15SEP11A	030CT11A	100 ⁻	15SEP11A	03OCT11A								
10R1DOE025	Walls inside Arch Bridge	20	20	06OCT11A	08DEC11A	100 (D6OCT11A	08DEC11A								
10R1DOE030	Delivery of formliner at site	0	0		040CT11A	100		04OCT11A								
10R1DOE035	Coping at East end with formlier	12	12	100CT11A	240CT11A	100 1	100CT11A	240CT11A								
10R1DOE045	Base of T Shapped Wall	7	7	270CT11A	02NOV11A	100 2	270CT11A	02NOV11A								
10R1DOE055	Wall of T Shapped Wall with formliner	10	10	03NOV11A	09NOV11A	100 (03NOV11A	09NOV11A								
10R1DOE065	Base outside Arch Bridge	7	7	10NOV11A	15NOV11A	100 1	10NOV11A	15NOV11A								
10R1DOE075	Wall outside Arch Bridge with formliner	10	10	16NOV11A	23NOV11A		16NOV11A	23NOV11A								
10R1DOE085	Reinstage rock armour	24	24	28NOV11A	09JAN12A	100 2	28NOV11A	09JAN12A								
Open Channel	Between Box Culvert & Seawall; West															
10R1DOW005	Formation & blinding	6	6	12SEP11A	21SEP11A	100 1	12SEP11A	21SEP11A								
10R1DOW015	Base inside Arch Bridge	7	7	040CT11A	110CT11A	100 (040CT11A	110CT11A								
10R1DOW025	Walls inside Arch Bridge	20			28NOV11A	100 1	180CT11A	28NOV11A								
10R1DOW035	Coping at West end with formliner	12	12	250CT11A	270CT11A	100 2	250CT11A	270CT11A								
10R1DOW045	Base of T Shapped Wall	7	7	02NOV11A	09NOV11A	100 (D2NOV11A	09NOV11A								
10R1DOW055	Wall of T Shapped Wall with formliner	10	10	10NOV11A	17NOV11A	100 1	10NOV11A	17NOV11A								
10R1DOW065	Base outside Arch Bridge	7			25NOV11A	100 2	21NOV11A	25NOV11A								
10R1DOW075	Wall outside Arch Bridge with formliner	10	10	26NOV11A	30NOV11A	100 2	26NOV11A	30NOV11A								
10R1DOW085	Reinstage rock armour	50	50	30JAN12A	20MAR12A	100	30JAN12A	24MAR12								
Coping & Baffl	e Walls															
10R1DOM005	Seawall coping with formliner; 9 bays	18			21NOV11A	100 2	280CT11A	21NOV11A								
10R1DOM015	Type G baffle walls with formliner; 16#	16	16	05DEC11A	04FEB12A	100 (05DEC11A	04FEB12A								
Vehicular Ac	cess/Upper Box Culvert/Cascade															
Stage 2 TTA; U	pper B/C/Lower Cascade/V. Access															
10ELS002	TBM advance to Ch. 0.00	0	0		28FEB12A	100		28FEB12								
10ELS012	Removel of Muck Hopper	24	24	01MAR12A	28MAR12A	100 (01MAR12	28MAR12								
10ELS014	Trial pits/identify utilities/elevated footpath	64	64	22DEC11A	27MAR12A	100 2	22DEC11A	12MAR12								
10ELS022	Install 27# pipe piles	34	34	09JAN12A	20FEB12A	100 0	09JAN12A	20FEB12A								
10ELS032	Install remaining 15# pipe piles	24	24	29MAR12A	25APR12A	100 2	29MAR12	02MAY12								
10R1DO0706	Excavate & temp. support to services incl. V. A.	135	135	29MAR12A	13SEP12	89 2	29MAR12	11SEP12	-606	+						
10R1DO0707	Construct base slab; 690m3 (2 pours)	13	13	12NOV12	26NOV12	0	12SEP12	26SEP12	-606	-						
10R1DO0708	Construct step 1; 403m3	10	10	27NOV12	07DEC12	02	27SEP12	09OCT12	-606	-	EX/					
10R1DO0709	Construct step 2 & 3; 362m3	10	10	08DEC12	19DEC12	0	10OCT12	20OCT12	-606	-						
10R1DO0710	Construct type F baffle walls; 8#	20	20	27NOV12	19DEC12	02	27SEP12	20OCT12	-527	- 1						
10R1DO0712	Construct walls, roof & upstand; 860m3 (4 pours)	40	40	20DEC12	07FEB13	02	22OCT12	07DEC12	-527	1						

ID	Activity	WP10	WP09	WP10	WP10	% WP09	WP09	Total	2012		20 M A M I	13		2 M A M	2014		2015
	Description	Dur	Dur	Start	Finish	Comp Start	Finish		3 64 65 6	1111111		74 75 76 77	78 79 80 81	82 83 84 8	5 86 87 88	89 90 9	D J F M A 1 92 93 94 95
10R1DO0716	Backfill include removal of king posts	24	24	08FEB13	11MAR13	0 08DEC12	08JAN13	-527									
10R1DO0726	Road paving & reinstate footpath	12	12	16OCT13	29OCT13	0 08APR13	20APR13	-606		XX							
10R1D00728	Re-open slow lane of E/B C'way	1	1	30OCT13	30OCT13	0 22APR13	22APR13	-606									
10R1DO0736	Additional ELS & key excavation	48	0	14SEP12	10NOV12	0		-606		XX							
PVO-W-10	Modification of existing Outfall "W"	48	0	26FEB13	26APR13	0		-527		H							
	of Vehicular Access																
10R1DO0407	Complete excavation with open cut/blinding	0	0		13SEP12	0	11SEP12	-440									
10R1DO0408	Construct base	8	8	14SEP12	22SEP12	0 12SEP12	20SEP12	-440	•	XXX.							
10R1D00410	Construct walls	10	10	24SEP12	05OCT12	0 21SEP12	03OCT12	-440		HAH.							
10R1DO0412	Construct roof	16	16	06OCT12	250CT12	0 04OCT12	220CT12	-440		<u> </u>	4						
	of Upper Cascade; Bays 16-21																
10R1DO0730	Construct base (1682m3); (6x7)/2=21 days	21	21	20DEC12	16JAN13	0 15NOV12	08DEC12	-606									
VO-245-200	Construct walls; 15 pours	60	0	17JAN13	03APR13	0		-606									
VODLNDAD60	Construct roof & planter wall; 6 pours	98	0	05APR13	01AUG13	0		-606		<u> </u>							
	be at West of Spiral Ramp																
10R1DOSW10	Removal of Tower Crane	4	4	02AUG13	06AUG13	0 19FEB13	22FEB13	-606									
10R1DOSW20	Excavate & construct mass conc. walls	18	18	07AUG13	27AUG13	0 23FEB13	15MAR13	-606									
10R1DOSW30	Slope reinstatement & drainage works	21	21	28AUG13	21SEP13	0 16MAR13	13APR13	-606				—					
VOADIS10	Additional Irrigation Sys Pump House	24	0	23SEP13	22OCT13	0		-606									
Permanent V	Works at +24mPD																
Removal of TE	BM Services & Excavation at +24mPD																
10R1DO0600	Remove TBM services from tunnel; 24 hrs works	24	24	02MAR12A	30APR12A	100 02MAR12	29MAR12										
10R1DO0601	Remove TBM serivces outside tunel; day time	44	44	02MAR12A	09JUN12A	100 02MAR12	26APR12										
10R1DO0602	Excavate tapered channel inside Noise Enclosure	25	25	18APR12A	16JUN12A	100 30MAR12	04MAY12										
10R1DO0603	Excavate tapered channel outside Noise Enclosre	32	32	21MAY12A	10JUL12A	100 05MAY12	11JUN12										
Construction	of Buttress Wall (VO#233)																
VO-233-005	Receive VO#233	0	0	19APR12A		100											
VO-233-010	Excavation/Formation/Blinding	9	0	14MAY12A	23MAY12A	100											
VO-233-015	Bay B, 1st pour; +23.8mPD~+27.0mPD	9	0	24MAY12A	02JUN12A	100											
VO-233-020	Bay B, 2nd pour; +27mPD~+31mPD	11	0	04JUN12A		100											
VO-233-025	Bay B, 3rd pour; +31.0mPD~+35.0mPD	13	0	26JUN12A		100				XXX							
VO-233-030	Bay B, 4th pour; +35.0mPD~+39.0mPD	20	0	12JUL12A		100				XX							
VO-233-035	Bay B, Upper planter wall	9	0	28SEP12	09OCT12	0		-546		XX							
VO-233-040	Bay A, 1st pour; +23.8mPD~+27.0mPD	7	0	16JUN12A						XXX							
VO-233-045	Bay A, 2nd pour; +27mPD~+31mPD	15	0	10AUG12A	27AUG12A	100				XX							
VO-233-050	Bay A, 3rd pour; +31.0mPD~+35.0mPD	9	0	28AUG12		0		-546	•	<u> XXXII</u>							
VO-233-055	Bay A, 4th pour; +35.0mPD~+39.0mPD	9	0	07SEP12	17SEP12	0		-546	8	YXXI.							
VO-233-060	Bay A, Upper planter wall	9	0	18SEP12	27SEP12	0		-546		XXXI.			XXX/				
VO-233-065	Bay C, 1st pour; +23.8mPD~+27.0mPD	9	0	100CT12	19OCT12	0		-546		XXXI.			XXX/				
VO-233-070	Bay C, 2nd pour; +27.0mPD~+31.0mPD	9	0	200CT12		0		-546		XXXI.			XXX/				
VO-233-075	Bay C, 3rd pour; +31.0mPD~+35.0mPD	9	0	01NOV12	10NOV12	0		-546		YXXI.			XXX/				
VO-233-085	Bay C, 4th pour; +35.0mPD~+39.0mPD	9	0	12NOV12		0		-546					XXX/				
VO-233-090	Bay C, Upper planter wall	9	0	22NOV12	01DEC12	0		-546									

ID	Activity	WD40	WP09	WP10	WP10	0/	WP09	WP09	Total		2012		2	013			2014			2015
ID	Description	Dur	Dur	Start	Finish	% Comp	Start	Finish	Total Float	A S	0 N	D J	F M A M J 3 69 70 71 72 73	J A S	0 N D	J F M	A M J J	A S O	N D	
Construction	of Tapered Channel (VO#245)									03 0-				14/15/10			05 04 05 00	01 00 09	90 91 3	52 53 54 50
10R1D00644	Install penstock & testing	39	39	02FEB13	22MAR13	0	15NOV12	02JAN13	-501			Å				M				
VO-245-005	Receive VO#245	0	0	19APR12A		100						Ň				HH				
VO-245-010	Bay B1; Blinding & survey setting out	2	0	23MAY12A	24MAY12A	100						TX)				MM				
VO-245-015	Bay B1; Base slab	14	0	25MAY12A		100						TX)				M				
VO-245-020	Bay B1; Wall B1A	15	0	13JUN12A	10JUL12A	100						TX)				MM				
VO-245-025	Bay B1; Wall B1B	15	0	11JUL12A	25JUL12A	100						\mathbb{N}				MM				
VO-245-030	Bay B1; Wall B1C	15	0	26JUL12A	13AUG12A	100						\mathbb{N}				MM				
VO-245-035	Bay B1; Wall B1D	15	0	14AUG12A	25AUG12A	100						\overline{X}				IN				
VO-245-040	Bay B2A; Blinding & survey setting out	2	0	16JUN12A	16JUN12A	100						$\overline{\mathcal{N}}$				IN				
VO-245-045	Bay B2A; Base slab	10	0	19JUN12A	29JUN12A	100						$\overline{\mathbb{N}}$								
VO-245-060	Bay B2B; Blinding & survey setting out	2	0	25JUN12A	27JUN12A	100														
VO-245-065	Bay B2B; Base slab	10	0	28JUN12A	09JUL12A	100						$\overline{\mathcal{N}}$								
VO-245-080	Bay B2C; Blinding & survey setting out	2	0	11JUL12A	20JUL12A	100						\overline{N}								
VO-245-085	Bay B2C; Base slab	10	0	13JUL12A	31JUL12A	100						$\overline{\mathcal{N}}$								
VO-245-090	Walls for Bay 2A, 2B and 2C	56	0	30JUN12A	04SEP12	87			-558			\mathbb{N}				M				
VO-245-105	Baffle walls (28#)	25	0	25AUG12A	22SEP12	8			-558			\mathbb{N}				M				
VO-245-115	Columns (12#)	25	0	01SEP12	29SEP12	0			-558			\mathbb{N}				M				
VODLNDAD10	Construct additional landscap deck	80	0	12SEP12	15DEC12	0			-558							M				
Platform at Ea	ist of Tappered Channel											Ň				M				
10R1DO0P10	Formation	8	8	05SEP12	13SEP12	0	20SEP12	28SEP12	-480	•	• 2	\mathbb{N}				MM				
10R1DO0P20	Const. slope toe planter wall/surface drainage	28	28	17DEC12	21JAN13	0	29SEP12	02NOV12	-558							M				
10R1DO0P30	Lay sub-base & construct slab	10	10	22JAN13	01FEB13	0	03NOV12	14NOV12	-558			\mathbb{N}				XXX				
VOADT-10	Additional Trellis	96	0	02FEB13	04JUN13	0			-558			X				III				
Reinstate Slo	pe at North & East of Spiral Ramp											X				INN				
10R1DO0E10	Prepare slope reinstatement report	49	49	20JUN11A	31MAY12A	100	20JUN11A	09MAR12				\mathbb{N}				MM				
10R1DO0E30	Obtain consent from SOR & GEO	170	170	08SEP11A	14JUL12A	100	08SEP11A	09MAY12				\mathbb{N}				MM				
10R1DO0E35	CLP disconnect power to TR	18	0	28AUG12	17SEP12	0			-557			\mathbb{N}				XXX				
10R1DO0E40	Demolish transformer room	18	18	18SEP12	09OCT12	0	25APR12	17MAY12	-557	E	•					IN				
10R1DO0E50	Construct ret. wall at entrance of Spiral Ramp	12	12	100CT12	240CT12		18MAY12	31MAY12	-557							IN				
10R1DO0E60	Reinstate slope; +14mPD to +21mPD	24	24	250CT12	21NOV12	-	01JUN12	29JUN12	-557							IAA				
10R1DO0E70	Reinstate slope; +21mPD to +28mPD	48	48	22NOV12	19JAN13	0	30JUN12	25AUG12	-557											
Seabed Pro	tection Works											\mathbb{N}				////				
Preliminary W	orks As Per VO#061															XXA				
	Site possession of Portion E-650d of DOC	0	0	09JUL09A		100	09JUL09A					X				XXA				
VO061-002	Receive VO # 061	0	0		30JUN09A	100		30JUN09A				Ň.				1XI)				
VO061-004	Appoint Independent Hydrographic Surveyor	60	60	02JUL09A	26SEP09A	100	02JUL09A	26SEP09A				Ň.				TX/				
VO061-006	Carry out sounding survey	6	6	02OCT09A	100CT09A	100	02OCT09A	100CT09A				Ň.				TX/				
VO061-008	Prepare/submit drwgs./report of sounding survey	6	6	04NOV09A	03NOV09A	100	04NOV09A	03NOV09A				Ň.				TI II				
VO061-010	SOR approves drwgs./report of sounding survey	6	6	04NOV09A	10NOV09A	100	04NOV09A	10NOV09A				X,				MA				
VO061-012	SOR issue Supplm. Environmental Review Report	30	30	02JUL09A	050CT09A	100	02JUL09A	050CT09A				X,				MA				
VO061-014	Apply for Variation to FEP	6		05OCT09A			05OCT09A	050CT09A				X				M				
VO061-016	EPD review/issue FEP	30	30	06OCT09A	280CT09A	100	06OCT09A	280CT09A								<u>XXD</u>				

	Activity Description	WP10 Dur	WP09 Dur	WP10 Start	WP10 Finish	% Comp	WP09 Start	WP09 Finish	Total	ASO	N D J	F M A	2013 M J J A S O N D 72 73 74 75 76 77 78 79	JFM	201	I A S O N	2015
VO061-018	Prepare/submit Revised EM&A Manual by ET	30	30	290CT09A	02DEC09A		290CT09A	02DEC09A	1 Iout	63 64 65		69/0/1	12 13 14 15 16 11 18 19	80 81 82	83 84 85 8	30 87 88 89 90	91 92 93 94 95
VO061-020	IEC endorse Revised EM&A Manual	12	12	03DEC09A	30DEC09A		03DEC09A	30DEC09A									
VO061-022	EPD acknowledge Revised EM&A Manual	6	6	02JAN10A	06JAN10A		02JAN10A	06JAN10A									
VO061-032	Appoint sub-contractor for varied works	60	60	02JUL09A	170CT09A		02JUL09A	170CT09A									
VO061-034	Submit & review of method statement	65	65		02MAR10A		10DEC09A	02MAR10A									
VO061-040	Apply for marine notice	6			11NOV09A		05NOV09A	11NOV09A									
VO061-042	Revew/issue marine notice by Marine Department	30	30		24DEC09A		12NOV09A	24DEC09A									
VO061-044	Apply for dumping permit	10		13AUG10A				24AUG10A									
VO061-046	Review/issue dumping permit by EPD	31	31	16AUG10A	20SEP10A	100	16AUG10A	20SEP10A									
VO061-050	6# pre-drilling for ground investigation	40		02FEB10A			02FEB10A	03MAY10A									
	orks As Per Alternative Design																
ALP-002	Submit Contractor's proposal; alternative design	0	0	03JUL10A	17SEP10A	100	03JUL10A	17SEP10A									
ALP-012	Review/approval of Contractor's proposal by SOR	87	87	05JUL10A			05JUL10A	26NOV10A									
ALP-022	Submit method statement for basin construction	36	-	19AUG10A			19AUG10A	22SEP10A									
ALP-032	Review/approval of method statement by ICE	12		30SEP10A			30SEP10A	30NOV10A									
ALP-042	Review/approval of method statement by SOR	47		20AUG10A			20AUG10A	110CT10A									
ALP-062	Review/approval of alternative design by SOR	41		27AUG10A			27AUG10A	26NOV10A									
ALP-072	Review/approval of alternative design by ICE	32		03SEP10A				270CT10A									
	ction As Per Alternative Design																
ALC002	Commence basin construction	0	0	250CT10A		100	250CT10A										
ALC012	Intial works	70*	70*	260CT10A	18JAN11A		260CT10A	18JAN11A									
ALC022	Install silt curtain	3	3		280CT10A		260CT10A	280CT10A									
ALC032	Dredge marine deposit	33	33		06DEC10A		290CT10A	06DEC10A									
ALC052	Remove rock armor	34	34	07DEC10A	18JAN11A		07DEC10A	18JAN11A									
ALC062	Form Seawall Type North & Eest	64*	64*	24JAN11A	12APR11A		24JAN11A	12APR11A									
ALC072	Dredge	39	39	24JAN11A	12MAR11A		24JAN11A	12MAR11A									
ALC082	Place concrete and levelling layer	11	11		25MAR11A		14MAR11A	25MAR11A									
ALC092	Place seawall blocks	7	7	26MAR11A	02APR11A		26MAR11A	02APR11A									
ALC102	Backfill seawall	7	7	04APR11A	12APR11A	100	04APR11A	12APR11A									
ALC112	Form Seawall Wing Wall at East	38*	38*	13APR11A	31MAY11A	100	13APR11A	31MAY11A									
ALC132	Place concrete and levelling layer	16	16	13APR11A	04MAY11A		13APR11A	04MAY11A									
ALC142	Place seawall blocks	13	13	05MAY11A	20MAY11A		05MAY11A	20MAY11A									
ALC152	Backfill seawall	9	9	21MAY11A	31MAY11A		21MAY11A	31MAY11A									
ALC172	Form Seawall at North & West	55*	55*	28JUN11A	31AUG11A	100	28JUN11A	31AUG11A									
ALC182	Dredge	22	22	28JUN11A	23JUL11A	100	28JUN11A	23JUL11A									
ALC192	Place back concrete and levelling layer	9	9	25JUL11A	03AUG11A	100	25JUL11A	03AUG11A									
ALC202	Place seawall blocks; 71#	24	24	04AUG11A			04AUG11A										
ALC212	Backfill seawall	10		30AUG11A			30AUG11A										
ALC214	Form temp. conc. block wall	6		22AUG11A			22AUG11A										
ALC222	Form Seawall Wing Wall at West	168*		01SEP11A				31MAR12									
ALC332	Dredging	6		01SEP11A			01SEP11A	14SEP11A									
ALC342	Place back concrete and levelling layer	6		15SEP11A			15SEP11A	19SEP11A									
ALC352	Place seawall blocks (1st stage); 48#	11	11	20SEP11A	30SEP11A	100	20SEP11A	30SEP11A									

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total		
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	63 64 65 66 67 68 69 70	A M J J A S O N D J F M A M J J A S O N D J F M A 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 66 87 88 89 90 91 92 93 94 95
ALC362	Backfill seawall	6	6	070CT11A	150CT11A		07OCT11A	150CT11A			
ALC366	Place seawall blocks (2nd stage); 12#	6	6	23MAR12A	24MAR12A		26MAR12	31MAR12			
ALC372	Place Concere Blocks in Apron Invert	137*	155*	250CT11A	12APR12A		250CT11A	05MAY12			
ALC382	Dredge	18	18		08NOV11A		250CT11A	08NOV11A			
ALC392	Place levelling layer	25	25				09NOV11A	26NOV11A			
ALC402	Place step blocks	58	58				28NOV11A	05MAR12			
ALC412	Place type 2 arour infront of seawall	24	24	13MAR12A	12APR12A		02APR12	05MAY12			
ALC522	Complete Outfall Basin	0	0		12APR12A	100		05MAY12			
Remaining V	Norks Prior to Handover										
10R1DO0904	Finishing & reinstatement works; Portion D	36	36		30OCT13		07MAR13	22APR13	-606		
10R1DO0906	Pre-handover inspections and remedial works	30	30	02OCT13	06NOV13		21MAR13	29APR13	-606		
16R7DO0900	Landscaping works upper part of slope	150	150	19SEP12	21MAR13		15JUN12	11DEC12	-420		
16R7DO0902	Landscaping works lower part of slope	60	60	26AUG13	06NOV13		14FEB13	29APR13	-606		
16R7DO0904	Establishment Works at Portion D	365	365	07NOV13	06NOV14		30APR13	29APR14	-745		
PVO-AP-10	Anti-pedestrian Apron Slab at Outfall D	48	0	01NOV12*	28DEC12	0			-395		
PVO-TR-10	Tree survey as per revised planting schedule	12	0	05SEP12	18SEP12	0			-420		
Schedule of	Milestones for Cost Centre No. 10R										
									_		
10R1DO1002	10R 1; On completion of 20% excavation works	0	0		09APR09A	100		09APR09A			
10R1DO1004	10R 2; On completion of 40% excavation works	0	0		28AUG09A	100		28AUG09A			
10R1DO1006	10R 3; On completion of 60% excavation works	0	0		13APR10A	100		13APR10A			
10R1DO1008	10R 4; On completion of 80% excavation works	0	0		08JUN11A	100		08JUN11A			
10R1DO1010	10R 5; On completion all excavation works	0	0		13SEP12	0		11SEP12	912	et Outfall O-1	
10R1DO1012	10R 6; On completion of cascade structure	0	0		01AUG13	0		18FEB13	590		◆at Outfall 0-1
10R1DO1014	10R 7; On completion of spiral ramp to +16mPD	0	0		07NOV11A	100		07NOV11A			
10R1DO1016	10R 8; On completion of spiral access ramp	0	0		23MAR13	0		12SEP12	721	 • • 	at Outfall O-1
10R1DO1018	10R 9; On completion box-culvert & open channel	0	0		01AUG13	0		18FEB13	590		◆and open channet underneath CPR
10R1DO1020	10R 10; On completion of seabed protection wks	0	0		12APR12A	100		05MAY12			
10R1DO1022	10R 11; On completion of all works under this CC	0	0		06NOV13	0		29APR13	493		Ounder this Cost Centre
Schedule of	Milestones for Cost Centre No. 14R										
14R5D01102	14R 1; On complet. of remove exist. rock armour	0	0		22JAN11A	100		22JAN11A			
14R5D01102	14R 2; On complet. of 50% soil nailing by number	0	0		07APR09A	100		07APR09A			
14R5D01104	14R 3; On completion all soil nailing works	-	0					19NOV09A			
14R5D01106	14R 4; On completion of all works under this CC	0	0		19NOV09A 22JAN11A			22JAN11A			
		0	0		ZZJANTIA	100		ZZJANTIA			
	nprovement Works at Portion G										
Preliminary											
Site Establish	Possession of Portion G -700d of DOC	0	0	26NOV09A		100	26NOV09A				
		0	-		02JAN10A			02100400	+		
01R6GG0116	Site clearance	30	30				26NOV09A	02JAN10A			
VO-125G05	VO#125 received for revised hoarding & fencing	0	0		02JAN10A	100		02JAN10A			

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	201	2		2013 2014 2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S O 63 64 65	N D 66 67	J F M . 58 69 70 7	A M J J A S O N D J F M A M J J A S O N D J F M 17 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94
VO-125G10	Fenceing/Hoarding erection	50	50	05JAN10A	01MAR10A	100	05JAN10A	01MAR10A					
G.I. Works (VC	D#126)												
VO-126G05	Slope stripping for RS-3	14	14	09DEC09A	24DEC09A	100	09DEC09A	24DEC09A					
VO-126G10	Timber platform for predrilling works	12	12	15JAN10A	20JAN10A	100	15JAN10A	20JAN10A					
VO-126G15	Predriliing for H-piling works & soil nailing	36	36			100	20JAN10A	04MAR10A					
VO-126G20	Submission of drilling report	14	14	18FEB10A	18FEB10A	100	18FEB10A	18FEB10A				III	
Tree Felling/T	ransplanting Works (VO#126)											INN	
VO-126T05	Tree survey & report submission	14	14	16DEC09A	04JAN10A	100	16DEC09A	04JAN10A					
VO-126T15	Obtain tree felling permit	105	105	05JAN10A	15MAY10A	100	05JAN10A	15MAY10A				INN	
VO-126T25	Tree felling	24	24	14JUN10A	12OCT10A	100	14JUN10A	120CT10A					
Soil Nailing	Works (VO#126)												
	/orks at Area A												
VO-126S05	Erect wokring platform & mobilization	8	8	19MAR10A	30MAR10A	100	19MAR10A	30MAR10A					
VO-126S10	Test nails	8	8	01APR04A	17APR04A	100	01APR04A	17APR04A					
VO-126S15	Permanent soil nails 64#	30	30	19APR10A	13MAY10A	100	19APR10A	13MAY10A					
VO-126S20	Soil nail heads	20	20	14MAY10A	01JUN10A	100	14MAY10A	01JUN10A					
VO-126S25	Removal of platform	7	7	02JUN10A	09JUN10A	100	02JUN10A	09JUN10A					
Soil Nailing W	/orks at Area B												
VO-126S35	Erect wokring platform & mobilization	8	8	19MAR10A	30MAR10A	100	19MAR10A	30MAR10A					
VO-126S40	Test nails	8	8	01APR04A	17APR04A	100	01APR04A	17APR04A					
VO-126S45	Permanent soil nails 19#	10	10	19APR10A	13MAY10A	100	19APR10A	13MAY10A					
VO-126S50	Soil nail heads	12	12	14MAY10A	01JUN10A	100	14MAY10A	01JUN10A					
VO-126S55	Removal of platform	7	7	02JUN10A	09JUN10A	100	02JUN10A	09JUN10A					
Piling Work	s (VO#0126)												
Piling Platform													
VO-126P05	Obtain SO's consent for temp. works design	0	0		23JUN10A	100		23JUN10A					
VO-126P20	Platform for mini piling	16	16	11JUN10A			11JUN10A	30JUN10A					
VO-126P30	Mobilization & set up for mini piling	3	3	02JUL10A			02JUL10A	05JUL10A				IM	
VO-126P35	Mini piling & pile caps construction	104	104	06JUL10A			06JUL10A	06NOV10A					
VO-126P37	Erect steel platform for H-piling	47	47	08NOV10A		100	08NOV10A	04JAN11A					
VO-126P39	Remove steel platform; grid 2-4	5	5	30MAY11A	03JUN11A	100	30MAY11A	03JUN11A					
VO-126P41	Remove steel platform; grid 4-6	3	3	20JUN11A	22JUN11A	100	20JUN11A	22JUN11A					
VO-126P43	Remove steel platform; grid 6-10	9	9	28NOV11A	03DEC11A	100	28NOV11A	03DEC11A					
VO-126P44	Remove steel platform; grid 10-14	5	5	03JUN11A	09JUN11A	100	03JUN11A	09JUN11A					
H-Piling Work	S												
VO-126P45	Mibilization & set up for H-piling	18	18	05JAN11A	25JAN11A	100	05JAN11A	25JAN11A				XXX	
VO-126P50	H-piling types 1 & 2; 38 nos.	93	93				26JAN11A	23MAY11A				1XXX	
VO-126P55	Demobilize piling rig	5	5	24MAY11A	28MAY11A	100	24MAY11A	28MAY11A				XXX	
Skin Wall						· · ·							
VO-126P60	Excavate; Bays 1, 5 & 6	52	52	10JUN11A	20AUG11A	100	10JUN11A	20AUG11A				XXX	
VO-126P65	Construct skin wall; Bays 1, 5 & 6	27	27				15JUL11A	07SEP11A					
VO-126P70	Construct capping beam; Bays 1, 5 & 6	18	18	270CT11A	23NOV11A	100	270CT11A	23NOV11A				MA	
1-1	· · · ·				1	· · · · ·		1	· · · · · ·				

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total		2012	2	013		20 ⁻	14		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S 63 64	65 66 6	J F M A M J 7 68 69 70 71 72 7	3 74 75 76 7	77 78 79 80 81 8	2 83 84 85	3 A S 0 86 87 88 89	9 90 91 §	J F M A 32 93 94 95
VO-126P75	Excavate; Bays 2, 3 & 4	30	30	05DEC11A	21JAN12A	100	05DEC11A	21JAN12A										
VO-126P80	Construct skin wall; Bays 2, 3 & 4	24	24	21JAN12A	18FEB12A	100	21JAN12A	18FEB12A										
VO-126P85	Construct capping beam; Bays 2, 3 & 4	18	18	10APR12A	05MAY12A	100	18APR12	10MAY12										
Drainage Imp	provement Works (VO#128)																	
Pipe Jacking B	etween SM1 & SM2																	
15R6GG0301	Obtain approval of ELS design package incl MS	0	0		04JUN10A	100		04JUN10A										
15R6GG0302	Install ELS & construct shaft for pipe jacking	51	51	08APR10A	08JUN10A	100	08APR10A	08JUN10A										
15R6GG0303	Mobilization & set up	12	12	09JUN10A	23JUN10A	100	09JUN10A	23JUN10A										
15R6GG0304	Pipe jacking	320	320	24JUN10A	30JUL11A	100	24JUN10A	30JUL11A										
15R6GG0314	Construct receiving shaft	24	24	06JUN11A	05JUL11A	100	06JUN11A	05JUL11A										
15R6GG0324	Demobilization	6	6	01AUG11A	06AUG11A	100	01AUG11A	06AUG11A										
1.5m dia. Drain	age beween SM2 & CP2																	
15R6GG0200	Excavate existing tow wall & formation for pipe	18	18	10AUG11A	10SEP11A	100	10AUG11A	10SEP11A										
15R6GG0205	Construct SM2 & CP2	18		13AUG11A			13AUG11A											
15R6GG0210	Construct 300UC along 1.5m dia. drainage (~12m)	12	12	27AUG11A			27AUG11A											
15R6GG0215	Construct 1.5m dia. drainage with CS (~12m)	12	12	-			12SEP11A	140CT11A										
15R6GG0220	Construct 1.5m dia. drainage with CS (~20m)	18	18				09MAR12	29MAR12										
15R6GG0230	Construct SM3	12		02APR12A			30MAR12	17APR12										
15R6GG0240	Construct 300UC & install/certify hoisting syst.	16	16	20FEB12A	08MAR12A	100	20FEB12A	08MAR12										
· · · · · · · · · · · · · · · · · · ·	& CP1 at Area B				-													
15R6GG0340	Obtain TTA scheme approval from SOR	30	30	01DEC09A				26MAR10A										
15R6GG0345	Implement TTA	1	1		14FEB11A		14FEB11A	14FEB11A										
15R6GG0350	Construct 750 UC, SC & CP1	72	72	20DEC10A	19MAR11A	100	20DEC10A	19MAR11A										
	age, WS1 & Outlet Structure							1										
15R6GG0355	Construct WS1 at Area A	25	25		10MAR11A		10FEB11A	10MAR11A										
15R6GG0385	Construct cross road 750UC at Area A	17	17	08APR11A			08APR11A	30APR11A										
15R6GG0390	Revised details received	0	0		08JUL11A	100		08JUL11A										
15R6GG0395	ELS works and excavation for 1.5m drainage	46	46		220CT11A		09JUL11A	220CT11A										
15R6GG0405	Strenthen existing masonry wall	18	18					220CT11A										
15R6GG0415	Install 1.5m dia. drainage with CS	10		220CT11A				04NOV11A										
15R6GG0425	Backfill & reinstate	12		05NOV11A				02DEC11A										
15R6GG0435	Excavate for Outlet (additional)	18		03DEC11A			03DEC11A	12DEC11A										
15R6GG0445 15R6GG0455	Construct Outlet (additional)	18 6	18				13DEC11A	16JAN12A 10APR12										
	Steel works	0	0	28MAY12A	31MAT 12A	100	30MAR12	IUAPRIZ			-4							
1.5m SC & Stee	Staircase connecting to CP2 Excavate for 1.5m stepped channel	30	30	11JUL11A	1341/0114	100	11JUL11A	13AUG11A										
15R6GG0520	Construct 1.5m stepped channel (~14m)	0	0		19SEP11A	100		19SEP11A										
15R6GG0520	Receive VO#219	0	0		19SEP11A 15SEP11A	100		19SEPTTA 15SEP11A						-XXXX			+++	
15R6GG0522	Install steel staircase (additional)	12	-	19MAY12A			18APR12	03MAY12						- XXXXX			+++	+
15R6GG0532	Excavate additional outlet	12		20SEP11A			20SEP11A										+	
15R6GG0542	Construct additional outlet	12		240CT11A				15NOV11A									+	
15R6GG0552	Excavate for mass concrete	6		16NOV11A				19NOV11A									+	
15R6GG0562	Construct mass wall	4		21NOV11A				25NOV11A									+	
1010000002		4	4	ZINUVIIA	25NOV TA	100	ZINOVIIA	LONOVITA				VNNN		<u>XIXIXIXI</u>				

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total	2	012			2013			2	.014		2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A S 63 64	O N [65 66 6	D J	F M A	2013 M J J A S 72 73 74 75 76 7	OND. 7778798	J F M 0 81 82	A M J 83 84 8	JAS 586878	5 O N D 8 89 90 91	J F M A 92 93 94 95
15R6GG0564	Receive VO#251 for modification of outlet	0	0		29MAR12A	100						X								
15R6GG0566	Preparation works for VO#251	1	0	30MAR12A	10APR12A	100						XA								
15R6GG0570	Modify outlet; VO#251	86	0	11APR12A	03AUG12A	100						XI								
1.5m dia. Drain	age, WS2 at Area C											XI								
15R6GG0605	Confirm additional land by SOR	0	0		12JUL11A	100		12JUL11A				XA								
15R6GG0610	Insurance cover for additional land	6	6	13JUL11A	19JUL11A	100 '	13JUL11A	19JUL11A				XA								
15R6GG0615	Procurement for hoarding	18	18	13JUL11A	02AUG11A	100 1	13JUL11A	02AUG11A				XA								
15R6GG0620	Confirm mobilization with house owner	7	7	03AUG11A	12AUG11A	100 (03AUG11A	12AUG11A				XA								
15R6GG0625	Erect hoarding	6	6	13AUG11A	17AUG11A	100 1	13AUG11A	17AUG11A				XA								
15R6GG0630	Trial pit excavation	6	6	18AUG11A	22AUG11A	100 1	18AUG11A	22AUG11A				XX								
15R6GG0635	Issue VO#223 & 216 with revised drainage details	12	12	23AUG11A	110CT11A	100 2	23AUG11A	110CT11A				XX								
15R6GG0640	Confirm site clearance with SOR/house owner	12	12	120CT11A	01NOV11A	100 1	120CT11A	01NOV11A				XX								
15R6GG0642	Site clerance & removal of trees	12	12	02NOV11A	15NOV11A	100 (02NOV11A	15NOV11A				XX								
15R6GG0645	ELS design & with ICE endorsement	18	18	16NOV11A	23DEC11A	100 1	16NOV11A	23DEC11A				XA								
15R6GG0650	Excavation & construction of WS2	18	18	16NOV11A	01DEC11A	100 1	16NOV11A	01DEC11A				XA								
15R6GG0655	Excavate/construct drainage; 6.5m	29	29	02DEC11A	06JAN12A	100 (D2DEC11A	06JAN12A				XA								
15R6GG0660	Excavate/construct drainage; 23.5m + SM1A	136	85	07JAN12A	30JUN12A	100 (07JAN12A	23APR12				XA								
15R6GG0665	Backfill & reinstate	12	12	03JUL12A	31JUL12A	100 2	24APR12	09MAY12				XD								
800UC at Area	C											XA								
15R6GG0755	Construct 800UC cross road & reinstate	12	12	01AUG12A	16AUG12A	100 1	18AUG12	31AUG12		•		XX								
750UC Crossro	bad connecting to CP2											XX								
15R6GG0801	Receive VO#252 for revised 750UC	0	0	31MAR12A		100						XX								
15R6GG0803	Trial pit excavation	1	0	11MAY12A	26MAY12A	100						XX								
15R6GG0808	Receive further revised 750UC details	0	0		27AUG12A	100				♦		XX								
15R6GG0810	Fabrication of pre-cast UC	36	24	28AUG12	09OCT12	0	11MAY12	07JUN12	696			XX								
15R6GG0820	Excavation & installation of pre-cast UC	12	12	100CT12	240CT12	0 (08JUN12	21JUN12	696			XX								
Mass Concrete	Beam, 300UC, 300SC, at Slope											X								
15R6GG0900	Excavate for mass concrete beam	12	12	07SEP11A	28SEP11A	100 (07SEP11A	28SEP11A				XX								
15R6GG0910	Construct mass concrete beam	6	6	20SEP11A	310CT11A	100 2	20SEP11A	310CT11A				XX	XX							
15R6GG0920	Construct 300UC, 300SC & conc. stair	48	48	12SEP11A	31JAN12A	100 '	12SEP11A	31JAN12A				XX								
15R6GG0930	Install steel stair & steel gate	12	12	25MAY12A	14JUL12A	100 (04MAY12	17MAY12				XX								
15R6GG0940	Install hand railing;	18	18	24MAY12A	06SEP12	50 2	25APR12	17MAY12	747			XA								
15R6GG0950	Lay erosoin control mat	6	6	05JUN12A	02AUG12A	100 1	18MAY12	24MAY12				XX								
15R6GG0960	Hydroseeding	1	2	10AUG12A	10AUG12A	100 2	25MAY12	26MAY12	[I		XA								
Remaning W	orks Prior to Handover to Client											XX				\mathbb{N}				
												XA								
15R6GG0370	Pre-handover inspections and remedial works	12	12	250CT12	07NOV12	0 0	01SEP12	14SEP12	696	-		XX				XXI.				
	Milestones for Cost Centre No. 15R								1			XX								
												X								
15R6GG0502	15R 1; On completion of all temp. works	0	0		04JAN11A	100		04JAN11A				XA			XX.	XXI.				
15R6GG0504	15R 2; On completion of 25% of pipejacking	0	0		080CT10A	100		080CT10A				XA						+++		
15R6GG0506	15R 3; On completion of 50% of pipejacking	0	0		12FEB11A	100		12FEB11A		1		XX						+		
		1						1		-		////	////			IVAL	u _			1 1 1

ID	Activity	WP10	WP09	WP10	WP10	%	WP09	WP09	Total		201	2				20	13					2	2014			2015
	Description	Dur	Dur	Start	Finish	Comp	Start	Finish	Float	A	s o	NC	J	FⅣ		ΛJ	JA	SC	NI	DJ	FM.	AM	JJ	A S C	ND	JFMA
	Description	Dur	Dur	Start	FINISH	Comp	Start	FILISH	FIDAL	63 6	65 65	66 6	7 68	69 70	0 71 7	2 73	74 75	76 7	7 78 7	9 80	81 82 8	33 84 8	35 86 8	37 88 89	90 91	92 93 94 9
15R6GG05	0508 15R 4; On completion of 75% of pipejacking	0	0		19MAR11A	100		19MAR11A					XA							XA						
15R6GG05	0510 15R 5; On completion of all pipejacking	0	0		30JUL11A	100		30JUL11A					XA	\mathbb{N}						XA						
15R6GG05	15R 6; On completion of all wks under this CC	0	0		07NOV12	0		14SEP12	857		•	Ur	ider	this	s Co	st C	entre			XA						



Implementation Status of Environmental Mitigation Measures

IMPLEMENTATION SCHEDULE January 2013

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 O	uality				
3.6.1		DSD's Contractor	Construction Work Sites	Air Pollution Control (Construction Dust)	
	As mentioned in Section 3.5, exceedances of 1-hour and 24-hour average TSP guideline levels have been predicted at most of the ASRs. Hence, mitigation measures are considered necessary in order to suppress the potential dust impact.			Regulation	\checkmark
	The dust suppression measures set out in the <i>Air Pollution Control (Construction Dust)</i> <i>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)</i> <i>Regulation</i> , the dust level is expected to be reduced by over 75%.				\checkmark
	 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; 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; 				\checkmark
	 stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones; 				\checkmark
	• dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;				\checkmark

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	DSD's	Construction	Air Pollution Control	
	washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Contractor	Work Sites	(Construction Dust) Regulation	\checkmark
	• 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;				\checkmark
	• 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;				\checkmark
	• 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;				\checkmark
	 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; 				\checkmark
	• all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;				\checkmark
	• vehicle speed should be limited to 10 kph except on completed access roads;				\checkmark
	• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;				\checkmark
	• 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				\checkmark
	• 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.				\checkmark
Noise 4.6.1	During Construction	DSD's	Construction	PN 2/93 Noise from	
4.0.1		Contractor	Work	Construction Activities &	
	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		Sites	EIAO	\checkmark
	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:				
	 only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works; 	-			\checkmark
	 machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 				√

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 &	\checkmark
	• mobile plant should be sited as far away from NSRs as possible; and	-	Sites	EIAO	\checkmark
	• material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				\checkmark
	 For Drill and Blast Works Charge mass per delay should be decreased by minimising the number of blastholes firing on each delay. 				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
	 For TBM Tunnelling 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. 				N/A
4.6.2	During Operation	DSD's	Project Area	NCO & EIAO	
	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 construction	Contractor			
	only well-maintained plant should be operated on-site;				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
	• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs.				N/A
	<u>Quality</u>	1	T		
5.9.1	During Construction	DSD's Contractor	Construction Work Sites	Practice Note for Professional Persons with	\checkmark
	Mitigation measures and a spill control and response plan have been prepared for works at the intakes and work sites.	-		regard to site drainage (ProPECC PN 1/94) and	
	<i>Precautions to be taken at any time of year when rainstorms are likely:</i>Temporarily exposed surfaces should be covered e.g. by tarpaulin.			WQO	\checkmark
	 Temporarry access roads should be protected by crushed stone or gravel. 	-			\checkmark
	 Trenches should be dug and backfilled in short sections. Measures should be taken to minimize the ingress of rainwater into trenches. 				\checkmark
	Actions to be taken when a rainstorm is imminent or forecast:Silt removal facilities, should be checked to ensure that they can function properly.				\checkmark

4 f.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
.1	• Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric.	DSD's Contractor	Construction Work Sites	WQO	\checkmark
	• All temporary covers to slopes and stockpiles should be secured.				\checkmark
	Actions to be taken during or after rainstorms:Silt removal facilities should be checked and maintained to ensure satisfactory working conditions.				\checkmark
	Spill Control and Response Plan				
	1 Prevention and Precaution Measures				
	<i>General Precautions</i>No discharge of silty water into watercourses.				\checkmark
	• All materials to be used during construction and operation shall be identified and their hazard potential evaluated.				\checkmark
	• 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.				\checkmark
	• Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials.				\checkmark
	• 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.				\checkmark
	• Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport				\checkmark
	• Chemical waste containers shall be suitably labelled to notify and warn the personnel who are handling the wastes to avoid accidents.				\checkmark
	• Storage areas shall be selected at safe locations on site and adequate space shall be allocated to the storage area.				\checkmark
	Prevent obstructions and tripping hazards.	-			\checkmark
	<i>Storage Precautions</i>All chemical storage containers shall be correctly labelled.				\checkmark
	• 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
	• The storage areas shall be inspected to detect any leakages or defective containers on a regular basis.]			\checkmark
	• Suitable notices warning of hazards, emergency response plans, telephone numbers etc shall be posted around the site, including storage areas.]			\checkmark
	• Large and heavy containers shall be stored at ground level.				\checkmark

IA ef.	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.				\checkmark
9.1	• Adequate space for handling of the containers shall be provided	DSD's	Construction	WQO	\checkmark
	• Spill response kits shall be located adjacent/near to the storage areas.	Contractor	Work Sites		\checkmark
	• A log of chemical wastes shall be maintained.				\checkmark
	• Incompatible chemicals shall be stored separately.				\checkmark
	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:				\checkmark
	• Only trained personnel who are equipped with protective clothing and equipment shall be allowed to enter the spillage area for clean up.				\checkmark
	• Spills shall be transferred appropriate back into containers using suitable equipment.				\checkmark
	 Absorbent materials shall be used to clean up the spills and shall be disposed of as chemical wastes. 				\checkmark
	• Where appropriate suitable solvents may be used to clean the contaminated area after removal of all contaminated materials.				\checkmark
	• All necessary protective devices, safety equipment, containers and clean up materials for emergency use shall be maintained to a high standard.				\checkmark
	3 Spill Clean Up and Disposal				
	Effect the response plan.				\checkmark
	Control the leakage and absorb the spillage using suitably absorbent materials.				\checkmark
	Provide safety equipment and personal protective equipment for handling of chemical wastes would be similar to that for handling of chemicals.				\checkmark
	Safety equipment includes but is not limited to:Fire extinguishers.				\checkmark
	• Spades, brushes, dustpan, mop and bucket (or similar readily available on site).				\checkmark
	• Absorbent material such as dry sand, tissues and toweling (all materials readily available on-site).				\checkmark
	• Containers including plaster bags, drums, etc.				\checkmark
	Absorbing materials.				\checkmark
	• Pumps.				\checkmark
	<i>Personal protective equipment includes as appropriate:</i>First-aid kits.				\checkmark
	• Safety helmet and goggles.				\checkmark
	Gloves which can resist chemical reaction.	1			\checkmark

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	\checkmark
5.9.1	Respirators and gas masks.	Contractor	Work Sites		\checkmark
	• Face visor and masks.				\checkmark
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.				
	<i>The emergency plans should include the procedures for:</i>spill prevention and precaution;	-			\checkmark
	• response actions; and				\checkmark
	• spill clean up and disposal.				\checkmark
	Spill prevention and precaution embraces good site practice and covers:good housekeeping practices;	-			\checkmark
	chemical storage requirements; and				\checkmark
	chemical transfer and transport.				\checkmark
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	
	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	(Chemical Wastes) (General) Regulation (Cap 354) and ETWBTC No.	\checkmark
	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	1

As referred to the section 6.4.1, the 317,936m ₃ of inert surplus material generated by the roject is suitable for public fill. The public fill reception facility at Tuen Mun Area 38 rovides a suitable facility for the reuse of surplus inert C&D material generated from the roject. Juder 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);	DSD's Contractor	Construction Work Sites	WDO (Cap.354), ETWBTC No. 15/ 2003, ETWBTC No. 12/2002 and ETWBTC No. 31/2004	۲ ۲
 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); 	-			V
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);	_			√ ./
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);				./
c) to reuse recycled aggregates in accordance with ETWBTC No. 12/2002 or any superseding circular(s);				v
				\checkmark
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.				\checkmark
The contractor will be required to properly sort into inert C&D materials, metals, timber and ther non-inert C&D material in the workplace to prevent cross-contamination.				\checkmark
n addition, DSD will conduct site inspection to monitor the contractors' performance in the mplementation of the WMP and other relevant specified requirements.	DSD	Construction Work Sites	WDO (Cap.354) and ETWBTC No. 15/2003	\checkmark
Excavated Materials Excavated materials should be segregated from other wastes to avoid contamination thereby nsuring acceptability at public filling areas and avoiding the need for disposal at landfill.	DSD's Contractor	Construction Work Sites	WDO (Cap.354) and ETWBTC No. 15/2003	V
Temporary refuse collection facilities should be set-up by the contractor and wastes should be tored in appropriate containers prior to collection and disposal.	_			\checkmark
pilets if public facilities are not available.				\checkmark
<i>Waste Management Plan</i> 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	DSD's Contractor	Construction Work Sites	WDO (Cap.354), ETWBTC No. 15/2003 and ETWBTC No. 33/2002	\checkmark
	unicipal Waste emporary refuse collection facilities should be set-up by the contractor and wastes should be ored in appropriate containers prior to collection and disposal. omestic effluent generated by the workforce will be directed to foul sewer or chemical ilets if public facilities are not available. aste Management Plan Waste Management Plan (WMP) for the construction of the Project should be prepared as	unicipal Waste Image: Construction of the contractor and wastes should be set-up by the contractor and wastes should be bered in appropriate containers prior to collection and disposal. Image: Construction of the contractor and wastes should be bered in appropriate containers prior to collection and disposal. Domestic effluent generated by the workforce will be directed to foul sewer or chemical ilets if public facilities are not available. Image: Construction of the construction of the Project should be prepared as rt of the contractors submission. It will provide recommendations for appropriate recycling disposal route and should include method statement for stockpiling and transportation of e excavated material and other construction wastes should also be included in the WMP d approved before the commencement of construction. All mitigation measures arising DSD's	unicipal Waste Image: Construction of the project should be prepared as the contractor submission. It will provide recommendations for appropriate recycling disposal route and should include method statement for stockpiling and transportation of e excavated material and other construction. All mitigation measures arising DSD's Construction Construction	<i>unicipal Waste</i> emporary refuse collection facilities should be set-up by the contractor and wastes should be pred in appropriate containers prior to collection and disposal. Domestic effluent generated by the workforce will be directed to foul sewer or chemical idets if public facilities are not available. <i>aste Management Plan</i> Waste Management Plan (WMP) for the construction of the Project should be prepared as rt of the contractors submission. It will provide recommendations for appropriate recycling disposal route and should include method statement for stockpiling and transportation of e excavated material and other construction wastes should also be included in the WMP

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
Ecology					
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. 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	DSD's Contractor	Construction Work Sites	EIAO	√
7.7.2	runoff. 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				√ √
	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.	DSD's Contractor	Construction Work Sites	EIAO	\checkmark
	 Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the remaining and surrounding natural stream habitats. Regularly check the work site boundaries to ensure that they are not breached and that no 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 				√ √ √
	I reat any damage that may have occurred to individual major trees in the adjacent area with surgery.				\checkmark

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	Compensation 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	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	V
Fisheries		D(D)		FIAO	
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

Non-compliance of mitigation measure Not applicable x

N/A

IMPLEMENTATION SCHEDULE February 2013

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	uality				
3.6.1	Specific	DSD's Contractor	Construction Work Sites	Air Pollution Control (Construction Dust)	/
	As mentioned in Section 3.5, exceedances of 1-hour and 24-hour average TSP guideline levels have been predicted at most of the ASRs. Hence, mitigation measures are considered necessary in order to suppress the potential dust impact.			Regulation	\checkmark
	The dust suppression measures set out in the <i>Air Pollution Control (Construction Dust)</i> <i>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)</i> <i>Regulation</i> , the dust level is expected to be reduced by over 75%.				V
	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;				\checkmark
	• 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;				\checkmark
	 stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones; 				\checkmark
	• dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;				\checkmark

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	DSD's	Construction	Air Pollution Control	/
	washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Contractor	or Work Sites	(Construction Dust) Regulation	\checkmark
	• 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;				\checkmark
	• 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;				\checkmark
	 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; 				\checkmark
	 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; 				\checkmark
	 all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; 				\checkmark
	 vehicle speed should be limited to 10 kph except on completed access roads; 				\checkmark
	• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;				\checkmark
	• 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				\checkmark
	• 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.				\checkmark
Noise 4.6.1	During Construction	DSD's	Construction	PN 2/93 Noise from	
1.0.1		Contractor	Work	Construction Activities &	
	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		Sites	EIAO	\checkmark
	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:				
	 during construction: only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works; 	1			\checkmark
	 machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	-			\checkmark

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 &	\checkmark
	• mobile plant should be sited as far away from NSRs as possible; and		Sites	EIAO	\checkmark
	• material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				\checkmark
	For Drill and Blast WorksCharge mass per delay should be decreased by minimising the number of blastholes firing on each delay.				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
	 For TBM Tunnelling 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. 				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 construction	DSD's Contractor	Project Area	NCO & EIAO	
	only well-maintained plant should be operated on-site;	-			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
	• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs.				N/A
	Quality	•	1		
5.9.1	During Construction Mitigation measures and a spill control and response plan have been prepared for works at	DSD's Contractor		Practice Note for Professional Persons with regard to site drainage	\checkmark
	the intakes and work sites.	_		(ProPECC PN 1/94) and	
	<i>Precautions to be taken at any time of year when rainstorms are likely:</i>Temporarily exposed surfaces should be covered e.g. by tarpaulin.			WQO	\checkmark
	 Temporarily exposed surfaces should be covered e.g. by tarpaulin. Temporary access roads should be protected by crushed stone or gravel. 	-			\checkmark
	 Trenches should be dug and backfilled in short sections. Measures should be taken to minimize the ingress of rainwater into trenches. 	-			\checkmark
	Actions to be taken when a rainstorm is imminent or forecast:Silt removal facilities, should be checked to ensure that they can function properly.				\checkmark

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

IA ef.	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.				\checkmark
9.1	• Adequate space for handling of the containers shall be provided	DSD's	Construction	WQO	\checkmark
	• Spill response kits shall be located adjacent/near to the storage areas.	Contractor	Work Sites		\checkmark
	• A log of chemical wastes shall be maintained.				\checkmark
	• Incompatible chemicals shall be stored separately.				\checkmark
	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:				\checkmark
	• Only trained personnel who are equipped with protective clothing and equipment shall be allowed to enter the spillage area for clean up.				\checkmark
	• Spills shall be transferred appropriate back into containers using suitable equipment.				\checkmark
	 Absorbent materials shall be used to clean up the spills and shall be disposed of as chemical wastes. 				\checkmark
	• Where appropriate suitable solvents may be used to clean the contaminated area after removal of all contaminated materials.				\checkmark
	• All necessary protective devices, safety equipment, containers and clean up materials for emergency use shall be maintained to a high standard.				\checkmark
	3 Spill Clean Up and Disposal				
	Effect the response plan.				\checkmark
	Control the leakage and absorb the spillage using suitably absorbent materials.				\checkmark
	Provide safety equipment and personal protective equipment for handling of chemical wastes would be similar to that for handling of chemicals.				\checkmark
	Safety equipment includes but is not limited to:Fire extinguishers.				\checkmark
	• Spades, brushes, dustpan, mop and bucket (or similar readily available on site).				\checkmark
	• Absorbent material such as dry sand, tissues and toweling (all materials readily available on-site).				\checkmark
	• Containers including plaster bags, drums, etc.				\checkmark
	Absorbing materials.				\checkmark
	• Pumps.				\checkmark
	<i>Personal protective equipment includes as appropriate:</i>First-aid kits.				\checkmark
	• Safety helmet and goggles.				\checkmark
	Gloves which can resist chemical reaction.				\checkmark

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	\checkmark
5.9.1	Respirators and gas masks.	Contractor	Work Sites		\checkmark
	• Face visor and masks.				\checkmark
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.				
	<i>The emergency plans should include the procedures for:</i>spill prevention and precaution;				\checkmark
	• response actions; and	-			\checkmark
	• spill clean up and disposal.				\checkmark
	Spill prevention and precaution embraces good site practice and covers:good housekeeping practices;				\checkmark
	chemical storage requirements; and				\checkmark
	chemical transfer and transport.				\checkmark
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	
	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	(Chemical Wastes) (General) Regulation (Cap 354) and ETWBTC No.	\checkmark
	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	4

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 317,936m ₃ 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 Construction Contractor Work Sites					Construction Work Sites	actor Work Sites No. 12/20		
	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;				\checkmark					
	(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);				\checkmark					
	 (c) to reuse recycled aggregates in accordance with ETWBTC No. 12/2002 or any superseding circular(s); 	_			\checkmark					
	(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;	_				\checkmark				
	(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.				\checkmark					
	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	\checkmark					
	<i>Excavated Materials</i> 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. <i>Municipal Waste</i>	DSD's Contractor	Construction Work Sites		WDO (Cap.354) and ETWBTC No. 15/2003	\checkmark				
	Temporary refuse collection facilities should be set-up by the contractor and wastes should be stored in appropriate containers prior to collection and disposal.				\checkmark					
	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	\checkmark					

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
Ecology					
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. 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	DSD's Contractor	Construction Work Sites	EIAO	√ √
7.7.2	runoff. 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				√
	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.	DSD's Contractor	Construction Work Sites	EIAO	\checkmark
	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the remaining and surrounding natural stream habitats. Regularly check the work site boundaries to ensure that they are not breached and that no 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.				\checkmark

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	Compensation 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	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	V
Fisheries		D(D)		FIAO	
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

Non-compliance of mitigation measure Not applicable x

N/A

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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
Air Q	uality		•		
3.6.1	Specific	DSD's Contractor	Construction Work Sites	Air Pollution Control (Construction Dust) Regulation	
	As mentioned in Section 3.5, exceedances of 1-hour and 24-hour average TSP guideline levels have been predicted at most of the ASRs. Hence, mitigation measures are considered necessary in order to suppress the potential dust impact.			Regulation	v
	The dust suppression measures set out in the <i>Air Pollution Control (Construction Dust)</i> <i>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)</i> <i>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; 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; 				√ √
	 stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones; 				\checkmark
	• dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;				\checkmark

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	DSD's Contractor	Construction Work	Air Pollution Control (Construction Dust)	\checkmark	
	or hardcores;	Contractor	Sites	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;				\checkmark	
	• 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;				\checkmark	
	 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; 				\checkmark	
	 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; 				\checkmark	
	 all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; 				\checkmark	
	 vehicle speed should be limited to 10 kph except on completed access roads; 	-			\checkmark	
	• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;				\checkmark	
	• 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					\checkmark
	• 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.				\checkmark	
Noise 4.6.1	During Construction	DSD's	Construction	PN 2/93 Noise from		
		Contractor	Work	Construction Activities &		
	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		Sites	EIAO	\checkmark	
	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: only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works; 	-			\checkmark	
	 machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	1			\checkmark	

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 Activities &	\checkmark
	• mobile plant should be sited as far away from NSRs as possible; and			EIAO	\checkmark
	• material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				\checkmark
	 For Drill and Blast Works Charge mass per delay should be decreased by minimising the number of blastholes firing on each delay. 				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
	 For TBM Tunnelling 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. 				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 construction	DSD's Contractor	Project Area	NCO & EIAO	
	only well-maintained plant should be operated on-site;	-			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				
	• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs.				N/A
	<u>Couality</u>				
5.9.1	During Construction Mitigation measures and a spill control and response plan have been prepared for works at	DSD's Contractor		Practice Note for Professional Persons with regard to site drainage	\checkmark
	the intakes and work sites.			(ProPECC PN 1/94) and	
	Precautions to be taken at any time of year when rainstorms are likely:			WQO	\checkmark
	 Temporarily exposed surfaces should be covered e.g. by tarpaulin. Temporary access roads should be protected by crushed stone or gravel. 	4			\checkmark
	 Trenches should be dug and backfilled in short sections. Measures should be taken to minimize the ingress of rainwater into trenches. 	-			\checkmark
	Actions to be taken when a rainstorm is imminent or forecast:Silt removal facilities, should be checked to ensure that they can function properly.				✓

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

IA ef.	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.				\checkmark
9.1	• Adequate space for handling of the containers shall be provided	DSD's	Construction	WQO	\checkmark
	• Spill response kits shall be located adjacent/near to the storage areas.	Contractor	Work Sites		\checkmark
	• A log of chemical wastes shall be maintained.				\checkmark
	• Incompatible chemicals shall be stored separately.				\checkmark
	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:				\checkmark
	• Only trained personnel who are equipped with protective clothing and equipment shall be allowed to enter the spillage area for clean up.				\checkmark
	• Spills shall be transferred appropriate back into containers using suitable equipment.				\checkmark
	• Absorbent materials shall be used to clean up the spills and shall be disposed of as chemical wastes.				\checkmark
	• Where appropriate suitable solvents may be used to clean the contaminated area after removal of all contaminated materials.				\checkmark
	• All necessary protective devices, safety equipment, containers and clean up materials for emergency use shall be maintained to a high standard.				\checkmark
	3 Spill Clean Up and Disposal				
	Effect the response plan.			\checkmark	
	Control the leakage and absorb the spillage using suitably absorbent materials.				\checkmark
	Provide safety equipment and personal protective equipment for handling of chemical wastes would be similar to that for handling of chemicals.			\checkmark	
	Safety equipment includes but is not limited to:Fire extinguishers.				\checkmark
	• Spades, brushes, dustpan, mop and bucket (or similar readily available on site).	-			\checkmark
	• Absorbent material such as dry sand, tissues and toweling (all materials readily available on-site).				\checkmark
	Containers including plaster bags, drums, etc.				\checkmark
	Absorbing materials.	-			\checkmark
	• Pumps.				\checkmark
	<i>Personal protective equipment includes as appropriate:</i>First-aid kits.				
	• Safety helmet and goggles.				\checkmark
	Gloves which can resist chemical reaction.	1			\checkmark

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	\checkmark
5.9.1	Respirators and gas masks.	Contractor	Work Sites		\checkmark
	• Face visor and masks.				\checkmark
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;				\checkmark
	• response actions; and	-			\checkmark
	• spill clean up and disposal.				\checkmark
	Spill prevention and precaution embraces good site practice and covers:good housekeeping practices;				\checkmark
	chemical storage requirements; and				\checkmark
	chemical transfer and transport.				\checkmark
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	
	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	(Chemical Wastes) (General) Regulation (Cap 354) and ETWBTC No.	\checkmark
	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	1

Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status			
As referred to the section 6.4.1, the 317,936m ₃ 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 Construction Contractor Work Sites				Contractor Work Sites		
material and reuse it on site through the following:							
material;				\checkmark			
Transport and Works Bureau Technical Circular (ETWBTC) No. 15/2003 or any	-			\checkmark			
 (c) to reuse recycled aggregates in accordance with ETWBTC No. 12/2002 or any superseding circular(s); 				\checkmark			
31/2004 or any superceding circular(s), for disposal of C&D material;				\checkmark			
and control of C&D materials to avoid/reduce/minimise the generation of C&D material during construction.					\checkmark		
				\checkmark			
In addition, DSD will conduct site inspection to monitor the contractors' performance in the	DSD	Construction Work Sites	WDO (Cap.354) and ETWBTC No. 15/2003	\checkmark			
<i>Excavated Materials</i> 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.	DSD's Contractor	DSD's Construction	Construction WDO (Cap.354	WDO (Cap.354) and ETWBTC No. 15/2003	\checkmark		
Temporary refuse collection facilities should be set-up by the contractor and wastes should be stored in appropriate containers prior to collection and disposal.				\checkmark			
toilets if public facilities are not available.				\checkmark			
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	DSD's Contractor	Construction Work Sites	WDO (Cap.354), ETWBTC No. 15/2003 and ETWBTC No. 33/2002	\checkmark			
	 As referred to the section 6.4.1, the 317,936ms 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. 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 material in the workplace to prevent cross-contamination. 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. In addition, DSD will conduct site inspection to monitor the contractors' performance in the implementation of the WP and other relevant specified requirements. <i>Excavated Materials</i> 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. <i>Municipal Waste</i> 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	implement the measure ? As referred to the section 6.4.1, the 317,936ms 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 Under the contract, the contractor will be required to minimise the generation of C&D material and reuse it on site through the following: Contractor (a) to plan in the design and construction, methods to minimise the generation of C&D material; Contractor (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); Contractor (c) to reuse recycled aggregates in accordance with ETWBTC No. 12/2002 or any superceding circular(s); Contractor (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; DSD 's (e) to incorporate a Waste Management System into the WMP for effective management and control of C&D material in the workplace to prevent cross-contamination. DSD 's The contractor will be required to properly sort into inert C&D materials, metals, timber and other relevant specified requirements. DSD 's Excavated Materials should be segregated from other wastes to avoid contamination thereby ensuring acceptability at public filling areas and avoiding the eneed for disposal at landfill. DSD 's	implement the measure implement the measure ? As referred to the section 6.4.1, the 317,936ms of inert surplus material generated by the project is suitable for 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 Construction Under the contract, the contractor will be required to minimise the generation of C&D material and reuse it to noise through the following: Contractor Work Sites (a) to plan in the design and construction, methods to minimise the generation of C&D material and reuse it on site through the following: Contractor Work Sites (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); Contractor Contractor (c) to reuse recycled aggregates in accordance with ETWBTC No. 12/2002 or any superseding circular(s); Cole barterial; Contractor (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 materials, metals, timber and other non-inert C&D material in the workplace to prevent cross-contamination. DSD Construction 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 Excovated Materials Excovated Materials Sould be se	implement the measureimplement the measure ?standards for the measure to achieve ?As referred to the section 6.4.1, the 317,936m: 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 ContractorWDO (Cap.354), ETWBTC No. 152/2003, ETWBTC No. 12/2002 and ETWBTC No. 12/2002 and ETWBTC No. 12/2002 and ETWBTC No. 13/2004(a) to plan in the design and construction, methods to minimise the generation of C&D material;DSD's (ContractorWDO (Cap.354), ETWBTC No. 13/2004 at TWBTC No. 13/2004 at TWBTC No. 13/2003 or any superseding circular(s);(c) to submit at Waste Management Plan (WMP) in accordance with ETWBTC No. 13/2004 or any superceding circular(s);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);ETWBTC No. 12/2002 or any superseding circular(s);(d) to observe the requirements of the WDP for effective management and control of C&D materials to avoid represent relevant specified requirements.DSDIn addition, DSD will conduct site inspection to monitor the contractors' performance in the implementation of the WMP and other relevant specified requirements.DSDExcavated Materials Excavated Materials Materials Excavated Materials ScontactorDSD's Construction Work SitesWDO (Cap.354) and ETWBTC No. 15/2003Domestic effluent generated by the workforce will be directed to foul sever or chemical onitiest in public filling areas 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
	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
Ecology					
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. 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.	DSD's Contractor	Construction Work Sites	EIAO	✓ ✓
	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. <i>Good Construction Practice</i>	-			\checkmark
	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.	DSD's Contractor	Construction Work Sites	EIAO	\checkmark
	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the remaining and surrounding natural stream habitats. Regularly check the work site boundaries to ensure that they are not breached and that no	-			\checkmark
	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.				v √

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	Compensation 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	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	V
Fisheries		D(D)		FIAO	
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

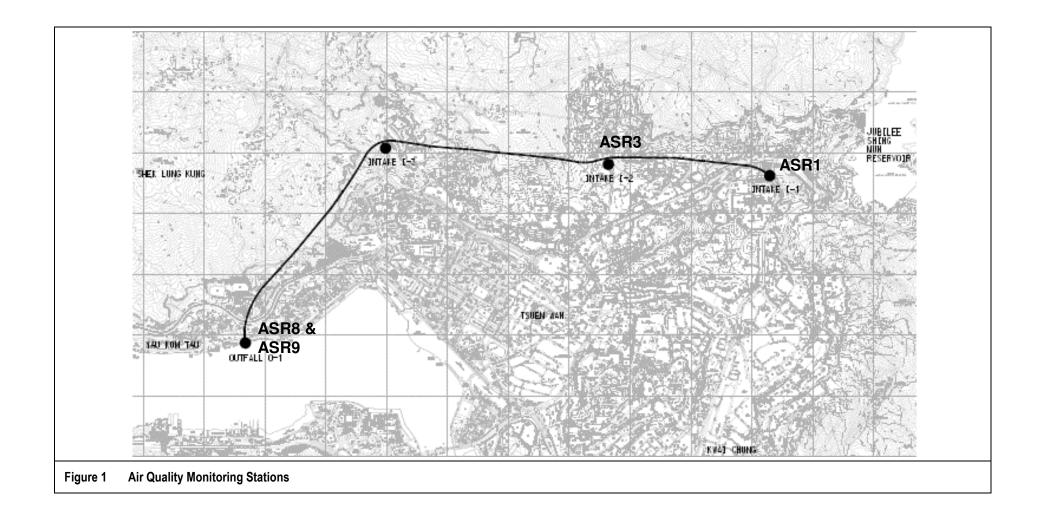
Non-compliance of mitigation measure Not applicable x

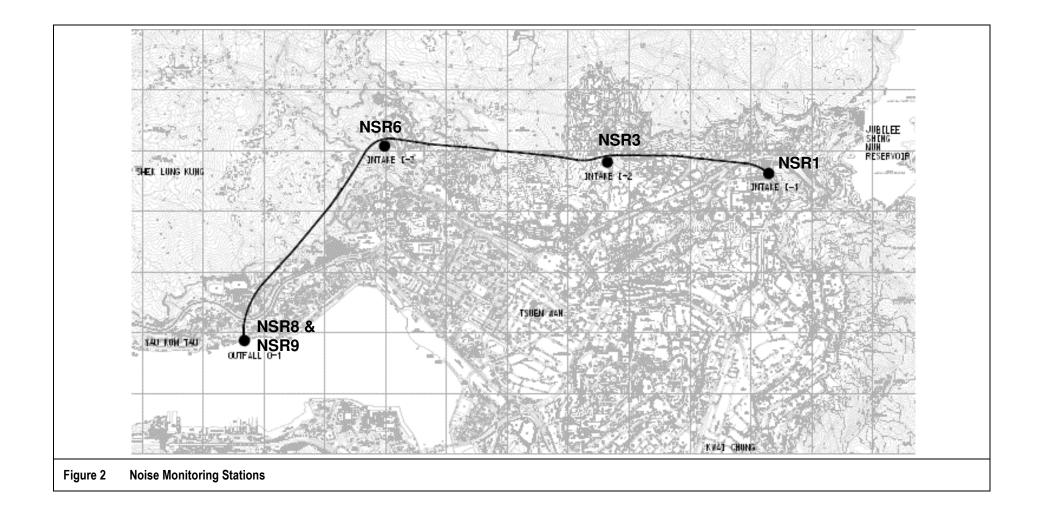
N/A

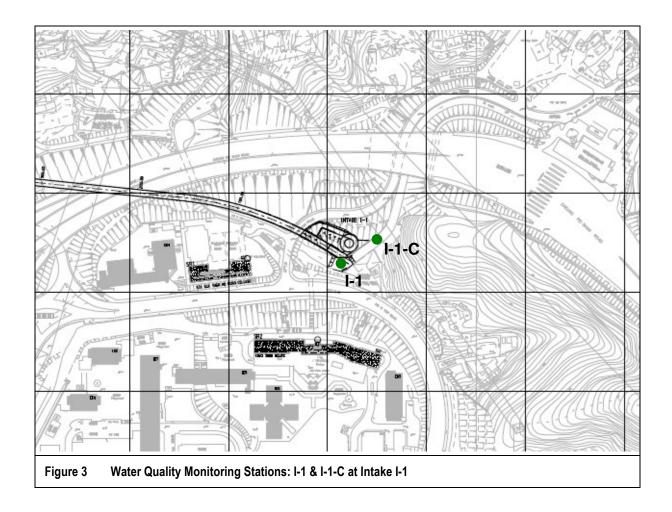


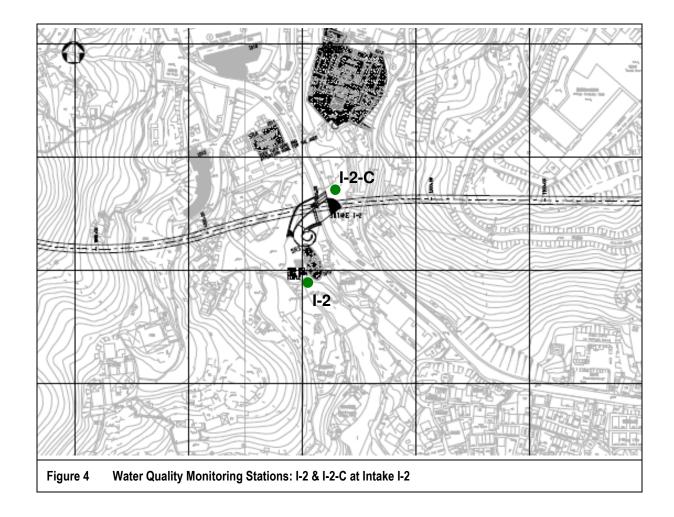
Appendix E

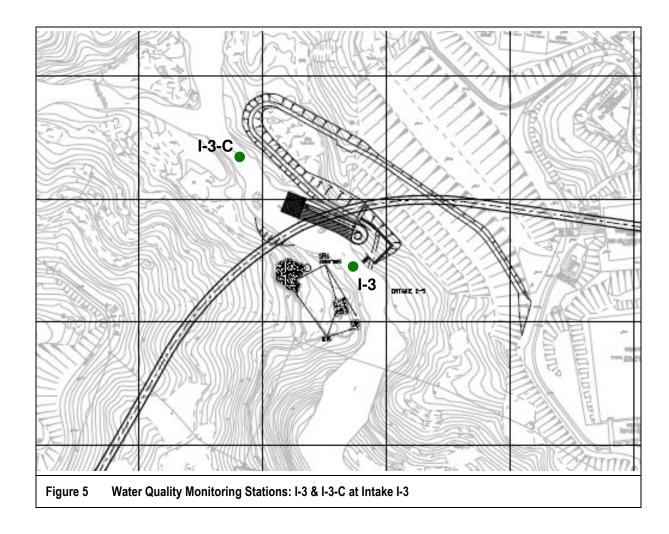
Monitoring Locations

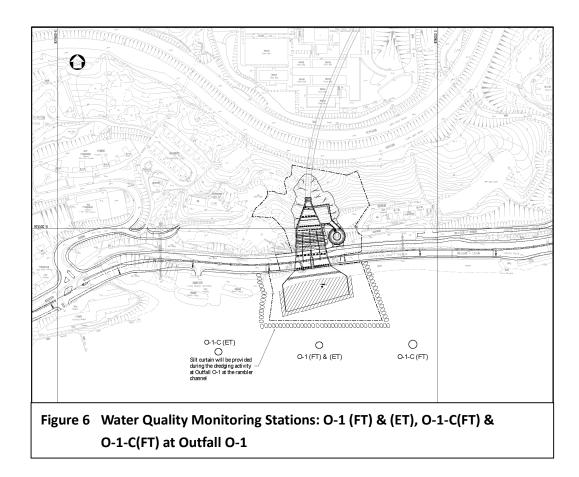








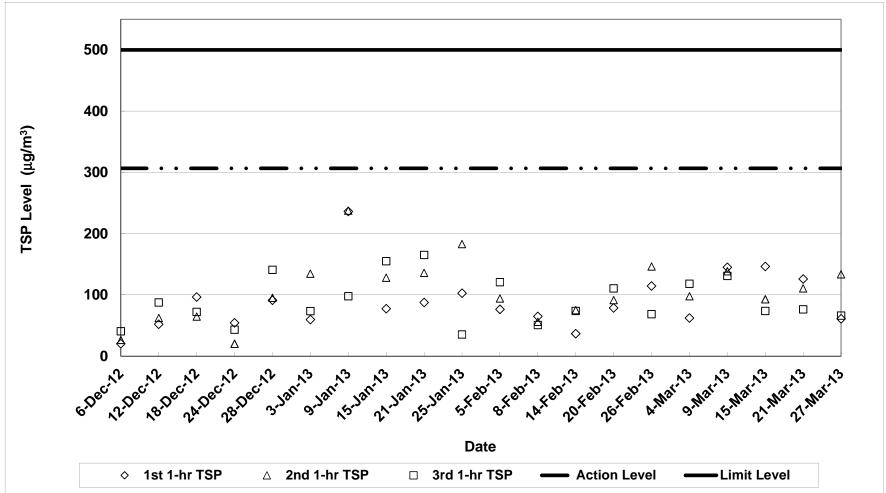




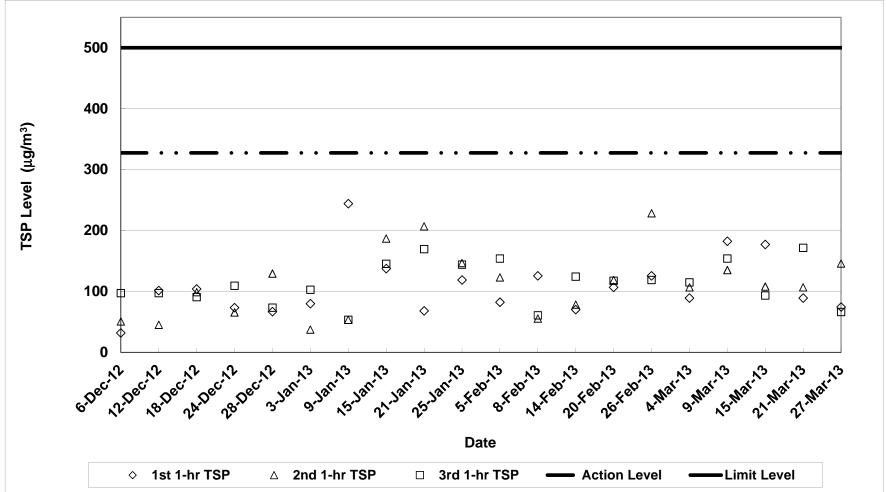


Appendix F

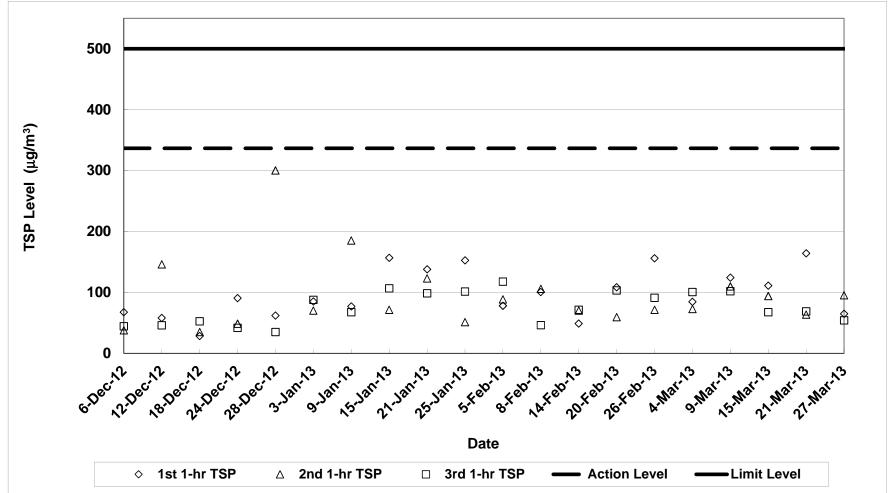
Monitoring Results



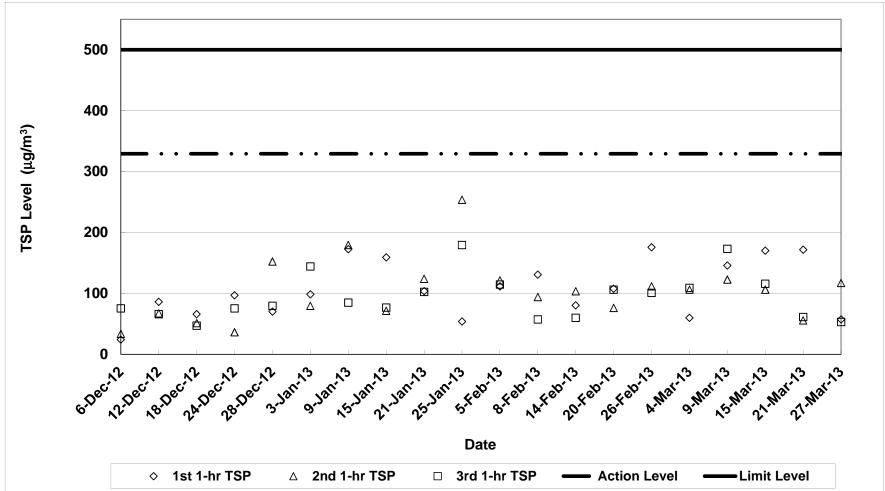
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Sik Sik Yuen Ho Fung College - Intake (ASR1) Dec-12 to Mar-13



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) Dec-12 to Mar-13

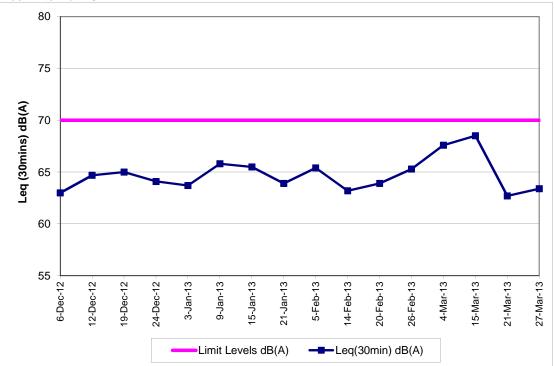


Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Long Beach Gardens - Outfall (ASR8) Dec-12 to Mar-13

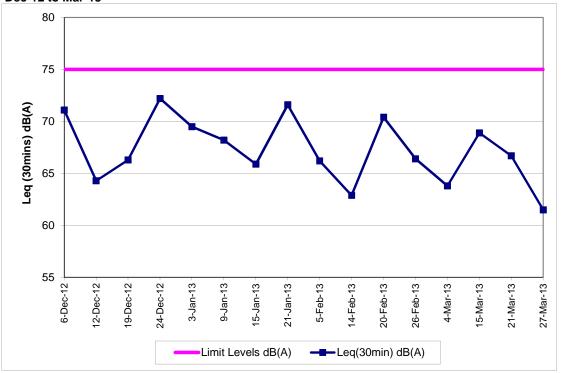


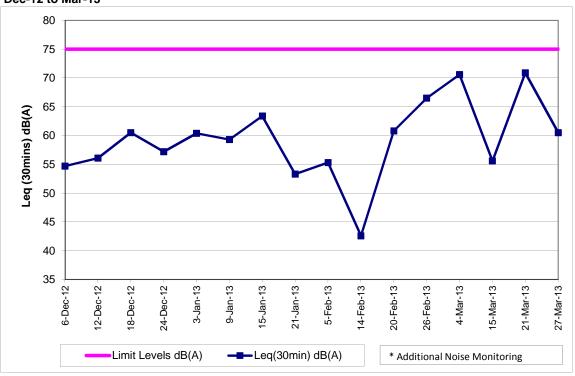
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Greenview Terrace - Outfall (ASR9) Dec-12 to Mar-13





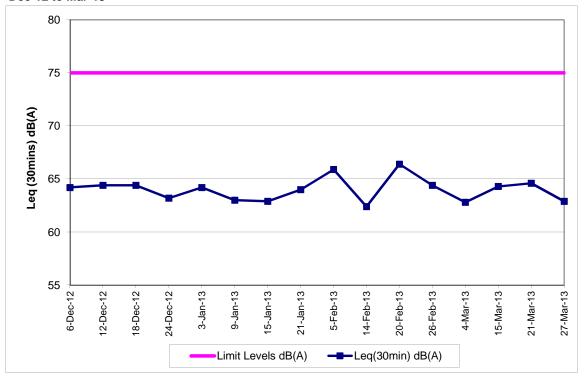
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Hong Hoi Chee Hong Temple (NSR 3) Dec-12 to Mar-13

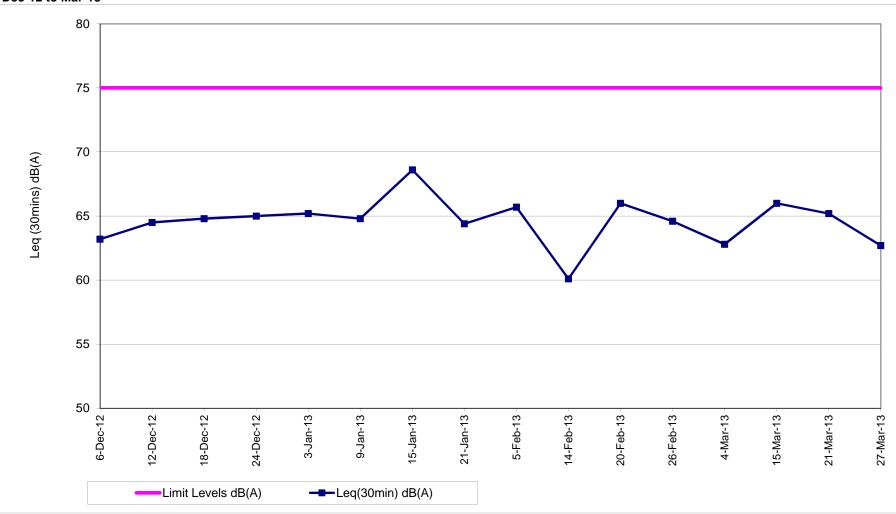




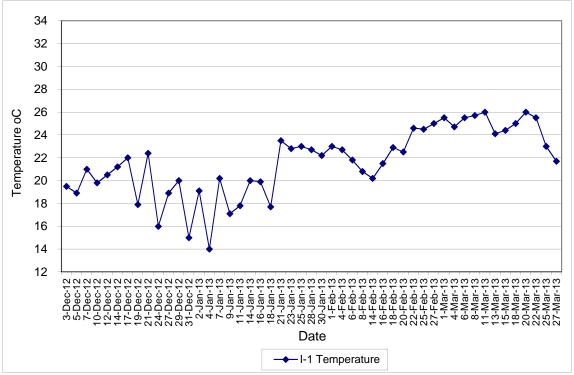
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Squatters (NSR 6) Dec-12 to Mar-13

Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Long Beach Gardens (NSR 8) Dec-12 to Mar-13



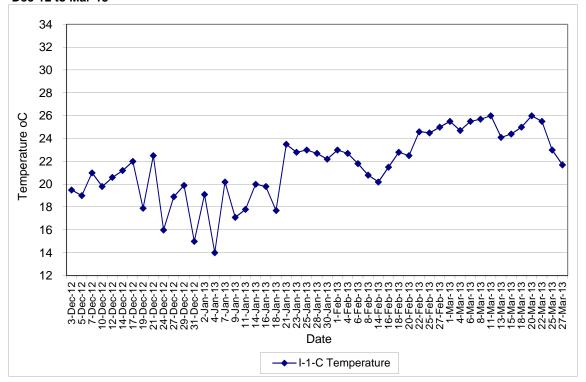


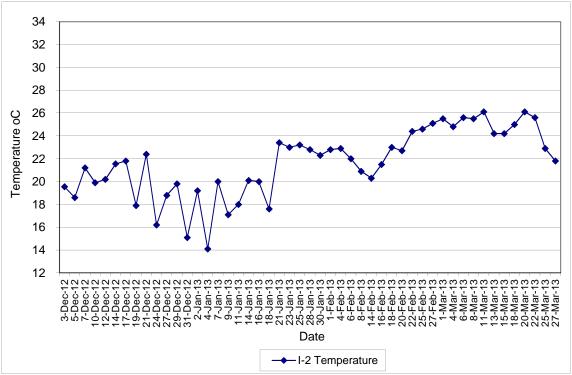
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Greenview Terrace (NSR 9) Dec-12 to Mar-13



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) Dec-12 to Mar-13

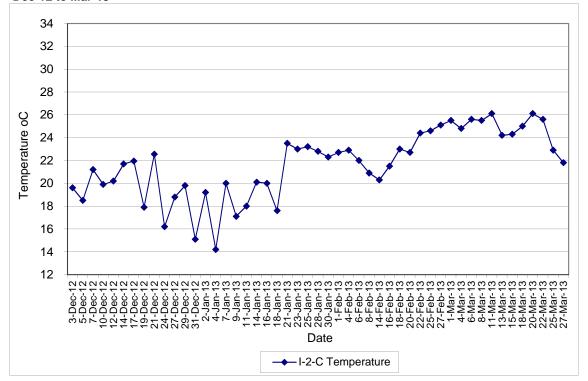
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) Dec-12 to Mar-13

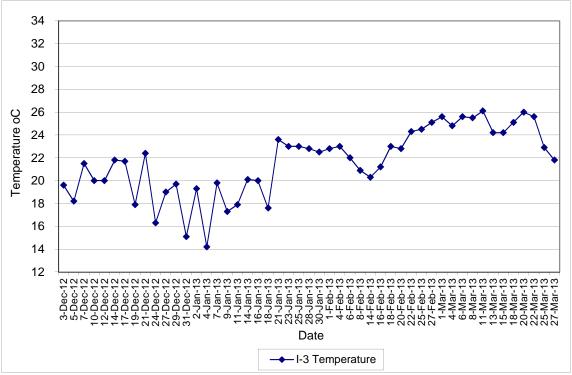




Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2) Dec-12 to Mar-13

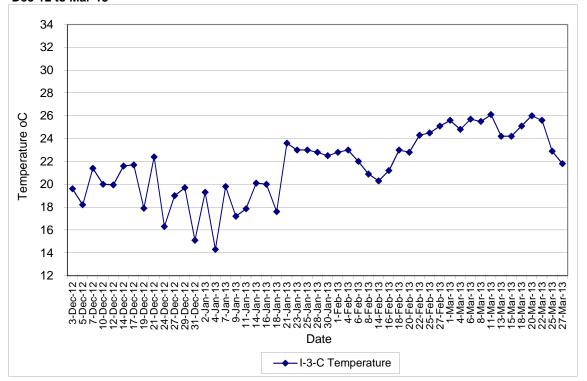
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Dec-12 to Mar-13

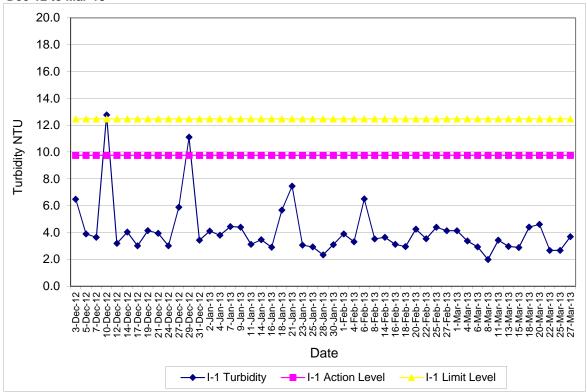




Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3) Dec-12 to Mar-13

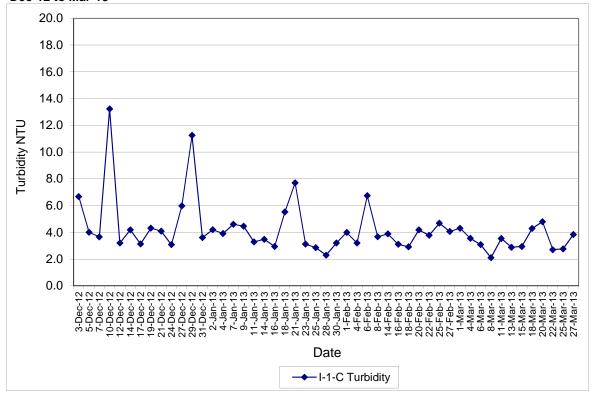
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C) Dec-12 to Mar-13

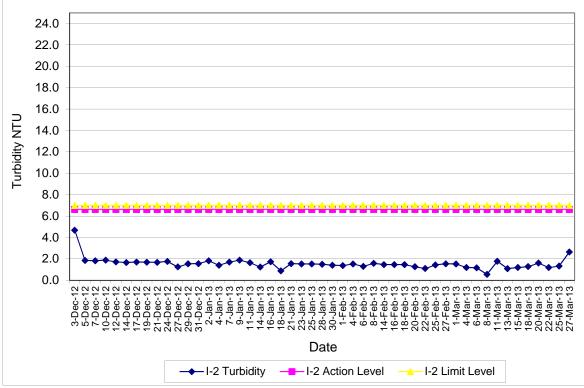




Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1) Dec-12 to Mar-13

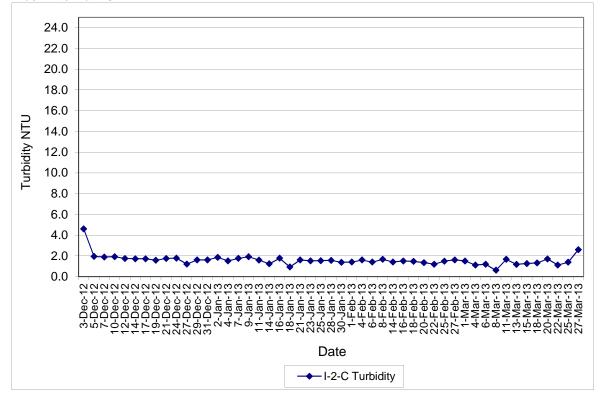
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) Dec-12 to Mar-13

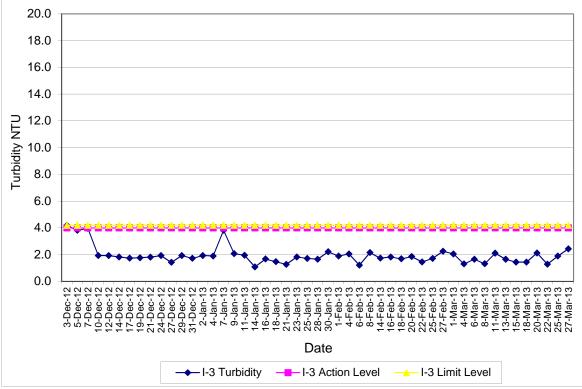




Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2) Dec-12 to Mar-13

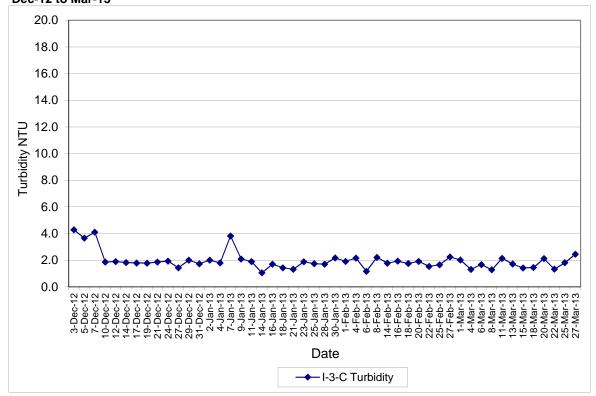
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Dec-12 to Mar-13



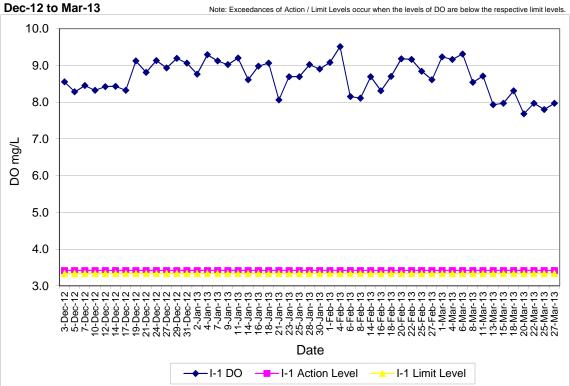


Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3) Dec-12 to Mar-13

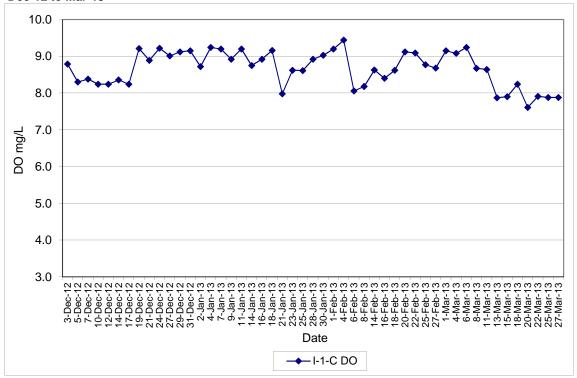
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C) Dec-12 to Mar-13

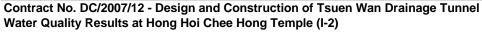


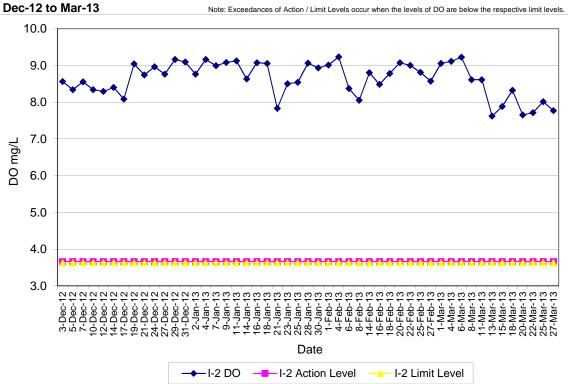
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



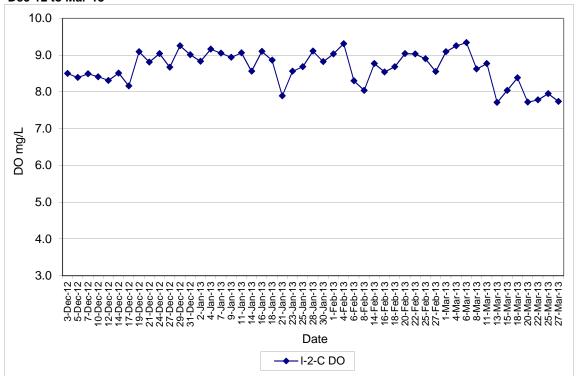
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) Dec-12 to Mar-13



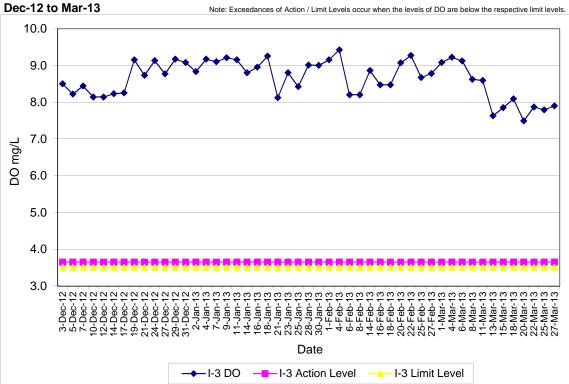




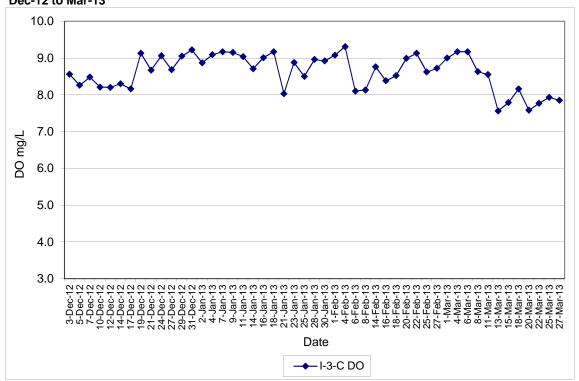
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Dec-12 to Mar-13



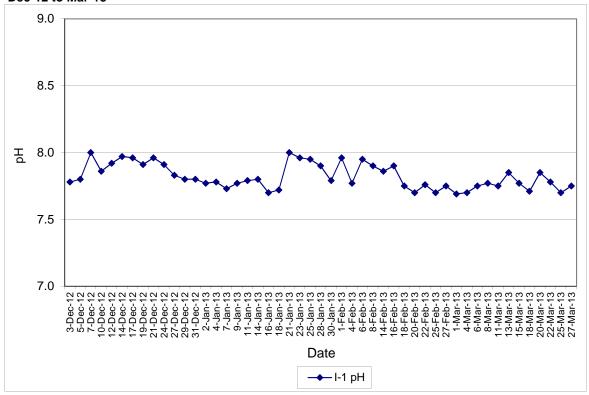
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3)



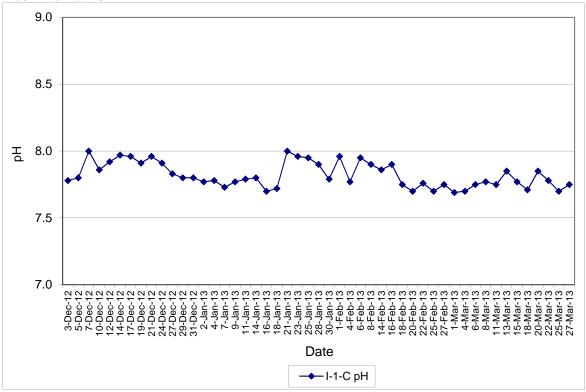
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C) Dec-12 to Mar-13



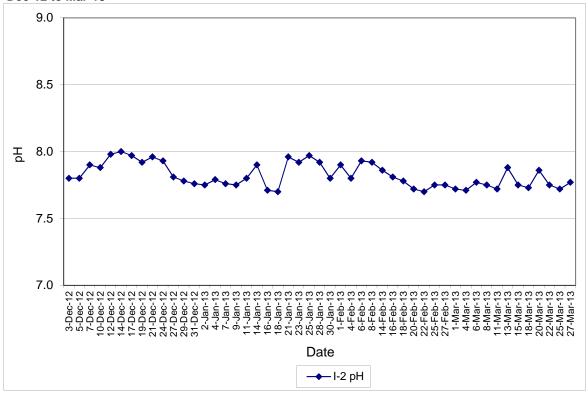
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1) Dec-12 to Mar-13



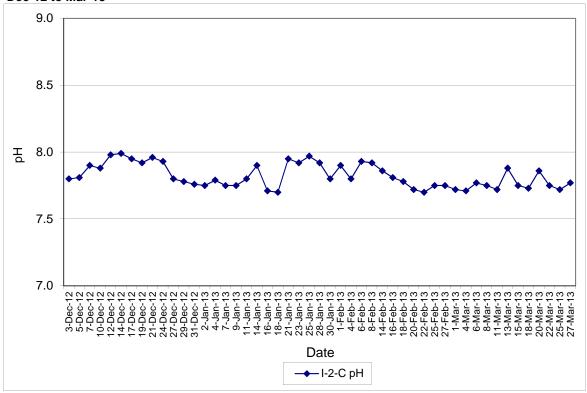
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) Dec-12 to Mar-13



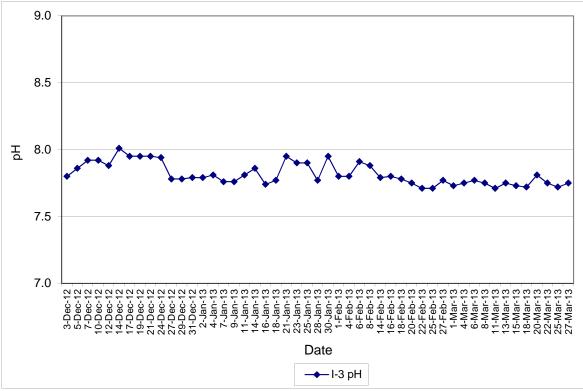
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2) Dec-12 to Mar-13



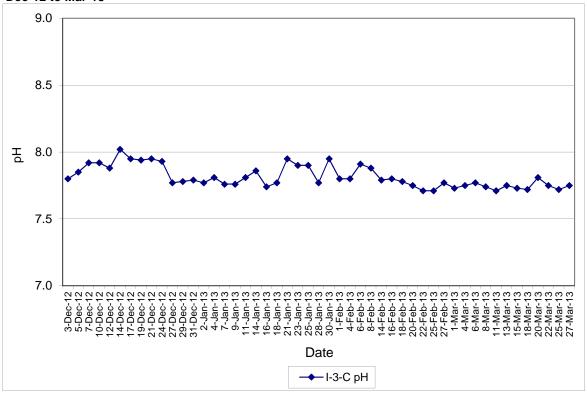
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) Dec-12 to Mar-13

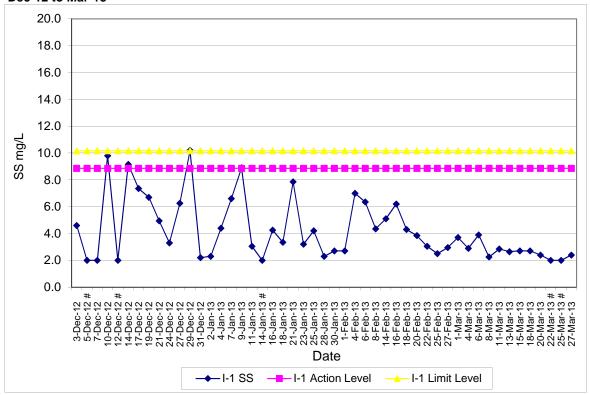


Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3) Dec-12 to Mar-13



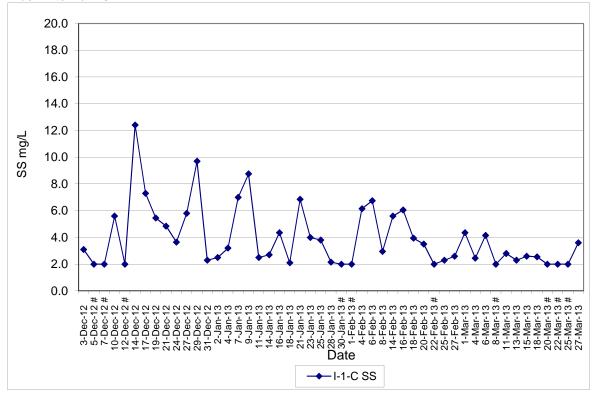
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C) Dec-12 to Mar-13





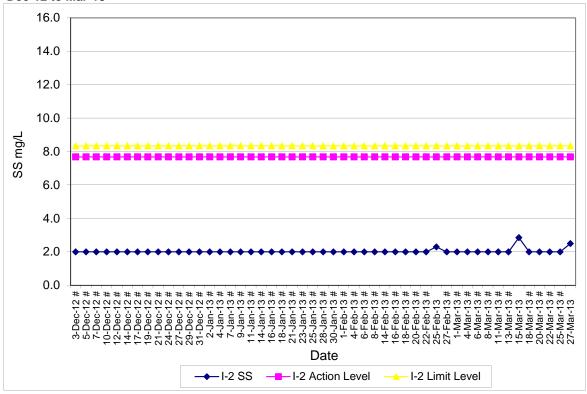
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1) Dec-12 to Mar-13

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) Dec-12 to Mar-13

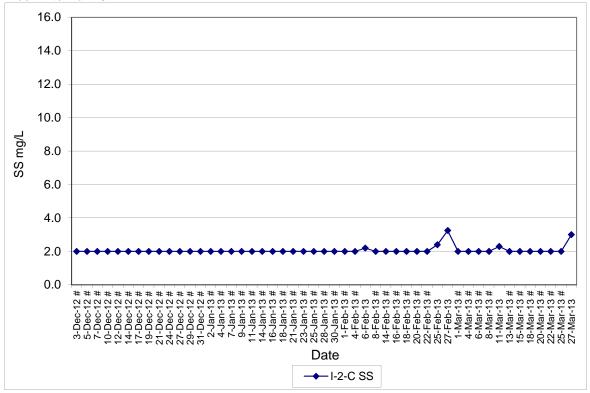


Note:# - For average SS level smaller than 2 mg/L, the level is plotted as 2 mg/L in the graph

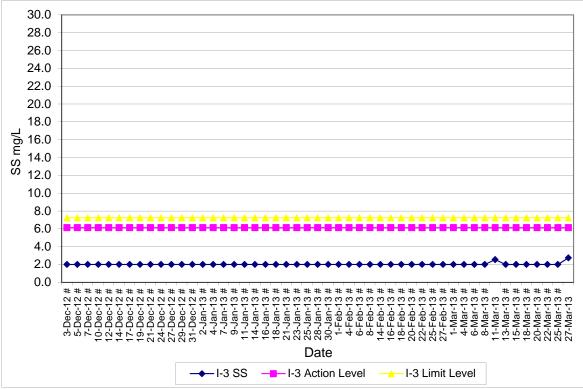
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2) Dec-12 to Mar-13



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) Dec-12 to Mar-13

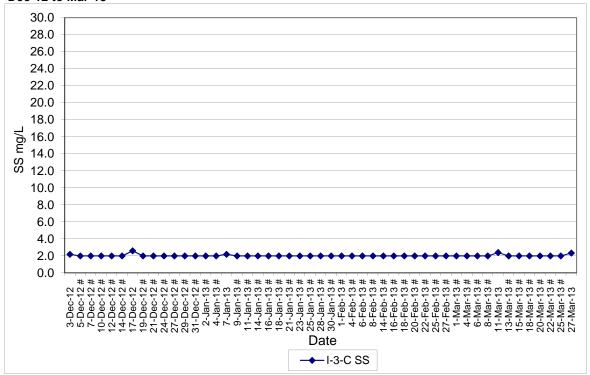


Note:# - For average SS level smaller than 2 mg/L, the level is plotted as 2 mg/L in the graph



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3) Dec-12 to Mar-13

Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3-C) Dec-12 to Mar-13



Note:# - For average SS level smaller than 2 mg/L, the level is plotted as 2 mg/L in the graph



Appendix G

Interim Notifications of Environmental Quality Limits Exceedances

Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	4-Jan-13
Time	1:10 PM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	4.40
Control Station	I-1-C
Measured Level at the Control Station (mg/L)	3.20
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action / limit level, but higher than 130% of the SS level of the control station (I-1-C). Backfilling of soil and filter granular at the top of box culvert was undertaken during the monitoring day. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) wastewater was collected and diverted to wastewater treatment plant for treatment before discharge.
Remarks	None

Prepared by:

Fan Cheong Tsang

Designation: Environmental Team Leader

Signature:

Hangtandkoof

Date:

11-Jan-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 04-Jan-13



Photo taken at I-1



Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	9-Jan-13
Time	1:22 PM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	8.90
Control Station	I-1-C
Measured Level at the Control Station (mg/L)	8.75
Possible reason for Action or Limit Level Non-compliance	The measured SS level was higher than the baseline action level, but lower than 120% of the SS level of the control station (I-1-C). Backfilling of soil and compaction at slope, installation of trash grill supporting frame, and installation of rebar for retaining wall upper part were undertaken during the monitoring day. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) wastewater was collected and diverted to wastewater treatment plant for treatment before discharge.
Remarks	None
Prepared by:	Fan Cheong Tsang
Designation:	Environmental Team Leader

Signature:

Hauftentheof

Date:

17-Jan-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 09-Jan-13



Photo taken at I-1



Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	11-Jan-13
Time	3:12 PM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	3.05
Control Station	I-1-C
Measured Level at the Control Station (mg/L)	2.50
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action level, but higher than 120% of the SS level of the control station (I-1-C). Backfilling of soil and compaction at slope, installation of trash grill supporting frame, excavation for U-channel, and slope reinstatement were undertaken during the monitoring day. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) wastewater was collected and diverted to wastewater treatment plant for treatment before discharge.
Remarks	None
Prepared by:	Fan Cheong Tsang
Designation:	Environmental Team Leader

Signature:

Hangtentheog

Date:

21-Jan-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 11-Jan-13



Photo taken at I-1



Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	18-Jan-13
Time	3:12 PM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	3.35
Control Station	I-1-C
Measured Level at the Control Station (mg/L)	2.10
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action / limit level, but higher than 130% of the SS level of the control station (I-1- C). Backfilling of soil and compaction at slope at spiral ramp west, dismantling formwork of U-channel at the top of box culvert, slope reinstatement at spiral ramp east, installation of trash grill, and concreting for retaining wall upper part were undertaken during the monitoring day. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) wastewater was collected and diverted to wastewater treatment plant for treatment before discharge.
Remarks	None

Prepared by:

Designation: Signature:

Houghandhoog

Fan Cheong Tsang Environmental Team Leader

Date:

28-Jan-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 18-Jan-13



Photo taken at I-1



Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	30-Jan-13
Time	2:14 PM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	2.70
Control Station	I-1-C
Measured Level at the Control Station (mg/L)	<2.00
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action / limit level, but higher than 130% of the SS level of the control station (I-1- C). Backfilling of soil and compaction at slope at spiral ramp west, installation of 525mm drainage pipe, and installation of trash grill were undertaken during the monitoring day. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) wastewater was collected and diverted to wastewater treatment plant for treatment before discharge.
Remarks	None
Prepared by:	Fan Cheong Tsang

Designation:

Signature:

Environmental Team Leader Hayfrencheory

Date:

7-Feb-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 30-Jan-13



Photo taken at I-1



Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel			
Date	8-Feb-13			
Time	10:57 AM			
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)			
Parameter	Suspended Solids (SS)			
Action & Limit Levels (mg/L)	8.85 / 10.17			
Measured Level (mg/L)	4.35			
Control Station	I-1-C			
Measured Level at the Control Station (mg/L)	2.95			
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action / limit level, but higher than 130% of the SS level of the control station (I-1- C). General cleaning, dsmantling formwork of 300mm and 525mm drainage pipe concrete surround at slope at spiral ramp west, erecting formwork of catch pit and placing concrete at slope at spiral ramp west, and installation of trash grill were undertaken during the monitoring day. No wastewater directly discharged from the site was observed. Although the SS level at I-1 was about 47% higher than at I-1-C, no direct sources of impact from the site were identified. As such, no further mitigation measures or actions were recommended.			
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) wastewater was collected and diverted to wastewater treatment plant for treatment before discharge.			
Remarks	None			

Prepared by:

Signature:

Fan Cheong Tsang

Environmental Team Leader

Designation:

Haytentheog

Date:

19-Feb-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 08-Feb-13



Photo taken at I-1



Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	1-Feb-13
Time	3:16 PM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	2.70
Control Station	I-1-C
Measured Level at the Control Station (mg/L)	<2.00
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action / limit level, but higher than 130% of the SS level of the control station (I-1-C). Backfilling soil and compaction at slope at spiral ramp west and installation of trash grill were undertaken during the monitoring day. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) wastewater was collected and diverted to wastewater treatment plant for treatment before discharge.
Remarks	None

Prepared by:

Fan Cheong Tsang

Designation: Environmental Team Leader

Signature:

Haugtentheog

Date:

5-Mar-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 01-Feb-13 $\,$



Photo taken at I-1



Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Limit Level Non-compliance

r	
Project	Tsuen Wan Drainage Tunnel
Date	15-Mar-13
Time	2:06 p.m.
Monitoring Location	Hong Hoi Chee Hong Temple (I-2)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	7.68 / 8.34
Measured Level (mg/L)	2.85
Control Station	I-2-C
Measured Level at the Control Station (mg/L)	<2.00
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action / limit level, but higher than 130% of the SS level of the control station (I-2-C). Remedial works for air vent shaft and main adit, dismantling steel brackets of in-situ staircase at lower man access shaft, erecting formwork for top slab of vortex shaft, casting of granular bedding, erecting formwork and concreting of draw pit adjacent to man access shaft, concreting for upstand concrete plinth of trash grill, and installation of handrail and cable riser at lower man access shaft were undertaken during the monitoring day. No direct disturbance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measure was provided on-site during monitoring: (1) Existing stream was disconnected and stream water was diverted from upstream to downstream so that the works area was maintained in dry condition.
Remarks	None
Prepared by:	Fan Cheong Tsang

Designation: Environmental Team Leader

Signature:

Haytentheog

Date:

27-Mar-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Hong Hoi Chee Hong Temple (I-2) on 15-Mar-13



Photo taken at I-2



Photo of I-2-C

Interim Notification of Environmental Quality Limit Exceedance

Incident Report on Action Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	20-Mar-13
Time	10:26 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solids (SS)
Action & Limit Levels (mg/L)	8.85 / 10.17
Measured Level (mg/L)	2.40
Control Station	I-1-C
Measured Level at the Control Station (mg/L)	<2.00
Possible reason for Action or Limit Level Non-compliance	The measured SS level was lower than the baseline action / limit level, but higher than 120% of the SS level of the control station (I-1- C). Site cleaning and tidying, construction of concrete pavement and installation of handrail were undertaken during the monitoring day. No direct disturbance was observed from the site. Therefore, the exceedance was considered to be contributed by natural variation. Since the exceedance was non-project related, no further action was required.
Actions taken / to be taken	The following mitigation measures were provided on-site during monitoring: (1) Wastewater was collected and diverted to Main Tunnel.
Remarks	None

Prepared by:

Fan Cheong Tsang

Designation:

Environmental Team Leader

Signature:

Hangtendlog

Date:

3-Apr-13

Photographic record for exceedance of Suspended Solids (SS) recorded at Sik Sik Yuen Ho Fung College (I-1) on 20-Mar-13



Photo taken at I-1





Appendix H

Complaint Log

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/ ObservationsIn 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 ActionThe 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 wastewater treatment plant, tanker should be used.	Closed
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	<u>Findings/ Observations</u> 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	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
				construction site on 8 May 2009. Site investigation was also carried out by EPD with the Contractor on 14 May 2009.	 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, the complaint is considered not justifiable since no 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	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	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
				and dusty at the outfall construction site on 14 May 2009.	 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 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_{eq.30 min}) 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	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					The measures were well in place and seemed effective during the measurement.	
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.	 <u>Findings/ Observations</u> 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. <u>Conclusion/Remedial Action</u> 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)/M45/5 00/02480, 02500) from Greenview Terrace regarding to daytime construction noise exceedance	<u>Findings/ Observations</u> 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 Action and Limit Levels from 6 July 2009 to 25 August 2009. <u>Conclusion/Remedial Action</u> The dust complaint on 22 July 2009 was due to the soil nailing works. The	Same Case with Complai nt No. 11

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
				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.	 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. 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 and monitoring data under regular EM&A requirements, noise level (L_{eq. 30 min}) 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	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					2009. Noise levels ($L_{eq, 30 \text{ min}}$) were also re-measured after the implementation of the mitigation measures. Noise level ($L_{eq, 30 \text{ min}}$) 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.	
7	CIR-006	12 August 2009 at Outfall	Public through SOR	SOR has received a complaint (SOR ref: $(DC/2007/12)/M45/5$ 00/02527) from Greenview Terrace, via Apple Daily regarding to daytime construction noise level (L _{eq(30min)}) was sometimes more than 80 dB(A) and a large amount dust generated at the outfall construction site. The complaint date was corresponded to 12 August 2009.	 <u>Findings/ Observations</u> 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 Action and Limit Levels from 6 July 2009 to 25 August 2009. <u>Conclusion/Remedial Action</u> 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 (L_{eq(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 	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					 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 and monitoring data under regular EM&A requirements, noise level (L_{eq, 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 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_{eq, 30 min}) were also re-measured after the implementation of the mitigation measures. Noise level (L_{eq, 30 min}) from 4 Sep to 28 Sep 2009 was in the range of 70 to 73 dB(A) to the nearest integer. 	
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.	 <u>Findings/ Observations</u> 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. <u>Conclusion/Remedial Action</u> 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: A staff from the Contractor was designated to take the reading of Leq 	Same Case with Complai nt No. 11

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					 (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 and monitoring data under regular EM&A requirements, noise level (L_{eq, 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. Noise level (L_{eq, 30 min}) 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. 	
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)/M4 5/500/02546) from Long Bench Garden	<u>Findings/ Observations</u> 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	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
				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.	 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. <u>Conclusion/Proposed Action</u> 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 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)/M45/5 00/02628) was received from Greenview Terrace regarding to daytime construction noise level (Leq(30min)) was sometimes exceeded 75 dB(A)	<u>Findings/ Observations</u> 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. <u>Conclusion/Proposed Action</u> The documented complaint for noise is considered to trigger the action level and the Contractor was reminded to enhance the on-site noise	Same Case with Complai nt No. 11

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
				at the outfall construction site. The complaint date was corresponded to 22 August 2009.	 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 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 and monitoring data under regular EM&A requirements, noise level (L_{eq, 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 was maintained in twice per week to check whether the mitigation measures are effective. From the information of the Contractor, all the mitigation measures. Noise level (L_{eq, 30 min}) 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. Noise level at Greenview Terrace. 	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
11	CIR-010	24 September 2009 at Outfall	Public through SOR	A complaint (SOR ref: (DC/2007/12)/M45/5 00/02749) was received from Greenview Terrace regarding to daytime construction noise level (Leq(30min)) was sometimes exceeded 75 dB(A) at the outfall construction site.	 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 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. 	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					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-011	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.	 <u>Findings/ Observations</u> 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 <u>Conclusion/Proposed Action</u> Based on our site inspection, the complaint for dust is 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.	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
13	(DC/200 7/12)/ M45/50 0/2923 & email on 11 Novemb er 2009 from MCSJV	9 November 2009 at Outfall	Greenview Terrace through EPD	Movable noise barrier was not placed close enough to the piling machine.	 Immediate Action The rig was re-orientated and the barrier was placed closed to the drilling head. Follow-up Action 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. 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. The follow up action was checked and a permit to dig system has been implemented. 	Closed
14	(DC/200 7/12)/ M45/50 0/2978 & email on 19 Novemb er 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. The mitigation measures were strictly followed as stated in the proposal. The follow up action and relevant records was checked. 	Closed
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/ ObservationsThe effluent discharge on 19 January 2010 was due to the leakage ofGabion wall at I3. The water from the rock drilling work was flowingthrough the gap of the Gabion Wall to the watercourses at I3.Immediate ActionThe contractor had sealed the gap at the Gabion Wall immediately afterthe incident.Conclusion/Proposed ActionBased on our site inspection, the complaint was due to leakage of Gabion	Closed.

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					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.	
16 C	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 investigation on the subject area in response to complaint. The noise mitigation measures during the site investigation were recommended as follows:	Closed.
					 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. Noise insulation materials were used to enclose the drilling rig tightly. <u>Conclusion/Proposed Action</u> 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. 	
17	CIR-13	21 January 2010 at Intake-3	Public through	EPD has received a public complaint (EPD ref:	Refers to Investigation /Mitigation Action for Complaint No. 16.	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
		construction site	EPD	EP3/N22/RW/01444- 10) regarding daytime construction noise at Intake-3 construction site on 21 January 2010.		
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 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. MH2 manhole is located middle section of Lo Wai Road. MH2 manhole is located middle section of Lo Wai Road. MH2 manhole is located middle 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 pupping to MH3 and 	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					apply the discharge license for the Lo Wai site. <u>Conclusion/Proposed Action</u> 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 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.	 <u>Findings/ Observations</u> 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. <u>Conclusion / Proposed Action</u> 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; Use of rock splitter (which is a relatively quieter method in contrast to rock breaker); and Noise insulation blanket enclosing the crane engine of derrick barge. 	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					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.	
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 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 for rock drilling and rock breaking; Water spraying for C&D material before loading and unloading to 	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					 derrick barge; Water spraying for the exposed surface and the haul road; Water spraying for trucks and vehicles at the site exit. <u>Construction Noise</u> 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; Semi-enclosed muck out process at muck hopper (with noise curtain underneath); Use of temporary noise enclosure for piling work at Castle Peak Road; Noise insulation blanket enclosing the crane engine of derrick barge; Additional noise blanket along the railings of the spiral ramp; and Use of rock splitter (which is a relatively quieter method in contrast to rock breaker). 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 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. 	
					Conclusion / Proposed Action1.Dark Smoke Emission from Derrick BargeDark smoke emitted from the derrick barge was considered a stand-alone	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					 incident and was specific to the derrick barge being complained. No further complaint was received after the barge was replaced by another. 2. <u>Construction Dust</u> Based on our site inspection and monitoring results, 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. <u>Construction Noise</u> 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. 	
22	CIR-17	30 June 2011 at Intake-3 construction site	Public through EPD	EPD has received a public complaint (EPD ref: EP3/N22/RW/12759- 11) regarding construction dust and daytime construction noise from the Intake-3 construction site on 30 June	 <u>Findings / Observations</u> Checking with the site log, construction activities conducted at I-3 were breaking / mucking out and rock splitting inside the shaft, curing of planter wall, backfilling at tree pit, slope reinstatement and backfilling at PB wall, monitoring of de-formation monitoring point, and general site cleaning and housekeeping. The Contractor and ET undertook site investigations on the subject area on 8 and 20 July 2011. The following dust and noise mitigation measures were implemented during site investigations: <u>Dust Mitigation Measures (implemented prior to the complaint)</u> All the main haul road was paved; 	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
				2011.	 Material transported by a dump truck was covered with impervious sheeting; Exposed soil slope surface near the PB wall was covered by tarpaulin sheets; Hoardings (with 2.4 m high) were provided along the site boundary next to the access road; Regular watering on haul roads by sprinklers was observed; Vehicle speed limit of 5 km per hour was implemented within the construction site; Water spraying for dust suppression of on-going "dusty" activities (essentially including drilling and rock breaking within the shaft of about 16.5 m below ground) was observed; Construction Noise Mitigation Measures (implemented prior to the complaint) Temporary noise barriers (about 4 m high) were erected on the shaft concrete block wall; Quiet plant (rock splitter) was employed for shaft excavation; Noise from generator was screened by a temporary noise barrier; and Breaker heads of rock breaking machine were wrapped with sound insulating materials. 	
					2. <u>Conclusion / Proposed Action</u> As there are no substantial noise sources at I-3 other than the project construction activities, it is considered that the noise complaint is project-related. In accordance with the Event / Action Plan for Construction Noise specified in the EM&A Manual, noise monitoring frequency at the squatters (NSR 6) near I-3 were increased to twice per week (from 11 July 2011 to 30 July 2011) due to this complaint. The measured noise levels (L _{eq, 30 min}) are shown in the following table. The measured noise levels, ranged from 60.0 dB(A) to 68.9 dB(A), are well below the limit level (75 dB(A)) in accordance with the EIAO-TM. During the site investigations on 8 and 20 July 2011, the above noise mitigation measures were continuously implemented. No further noise complaint was received in July 2011. Thus, with the consideration of the noise measurement results	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint			Inves	stigation / N	litigation Act	ion	Status			
					construe	ction noise se mitiga	e is consid	lered acce	eptable. Th	nitigation measures, the ne Contractor will maintain bove to minimise noise				
					Date	DateStart TimeEnd TimeLeg, dB(A)Limit Level, dB(A)Major Construction Noise Sources6-Jul-1111:1711:4760.075Crane operation14-Jul-1116:0016:3067.075Drilling and rock breaking15-Jul-1117:0017:3068.975Drilling and rock breaking18-Jul-1113:3014:0065.775Drilling and crane operation								
					6-Jul-11									
					14-Jul-11									
					15-Jul-11									
					18-Jul-11									
					20-Jul-11	13:10	13:40	68.1	75	Drilling and rock breaking				
					28-Jul-11	13:35	14:05	64.9	75	Drilling and excavation				
					30-Jul-11		09:40	63.6	75	Drilling and crane operation				
					Remark: The loca and the u	ation of pov utilization tir	wered mec me for eacl	hanical eq n PME may	uipment (PM v not be cons	HE) will change occasionally stant.				
					As observed during the site investigation on 8 July 2011, dust suppression measures aforementioned were implemented on site. Additional dust control measures have been implemented at I-3 by the Contractor in early July 2011 to further suppress dust emission:									
					2) Wat mad	2) Water hoses have been installed to the drilling rig within the tailor- made frame during drilling; and								

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status			
				 The Contractor have continuously applied all the above mentioned dust suppression measures to minimise airborne dust generation, as observed during the site investigation on 20 July 2011. No dust dispersion from the construction site was observed during the site investigations on 8 and 20 July 2011. In addition, no further construction dust complaint is received in July 2011. As such, it is considered that the dust suppression measures implemented on site are adequate to minimise dust nuisance. The Contractor will maintain these measures on site for construction dust control. 3. Follow Up Action(s) For this complaint, the Contractor has implemented adequate mitigation measures for construction dust and noise control. As no further complaint is received in July 2011, it is considered that the complaint is closed. Nevertheless, the ET will continuously review the condition of the site during the routine site inspections, inspect proper functioning of the aforementioned construction dust and noise mitigation measures, and provide advice to the Contractor to be vigilant and tailor mitigation measures in advance of future planned site work activities. 					
23	CIR-18	2 September 2011 at Sheung Kok Shan near Intake 2	Mr. Cheung through EPD	EPD have received a complaint from Mr. Cheung, who lived in Sheung Kok Shan, concerning construction noise arising from the use of the TBM at night time. He alleged that the noise emanated from the tunnelling works had caused	1. <u>Findings / Observations</u> According to the approved EIA Report, it is recommended to restrict the tunnel boring machine (TBM) operation in the non-restricted period for tunnel section from chainage 1295 m to 1449 m. Checking with the site log, the Contractor has strictly followed the EIA recommendation for the TBM operation within the non-restricted period between the chainage 1295 m to 1449 m. TBM moved from CH1449 on 11 August 2011 and passed through CH1295 on 23 August 2011, and the Contractor resumed night time TBM operation afterwards. TBM was operating at night time (from 01:10 to 07:00) on 26 August 2011 (about 55 m away from the EIA restricted zone and about 22 m away from Mr. Cheung's house, which is located near CH1218).	Closed			

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint		Investigation	n / Mitigation Action	Status			
				nuisance to him since 26 August 2011.	August 2001 by the Contractor. The Contractor had stopped TBM night						
					2. <u>Mitigation Measure Implemented after Receiving the Complaints</u> Night time operation of the TBM was restricted as shown in the following table:						
					Period	Night Time Operation ¹	Remark				
					25 - 26 Aug 2011	From 01:10 to 07:00 (26 Aug)	The Contractor received a verbal complaint in the morning (26 Aug 2011). The Contractor began to stop night time TBM operation. TBM was located about 22 m away from Mr. Cheung's house.				
					26 - 27 Aug 2011	-	No night time TBM operation				
					27 - 28 Aug 2011	-	No night time TBM operation				
					28 - 29 Aug - No night time TBM operation 2011						
					29 - 30 Aug 2011	-	No night time TBM operation				

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint		Investigatio	n / Mitigation Action	Status	
					30 - 31 Aug 2011	-	No night time TBM operation		
					31 Aug - 01 Sep 2011		No night time TBM operation. TBM was located about 38 m away from Mr. Cheung's house.		
					01 - 02 Sep 2011	From 23:00 (01 Sep) to 04:50 (02 Sep)	The Contractor attempted to resume night time TBM operation on 01 Sep 2011. ET received a complaint via EPD in the morning (2 Sep 2011). The Contractor began to stop night time TBM operation on 02 Sep 2011.		
					02 - 03 Sep 2011	-	No night time TBM operation		
					03 - 04 Sep 2011	-	No night time TBM operation		
					04 - 05 Sep 2011	-	No night time TBM operation		
					05 - 06 Sep 2011	-	No night time TBM operation		
					06 – 07 Sep 2011	-	No night time TBM operation		
					07 – 08 Sep 2011	From 06:00 to 07:00 (08 Sep 2011)	TBM was located about 109 m away from Mr. Cheung's house. The Contractor attempted to resume TBM night time operation and no further complaint was received.		
					Remark: 1. "Nig	pht Time" refers to	23:00 to 07:00 of the following day.		
					3. <u>Conclusion / Proposed Action</u>				
							the complaints and periods of TBM on 25 - 26 August 2011 and 1 - 2		

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action	Status
					 September 2011, it is believed that the complaints are related to the TBM operation during the night time. The Contractor has undertaken swift and appropriate action in response to Mr. Cheung's complaints. The night time operation of the TBM was restricted following the complaint. As the TBM continues to operate during the day time and moves further away from Mr. Cheung's house, the ground-borne noise nuisance upon Mr. Cheung gradually fades away. It is considered that the nuisance caused by TBM night time operation is then imperceptible from the complainant. No further complaint is received after 2 September 2011. As such, no further action is required. 4. Follow Up Action(s) For this complaint, the Contractor has implemented adequate mitigation measure (that is, restricting the TBM to operate during the day time only) for ground-borne noise control. The TBM has moved further away from Mr. Cheung's house and no further complaint is received after the Contractor resumed the TBM night time operation (08 September 2011). Thus, it is considered that the complaint is closed. 	
24	CIR-19	8 February 2012 at Intake-3 Construction Site	Mr. Cheng through SOR	SOR has received a public complaint regarding daytime construction noise from the Intake-3 construction site on 8 February 2012.	 <u>Findings / Observations</u> <u>Checking with the site log, construction activities conducted at I-3 in that</u> morning was rock breaking by hydraulic breaker at the proposed access road. The Contractor and ET undertook site investigations on the subject area on 9 February 2012. The following noise mitigation measures were implemented during site investigations: <u>Construction Noise Mitigation Measures (implemented prior to the complaint)</u> Noise barrier on the top of vortex shaft was maintained; Silent type breaker tip was utilized; and Breaker tip was wrapped by acoustic insulating material. 	Closed

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint		Investigation / Mitigation Action						
					2) <u>Concl</u>	usion /	Propo	sed Act	<u>ion</u>			
					As there are no substantial noise sources at I-3 other than the project construction activities, it is considered that the noise complaint is project-related. In accordance with the Event / Action Plan for Construction Noise specified in the EM&A Manual, noise monitoring frequency at the squatters (NSR 6) near I-3 were increased to twice per week (from 10 February 2012 to 29 February 2012) due to this complaint. The measured noise levels (L _{eq, 30 minutes}) are shown in the following table. The measured noise levels, ranged from 59.5 dB(A) to 68.1 dB(A), are well below the limit level (75 dB(A)) in accordance with the EIAO-TM. During the site investigations on 9 and 23 February 2012, the above noise mitigation measures were continuously implemented. No further noise complaint was received in February 2012. Thus, with the consideration of the noise measurement results and implementation of the above noise mitigation measures, the construction noise is considered acceptable. The Contractor will maintain the noise mitigation measures mentioned above to minimise noise nuisance.							
					Date	Start Time	End Time	L _{eq} , dB(A)	Limit Level, dB(A)	Major Construction Noise Sources		
					7-Feb- 2012	13:28	13:58	60.2	75	Crane operation and rock breaking		
					10-Feb- 201215:1515:4562.175Crane operation and excavation works13-Feb- 201213:3514:0568.175Crane operation and rock breaking							

Log Ref.	Date/Location	Complainant	Details of Complaint				Investiga	ation / Mit	igation Action	Status
				17-Feb- 2012	16:20	16:50	60.2	75	Crane operation and excavation works	
				20-Feb- 2012	13:33	14:03	66.4	75	Crane operation and rock breaking	
				23-Feb- 2012	14:30	15:00	64.3	75	Crane operation and rock breaking	
				27-Feb- 2012	11:10	11:40	63.4	75	Crane operation and rock breaking	
				29-Feb- 2012	13:26	13:56	59.5	75	Crane operation and rock breaking	
				The occas Additiona Contracto Nois rock The Cont mitigation the site ir noise con that the r minimise	locatio sionally I noise or to fur be barr break ractor meas nyestiga nplaint noise m constru	and the mitigat ther re ier cor ing are have c ures to ation o was re nitigatio	tion mea duce the mprised a was e continuou o minimi on 9 and eceived i on meas noise nu	on time fo asures h e constru of acou rected o usly app ise cons 23 Feb is Febru sures im uisance.	r each PME may not be constant. ave been implemented at I-3 by the action noise: stic blankets installed close to the n the site. lied all the above mentioned noise truction noise, as observed during ruary 2012. No further construction ary 2012. As such, it is considered plemented on site are adequate to The Contractor will maintain these	
	Log Ref.	Log Ref. Date/Location	Log Ref. Date/Location Complainant	Log Ref. Date/Location Complainant Details of Complaint Image: Complain in the second se	17-Feb-2012 20-Feb-2012 23-Feb-2012 27-Feb-2012 29-Feb-2012 29-Feb-2012 Rema The occas Additiona Contracto Nois rock The Cont mitigation the site in noise con that the r	1 1	17-Feb- 2012 16:20 16:50 20-Feb- 2012 13:33 14:03 23-Feb- 2012 14:30 15:00 27-Feb- 2012 11:10 11:40 29-Feb- 2012 13:26 13:56 Remark: The location of occasionally and the Additional noise mitigat Contractor to further re Noise barrier cor rock breaking are The Contractor have of mitigation measures to the site investigation of noise complaint was re The construction have of mitigation measures to the site investigation of noise construction	Expression Companient Companient IT-Feb- 2012 16:20 16:50 60.2 20-Feb- 2012 13:33 14:03 66.4 23-Feb- 2012 14:30 15:00 64.3 27-Feb- 2012 11:10 11:40 63.4 29-Feb- 2012 13:26 13:56 59.5 Remark: The location of powered occasionally and the utilization Remark: Contractor to further reduce the • Noise barrier comprised rock breaking area was e The Contractor have continuo mitigation measures to minim the site investigation on 9 and noise complaint was received that the noise mitigation measures to minim the site investigation noise numers	Level betallowing Declarity of complaint 17-Feb- 2012 16:20 16:50 60.2 75 20-Feb- 2012 13:33 14:03 66.4 75 23-Feb- 2012 14:30 15:00 64.3 75 27-Feb- 2012 11:10 11:40 63.4 75 29-Feb- 2012 13:26 13:56 59.5 75 Remark: The location of powered mechar occasionally and the utilization time for Additional noise mitigation measures h Contractor to further reduce the constru- ock breaking area was erected o Additional noise mitigation measures h Contractor to ave continuously app mitigation measures to minimise construction on 9 and 23 Feb noise complaint was received in Febru that the noise mitigation measures in minimise construction noise nuisance.	Image: second

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint		Investigation / Mitigation Action							
25	CIR-20	10 August 2012 at Intake-3 Construction Site	Mr. Cheng through ICC	1823 Call Centre (ICC) received a verbal complaint regarding the deterioration of water quality at Tso Kung Tam due to the construction works at Intake 3 construction	For this measur received Neverth during aforeme advice advice advance as an a the mor 1) <u>Find</u> Routine construct 2012. T	LOW UP ACTIN complaint, the es for construct d in February 2 heless, the ET the routine site entioned construct to the Contractor e of future plann action level exce onthly EM&A Rep dings / Observat water quality mo tion site at Intake tion works. Moni he results, as pre- uality at I-3 with me.	Contrac ction nois 012, it is will conti e inspec uction n or to be ned site v eedance ort (Febr ions initoring v e 3 has b toring was esented in	se contra conside nuously tions, ir oise m vigilant work act on noise uary 20 pstream been carr s conduc the follo	rol. As no ered that the review the aspect propitigation m and tailor m and tailor m ivities. This e and also 12). (I-3-C) and ried out sinc ted on 8 Aug wing table, in	o further c ne complair e condition per function easures, a mitigation n s case will in the comm downstream e the comm gust 2012 ar ndicate full c	omplaint is of the site ning of the ind provide neasures in be reported plaint log in n (I-3) of the encement of nd 10 August ompliance of	Closed	
				site on 10 August 2012.	Date Parameters Stations Action Level Limit Level Exceedance								
				Water 31.6 31.7 - - 8 - - - - -							-		
					8 August 2012	рН	7.91	7.92	-	-	-		
						Dissolved Oxygen (mg/L)	6.89	6.85	3.65	3.51	No		

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action						Status	
						Turbidity (NTU)	2.21	2.25	3.99 NTU or 120% of upstream control station's turbidity	4.18 NTU or 130% of upstream control station's turbidity	No	
						Suspended Solids (SS) (mg/L)	< 2.00	< 2.00	6.13 mg/L or 120% of upstream control station's SS	7.23 mg/L or 130% of upstream control station's SS	No	
						Water Temperature (°C)	29.1	29.0	-	-	-	
						рН	7.90	7.90	-	-	-	
						Dissolved Oxygen (mg/L)	7.22	7.12	3.65	3.51	No	
					10 August 2012	Turbidity (NTU)	3.07	3.20	3.99 NTU or 120% of upstream control station's turbidity	4.18 NTU or 130% of upstream control station's turbidity	No	
						Suspended Solids (SS) (mg/L)	< 2.00	< 2.00	6.13 mg/L or 120% of upstream control station's SS	7.23 mg/L or 130% of upstream control station's SS	No	
					monitori (1) Was prior to c	Ilowing mitigation measures were implemented on-site during ring on 8 and 10 August 2012: stewater was collected and diverted to waste water treatment plant discharge; and area and existing stream were separated by sealed concrete block						

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action					
					Clear flowing stream water was visually observed during the monitoring at I-3 on 10 August 2012. No significant water pollution source from the construction site was identified.					
					2) <u>Conclusion / Proposed Action</u> Based on the site observation and the water quality monitoring data collected at I-3 and I-3-C on 8 and 10 August 2012, it is concluded that the construction works at I-3 did not generate unacceptable water quality impact at Tso Kung Tam. As such, the concerned complaint is not considered related to the construction works at Intake 3. No further action is, therefore, required.					
					3) <u>FOLLOW UP ACTION(S)</u> Prior to the receipt of this complaint, the Contractor has already implemented adequate mitigation measures for construction effluent discharge. As no unacceptable water quality impact from the construction works was identified during the investigation, the complaint is considered as non-project related and is closed. Nevertheless, the ET will continuously monitor the water quality at Intake 3 under the current EM&A programme, review the condition of the site during the routine site inspections, and inspect proper functioning of the waste water treatment facilities.					
26	CIR-21	5 September 2012 at Chung Kee Store at Lo Wai Road (NSR 3)	Through ICC	1823 Call Center (ICC) received a complaint (5 September 2012) regarding daytime construction noise nuisance generated by the power supply	 Findings / Observations Checking with the site log, an air compressor was located opposite to Chung Kee Store on 5 September 2012. As there was no other powered mechanical equipment located nearby and the construction was only undertaken during the daytime, it is considered that the complaint is about the noise nuisance generated from the air compressor during the daytime operation. 	Closed				

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint			Inves	stigation /	Mitigation Action		Status
				machine opposite to Chung Kee Store at Lo Wai Road.	following f following f The c Store the at Septe A laye the n Septe A laye the n Septe A laye the n Septe A laye the su layout poten anoth obser AC2 a demo site ir mech Regular d the ET at with the c complaint constructi borne noi increased September	measures oncerned near the ttached I- mber 201 er of acou- oise nuise mber 201 d air com ub-contract t plan) th tial noise er stage ved durin at L1 had bilised of nvestigatio anical equilarity contract s was c on air-bo se in the from on er 2012.	I air com Vortex I 2 layout 2 and re ustic she ance, as 2; pressor (ctor's offi nat scree nuisanc of constri g the site ceased f-site on on on 20 uipment onstructia (that is, specific E onsidere rne nois Manual, ce to tw The nois	pressor Drop Sh plan) was placed b et was in cobserver (AC3) was ce conta ened off ce to the cuction a e investig operation 18 Septer was loca on noise Hong Ho EM&A M d as a e. Follo the nois ice per v e measu presente	(AC1) located of aft (VDS) entra as de-mobilised by another air constalled next to ed during the s as mobilized on iner (as "L2" sho the noise from public. AC3 h ctivities since 1- gation on 20 Sep on since 14 Sep ember 2012. A ber 2012, no a ted at L1. monitoring is c of Chee Hong T anual. Accordi an exceedance wing the Event e monitoring fre week between	has implemented the ppposite to Chung Kee nce (as "L1" shown in for maintenance on 7 pmpressor (AC2); AC2 at L1 to minimise ite investigation on 11 site and placed behind own in the attached I-2 n AC3 and minimised had been operated for 4 September 2012 (as ptember 2012); and otember 2012); and otember 2012 and was as observed during the ir compressor or other surrently undertaken by Temple) in accordance ing to the Manual, the e of action level of t / Action Plan for air- equency at NSR 3 was 10 September and 26 (as $L_{eq(30-minute)}$) at NSR g table: Dominant Noise Sources Drilling Drilling and concrete work	
					10-0ep-12	14.05	14.55	02.2	15	Driving and concrete WOR	

Complaint No.	Log Ref.	Date/Location	Complainant	Details of Complaint	Investigation / Mitigation Action						
					14-Sep-12	11:00	11:30	64.1	75	Drilling	
					17-Sep-12	15:20	15:50	64.3	75	Drilling	
					20-Sep-12	14:02	14:32	64.8	75	Drilling and concrete work	
					24-Sep-12	13:20	13:50	63.7	75	Drilling and concrete work	
					26-Sep-12	16:00	16:30	64.6	75	Drilling and concrete work	
					below the Report and 2) <u>Conclu</u> With the implement noise nui received. air compre- to minimis considered 3) <u>Follow</u> As the no further co closed. N site during construction advice to advance of	limit lev d the Con sion / Pr consid tation of sance is As the c essor cui e constru- d necess <u>Up Actio</u> bise sour mplaint everthele g the rou on noise the Con of future	vel (75 c ntract Sp oposed A eration the abo s consic oncerned rrently de uction no ary. <u>ons</u> rce of co was rec ess, the I ttine site mitigatio tractor to planned	dB(A)) in ecific EM of the ove nois dered m dair com ployed c bise nuisa omplaint eived, it ET will co inspection n measu o be vigi site work	accordance M&A Manual. Noise meas mitigation r inimised with pressor has be on site is scree ance to the pul was removed is considered ontinuously rev ons, inspect pr ures implement lant and tailor	B(A) to 64.8 dB(A), are with the approved EIA surement results and measures, construction no further complaint en demobilised and the med by a site container blic, no further action is from the site and no I that the complaint is iew the condition of the roper functioning of the red on site, and provide mitigation measures in is case will be reported ie.	

Signed by Environmental Team Leader:

Hangtangheory

29 March 2013

Date: