





# Permanent Aviation Fuel Facility (EP-139/2002/A)

First Quarterly Environmental Monitoring and Audit Report – March 2006

13th April 2006

#### **Environmental Resources Management**

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#### REPORT

# Permanent Aviation Fuel Facility (EP-139/2002/A) First Quarterly Environmental Monitoring and Audit Report – March 2006

13<sup>th</sup> April 2006

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For and on behalf of

**Environmental Resources Management** 

Approved by: Freeman Cheung

Signed:

Position: Environmental Team Leader

Date: 13<sup>th</sup> April 2006

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#### **EXECUTIVE SUMMARY**

This first quarterly Environmental Monitoring and Audit (EM&A) report presents the EM&A works carried out during the period from 18th November 2005 to 14th February 2006 in accordance with the EM&A Manual.

Spot Acoustic Monitoring and Underwater Noise Monitoring were conducted in the first week of the marine piling and the results complied with the EP requirements. Dolphin Visual Monitoring was conducted during the piling activities and no dolphins were found entering the 500m exclusion zone during piling activities over the reporting period.

Weekly site inspections were conducted during the reporting period and no non-compliance was found. Recommendations have been made to the contractor for observations on the environmental deficiencies on site.

No breaches of action/limit levels was occurred and no environmental summon or prosecution was received in this reporting period. However, two complaints regarding the dust emission were received in October and November 2005. Follow up actions were implemented to minimise the dust emission on site.

Air and noise monitoring are not required for the Project. No water quality monitoring was conducted as no dredging work was implemented.

#### 1 PROJECT INFORMATION

Leighton Contractors (Asia) Limited (LCAL) has appointed ERM-Hong Kong, Limited (ERM) as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the Permanent Aviation Fuel Facility (the Project) during construction works.

#### 1.1 PROJECT AREA

The project area is in Area 38 of Tuen Mun and the pipelines are located in Urmston Road between Tuen Mun Area 38 and Sha Chau. The site is illustrated in *Annex B*.

#### 1.2 ENVIRONMENTAL SENSITIVE RECEIVERS

No air and noise sensitive receivers were identified in the EIA close to the project area. However, water sensitive receivers and ecological sensitive receivers were identified in the EIA study, and are shown in *Annex A*.

#### 1.3 PROJECT ORGANISATION

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

#### 1.4 CONSTRUCTION PROGRAMME

The work programme for the Project is presented in *Annex D*. A summary of the major construction activities undertaken in this reporting period is shown in *Table 2.1*.

Table 2.1 Summary of Works Undertaken from 18 November 2005 and 14 February 2006

Area	Works Undertaken
Tuen Mun Area 38	Marine Piling Works
	Site Preparation Works
	Surcharges Construction

## 1.5 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS AND REPORTS SUBMISSION

A summary of the relevant permits, licences, notifications and reports submitted for this Project as of 14th February 2006 is presented in *Annex E*.

#### 2 SUMMARY OF EM&A REQUIREMENTS

#### 2.1 AIR QUALITY AND NOISE

Air and noise monitoring are not required for this Project.

#### 2.2 WASTE MANAGEMENT

Auditing the contractor's Waste Management Plan (WMP) is part of the EM&A requirements. The WMP was received during the reporting period and was submitted to EPD after our and IEC reviews. The WMP provided details on the waste management issues associated with the construction phase of the project, and included recommendations on the procedures for handling of C&D materials, excavated materials, chemical waste and general refuse.

#### 2.2.1 Solid and Liquid Waste Management Status

Solid Waste

Major solid wastes generated on site during the reporting period were C&D materials (mainly sand for surcharges) and general refuses. The Contractor indicated that the C&D materials would be reused on site. Bins and recycling facilities were provided on site for general refuse and the C&D wastes were disposed at WENT. Trip tickets were available for inspection.

During site inspections, some rubbish was found on site. The Contractor was advised to remove the rubbish regularly and to inform the staff that rubbish should be placed in the refuse bins provided. Extra bins should be provided on site if considered necessary.

#### Liquid Waste

The main type of liquid waste was wasted oil (lubricant oil). Two chemical waste stores were provided on site. The stores were enclosed with 3 sides and a roof top, and labelled. Curtains were provided to cover up the front side of the stores to avoid direct sunlight and rain getting inside the stores. Drip trays were provided for the chemical waste containers and overall, the containers were labelled properly.

During site inspections, some chemical waste containers were found without labels. The Contractor was reminded to label all chemical waste containers properly. The Contractor was advised to seal the store appropriately.

Chemical waste was produced during the reporting period, however, no chemical waste has yet been collected and disposed.

#### 2.3 WATER QUALITY

Water quality monitoring will be evaluated against Action and Limit Levels which are presented in *Annex F*. Water quality monitoring is only required during the dredging phase of the project and the monitoring locations are presented in *Annex A*. Since no dredging activity has been conducted during the reporting period, water quality monitoring was not required.

The Contractor applied for a wastewater discharge licence on 23 January 06 and the licence has not been issued within the reporting period.

#### 2.4 ECOLOGY

Dolphin pre-construction phase baseline monitoring was conducted prior to the commencement of marine piling works, Spot acoustic monitoring and Underwater noise monitoring were conducted during the first week of the marine piling works and Visual dolphin monitoring for the 500m exclusion zone was conducted during the piling works. The action plan for dolphin pre/post-construction phase monitoring is presented in *Annex F*. Bubble jackets were used surrounding the pile and barge to reduce the noise impact generated from the marine piling activities.

#### 2.5 CULTURAL HERITAGE

The watching brief (dive investigation) for marine archaeology is only required during the dredging phase of the pipe trench. Since no dredging activity has been conducted during the reporting period, dive investigation was not required.

#### 2.6 LANDSCAPE AND VISUAL

According to the EIA report and EM&A Manual, mitigation measures and site inspection are required during the landscaping/planting works. However, no landscaping or planting works were conducted on site during the reporting period. Our weekly inspection included audits on landscape and visual issues to ensure that the site was in orderly acceptable manner. The action plans for design and operational phases are presented in *Annex F*.

#### 2.7 LAND CONTAMINATION, HAZARD TO LIFE AND FUEL SPILL RISK

According to the EIA report and EM&A Manual, mitigation measures and design phase audit are required to minimise the risk of fuel spill and hazards. As there was no construction works related to such issues in the reporting period, audit on the mitigation design and measures was not required. However, weekly site inspection covered the waste management aspects which included measures to prevent land contamination by chemical wastes.

#### 2.8 ENVIRONMENTAL SITE AUDITING

Weekly site inspections were conducted during the construction phase of the project covering the aspects of air and noise, water quality, waste management and landscape & visual. Overall the site was in good orderly manner and no non-compliance was found. *Table 2.2* summarised the environmental deficiencies found on site during the reporting period.

Table 2.2 Environmental Deficiencies (Observations) from the Site Inspections during the Reporting Period

Reporting Month	Observation	Follow-up Action
December 2005	Stagnant water near pier	Stagnant water was filled with sand.
January 2006	A dusty stockpile was found not covered properly	Cover was provided for the stockpile.
January 2006	Stagnant water near a surcharge	Water (marine) was generated from the surcharge. A trench was formed next to surcharge to contain water. Stagnant water was also cleared.
January 2006	No front cover for a chemical waste store	Front cover was provided for the store.
January 2006	Chemical waste drums without labels	Labels were provided for the chemical waste drums.
February 2006	A C&D stockpile without cover	The C&D stockpile was removed.
February 2006	Chemical waste drums without labels	Labels were provided for the chemical waste drums.

#### 2.9 IMPACT PREDICTION REVIEW

The construction impacts predicted in the EIA and the monthly reports were similar with the actual impacts occurred in the reporting period. However, as the underwater noise monitoring results were not available during the reporting period, it is unable to compare the noise levels generated from the piling barge during piling with the EP conditions. As water quality monitoring was not conducted during the reporting period due to no dredging work, it is unable to conduct prediction review on the water quality.

Future Key Issues in the Next Quarter

- Impacts on dolphins due to piling works;
- Noise from operating machinery and equipment;
- Dust release and suppression
- Wastewater discharge within construction site as wet season is approaching

# 3 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The implementation status of environmental mitigation measures and requirements as stated in the EIA Report, Environmental Permits and EM&A Manual during the reporting period is summarized in  $Annex\ G$ .

#### 4 ENVIRONMENTAL NON-CONFORMANCE

#### 4.1 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE AND EXCEEDANCE

No environmental non-compliance or exceedance was found during the reporting period.

#### 4.2 SUMMARY OF ENVIRONMENTAL COMPLAINT

During the reporting period, two environmental complaints regarding dust emission were received in November 2005. However, one complaint was made prior to the commencement of the construction works. The ET's Interim Reports and Complaint Logs of the two complaints were sent to EPD on the 25th November and 5th December 2005 respectively. A copy of the Interim Reports and Complaint Logs, and the follow up actions are attached in *Annex H*. The contractor conducted follow-up mitigation measures after the complaints including the use of water tankers to wet the site regularly and provided tarpaulin sheets to cover up large stockpiles.

#### 4.3 SUMMARY OF ENVIRONMENTAL SUMMONS

No summons was received in this reporting period.

#### CONCLUSION AND RECOMMENDATIONS

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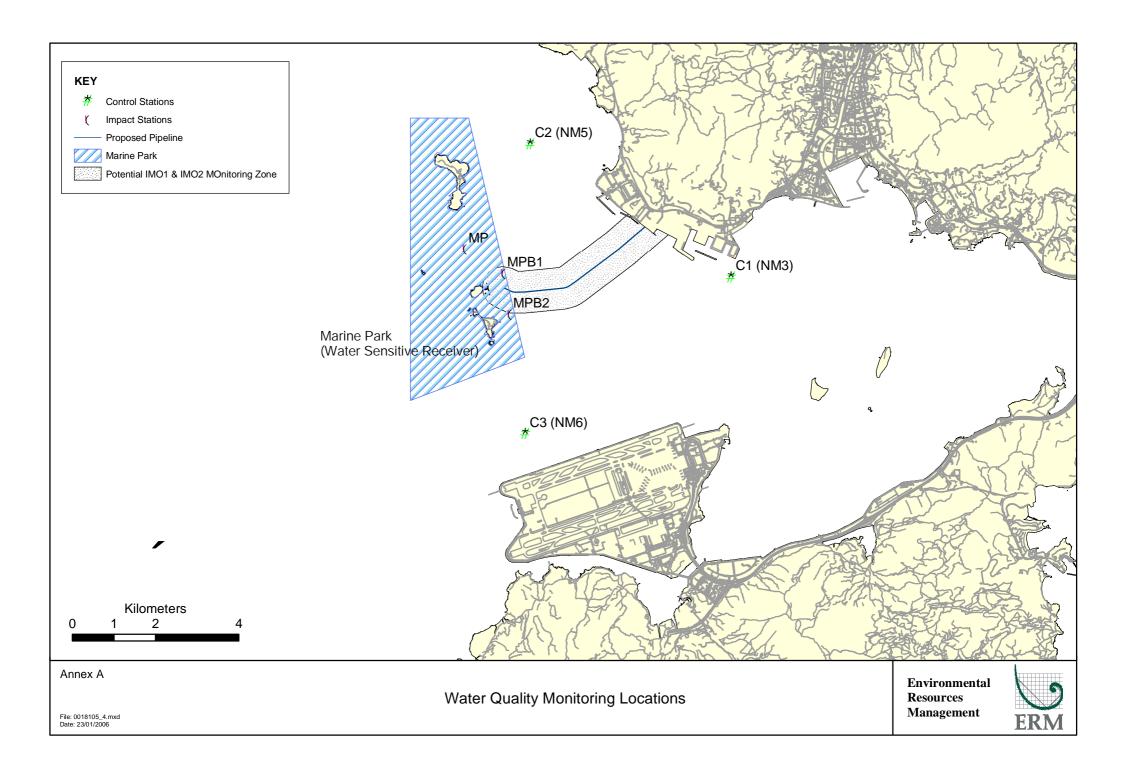
The EM&A works were conducted throughout the construction period and the relevant monitoring were conducted in accordance with the EP's requirements. Mitigation measures were used to minimise the environmental impacts on site including those on the piling barge. Some environmental deficiencies were observed during site inspections and the Contractor provided mitigation measures to solve the issues. Overall, the site was in an orderly manner.

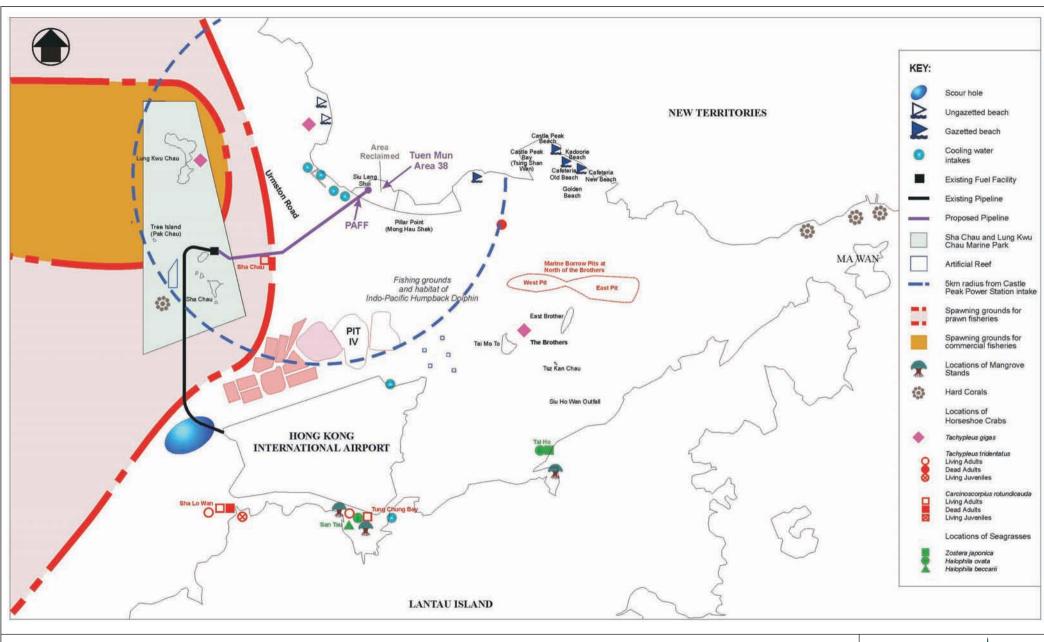
Recommendations to the environmental deficiencies found on site during site inspections included:

- To cover up dusty stockpiles and locate them away from the windy locations as possible
- To label all chemical waste containers and store them in enclosed cabin with good ventilation
- To install the wastewater treatment facility as soon as possible to treat the wastewater/runoff from the site as wet season is approaching
- To clear the stagnant water on site or fill the ponds with sand

#### Annex A

Water Quality Monitoring Locations, Water Quality and Ecological Sensitive Receivers





Annex A

Water Quality and Ecological Sensitive Receivers

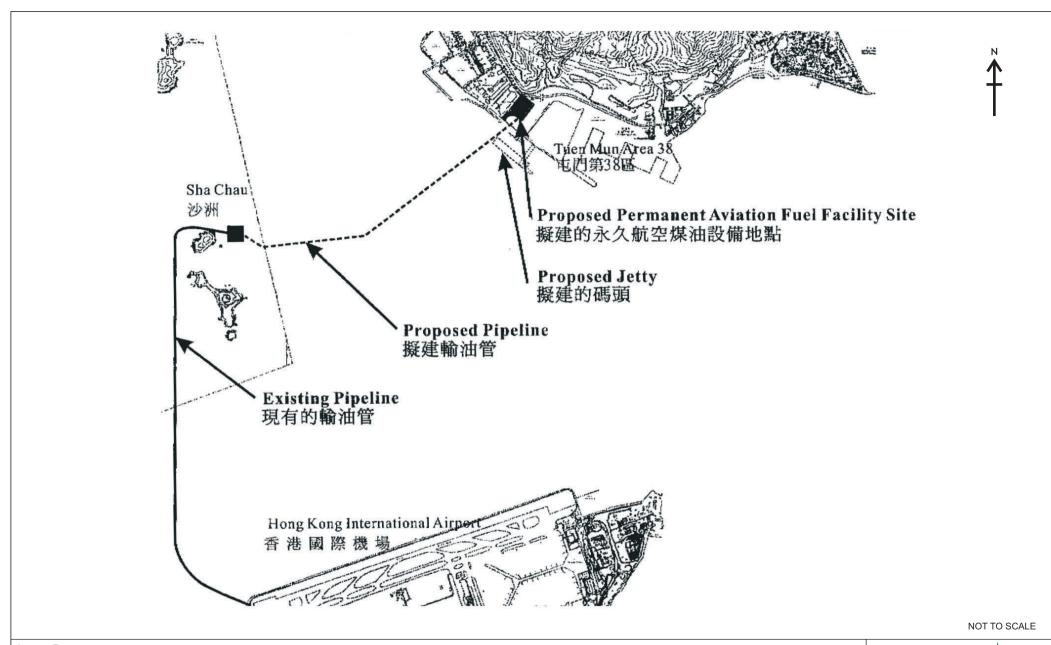
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(Soure: PAFF for Hong Kong International Airport EIA, Mouchel 2002)

### Annex B

# **Project Location**



Annex B

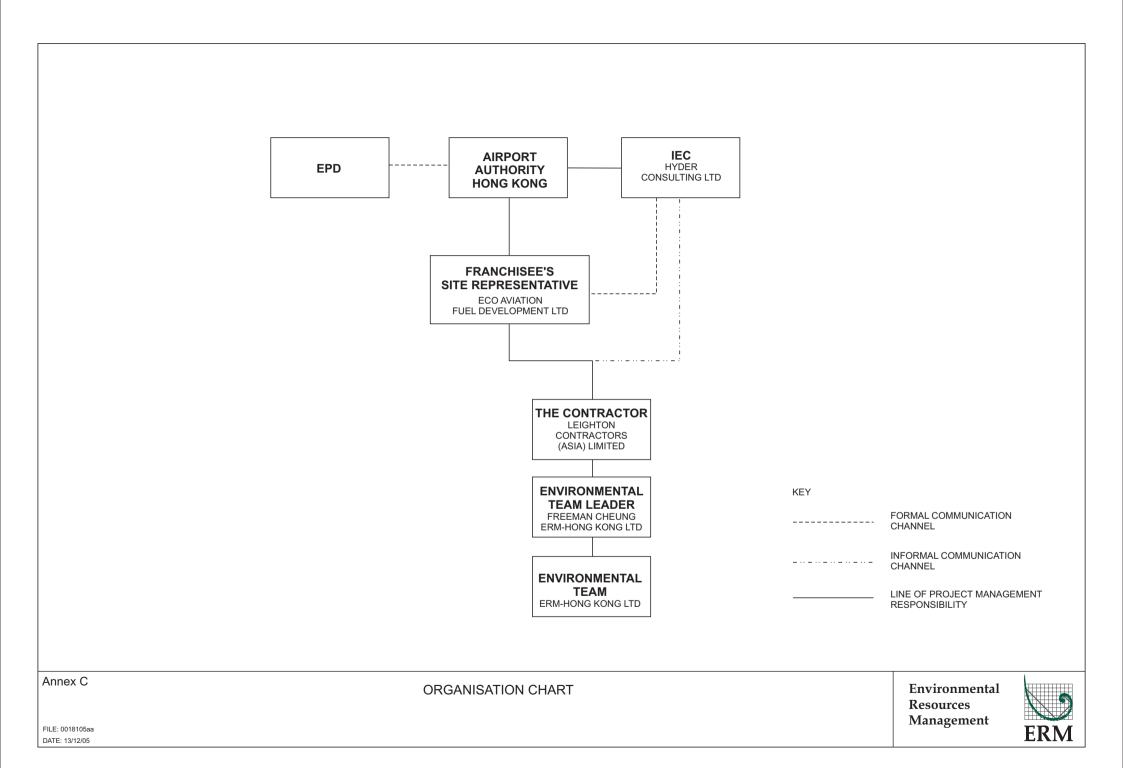
PROJECT LOCATION

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### Annex C

# Organisation Chart



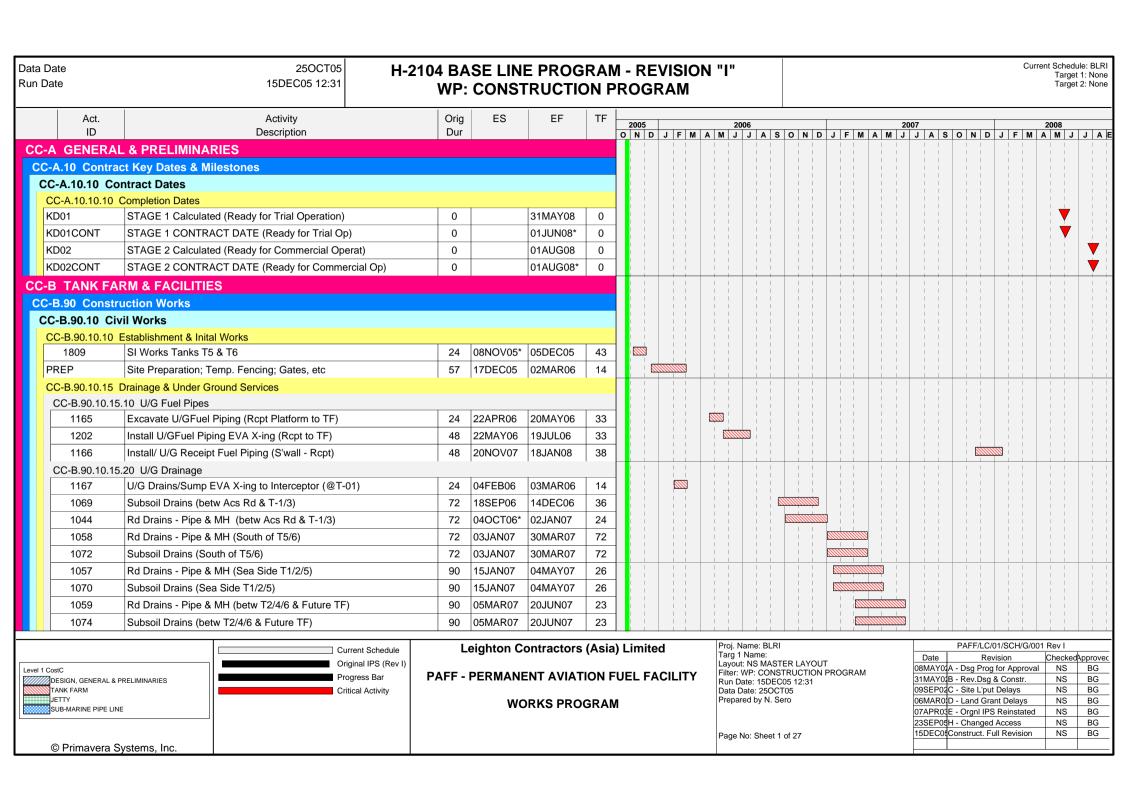
### PERMANENT AVIATION FUEL FACILITY

### **Project Organisation - Contact Details**

Role	Contact Person	Organization	Telephone	Facsimile	E-mail
Contractor (Project Director)	Brian Gillon	Leighton Contractors (Asia) Limited	2403 0900	2404 0081	brian.gillon@leighton asia.com
Contractor (Project Environmental Coordinator)	David Holden	Leighton Contractors (Asia) Limited	2404 8900	2404 0081	david.holden@leighto nasia.com
Contractor (Sub Agent – Environmental)	Eric Luk	Leighton Contractors (Asia) Limited	2403 0992	2404 0081	eric.luk@leightonasia .com
Environmental Team (Team Leader)	Freeman Cheung	ERM-HK Ltd	2271 3104	2723 5660	freeman.cheung@erm .com
Environmental Team (Project Manager)	Craig Reid	ERM-HK Ltd	2271 3179	2723 5660	craig.reid@erm.com
Environmental Team (Team Member)	Jor Fan	ERM-HK Ltd	2271 3186	2723 5660	jor.fan@erm.com
IEC	Gui-yi Li	Hyder Consulting Ltd	2911 2731	2805 5028	gui- yi.li@hyderconsulting .com
IEC	Sharifah Or	Hyder Consulting Ltd	2911 2730	2805 5028	sharifah.or@hydercon sulting.com
Franchisee's Site Representative	Philip Siu	ECO Aviation Fuel Development Ltd	2963 2820	2563 6311	Philip.siu@towngas.c om
Airport Authority	Martin Putnam	Airport Authority HK	2183 6645	2183 3186	PUTNAMM@hkairp ort.com
EPD	Matthew Chan	EPD	2835 2163	2591 0558	matthewchan@epd.go v.hk

### Annex D

# **Works Programme**



	A 11 11		F.0													
Act.	Activity Description	Orig Dur	ES	EF	TF	200		2006			-	2007			2008	
1060	Rd Drains - Pipe & MH (Constr opening)	24	07JAN08	02FEB08	0	ON	N D J F M A M	JJA	SON	DJF	MAM	J J A S	5   O   N   D	J F M	AMJ	JAE
	Subsoil Drains (Constr opening)	24	07JAN08	02FEB08	0											
I	30 U/G Fire Services		0.0	102: 2200												
1213	Exc. F.Serv U/G Pipe(OpBldg - Bwall Ring Main)	12	17OCT06	30OCT06	26	1										A + A
1214	Install U/G F.Serv Pipe (admin to bund wall)	36	01NOV06	12DEC06	26	1 📗										A + A
1023	U/G FServ Ring Main (betw Acs Rd & T-1/3)	36	01DEC06	30JAN07	24	1 [										4
1028	U/G FServ Ring Main (South of T5/6)	36	03MAR07	28APR07	72	<b>₹</b>			1 1			1 1	1 1	1 1	1 1	
1027	U/G FServ Ring Main (Sea Side T1/2/5)	66	15MAR07	01JUN07	26	1										
1029	U/G FS Ring Main (betw T2/4/6 & Future TF)	66	02APR07	20JUL07	23											
1139	U/G FServ Ring Mains (Constr opening)	24	21JAN08	20FEB08	0	1							i i			4
CC-B.90.10.15.	40 U/G Cable Ducts		1	'									1 1			
1188	U/G El Cable Ducts OpBldg to TF incl. EVA Xing	36	24JUN06	07AUG06	23	1										
1180	E&I - BWall Perim U/G CblDuct (South of T5/6)	18	30APR07	21MAY07	72	1										
1179	E&I - BWall Perim U/G CblDuct (Accss Rd - T-1/3)	18	12MAY07	01JUN07	56	1 [										4
1120	E&I - BWall Perim U/G CblDuct (Sea Side T-1/2/5)	30	02JUN07	10JUL07	74				1 1	1 1			1 1	1 1	1 1	
1169	E&I - BWall Perim UG CblDuct (Future TF T-3/4/6)	30	21JUL07	25AUG07	23											A + A
CC-B.90.10.15.	50 U/G Plumbing															
4640	Plumbing Pipe to Building Trench Excavation	12	21DEC06	08JAN07	207											A + A
4642	Plumbing Pipe to Planter Area Trench Excavation	12	09JAN07	22JAN07	207								i i			1
4643	Plumbing Pipe to Planter Area Pipe Installation	12	15JAN07	27JAN07	207	1		1	1 1	⊠¦ ¦	1 1	1 1	1 1	1 1	1 1	
4641	Plumbing Pipe to Building Pipe Installation	18	26JAN07	15FEB07	328											1
4644	Plumbing Pipe to Planter Area Backfilling	6	29JAN07	03FEB07	207											
4645	Plumbing Pipe to Building Backfilling	6	16FEB07	26FEB07	328			i	İ		1 1		i i	i i	ii	
CC-B.90.10.25 V	Valls; Fences; Walkovers; Crossovers								1 1	1 1	1 1	1 1	1 1	1 1	1 1	
CC-B.90.10.25.	10 Bund and Security Wall/Fence					<b>↓</b>										
1039	Bund Wall Between Access Rd & T-001/3	78	16JUN06	16SEP06	36	<b>.</b> II.			<b>∑</b>   ¦ ¦							
1194	B'Wall Seaside of T-001/2/5	120	08AUG06	13JAN07	23	<b>.</b> ■										4
1040	Bund Wall South of Tanks T-005/6	84	18SEP06	02JAN07	72	_							1 1			
1193	Bund Wall Between T-003/4/6 & Future T.Tarm	102	27OCT06	03MAR07	23	<b>.</b>					1 1	1 1	1 1	1 1	1 1	
1045	Security Wall Between Access Rd & T-001/3	102	31JAN07	04JUN07	24								1 1			
1076	Security Single Fence/Gts Betw Accs Rd & T-001/3	48	13MAR07	09MAY07	263	<b>.</b>										4
1517	Security Wall Seaside of T-001/2/5	78	05JUN07	07SEP07	24	<b>.</b> I					1 1					4
1055	Security Wall South of Tanks T-005/6	60	06JUL07	15SEP07	60					1 1	1 1		1 1	1 1	1 1	1 1
1077	Security Single Fence/Gat South of Tanks T-005/6	36	17SEP07	30OCT07	61				1 1	1 1	1 1				1 1	
1518	Security Single Fence/Gate Seaside of T-001/2/5	60	31OCT07	12JAN08	61											
1340	Security Double Fence/Gates - Future TFarm	90	29NOV07	20MAR08	24											
1204	Bund Wall Constr Open. (between T4&T6)	24	04DEC07	04JAN08	1			Ì	i	iii					i i	
	Bund Wall Constr Open. (between T3&T4)	24	05DEC07	05JAN08	0			1		1 1		1 1			1 1	1 1
1399	Construct 500mm Bund Walls - Between T1/3 & T2/4	36	05DEC07	19JAN08	0			1	1 1	1 1	1 1	1 1			1 1	

					l													
Act. ID	Activity Description	Orig Dur	ES	EF	TF		2005	20			T T -			2007			2008	
1472	Construct 500mm Bund Walls - Between T2/4 & T5/6	36	18DEC07	01FEB08	1	0	NDJFMA	MJ	JA	S O	N D	JFN	MAM	JJA	SOND	JFM	AMJ	JAE
1391	Construct 500mm Bund Walls - Between T5 & T6	36	07JAN08	20FEB08	6			<del>                                     </del>	-		<del>i i</del>			i				
1385	Construct 500mm Bund Walls - Between T2 & T4	24	19JAN08	19FEB08	7	H			1 1	I I			1		1 1 1		1 I 1 I	
1370	Construct 500mm Bund Walls - Between T1 & T3	24	21JAN08	20FEB08	6	П				!	1 1		1					
1521	Security Dbl Fences Swall/OpBldg/PumpPltf Area	36	02FEB08	25MAR08	38	П												
1187	Bund Wall Contain.Barrier - Finishing Works	48	28FEB08	24APR08	0									i I i				
CC-B.90.10.25.	20 Wallkovers & Elevated Crossovers					H		1 1										
1514	Install Tanks T-1/2/3/4 Elevated Crossovers	24	07NOV07	04DEC07	0	1		1 1					1					
1516	Install Tanks T5/6;T2/5;T4/6 Elevated Crossovers	18	27NOV07	17DEC07	1													
1368	Install Tanks T-1/2/3/4 Fuel Pipe Wallkovers	36	21JAN08	05MAR08	0			ii	i		ii	iii	i	i I i			ii	
1175	Install Bund Wall Walkovers	48	31JAN08	29MAR08	21	П		1 I 1 I	1 1	 	1 I 1 I	1 1	1	1 1				1 1
1486	Install Tanks T-5/6 Fuel Pipe Wallkovers	24	02FEB08	04MAR08	1	П		1 1		!			1					
CC-B.90.10.35	Seawall Works					П												
4600	Wall K - Open Excavation Behind	9	05AUG06	15AUG06	26			ii			i		i	i I i		ii	ii	
4602	Wall K - Remove Existing Coping and Block	6	16AUG06	22AUG06	26			1 I 1 I	8	1			1			1 1		
4604	Wall K - Install Precast Intake Pipe Inlet Block	3	23AUG06	25AUG06	26			1 1			1 1	1 1	1					
4605	Wall K - Install 1st Layer PC Block	2	26AUG06	28AUG06	26				8									
4606	Wall K - Bedding, Infill and Install Intake Pipe	18	29AUG06	18SEP06	26									i I i			i i	4 1 1
4610	Wall K - Install Remaining PC Block	4	19SEP06	22SEP06	26					8			1			1 1		
4612	Wall K - Construct Staircase, In-situ Concrete	15	23SEP06	13OCT06	26			1 1			1 1	1 1	1				1 1	
4615	Wall K - Install PC Wave Reflecting Block	2	14OCT06	16OCT06	26													
4617	Wall K - Backfill Behind Wall	14	17OCT06	02NOV06	26						3			i I i				
4601	Wall C - Open Excavation Behind	5	06OCT06	12OCT06	68							1 1	1			1 1	1 1	
4603	Wall C - Remove Coping, Blocks & Bermstones	12	13OCT06	26OCT06	68	П						1 1	1	I I I		1 1		1 1
4607	Wall C - Trench at Seawall Foundation	4	27OCT06	01NOV06	68					!							1 1	
4609	Wall C - Bagged Concrete, Fill, Bermstones	4	02OCT07	05OCT07	38										1			
4611	Wall C - Install PC Block	15	06OCT07	23OCT07	38			ii	i		i i	iii	i	i li		i i	i i	
4613	Wall C - Infill Concrete to Cell	2	24OCT07	25OCT07	38			1 1 1 1	1 1		1 I 1 I	1 1	1	1 I I		1 1		1 1
4614	Wall C - Fuel Pipe Tie-in	2	26OCT07	27OCT07	38													
4616	Wall C - Insitu Concrete Coping	9	29OCT07	07NOV07	38													
4618	Wall C - Install PC Wave Reflecting Block	2	08NOV07	09NOV07	42			ii	i		i	iii	i	i I i		ii	ii	
4619	Wall C - Backfill Behind Wall	10	08NOV07	19NOV07	38			 		l I	 		I I			1 1	1 I 1 I	
CC-B.90.10.45 T	anks Foundations											1 1	1			1 1	1 1	
	10 Ground Treatment & Preloading																	
1377	Mobilise Band Drains S/C	12	07NOV05*		26													
1386	Apply Surcharge - Tank T-1	15	11NOV05*	28NOV05	0			I I	1 1		i i	1 1	İ			i	i	1 1
1376	Excavate & Install Band Drains Tank T-2	12	21NOV05	03DEC05	26			1 I 1 I	1 1			1 1	1	I I I		1 1		1 1
1396	Surcharge Consolidation Period - Tank T-1	84	29NOV05	20FEB06	0				1 1			1 1						
1387	Apply Surcharge - Tank T-2	15	05DEC05	22DEC05	26											1 1	1 1	

Act.	Activity Description	Orig Dur	ES	EF	TF	2005 2006 2007 2008
1397	Surcharge Consolidation Period - Tank T-2	84	23DEC05	08APR06	26	0 N D J F M A M J J A S O N D J F M A M J J A S
1389	Apply Surcharge - Tank T-5	15	30DEC05	18JAN06	43	
1398	Surcharge Consolidation Period - Tank T-5	84	19JAN06	02MAY06	43	
1406	Surcharge Removal/Excavate - Tank T-1	18	21FEB06	13MAR06	0	
1419	Excavate for Tank T-3 Ring Beam	12	01MAR06	14MAR06	18	
1450	Excavate for Tank T-4 Ring Beam	12	01MAR06	14MAR06	45	
1471	Excavate for Tank T-6 Ring Beam	12	06APR06	19APR06	74	
1407	Surcharge Removal/Excavate - Tank T-2	18	10APR06	29APR06	26	
1409	Surcharge Removal/Excavate - Tank T-5	18	03MAY06	23MAY06	43	
CC-B.90.10.45.	20 Tank Foundations			1		
1366	Tank 3- Plate Bearing Tests	6	30DEC05	07JAN06	41	
1367	Tank 4 - Plate Bearing Tests	6	30DEC05	07JAN06	56	
1356	Tank 1 Plate Bearing Tests	6	14MAR06	20MAR06	0	
1363	Tank 6 - Plate Bearing Tests	6	20APR06	26APR06	74	
1361	Tank 2 - Plate Bearing Tests	6	02MAY06	08MAY06	26	
1362	Tank 5 - Plate Bearing Tests	6	24MAY06	30MAY06	43	
1042	Tank 3 Fuel Tank Ring Beams/Vlv.Plinth (1x1/4)	30	09JAN06	15FEB06	41	
1043	Tank 4 Fuel Tank Ring Beams/VIv Plinths (half 1)	42	09JAN06	01MAR06	56	
1047	Tank 3 Fuel Tank Ring Beams/Vlv.Plinths (3x1/4)	48	15MAR06	11MAY06	18	
1050	Tank 4 Fuel Tank Ring Beams/VIv Plinths (half 2)	36	15MAR06	26APR06	45	
1026	Tank 1 Fuel Tank Ring Beams & Valve Plinths	72	21MAR06	15JUN06	0	
1052	Tank 6 Fuel Tank Ring Beams & Valve Pliths	72	27APR06	24JUL06	74	
1041	Tank 2 Fuel Tank Ring Beams & Valve Plinths	72	12MAY06	07AUG06	23	
1051	Tank 5 Fuel Tank Ring Beams & Valve Pliths	72	16JUN06	09SEP06	30	
1197	Tank 4 Fuel Tank Ring Beam Containment Barrier	12	27APR06	11MAY06	45	
1198	Tank 3 Fuel Tank Ring Beam Containment Barrier	12	12MAY06	25MAY06	18	
1196	Tank 1 Fuel Tank Ring Beam Containment Barrier	12	16JUN06	29JUN06	0	
1282	Tank 6 Fuel Tank Ring Beam Containment Barrier	12	25JUL06	07AUG06	74	
1195	Tank 2 Fuel Tank Ring Beam Containment Barrier	12	08AUG06	21AUG06	47	
1242	Tank 5 Fuel Tank Ring Beam Containment Barrier	12	11SEP06	23SEP06	30	
CC-B.90.10.55 M	Miscellaneous Foundations and Supports					
1025	Construct Receipt/Pump Platform	90	20JUL06	06NOV06	33	
1032	Product Recovery Tank Foundations & Containment	48	07NOV06	05JAN07	33	
1172	Construct Filter/Water Separator Pump Plinths	9	06JAN07	16JAN07	54	
1173	Construct Drain Down Tank Chamber	12	06JAN07	19JAN07	195	<mark> </mark>
1256	Transfer Pump Plinths	12	17JAN07	30JAN07	54	
1257	Pig Traps Plinths	6	31JAN07	06FEB07	54	
1244	Install Pipe Supports/Sleepers to Rcpt/Recovery	18	07FEB07	02MAR07	54	
1168	Diesel Tank Foundation & Containment Bund	12	03MAR07	16MAR07	107	

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Act. ID	Activity Description	Orig Dur	ES	EF	TF		2005 2006 2007 2008
1176	Pipe Sleepers - Median Run To TanksT-1/2/3/4	36	11JUN07	25JUL07	0		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 E
1318	Install FS Pipe Supports/Sleepers (T-3/4/6)	18	11JUN07	04JUL07	21	1	
1177	Pipe Sleepers - Lateral Runs to Tanks T-1/2/3/4	36	05JUL07	16AUG07	19	Ħ	
1333	Install FS Pipe Supports/Sleepers (T-1/2/5)	18	05JUL07	25JUL07	21	1	
1178	Pipe Sleepers - Medians Run to Tanks T-5/6	24	27JUL07	23AUG07	13	1	
1201	Pipe Sleepers - Lateral Runs to Tanks T-5/6	12	24AUG07	06SEP07	13	1	
CC-B.90.10.60 M	Miscellaneous Structures					П	
1161	Constr. Oil Interc. & U/G Drains (Outside BWall)	78	04MAR06	06JUN06	44	1	
1210	Construct Small Boat Landing	60	03NOV06	16JAN07	378	1	
1200	Construct Nitrogen Store Building	24	21DEC06	22JAN07	331	1	
1162	Erect Product Recovery Tank Maint. Steel Platf.	24	06JUL07	03AUG07	90	1	
1164	Erect Receipt/Pump Maint. Steel Platform	36	01SEP07	16OCT07	54	1	
CC-B.90.10.65 F	Road Works						
1079	Road Construction (betw Acs Rd & T-1/3)	48	01AUG07*	27SEP07	9		
1087	Road Construction (betw T2/4/6 & Future TF)	78	27AUG07	28NOV07	23		
1085	Road Construction (Sea Side T1/2/5)	78	28SEP07	02JAN08	9	1	
1086	Road Construction (South of T5/6)	48	01NOV07	29DEC07	23		
1107	Road Construction (Constr opening)	30	21FEB08	26MAR08	0		
1056	Foot Path (betw Acs Rd & T-1/3)	24	05SEP07	26OCT07	99		
1063	Foot Path (betw T3/4/6 & Future TF)	48	25OCT07	29DEC07	47		
1061	Foot Path (Sea Side T1/2/5)	48	24NOV07	30JAN08	9		
1062	Foot Path (South of T5/6)	30	06DEC07	28JAN08	23		
1064	Foot Path (Constr opening)	18	13MAR08	10APR08	0		
CC-B.90.10.75 L	Landscaping Works					4	
1143	Lndscp - Preparation for Tree Transplant	36	25OCT05	05DEC05	41		
1355	Lndscp - Tree Remove (T-3/4) & Tree Transplant	24	06DEC05	07JAN06	41		
1531	Landsape 1.5m Mounds (Future TF Ring Beams Area)	78	24MAY06	25AUG06	472		
1526	Landsape 1.5m Mound (North of Acs Rd & T-1/3)	24	16JUN06	15JUL06	421		
1539	New Trees/Shrubs/Grass (North of Acs Rd & T-1/3)	36	17JUL06	26AUG06	421		
1528	Landsape 1.5m Mound (Sea Side T1/2/5)	36	08AUG06	18SEP06	295		
1533	New Trees (Future TF Ring Beams Area)	52	26AUG06	28OCT06	472		
1527	Landsape 1.5m Mound (South of T5/6)	24	18SEP06	18OCT06	301		
1540	New Trees/Shrubs (South of T5/6)	30	19OCT06	23NOV06	301		
1529	Landsape 1.5m Mound (Future TF Perimiter Area)	48	27OCT06	23DEC06	210		
1542	New Trees/Shrubs/Gras (Future TF Perimiter Area)	90	27DEC06	16APR07	210		
1541	New Trees/Shrubs (Sea Side T1/2/5)	72	05FEB07	04MAY07	207		
1192	Construct Car Park	78	14JUN07	18SEP07	107		
1534	New Trees/Shrubs (North of OpBldg)	30	19SEP07	25OCT07	107		
1535	New Trees/Shrubs/Grass (South of OpBldg)	42	19JAN08	11MAR08	38	П	

Act.	Activity	Orig	ES	EF	TF														
ID	Description	Dur				2005 O N	05 D J F M		2006 J J A	S O N	D J F	M A		007 J A	s o	N D	J F M	2008 A M	
CC-B.90.20 Bu	uildings	·		"				1 1				1	1 1						
CC-B.90.20.10	Excavation & Lateral Support																		
4311	Bldg - Open Excavation to +3.475	8	07FEB06	15FEB06	27														
4312	Bldg - Area A Drive Sheet Piles	15	10FEB06	27FEB06	27			1 1	i	i i				1 1	i	i	1 1	i	
4313	Bldg - SP Record Plan, BA14 & Consent for ELS	28	28FEB06	27MAR06	31				1	1 1		1	1 I 1 I	1 1	1	1	1 1		
4315	Bldg - Area A Excavation with Lateral Support	15	28MAR06	14APR06	26			3				1	1 1				1 1		
4316	Bldg - Remove Sheet Pile	8	24JUN06	04JUL06	26														
4317	Bldg - Area B Excavation to +0.085	2	05JUL06	06JUL06	26			1 1							i		iii		
4318	Bldg - Grid C-F Backfill and Blinding	3	27JUL06	29JUL06	26			1 1	8	1 1	1	1	1 1 1 1	1 1	1	1	1 1	1	
4314	Bldg - Grid A-C Backfill and Blinding	2	01SEP06	02SEP06	50		1 1 1	1 1			1	1	1 I 1 I	1 1	1	1	1 1	1	
CC-B.90.20.20	Substructure																		
4321	Bldg - IC Blinding, Base & Wall to -2.0	12	15APR06	28APR06	26														
4322	Bldg - IC 7 days Curing for Wall to -2.0	7	29APR06	05MAY06	32				l i			i	i i	l i i	l i	i l	ii	1	
4323	Bldg - IC Backfill to -2.0 & Remove Shoring -1.5	2	06MAY06	08MAY06	26				1	1 1		1	1 I 1 I	1 1	1	1	1 1		
4324	Bldg - IC Construct Wall to +0.0	5	09MAY06	13MAY06	26							1	1 1	1 1			1 1		
4326	Bldg - IC 7 days Curing for Wall to +0.0	7	14MAY06	20MAY06	32			8					1 1						
4325	Bldg - IC Install Internal Shoring at -0.2	2	15MAY06	16MAY06	30			1											
4327	Bldg - IC Backfill to +0.0 & Remove Shoring +0.5	2	22MAY06	23MAY06	26				l i	iii		i	i i		l i	i	ii		
4328	Bldg - IC Construct Wall to +2.0	5	24MAY06	29MAY06	26			8	1	1 1		1	1 I 1 I	1 1	1	1	1 1		
4329	Bldg - IC Install Internal Shoring at +1.8	2	30MAY06	01JUN06	29							1	1 1	1 1			1 1		
4330	Bldg - IC 7 days Curing for Wall to +2.0	7	30MAY06	05JUN06	31								1 1						
4331	Bldg - IC Backfill to +2.0 & Remove Shoring +2.5	2	06JUN06	07JUN06	26														
4332	Bldg - IC Construct Intake Chamber Wall, G/F S&B	14	08JUN06	23JUN06	26				3   j	iii		İ		i i	i	i	i i	i	
4333	Bldg - Construct Footing and Wall Grid C to E	16	07JUL06	26JUL06	26		1 1 1	1 1		1 1		1		1 1	1	1	1 1		
4334	Bldg - IC Remove Internal Shoring	2	11JUL06	12JUL06	46				1			1	1 1			-			
4319	Bldg - Construct Footing and Wall Grid A - C	31	27JUL06	31AUG06	50								1 1						
4320	Bldg - Holding Tank	18	01SEP06	21SEP06	68			iii					i						
CC-B.90.20.30	Superstructure							1 1	İ	1 1	i			i i	i	I	1 1	İ	
4338	Bldg - Grid E-Pit Ground Slab & Beam	5	31JUL06	04AUG06	26			1 1	B	1 1	1		1 I	1 1		I I	1 1		
4335	Bldg - Grid A-C Ground Slab and Trench	18	04SEP06	23SEP06	50														
4336	Bldg - Grid A-C Column and Wall	18	25SEP06	18OCT06	50														
4337	Bldg - Grid A-C Roof	7	09OCT06	16OCT06	50			1 1		8									
4339	Bldg - Grid C-E Ground Slab	5	17OCT06	21OCT06	50			1 1				1	1 I 1 I	1 1		I	1 1		
4340	Bldg - Water Tanks at G/F	9	23OCT06	02NOV06	224			1 1		<b>S</b>	1		1 1						
4341	Bldg - Grid C-F Gnd to 1/F Column, Wall & Slab	22	23OCT06	17NOV06	50			1 1											
4342	Bldg - Roof at Water Tank Area	6	03NOV06	09NOV06	224														
4343	Bldg - Grid C-F 1st/F Column/Wall to Roof (incl)	28	18NOV06	20DEC06	50				İ			i			i		i		

Λ-4	A sale inter-	0-1-	FO	FF	TE														
Act.	Activity Description	Orig Dur	ES	EF	TF		2005   N D J F M A		006	8 0	N D	1   5   4	4 A N4	2007	A   C	O N D	I E M	2008	I A E
	builders Work and Finishes	Dui				Ĭ	NDJFMA	IVI J	JA	3 0	ט א	JFI	A A M	JJ	AS	OND	JFIM	A M J	JAE
CC-B.90.20.40.	10 Transformer Room					П		I I I I		1 1	1	1 1				1 I 1 I	1 1		1 1
4344	Bldg - Tx Room Blockworks	3	03NOV06	07NOV06	165			I I I I			1	1 1				1 1			
4345	Bldg - Tx Room Ceiling Plater	2	08NOV06	09NOV06	190	П		1 1											
4346	Bldg - Tx Room Door / Louvre Frame	1	10NOV06	10NOV06	190	П													
4347	Bldg - Tx Room Wall Plaster	5	11NOV06	16NOV06	190			I I I I				1 1					1 1	1 1	
4348	Bldg - Tx Room Floor Screeding	7	17NOV06	24NOV06	190			I I I I	1	1 1	<b>8</b> ¹	1 1	1 1		1 1	1 1	1 1	1 1	1 1
4349	Bldg - Tx Room Ceiling and Wall Paint	7	25NOV06	02DEC06	190						S								
4350	Bldg - Tx Room Door Leaf and Louvre	1	20MAR07	20MAR07	327														
CC-B.90.20.40.	20 Genset Room, Switch Room & Compressor Room							I I I I	I I	I I	Ī	1 1	I I			I I I I	1 1		I I
4351	Bldg - Machine Room Blockworks	4	08NOV06	11NOV06	165			I I I I			1	1 1			1 1	1 1	1 1	1 1	1 1
4352	Bldg - Machine Room Ceiling Plater	4	13NOV06	16NOV06	165														
4353	Bldg - Machine Room Door / Louvre Frame	2	17NOV06	18NOV06	165														
4354	Bldg - Machine Room Wall Plaster	5	20NOV06	24NOV06	165			i i	l i		8	i i	i i			i i	i i	i	1 1
4355	Bldg - Machine Room Floor Screeding	7	25NOV06	02DEC06	165			I I I I	I	1 I	S	I I I I	1 1			1 I 1 I	1 1	1 1	1 I
4356	Bldg - Machine Room Ceiling and Wall Paint	7	05MAY07	12MAY07	91			1 1			!					1 1	1 1		
4357	Bldg - Machine Room Door Leaf and Louvre	2	14MAY07	15MAY07	281								1			1 1			
CC-B.90.20.40.	30 Laboratory and Workshop							i i	l i		i	i i				ii	iii	ii	1 1
4358	Bldg - Lab & WS Blockworks	2	13NOV06	14NOV06	328			I I I I	1	1 1	1	1 1	1 1			1 I 1 I	1 1	1 1	1 I
4359	Bldg - Lab & WS Ceiling Plater	4	15NOV06	18NOV06	328			I I I I			1	1 1				1 1			
4360	Bldg - Lab & WS Door / Louvre Frame	2	20NOV06	21NOV06	328			 			1						1 1		
4361	Bldg - Lab & WS Wall Plaster	5	22NOV06	27NOV06	328						8								
4362	Bldg - Lab & WS Floor Screeding	7	28NOV06	05DEC06	328						8	<u> </u>				i	iii	<u> </u>	i i
4363	Bldg - Lab & WS Ceiling and Wall Paint	7	06DEC06	13DEC06	328			I I I I	1	1 1		1 1				1 1	1 1		1 1
4364	Bldg - Lab & WS Door Leaf and Louvre	2	14DEC06	15DEC06	338			I I I I			¦ 8	1 1			1 1	1 I 1 I	1 1		1 1
CC-B.90.20.40.	40 Fire Service Room																		
4365	Bldg - FR Waterproofing & Rendering to Tank	7	27NOV06	04DEC06	224			i i	l i			ii				ii	ii	ii	1 1
4366	Bldg - FR Cover and Step to Tank	2	05DEC06	06DEC06	224			I I I I			18	_				1 1	1 1	1 1	1 I
4367	Bldg - FR Ceiling Plaster	6	11JAN07	17JAN07	107			I I I I			1					1 1	1 1		
4368	Bldg - FR Wall Plaster	6	18JAN07	24JAN07	107			1 1											
	Bldg - FR Screeding	9	25JAN07	03FEB07	107						i	<b>\$</b>				iii	1 1		
4370	Bldg - FR Ceiling Paint	6	05FEB07	10FEB07	107			I I I I	1	1 1	1					1 1 1 1	1 1	1 1	1 1
4371	Bldg - FR Door and Louvre	12	14JUN07	28JUN07	244			I I I I			1	1 1	1 1			1 1	1 1		1 1
	Bldg - FR Walls Paint	12	14JUN07	28JUN07	244	Ц			1										
	50 Office Area & Control Room				T							-							
	Bldg - OA Blockworks	9	11JAN07	20JAN07	191			I I											
4373	Bldg - OA Door / Window Frame	4	22JAN07	25JAN07	191			 	i i				1 1				i i	ii	
4374	Bldg - OA Wall Plaster	10	26JAN07	06FEB07	219			I I I I	1										1 1
4375	Bldg - OA Screeding	15	01FEB07	17FEB07	219			I I I I	1		I		1 1			1 1	1 1		

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Act.	Activity Description	Orig Dur	ES	EF	TF		2005 200					2007			2008	
4376	Bldg - OA Ceiling Grid	9	10FEB07	27FEB07	246	0	N D J F M A M J	JAS	S O N D	J F M	AMJ	JAS	O N D	J F M	AMJ	JAE
4377	Bldg - OA Wall & Floor Tile	12	24FEB07	13MAR07	219			1 1			1 1					
4378	Bldg - Door Leaf and Louvre	4	14MAR07	17MAR07	263	۱		1 1	1 1		1 1	1 1		1 1	1 1	1 1
4379	Bldg - OA Sanitary Fitment	4	19MAR07	22MAR07	313	۱										
4380	Bldg - Fixture	4	19MAR07	22MAR07	314	١										
4381	Bldg - Flooring to Dry Area	8	23MAR07	31MAR07	314			ii								
4382	Bldg - Ceiling Panel	3	02APR07	04APR07	314			1 1								
CC-B.90.20.40.	60 External Works	1	I	1												
4383	Bldg - External Wall Plastering	13	26JAN07	09FEB07	191											
4384	Bldg - Roofing	20	30JAN07	24FEB07	227									1 1	1 1	
4385	Bldg - External Wall Painting	17	10FEB07	05MAR07	191	1		1 1	1 1		1 1	1 1	1 1	1 1	1 1	1 1
CC-B.90.20.50 E	Building Services		'													
CC-B.90.20.50.	10 Transformer Room															
4386	Bldg - Tx Room Conduit	3	03NOV06	06NOV06	165				8							
4387	Bldg - Tx Room Wiring	3	25NOV06	28NOV06	200			1 1	¦ <b>B</b> ¦	1 1	1 1	1 1	1 1	1 I 1 I		1 1
4389	Bldg - Tx Room Air Ducting & Fan	6	04DEC06	09DEC06	190			1 1								
4391	Bldg - Tx Room Electrical Fixtures & Termination	6	11DEC06	16DEC06	190											
4392	Bldg - Tx Room T&C Prior Handover to CLP	6	18DEC06	27DEC06	190											
4393	Bldg - Tx Room Handover to CLP	6	28DEC06	04JAN07	190			1 1	1 1		1 1	1 1	1 1	1 1	1 1	1 1
4394	Bldg - Tx Room CLP Installation (Tx & HV SWGR)	60	05JAN07	19MAR07	190			1 1	1 1		1 1	1 1	1 1	1 1	1 1	1 1
CC-B.90.20.50.	20 Genset Room, Switch Room & Compressor Room															
4395	Bldg - Machine Rooms Conduit	12	08NOV06	21NOV06	332											
4396	Bldg - Machine Rooms Wiring Small Power & Lights	12	04DEC06	16DEC06	322			ii								
4433	Bldg - Generator Set Installation	48	15DEC06	13FEB07	155			1 1			1 1	1 1	1 1			1 1
4434	Bldg - Generator Set Control Panel & Wiring	6	14FEB07	23FEB07	210			1 1								
4448	Bldg - Install Piping to Diesel Tank (outdoor)	12	20APR07	04MAY07	91											
4398	Bldg - Machine Rooms Air Ducting & Fan	6	14MAY07	19MAY07	91											
4400	Bldg - LV Switch Board Installation	48	21MAY07	18JUL07	91			ii						iii		
4412	Bldg - UPS Installation & Wiring (ELV Room)	12	21MAY07	02JUN07	121			1 1	1 1	1 1		1 1	1 1	1 1		1 1
4401	Bldg - Install ELV Pannel (ELV Room)	6	04JUN07	09JUN07	121											
4410	Bldg - Switch Board Wiring, Connection	48	04JUN07	02AUG07	163			1 1								
4435	Bldg - Install MCB Boards (Switch Room)	12	04JUN07	16JUN07	175											
4397	Bldg - Install & Terminate Small Power & Light.	24	19JUL07	16AUG07	151			ii						iii	iii	
4399	Bldg - Interconnect. Cabling All El. Rooms	36	19JUL07	30AUG07	91			1 1	1 1	1 1	1 1			1 1		1 1
4436	Bldg - Interconnect. Terminations All El. Rooms	36	03AUG07	14SEP07	127				1 1	1 1				1 1	1 1	1 1
CC-B.90.20.50.	30 Laboratory and Workshop															
4402	Bldg - Lab & WS Conduit	2	13NOV06	14NOV06	368							1 1		1 1		1 1
4403	Bldg - Lab & WS Wiring	3	06DEC06	08DEC06	350			1 1		1 1	1 1	1 1			1 1	
4404	Bldg - Lab & WS FS Main & Sub-main	6	14DEC06	20DEC06	328					1 1	1 1	1 1		1 1	1 1	

A of	Activity	Oric	EQ	CC	TE																		
Act. ID	Activity Description	Orig Dur	ES	EF	TF	2005 N D J	E M	Δ 84	2006	Δ .		D	I E	M		2007	Δ C	0 N	D	LEN	200		JAE
4405	Bldg - Lab & WS Air Ducting & Fan	6	21DEC06	30DEC06	328	NDJ	FIN	A	JJ	A		0	JF	IVI A	A IVI	J J ,	AJ	UN	, О	)   F   IV	1   A   1	IVI J	JAE
4406	Bldg - Lab & WS Sprinkler Head, FE	3	02JAN07	04JAN07	328			1	 	 	1	1			1 1 1 1	1	1			1 1	1	1	1 1
4437	Bldg - Small Power & Lighting Fixtures	3	05JAN07	08JAN07	328										1 1								
4407	Bldg - Lab & WS Termination	3	09JAN07	11JAN07	328					     													
CC-B.90.20.50.	40 Fire Service Room		1		'	l l	1 1	1			1	Ī	1 1		1 1		i			1 1			
4414	Bldg - FS Room Install Hoisting Beam	12	18NOV06	01DEC06	176	l   		I I		 	1		1 1		1 1 1 1	1	1			1 1	1	1	1 1
4408	Bldg - FS Room Conduit	12	11JAN07	24JAN07	1,179		1 1																
4409	Bldg - FS Room Wiring (small Power/Lighting)	12	05FEB07	17FEB07	1,170							il			1 1		i				li		
4411	Bldg - FS Room Air Ducting & Fan	12	12FEB07	28FEB07	107	 	1 I 1 I	I I		 	1	1			1 I 1 I	1	1		1		1	-	1 1
4438	Bldg - FS Room Install Sea Water Turbine Pumps	32	01MAR07	07APR07	107	l I I I	1 1	I I		 	1	1			1 1	1	1		1	1 1	1		1 1
4439	Bldg - FS Room Foam Concentrate Pumps	16	09APR07	26APR07	107										<b>S</b>								
4441	Bldg - FS Room Piping Works	36	09APR07	13JUN07	107											3							
4440	Bldg - FS Room Sprinkler and Fire Serv Pumps	16	27APR07	16MAY07	107		i i	i	i i	 I I	İ	i	i i			i	i			ii	l i	i	1 1
4446	Bldg - FS Room Foam Concentrate Tanks	6	27APR07	04MAY07	117		1 I 1 I	I I	 	 	1	1	1 1			1	1		1		1	-	
4442	Bldg - FS Room Power/Controls Cabling	24	14JUN07	14JUL07	166					 					1 1		-						
4444	Bldg - FS Room Small Power/Light Fixtures	12	14JUN07	28JUN07	184																		
4443	Bldg - FS Room Power/Controls Terminations	24	29JUN07	30JUL07	166							il			1 1		i.				l i		
4445	Bldg - FS Room Small Power/Light Terminations	6	29JUN07	07JUL07	184		1 I 1 I	1		 	1	1	1 1		1 1 1 1	<b>3</b> ¦	1				1	-	
4447	Bldg - FS Room FS cabling	12	15SEP07	29SEP07	91		1 1	I I			1	I I	1 1		1 1	1			1		1	-	
CC-B.90.20.50.	50 Office Area & Control Room																						
4415	Bldg - OA Conduit	18	11JAN07	31JAN07	245							il					i						
4416	Bldg - OA FS Main & Sub-main	18	26JAN07	06MAR07	246			Ì	i i		i	i			ii	i	i			i i	i	i	
4417	Bldg - OA Pipe and Air Ducting	18	06FEB07	16MAR07	246	 	1 I 1 I	I I	 	 	1	1		<u> </u>	1 1	1	1			1 1	1	1	1 1
4418	Bldg - OA Plumb and Drainage Pipe	18	10FEB07	06MAR07	219																		
4419	Bldg - OA Small Power/Lighting Wiring	18	22FEB07	14MAR07	230		1 1			 				<u> </u>	1 1								
4420	Bldg - Install MVAC Units/Piping @ Roof	18	26FEB07	17MAR07	227			į			i	i		<u>S</u>	ii	į	i			ii	li	1	
4421	Bldg - Plumbing Incoming Connection	6	07MAR07	13MAR07	321	l I I I	1 I 1 I	1	 	 	1	1			1 1 1 1	1	1		1		1	1	1 1
4422	Bldg - OA Disabled Hoist Installation	36	14MAR07	25APR07	219		1 1			 		!			3					1 1			
4423	Bldg - OA MVAC Connection	6	19MAR07	24MAR07	245					     													
4424	Bldg - OA Sprinkler Head, HR, FE	18	19MAR07	09APR07	263		<u>i i</u>	ļ į			l i		<u> </u>		<u> </u>					ii	l i		
4425	Bldg - OA Small Power/Light Fixtures & Terminate	24	19MAR07	16APR07	227	l I I I	1 I 1 I	I I	 	 	1	1	1 1		1 1	1	1		1	1 1	1	-	1 1
4430	Bldg - OA Install Telemetry Equipment	12	26APR07	10MAY07	279		1 1	1		 	1	1								1 1			
4431	Bldg - OA SCADA Equipment	48	02OCT07	26NOV07	91																		
C-B.90.30 Tar																							
CC-B.90.30.15 T						l i	 	1		     	İ	I	1 1				I					1	1 1
	10 Annular & Bottom Plates		T	1		l I I I		1		 	1	I	1 1		I I I I		1					1	1 1
3100	T1 - Check foundation level	2	30JUN06	03JUL06	0			1					1 1		1 1					1 1			
3101	T1 - Excavate for sump pit	2	04JUL06	05JUL06	0																		
3106	T1 - Laydown, fit-up & weld bottom plates	18	04JUL06	25JUL06	5				<b>===</b>			i	1 1							1 1		1	

	A # "		F.0																		
Act. ID	Activity Description	Orig Dur	ES	EF	TF		2005		2006				_   _		2007		1 - 1 -			2008	
3102	T1 - Install sump	1	06JUL06	06JUL06	0	0	N D J F M	AM	JJ	AS	ON	D J I	FM	AM	JJ	AS	ON	I D J	JFN	I A M	JJA
3103	T1 - Laydown and fit-up annular plates	6	07JUL06	14JUL06	0			i i	<u> </u>	i	i i	i	i	i i		i i	l i	i	i i	İ	
3104	T1 - Weld annular to annular plates	1	15JUL06	15JUL06	0					-		+				1 1					
3105	T1 - Radiograph test weld of annular plates	1	17JUL06	17JUL06	0					1	1 1					1 1					
3107	T1 - Weld bottom plates to annular plates	18	18JUL06	07AUG06	0				<u> </u>												
3108	T1 - Vacuum test bottom plates; Repair works	12	08AUG06	21AUG06	59					⊠ İ			i	ii		i i	li		ii	i	
CC-B.90.30.15	.20 Shell Plates & Appurtenances			1		П				-						1 1		1			
3110	T1 - Install/Weld 1st course shell plates	15	01AUG06	17AUG06	0	П				<del>22</del>											
3111	T1 - Install/Weld 2nd course shell plates	13	18AUG06	01SEP06	0					<b>E</b>		1 :	il					i			
3112	T1 - Install/Weld 3rd course shell plates	12	02SEP06	15SEP06	0			1 1		<b>E</b>	1 1	i i	i	1 1		1 1		1	1 1	1	
3113	T1 - Install/Weld 4th course shell plates	12	16SEP06	29SEP06	0			1 1				1	1	1 1		1 1 1 1	1	1	1 1	1	
3114	T1 - Install/Weld 5th course shell plates	11	03OCT06	16OCT06	0					1						1 1		!	1 1		
3115	T1 - Install/Weld 6th course shell plates	11	17OCT06	28OCT06	0	П					8										
3120	T1 - Install/Weld shell manholes & nozzles	10	17OCT06	27OCT06	52			l i i		i		l i	i l	i i		i	li	i	ii	i	
3121	T1 - Erect/weld spiral staircase & wind girder	28	28OCT06	30NOV06	52			1 1		1		1	-	1 1		I I I I	1	1	1 1	1	
3116	T1 - Install/Weld 7th course shell plates	10	30OCT06	10NOV06	0					1						1 1			1 1		
3117	T1 - Install/Weld 8th course shell plates	9	11NOV06	21NOV06	0																
3350	T1 - Install/Weld 9th course shell plates	9	22NOV06	01DEC06	0					i										i	
3118	T1 - Erect/weld top angle/girder	5	02DEC06	07DEC06	22			1 1		1		1	1	1 1		1 I 1 I	1	1	1 1	1	
3119	T1 - Remove erection jigs & remedial work	12	04JAN07	17JAN07	39					1	1 1			1 1		1 1		1	1 1	1	
CC-B.90.30.15	.30 Roof Plates & Appurtenances; Internals																				
3123	T1 - Erect temporary support column	4	02DEC06	06DEC06	23					į											
3124	T1 - Erect /weld roof steelwork	18	08DEC06	02JAN07	22			i i		i				i i		i i	li	i	ii	İ	
3125	T1 - Install/weld roof plates	18	03JAN07	23JAN07	22			1 1		1	1 1		-	1 1		1 I 1 I	1	1	1 1	1	
3126	T1 - Install/weld roof manholes & nozzles	6	24JAN07	30JAN07	22					1		8				1 1					
3128	T1 - Install various tank's internals	18	24JAN07	13FEB07	28						1 1		1								
3127	T1 - Install roof handrails/walkway/platform	18	31JAN07	23FEB07	22					i	1 1		<b>3</b>	i			i		i	i	
3129	T1 - Pneumatic test roof plates & remadial works	6	24FEB07	02MAR07	22			1 1		1	1 1	1	₽			1 I 1 I				1	
CC-B.90.30.15	.40 Tanks Hydrotest									1						1 1					
3130	T1 - Temp. piping & hydrotest preparation	18	18JAN07	07FEB07	39																
3131	T1 - Water filling of tank	9	03MAR07	13MAR07	22					į								1			
3132	T1 - Tank Settlement	90	14MAR07	11JUN07	27			1 1		1	1 1	1			3	1 I 1 I	1	1	1 1	1	
3141	T1 - Pressure Test	6	14MAR07	20MAR07	77									1 1		I I I			1 1	1	
3133	T1 - Drain Tank; Remove temp. pipework	6	12JUN07	18JUN07	20	Ш									8						
CC-B.90.30.15	.50 Tanks Painting																		1 1		
3138	T1 - Erect scaff/canvass for external painting	6	14MAR07	20MAR07	77			1 1		i	i i	İ				1 I 1 I	1	1	1 1	I	
3139	T1 - External painting of shell/roof plate	18	21MAR07	11APR07	77			1 1			1 1	1	💹			1 I 1 I			1 I 1 I	1	
3140	T1 - Dismantle external scaffold	3	12APR07	14APR07	77									1		1 1			1 1	1	
3134	T1 - Internal scaffold for shell/roof plate	6	20JUN07	26JUN07	66										<b>S</b>	1 1			1 1		

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	Act. ID	Activity Description	Orig Dur	ES	EF	TF	2005	J F M		2006	A   C						2007						800	
	3135	T1 - Internal paint shell/roof plate	24	27JUN07	27JUL07	66	UND	JFM	A W J	) J	A   S	0 1	NID	JF	IVI	A IVI		AS	0 1	וטוו	JF	IVI A	W J	JAE
	3136	T1 - Dismantle Internal Scaffold/Clean Tank	6	28JUL07	03AUG07	66			1 1		1		1			1 1		<u> </u>				1	1	1 1
	3137	T1 - Paint internal bottom plate/Clean Tank	12	04AUG07	17AUG07	150			1 1		1	1		1						1				
(	CC-B.90.30.25 T										İ		1			1 1						1		
	CC-B.90.30.25.	10 Annular & Bottom Plates							i i		į	i	i	i		i i		i	l i	i	ii	i	į	
	3150	T2 - Check foundation level	2	22AUG06	23AUG06	47		1 1	1 1	1	$T_{\rm L}^{\rm L}$	1	1	1		1 1			1	1	1 1	1	1	1 1
	3151	T2 - Excavate for sump pit	2	24AUG06	25AUG06	47			1 1		B¦	1		1									1	
	3152	T2 - Laydown, fit-up & weld bottom plates	18	24AUG06	13SEP06	52																	ļ	
	3153	T2 - Install sump	1	26AUG06	26AUG06	47				li	ľ		i	i		1 1			Hi				i	
	3154	T2 - Laydown and fit-up annular plates	6	28AUG06	02SEP06	47		1 1	1 1	1	<b>§</b>	1	1	1		1 1		I I I	1	1	1 1	1	1	1 1
	3155	T2 - Weld annular to annular plates	1	04SEP06	04SEP06	47		1 1	1 1		18		i					1 1	i i	i	1 1	1	I I	1 1
	3156	T2 - Radiograph test weld of annular plates	1	05SEP06	05SEP06	47					į.													
	3157	T2 - Weld bottom plates to annular plates	18	06SEP06	26SEP06	47							i	i		1 1							į	
	3158	T2 - Vacuum test bottom plates; Repair works	12	27SEP06	13OCT06	183			1 1	İ	i		i	i		1 1		i i	İ		i i	i	İ	
	CC-B.90.30.25.	20 Shell Plates & Appurtenances						1 1	1 1		I	1	1	I I		I I		I I I I	1	1	I I	1	I I	1 1
	3159	T2 - Install/Weld 1st course shell plates	15	18NOV06	05DEC06	0			1 1		1	1		1				1 1					1	
	3160	T2 - Install/Weld 2nd course shell plates	13	06DEC06	20DEC06	0					Ì												į	
	3161	T2 - Install/Weld 3rd course shell plates	12	21DEC06	08JAN07	0				l i	į	l i				1 1			Ιį		i i		į	
	3162	T2 - Install/Weld 4th course shell plates	12	09JAN07	22JAN07	0		1 1	1 1	1	1	1	1	<u> </u>		1 I 1 I		I I I I	1	1	1 I 1 I		1	1 1
	3163	T2 - Install/Weld 5th course shell plates	11	23JAN07	03FEB07	0		1 1	1 1	1	I I	1	1	Ħ				I I I I	1	1	1 I	1	1	1 1
	3164	T2 - Install/Weld 6th course shell plates	11	05FEB07	16FEB07	0					1			<b>E</b>									1	
	3165	T2 - Install/Weld shell manholes & nozzles	10	05FEB07	15FEB07	32					ì			S									Ì	
	3167	T2 - Erect/weld spiral staircase & wind girder	28	16FEB07	23MAR07	32			1 1	i	İ	i	i			i i		i i	İ	i	i i	i	İ	
	3166	T2 - Install/Weld 7th course shell plates	9	17FEB07	02MAR07	0		1 1	1 1	1	1	1	1			1 1		I I I I	1	1	1 1		1	1 1
	3168	T2 - Install/Weld 8th course shell plates	9	03MAR07	13MAR07	0			1 1		1	1			<u></u>								!	
	3169	T2 - Install/Weld 9th course shell plates	9	14MAR07	23MAR07	0					İ				<u></u>								İ	
	3172	T2 - Erect/weld top angle/girder	5	24MAR07	29MAR07	0			i i		i	i	i	i		i i			l i	i l	ii	i	į	
	3173	T2 - Remove erection jigs & remedial work	12	23APR07	07MAY07	29		1 1	1 1		I		1	1					1	1		1	I I	
	CC-B.90.30.25.	30 Roof Plates & Appurtenances; Internals							1 1		1	1		1						1	1 1		1	
	3174	T2 - Erect temporary support column	4	24MAR07	28MAR07	1					1				8								1	
	3175	T2 - Erect /weld roof steelwork	18	30MAR07	20APR07	0					i			İ									İ	
	3176	T2 - Install/weld roof plates	18	21APR07	12MAY07	0			1 1	i	İ	i	i	i				i i	İ	i	i i	i	İ	
	3177	T2 - Install/weld roof manholes & nozzles	6	14MAY07	19MAY07	0		1 1		1	1	1	1	1				I I I I	1		1 1		I	1 1
	3178	T2 - Install various tank's internals	18	14MAY07	02JUN07	21		1 1	1 1					1		💹		1 1						1 1
	3179	T2 - Install roof handrails/walkway/platform	18	21MAY07	09JUN07	0					1			 				     					 	
	3180	T2 - Pneumatic test roof plates & remadial works	6	11JUN07	16JUN07	15					i	li		i			3				1 1		İ	
		40 Tanks Hydrotest						1 1			i	i		i I						i			İ	
	3181	T2 - Temp. piping & hydrotest preparation	18	08MAY07	28MAY07	32		1 1	1 1			1	1	1				1 1	1				1	1 1
	3182	T2 - Water filling of tank	9	18JUN07	28JUN07	15					1			I I		1 1				1	1 1		I I	1 1

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Act. ID	Activity Description	Orig Dur	ES	EF	TF		2005 2006			2007			2008	
3183	T2 - Tank Settlement	90	29JUN07	26SEP07	20	0	N D J F M A M J J A S O N	I D J F M	A M .	J J A S	OND	J F M	AMJ	JAE
3212	T2 - Pressure Test	6	29JUN07	07JUL07	15	1			1 1	N 1		1 1	1 1	1 1
3184	T2 - Drain Tank; Remove temp. pipework	6	27SEP07	04OCT07	16	1								1 1
CC-B.90.30.25.	50 Tanks Painting	1		I	1									
3189	T2 - Erect scaff/canvass for external painting	6	29JUN07	07JUL07	15	1				<b>S</b>				
3190	T2 - External painting of shell/roof plate	18	09JUL07	30JUL07	15	1			1 1			1 1		1 1
3191	T2 - Dismantle external scaffold	3	31JUL07	02AUG07	15	1				8				1 1
3185	T2 - Internal scaffold for shell/roof plate	6	05OCT07	11OCT07	16						8			
3186	T2 - Internal paint shell/roof plate	24	12OCT07	08NOV07	16	1						ii	iil	ii
3187	T2 - Dismantle Internal Scaffold/Clean Tank	6	09NOV07	15NOV07	16			1 1 1	1 1	I I	8		I I I I	1 1
3188	T2 - Paint internal bottom plate/Clean Tank	12	16NOV07	29NOV07	88									
CC-B.90.30.35 T	ank T-3													
CC-B.90.30.35.	10 Annular & Bottom Plates								l i i			ii	iil	ii
3192	T3 - Check foundation level	2	26MAY06	27MAY06	18				1 1	1 1	1 1		1 1	1 1
3193	T3 - Excavate for sump pit	2	29MAY06	30MAY06	18							1 1	1 1	1 1
3195	T3 - Install sump	1	01JUN06	01JUN06	18									
3194	T3 - Laydown, fit-up & weld bottom plates	18	14JUN06	05JUL06	10									
3196	T3- Laydown and fit-up annular plates	6	14JUN06	20JUN06	8				ii			i i	i i	i i
3197	T3 - Weld annular to annular plates	1	21JUN06	21JUN06	8			1 1 1	1 1	1 1	1 1		1 1	1 1
3198	T3 - Radiograph test weld of annular plates	1	22JUN06	22JUN06	8									1 1
3199	T3 - Weld bottom plates to annular plates	18	23JUN06	15JUL06	8									
3200	T3 - Vacuum test bottom plates; Repair works	12	17JUL06	29JUL06	66							i		ii
CC-B.90.30.35.	20 Shell Plates & Appurtenances								1 1			1 1		1 1
3201	T3 - Install/Weld 1st course shell plates	15	19JUL06	04AUG06	0				1 1	1 1		1 1	1 1	1 1
3202	T3 - Install/Weld 2nd course shell plates	13	05AUG06	19AUG06	0									
3203	T3 - Install/Weld 3rd course shell plates	12	21AUG06	02SEP06	0									
3204	T3 - Install/Weld 4th course shell plates	12	04SEP06	16SEP06	0							ii	iil	ii
3205	T3 - Install/Weld 5th course shell plates	11	18SEP06	29SEP06	0									
3206	T3 - Install/Weld 6th course shell plates	11	03OCT06	16OCT06	0									
3207	T3 - Install/Weld shell manholes & nozzles	10	03OCT06	14OCT06	51									
3209	T3 - Erect/weld spiral staircase & wind girder	28	16OCT06	17NOV06	51									
3208	T3 - Install/Weld 7th course shell plates	9	17OCT06	26OCT06	0				1 1				1 1	
3210	T3 - Install/Weld 8th course shell plates	9	27OCT06	07NOV06	0			1 1 1		1 1	1 1		1 1	1 1
3211	T3 - Install/Weld 9th course shell plates	9	08NOV06	17NOV06	0									
3214	T3 - Erect/weld top angle/girder	5	18NOV06	23NOV06	31									
3215	T3 - Remove erection jigs & remedial work	12	16DEC06	03JAN07	51	Ц								
	30 Roof Plates & Appurtenances; Internals					4		_	ii	i i		ii	iii	i i
3216	T3 - Erect temporary support column	4	18NOV06	22NOV06	32							1 1		1 1
3217	T3 - Erect /weld roof steelwork	18	24NOV06	14DEC06	31				1 1	1 1			1 1	

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Act. ID	Activity Description	Orig Dur	ES	EF	TF		2005 2006 2007	2008
3218	T3 - Install/weld roof plates	18	15DEC06	09JAN07	31	0	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	DJFMAMJJA
3219	T3 - Install/weld roof manholes & nozzles	6	10JAN07	16JAN07	31	1		
3220	T3 - Install various tank's internals	18	10JAN07	30JAN07	37	1		
3221	T3 - Install roof handrails/walkway/platform	18	17JAN07	06FEB07	31	t		
3222	T3 - Pneumatic test roof plates & remadial works	6	07FEB07	13FEB07	31	1		
CC-B.90.30.35.	40 Tanks Hydrotest	1	ı		'	П		
3223	T3 - Temp. piping & hydrotest preparation	18	04JAN07	24JAN07	51			
3224	T3 - Water filling of tank	9	14FEB07	27FEB07	34			
3225	T3 - Tank Settlement	90	28FEB07	28MAY07	41			
3254	T3 - Pressure Test	1	28FEB07	28FEB07	89			
3226	T3 - Drain Tank; Remove temp. pipework	6	29MAY07	04JUN07	32			
CC-B.90.30.35.	50 Tanks Painting							
3231	T3 - Erect scaff/canvass for external painting	6	28FEB07	06MAR07	89			
3232	T3 - External painting of shell/roof plate	18	07MAR07	27MAR07	89			
3233	T3 - Dismantle external scaffold	3	28MAR07	30MAR07	89			
3227	T3 - Internal scaffold for shell/roof plate	6	05JUN07	11JUN07	78			
3228	T3 - Internal paint shell/roof plate	24	12JUN07	12JUL07	78			
3229	T3 - Dismantle Internal Scaffold/Clean Tank	6	13JUL07	19JUL07	78			
3230	T3 - Paint internal bottom plate/Clean Tank	12	18AUG07	31AUG07	150			
CC-B.90.30.45 T	TankT-4							
	10 Annular & Bottom Plates		T		_			
3234	T4 - Check foundation level	2	12MAY06	13MAY06	45			
3235	T4 - Excavate for sump pit	2	15MAY06	16MAY06	45			
3237	T4 - Install sump	1	17MAY06	17MAY06	45	4		
3236	T4 - Laydown, fit-up & weld bottom plates	18	14JUN06	05JUL06	25	4		
 3238	T4 - Laydown and fit-up annular plates	6	14JUN06	20JUN06	23			
3239	T4 - Weld annular to annular plates	1	21JUN06	21JUN06	23			
3240	T4 - Radiograph test weld of annular plates	1	22JUN06	22JUN06	23			
3241	T4 - Weld bottom plates to annular plates	18	23JUN06	15JUL06	23	4		
3242	T4 - Vacuum test bottom plates; Repair works	12	17JUL06	29JUL06	81			
	20 Shell Plates & Appurtenances	T	40 11 11 00	0.4411000	T	4		
3243	T4 - Install/Weld 1st course shell plates	15	19JUL06	04AUG06	15	4		
3244	T4 - Install/Weld 2nd course shell plates	13	05AUG06	19AUG06	15	4		
3245	T4 - Install/Weld 3rd course shell plates		21AUG06	02SEP06	15	-		
3246	T4- Install/Weld 4th course shell plates	12	04SEP06	16SEP06	15	-		
3247	T4 - Install/Weld 5th course shell plates	11	18SEP06	29SEP06	15			
3248	T4 - Install/Weld 6th course shell plates	11	03OCT06	16OCT06	15	-		
3249	T4 - Install/Weld shell manholes & nozzles	10	03OCT06	14OCT06	39			
3251	T4 - Erect/weld spiral staircase & wind girder	28	16OCT06	17NOV06	39			

	Λot	Activity	Orig	ES	EF	TF	L																	
	Act.	Description	Dur	ES	EF	11		2005 N D J F M	Δ Μ	2006	ΔΙς	O N I	)	F M	Δ R		007 .ι Δ	اع ا	O N	D	I E		8008 M .I	
	3250	T4 - Install/Weld 7th course shell plates	9	17OCT06	26OCT06	15	Ĭ	IN D J F W	AIM	3 3	A 3	N I	, ,	L IAI	AIN	1 3	3 1 4	, ,	U		J   F	IVI A	IVI J	JA
	3252	T4 - Install/Weld 8th course shell plates	9	27OCT06	07NOV06	15	11							1	1	1			-					
	3253	T4 - Install/Weld 9th course shell plates	9	08NOV06	17NOV06	15						8												
	3256	T4 - Erect/weld top angle/girder	5	18NOV06	23NOV06	43	11							İ		i			i					
	3257	T4 - Remove erection jigs & remedial work	12	02DEC06	15DEC06	72	П		1 1					İ	1	i I	i	İ	İ	I I				
	CC-B.90.30.45	.30 Roof Plates & Appurtenances; Internals					П									İ				1				
	3258	T4 - Erect temporary support column	4	18NOV06	22NOV06	44										1			- 1					
	3259	T4 - Erect /weld roof steelwork	18	24NOV06	14DEC06	43								į		i			i					
	3260	T4 - Install/weld roof plates	18	15DEC06	09JAN07	43			1 1		i i i			i	i	İ	i	İ	i	i i	1 1			
	3261	T4 - Install/weld roof manholes & nozzles	6	10JAN07	16JAN07	43			1 1		1 1	1 1	8	1	1	I I		1	1	1				
	3262	T4 - Install various tank's internals	18	10JAN07	30JAN07	49	П							1		1			-					
	3263	T4 - Install roof handrails/walkway/platform	18	17JAN07	06FEB07	43								3		i								
	3264	T4 - Pneumatic test roof plates & remadial works	6	07FEB07	13FEB07	43										į			i					
	CC-B.90.30.45	40 Tanks Hydrotest							I   I		I I I I			I	1	I	I I	I	I	I I				
	3265	T4 - Temp. piping & hydrotest preparation	18	16DEC06	10JAN07	72	П		1 1		1 1	1 1		1	1	I I		1	1	1				
	3266	T4 - Water filling of tank	9	14FEB07	27FEB07	43										1			-					
	3267	T4 - Tank Settlement	90	28FEB07	28MAY07	51										<u>3</u>								
	3296	T4 - Pressure Test	6	28FEB07	06MAR07	127								8		į			i					
	3268	T4 - Drain Tank; Remove temp. pipework	6	29MAY07	04JUN07	41			1 1			1 1		1	1	No.	1	1	1	I I				
	CC-B.90.30.45	.50 Tanks Painting									1 1			1		1								
	3273	T4 - Erect scaff/canvass for external painting	6	28FEB07	06MAR07	127								3		1			1					
	3274	T4 - External painting of shell/roof plate	18	07MAR07	27MAR07	127										Ì			i					
	3275	T4 - Dismantle external scaffold	3	28MAR07	30MAR07	127			i i		i i	i i	j	i		i	i	i	i		i			
	3269	T4 - Internal scaffold for shell/roof plate	6	05JUN07	11JUN07	78			1 1		I I I	1 1	1	1	1		1	1	1	1				
	3270	T4 - Internal paint shell/roof plate	24	12JUN07	12JUL07	78									1		<b>3</b>	1		1				
	3271	T4 - Dismantle Internal Scaffold/Clean Tank	6	13JUL07	19JUL07	78										1	8		-					
	3272	T4 - Paint internal bottom plate/Clean Tank	12	20JUL07	03AUG07	174								į		į			i					
C	C-B.90.30.55	Tank T-5							1 1		1 1	1 1		1	1	I I	1		İ					
,	CC-B.90.30.55	10 Annular & Bottom Plates							1 1		I I I	1 1		1	1	1	1	1	1	1				
	3276	T5 - Check foundation level	2	25SEP06	26SEP06	30								1		1			1	1				
	3277	T5 - Excavate for sump pit	2	27SEP06	28SEP06	30								i		İ								
	3278	T5 - Laydown, fit-up & weld bottom plates	18	27SEP06	20OCT06	35	╛							į	l i	į	l i		į					
	3279	T5 - Install sump	1	29SEP06	29SEP06	30			i i			1 1			İ	I I	İ		I	1				
	3280	T5 - Laydown and fit-up annular plates	6	03OCT06	10OCT06	30			1 1			S				I	1		I	1				
	3281	T5 - Weld annular to annular plates	1	11OCT06	11OCT06	30																		
	3282	T5 - Radiograph test weld of annular plates	1	12OCT06	12OCT06	30																		
	3283	T5 - Weld bottom plates to annular plates	18	13OCT06	03NOV06	30										İ				i I				
	3284	T5 - Vacuum test bottom plates; Repair works	12	04NOV06	17NOV06	157					I I I I					I		I	I					

Act.	Activity	Orig	ES	EF	TF																		
ID	Description	Dur	ES	EF	112		2005 N D	JE	М А		006	l s l	ו או כ	) .1 5	: М	Δ M	2007	ΔΙ	O N D	JE	2008 M A N		AF
I .	20 Shell Plates & Appurtenances			I	1	Ĭ	NID	3   1	IVI A	IVI	3 7		)   N   1	, 3 , 1	IVI	A W	3 3 7	A   3	OINIB	J	A A IN	1   3   3	^
3285	T5 - Install/Weld 1st course shell plates	15	02DEC06	19DEC06	0	1	1			1 1		1		3	1	1 1							1 1
3286	T5 - Install/Weld 2nd course shell plates	13	20DEC06	08JAN07	0	1	i																
3287	T5 - Install/Weld 3rd course shell plates	12	09JAN07	22JAN07	0	1	i	ii			li	i l				ii	i	i	11				
3288	T5 - Install/Weld 4th course shell plates	12	23JAN07	05FEB07	0	1	1	1 1		I I I I	1	1	1 1	B	1	1 1	1	1	1 1	1 1			1 1
3289	T5 - Install/Weld 5th course shell plates	11	06FEB07	17FEB07	0	1	1	1 1		I I I I	1	1			1	1 1	1		1 1	1 1			1 1
3290	T5 - Install/Weld 6th course shell plates	11	22FEB07	06MAR07	0		i																
3291	T5 - Install/Weld shell manholes & nozzles	10	22FEB07	05MAR07	32													i					11
3293	T5 - Erect/weld spiral staircase & wind girder	28	06MAR07	07APR07	32		1			I I I I	1	1		1		1	1		1 1	1 1			1 1
3292	T5 - Install/Weld 7th course shell plates	10	07MAR07	17MAR07	0		1	1 1		I I		1	1 1	1		1 1	1			1 1			1 1
3294	T5 - Install/Weld 8th course shell plates	9	19MAR07	28MAR07	0					1 1													
3295	T5 - Install/Weld 9th course shell plates	9	29MAR07	09APR07	0							i				3							
3298	T5 - Erect/weld top angle/girder	5	10APR07	14APR07	0		İ	1 1		1 I 1 I		1	1 1	1	1		1			1 1			1 1
3299	T5 - Remove erection jigs & remedial work	12	08MAY07	21MAY07	20		I I	1 1			1	I I	1 1	1	I I		1	1	1 1	1 1			1 1
CC-B.90.30.55.	30 Roof Plates & Appurtenances; Internals									1 1						1 1							
3300	T5 - Erect temporary support column	5	10APR07	14APR07	0							1			i								
3301	T5 - Erect /weld roof steelwork	18	16APR07	07MAY07	0		l l	1 1		1 I 1 I	i	1		1	1		1	i	1 1	1 1			1 1
3302	T5 - Install/weld roof plates	18	08MAY07	28MAY07	0		1	1 1		I I	1	1	1 1	1	1					1 1			1 1
3303	T5 - Install/weld roof manholes & nozzles	7	29MAY07	05JUN07	0					1 1													
3304	T5 - Install various tank's internals	18	29MAY07	18JUN07	7	Ш	i																
3305	T5 - Install roof handrails/walkway/platform	18	06JUN07	27JUN07	0		i	ii		i i	i	i	ii	i	i	i il	<b>23</b>	i	ii	ii	i		
3306	T5 - Pneumatic test roof plates & remadial works	7	28JUN07	07JUL07	0	Ц	-								1			1					1 1
	40 Tanks Hydrotest					4	1			1 1		1	1 1				.   !						
3307	T5 - Temp. piping & hydrotest preparation	18	22MAY07	11JUN07	20	-	i					1											
3308	T5 - Water filling of tank	9	09JUL07	18JUL07	0	-	İ	i i		i i	i	İ		i	İ	1 1			i i	1 1			1 1
3309	T5 - Tank Settlement	90	19JUL07	16OCT07	0	-	1	 		I I I I	1	1		1	1				1 1	1 1			1 1
3338	T5 - Pressure Test	6	19JUL07	25JUL07	0	-	1			1 1			1 1		1	1 1				1 1			
3310	T5 - Drain Tank; Remove temp. pipework	6	17OCT07	23OCT07	0	H	i	11		1 1		1		1	1	1 1							1
	50 Tanks Painting	_	40 11 11 07	25 11 11 07		4	İ	i i		i i	i	i		İ	i I	i i		i	ii	i i			
3315	T5 - Erect scaff/canvass for external painting	6	19JUL07	25JUL07 16AUG07	0	-		1 1		I I		1	1 1	1	1	1 1		3 !		1 1			
3316	T5 - External painting of shell/roof plate	18 3	27JUL07		0	-				1 1						1 1							
3317	T5 - Dismantle External scaffold	6	17AUG07 24OCT07	20AUG07 30OCT07	0	-				1 1													
3311	T5 - Internal scaffold for shell/roof plate T5 - Internal paint shell/roof plate		31OCT07	27NOV07	0	-	i I			I I I I	i		1 1	İ	I I	1 1	i			1 1			i
3312	T5 - Dismantle Internal Scaffold/Clean Tank	6	28NOV07	04DEC07		+	I	1 1		I I	1			1	I	1 1	1			1 1			1 1
	T5 - Paint internal Scarrold/Clean Tank  T5 - Paint internal bottom plate/Clean Tank		05DEC07	18DEC07	72	-	I	1 1		1 1				1		1 1							
3314 CC-B.90.30.65 T	·	12	USDECU/	TODECUI	72	H				 		-		+ +	-	1 1		-			+		
	10 Annular & Bottom Plates					1	İ	ii						i		iii		i	i i	1 1	i	1	
3318	T6 - Check foundation level	2	08AUG06	09AUG06	74	1	1	1 1		I I I I			1 I 1 I	1	1	1 1		i	1 1	1 1	1	1	1 1
0010	TO SHOOK TOUTIQUIDIT TOYOT		20,10000	337.0000	' -			1 1			'		1 1		1								

	A -1' ''	٥.	ГО		T-													
Act. ID	Activity Description	Orig Dur	ES	EF	TF			2006						007			2008	
3319	T6 - Excavate for sump pit	2	10AUG06	11AUG06	74		N D J F M A M	JJA	5 (	NIL	) J F	MA	MJ	JAS	O N D	JFM	AMJ	JAE
3320	T6 - Laydown, fit-up & weld bottom plates	18	10AUG06	30AUG06	79	1			3	1 1	1	l I	 	1 1	1 1	1 1	1 1	1 1
3321	T6 - Install sump	1	12AUG06	12AUG06	74	1			1			!	 					
3322	T6 - Laydown and fit-up annular plates	6	14AUG06	19AUG06	74	1							       					
3323	T6 - Weld annular to annular plates	1	21AUG06	21AUG06	74				İ	1 1	i	!	 I I	1 1	1 1	1 1		
3324	T6 - Radiograph test weld of annular plates	1	22AUG06	22AUG06	74	1		1 1			1	I I	 	1 1	1 1	1 1	1 1	
3325	T6 - Weld bottom plates to annular plates	18	23AUG06	12SEP06	74	1						!	 					
3326	T6 - Vacuum test bottom plates; Repair works	12	13SEP06	26SEP06	198	1												
CC-B.90.30.65.	20 Shell Plates & Appurtenances	'		'				İ	İ	1 1	İ	I I		i i	i i	iii	i i	1 1
3327	T6 - Install/Weld 1st course shell plates	15	18NOV06	05DEC06	15	1		I I	1		1	I I	 	1 1	1 1	1 1	1 1	1 1
3328	T6 - Install/Weld 2nd course shell plates	13	06DEC06	20DEC06	15	1			1		3	!	 					
3329	T6 - Install/Weld 3rd course shell plates	12	21DEC06	08JAN07	15	1												
3330	T6 - Install/Weld 4th course shell plates	12	09JAN07	22JAN07	15	1						i I						
3331	T6 - Install/Weld 5th course shell plates	11	23JAN07	03FEB07	15	1		1	1	1 1	<b>₽</b>	1	 	1 1	1 1	1 1	1 1	
3332	T6 - Install/Weld 6th course shell plates	11	05FEB07	16FEB07	15			İ	1	1 1	No.	1	l I	1 1	1 1			
3333	T6 - Install/Weld shell manholes & nozzles	10	05FEB07	15FEB07	20	1					S		 					
3335	T6 - Erect/weld spiral staircase & wind girder	28	16FEB07	23MAR07	20	1												
3334	T6 - Install/Weld 7th course shell plates	9	17FEB07	02MAR07	15	1		i	i	i i			I I		i i			
3336	T6 - Install/Weld 8th course shell plates	9	03MAR07	13MAR07	15	1		1	1	1 1	1		 	1 1	1 1	1 1	1 1	
3337	T6 - Install/Weld 9th course shell plates	9	14MAR07	23MAR07	15				1				1 1					
3340	T6 - Erect/weld top angle/girder	5	24MAR07	29MAR07	15	1		1				. <u>8</u>	       					
3341	T6 - Remove erection jigs & remedial work	12	09APR07	21APR07	44			i	i	i i	i		I I	i i	ii	i i	i i	
CC-B.90.30.65.	30 Roof Plates & Appurtenances; Internals							1	1		1	I I	 	I I	1 1	1 1	I I I	1 1
3342	T6 - Erect temporary support column	4	24MAR07	28MAR07	16				1			8	 					
3343	T6 - Erect /weld roof steelwork	18	30MAR07	20APR07	15								     					
3344	T6 - Install/weld roof plates	18	21APR07	12MAY07	15				i									
3345	T6 - Install/weld roof manholes & nozzles	6	14MAY07	19MAY07	15			İ		1 1	1	i i		1 1	1 1		1 1	
3346	T6 - Install various tank's internals	18	14MAY07	02JUN07	21			I I	1	1 1	1	I I		1 1	1 1	1 1	1 1	1 1
3347	T6 - Install roof handrails/walkway/platform	18	21MAY07	09JUN07	15					1 1								
3348	T6 - Pneumatic test roof plates & remadial works	6	11JUN07	16JUN07	15			1									1 1	
CC-B.90.30.65.	40 Tanks Hydrotest					4		l i	i	ii	i	i l	I I	l i i				
3349	T6 - Temp. piping & hydrotest preparation	18	23APR07	14MAY07	44	1		1	1	1 1	1			1 1	1 1	1 1	1 1	
3360	T6 - Water filling of tank	9	18JUN07	28JUN07	15	1			1	1 1			[		1 1			
3361	T6 - Tank Settlement	90	29JUN07	26SEP07	20					       								
3362	T6 - Pressure Test	6	29JUN07	07JUL07	53	1												
3352	T6 - Drain Tank; Remove temp. pipework	6	27SEP07	04OCT07	16	Ш			1			-			8			
	50 Tanks Painting					4		1	1	1 1	1				1 1	1 1	1 1	
3357	T6 - Erect scaff/canvass for external painting	6	29JUN07	07JUL07	53	1			1	1 1								
3358	T6 - External painting of shell/roof plate	18	09JUL07	30JUL07	53					1 1	1						1 1	

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	Act.	Activity Description	Orig Dur	ES	EF	TF		2005 N D J F M A		006	9 6	ם או	I I E	MA		007	S O N D	I E M	2008	A   E
	3359	T6 - Dismantle scaffold & clean tank	3	31JUL07	02AUG07	53	Ĭ	N D J F M A	IVI	JA	3 (	ט ו א ן <i>ע</i>	JF	IVI A	IVI J	J A	S O N D	J F W	A WI	JJJAE
	3353	T6 - Internal scaffold for shell/roof plate	6	05OCT07	11OCT07	16	1			1	1	1 1	1 1		1	1 1	<b>S</b>	1 1	1 1	
	3354	T6 - Internal paint shell/roof plate	24	12OCT07	08NOV07	16	1								1					
	3355	T6 - Dismantle Internal Scaffold/Clean Tank	6	09NOV07	15NOV07	16	П		1 1			1 1			1	1 1	8			
	3356	T6 - Paint internal bottom plate/Clean Tank	12	16NOV07	29NOV07	88	1		i	l i	i	i i			i	ii		i i	iii	
C	C-B.90.40 Me	chanical Works		1	1	1	П				1									
		Receipt & Product Recovery							1 1			1 1			I I					
	1033	Install Product Recovery Tanks	24	06JAN07	02FEB07	63														
	1255	Install Drain Down Tank	12	20JAN07	02FEB07	195			i i	İ		i i			i	i i	i i	iii	i i	
	1170	Removable PigLunch/Trap V-08-05/06 (jetty loop)	6	07FEB07	13FEB07	60			1 1 1 1	1	1	1 1			1	1 1	1 1	1 1	1 1	
	1265	Install Pig Launchers V-18-01/02 (Sha Chau)	6	14FEB07	23FEB07	60						1 1								
	1171	Receipt/Pump Platform - Transfer Pumps	24	01MAR07*	28MAR07	86														
	1181	Install Filter/Water Separators	24	01MAR07*	28MAR07	86				İ	I I	1 1			i	1 1	1 1	i		
	1264	Install Drain Down Pumps	6	01MAR07*	07MAR07	170				1		1 1		3	1	1 1	1 1	I I I I	1 1	
	1034	Receipt/Pump Platform - Piping & Misc Eqp.	78	03MAR07	04JUN07	54			1 1		!	1 1				1 1	1 1	1 1		
	1035	Install Product Recovery Pumps	6	29MAR07	04APR07	146								8						
	1067	Product Recovery Piping & Misc Eqp	18	06APR07	26APR07	146									i					
	1174	Install Diesel Tank T-100-001	12	06APR07	19APR07	91				İ	I I	1 1	1 1		I	1 1	1 1	1 1	1 1	
	1071	Install Sealed Sample Tanks	24	04DEC07	04JAN08	122				1	1	1 1			1	1 1		3	1 1	
	1036	Receipt/Pump Platform - Pipe Painting	48	07JAN08	05MAR08	73			1 1		!	1 1			1	1 1	1 1			
	1068	Product Recovery Pipe Painting	12	07JAN08	19JAN08	109						1 1			1					
	CC-B.90.40.20 T	Fank Farm							i i	i	i	1 1			i		i i			
	1030	Main Run Piping Between Tanks T-1/2/3/4	60	27JUL07	08OCT07	0				1		1 1			1			1 1	1 1	
	1031	Lateral Piping to the Tanks T-1/2/3/4	36	24SEP07	06NOV07	0			1 1			1 1			1	1 1				
	1053	Main Run Piping Between Tanks T-5/6	30	09OCT07	12NOV07	0														
	1054	Lateral Piping to the Tanks T-5/6	18	13NOV07	03DEC07	0									i					
	1228	Paint Above Ground Piping - Tank Farm	72	12JAN08	09APR08	0					İ	1 1	1 1		İ	1 1				
	1046	Final Connections to Tank Nozzles	24	20MAR08	17APR08	0				I	1	1 1			I I	1 1	1 1		<del></del>	1 1
C	C-B.90.50 Ele	ctrical & Controls													1					
		Power & Lighting					4 /													
	CC-B.90.50.10.	10 Receipt Platform & Product Recovery					4		i	l i	i l	ii			į		<u>i</u> i	ii		
	1262	E&I - Cable Ladders to Rcpt/Recovery Platforms	18	17OCT07	06NOV07	54				1					1	1 1		1 1	1 1	
	1145	E&I - Pull Elec/Control Cables Receipt/Recovery	24	05DEC07	05JAN08	30				I		1 1			1					
	1236	E&I - Terminate Power Cbl Rcpt/Recovery Platf.	12	19DEC07	12JAN08	30						1 1								
	1151	E&I - Install/Term Lght Fixures Receipt/Recovery	24	07JAN08	02FEB08	36														
	1525	E&I - Install/Hook Instrumentation Pump/Recovery	24	07JAN08	02FEB08	36	Ш			l i		i					iii			
		20 Bund Wall Perimiter Area					4			1	1			i i	İ	1 1	1 1	1 1		
	1501	E&I - Install U/G Cbl Duct SwitchRoom - FS Room		21DEC06	08JAN07	283	1				1	[					1 1	1 1		
	1496	E&I - Install Pillar Boxes @ Receipt Platform	6	05JUN07	11JUN07	121									8			1 1	1 1	

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Act.	Activity Description	Orig Dur	ES	EF	TF		2005		2006			20		N D	2008	
1125	E&I - Pull U/G Power Cbl SwitchRoom - FS Room	12	31AUG07	14SEP07	91	0	N D J F M	AM	J J A S	SOND	JFM	AMJ	JASO	NDJF	MAM	JJAE
1207	E&I - Pull U/G Cable SwRoom to TF Cbl Trays	24	07NOV07	04DEC07	1	1			1 1	1 1	1 1	1 1			1 1	1 1
1123	E&I - Install TF Area Pillar Boxes	12	21NOV07	04DEC07	0	1					1 1					
1208	E&I - Pull U/G Cable to Pillar Boxes	24	05DEC07	05JAN08	0											
1260	E&I - BWall Perim U/G Cabling (Sea Side T-1/2/5)	36	07JAN08	20FEB08	0	1										
1346	E&I - BWall Perim UG Cabling (Future TF T-3/4/6)	36	07JAN08	20FEB08	0	1		1 1	1 1	1 1	1 1	1 1		******		
1350	E&I - BWall Perim U/G Cabling (Accss Rd - T-1/3)	24	21JAN08	20FEB08	0	11			1 1	1 1	1 1					
1352	E&I - BWall Perim U/G Cabling (South of T5/6)	24	21JAN08	20FEB08	0	1										
1121	E&I - Bund Wall Perimiter Light fixtures/Teminat	24	21FEB08	19MAR08	0			1 1			1 1				<del>2</del>	1 1
CC-B.90.50.10	.30 Within Bund Wall	1			1			1 1	1 1	1 1	1 1	1 1	1 1	1 1 1		1 1
1359	E&I - Cable Ladders Median Run T-1/2/3/4	25	09OCT07	06NOV07	0			1 1	1 1		1 1	1 1		3		
1122	E&I - Cable Ladders to T-1/2/3/4	24	07NOV07	04DEC07	0											
1360	E&I - Cable Ladders Median Run T-5/6	24	13NOV07	10DEC07	0											
1216	E&I - Cable Ladders to T-5/6	12	04DEC07	17DEC07	0			ii		l i i	i i					
1163	E&I - Pull Power/Control Cable Tanks T-1/2/3/4	28	05DEC07	10JAN08	1				1 1	1 1	1 1	1 1			1 1	1 1
1369	E&I - Cable Ladders T-1/2/3/4 X-overs	18	05DEC07	28DEC07	0											
1390	E&I - Cable Ladders T-5/6;2/5;4/6 X-over	6	18DEC07	27DEC07	1	1										
1513	E&I - Pull Power/Control Cable to Tanks T-5/6	18	18DEC07	11JAN08	0	1										
1142	E&I - Install/Hook up Instrumentation T-1/2/3/4	24	19DEC07	19JAN08	30	1			1 1	1 1	1 1	1 1			1 1	
1126	E&I - Pull Lght Cable to the Tanks T-1/2/3/4	36	29DEC07	13FEB08	0	1		1 1	1 1	1 1	1 1	1 1		******	1 1	1 1
1218	E&I - Terminate Power Cables Within Bundwall	18	11JAN08	31JAN08	10									<b>E</b>		
1147	E&I - Install/Hook up Instrumentation T-5/6	18	21JAN08	13FEB08	30											
1130	E&I - Pull Lght Cable to the Tanks T-5/6	24	28JAN08	27FEB08	0			1 1	1 1	1 1	1 1	1 1				
1219	E&I - Terminate CbI to Motor OpValves T-5/6	4	01FEB08	05FEB08	10				1 1	1 1	1 1	1 1			1 1	1 1
1140	E&I - Instal/Term Lght Fixtures T-1/2/3/4 X-over	6	14FEB08	20FEB08	24						1 1					
1146	E&I - Install/Terminate Light Fixtures T-1/2/3/4	30	14FEB08	19MAR08	0										***	
1141	E&I - Instal/Term Lght Fixt T-5/6;2/5;4/6 X-over	6	28FEB08	05MAR08	12										]	
1137	E&I - Install/Terminate Light Fixtures T-5/6	12	06MAR08	19MAR08	0				1 1	1 1	1 1	1 1				1 1
CC-B.90.50.20	Earthing & Lightining															
1206	E&I - Earth Cable to Ring Beams	12	12MAY06	12SEP06	33											
1157	E&I - Earth Tape Ring Bund Wall Perimiter	48	18SEP06	10FEB07	272											
1152	E&I - Earth Tape Ring to Receipt/Recovery	12	06JAN07	19JAN07	327				1 1	1 1	<b>⊠</b>	1 1			1 1	
1211	E&I - U/G Earth Tape from OpBldg to TF	12	06JAN07	19JAN07	291			1 1		1 1		1 1				1 1
1156	E&I - Earth Bonding to Recipt/Recovery	12	17OCT07	30OCT07	108											
1205	E&I - Earth Bonds to Pipe/Trays/Step Over	48	18DEC07	12MAR08	0										3	
CC-B.90.50.30	Security System							1 1	iii	i	iii	1 1			i	i
1209	E&I - Install Perimiter Sensor Cable & Processor	36	29FEB08	11APR08	24				1 1	1 1	1 1	1 1				1 1
1217	E&I - Install Microwave Beam Detector	12	21MAR08	03APR08	36			1 1		1 1		1 1				1 1
1220	E&I - Install Alarms/EI.Locks	24	21MAR08	18APR08	24				1 1		1 1	1 1				

	Act.	Activity	Orig	ES	EF	TF																		
	ID	Description	Dur		_,			2005 D N D J	J F N	I A M	2006 J J	A S	O N	D,	JFN	M A		J A	S O I	N D	J F I	2008 VI A M		ΑE
	1212	E&I - Install Dome Cameras	18	28MAR08	18APR08	24						1					1							
С	C-B.90.60 Fire	Services					П					İ					İ		i					
	CC-B.90.60.10 F	Receipt & Product Recovery							ii	li		i	l i		i i	i	i	ii	- l	i l	ii		i	
	1261	FS - Fire Services Piping to Receipt Platform	48	05JUN07	03AUG07	54			1 1		1 I	1	1	1	1 1	1			1		1 1			1 1
	1288	FS - Fire Services Piping Works to Prod Recovery	12	05JUN07	18JUN07	90			1 1			1	1	1	1 1	1		1 1	1		1 1			1 1
	1290	FS - Fire Services Deluge to Product Recovery	12	20JUN07	05JUL07	90						1			1 1		[	3						
	1263	FS - Deluge System to Receipt Platform	48	06JUL07	31AUG07	54						i					į							
	1345	FS - Paint Fire Serv Piping - Receipt/Recovery	48	01SEP07	30OCT07	102			i i	j		i	l i		i i	i	i			i	ii		i	i i
	1110	FS - Detect/Control Cabl/Term - Receipt/Recovery	24	07NOV07	04DEC07	96			1 1			I I	1	1	1 1	I	1	1 1					1	
	CC-B.90.60.20	Tank Farm							1 1			1		!	1 1	1	1	1 1						
	3255	FS - T4 - Install FS pipe/supp (Tank Shell/Roof)	12	18NOV06	01DEC06	39								3			İ							
	3213	FS - T3 - Install FS pipe/supp (Tank Shell/Roof)	12	02DEC06	15DEC06	39						į	H				į							
	3122	FS - T1 - Install FS pipe/supp (Tank Shell/Roof)	12	16DEC06	03JAN07	39			ii	İ		İ	i		i i	i	İ	1 1	i	i	ii		i	
	3339	FS - T6 - Install FS pipe/supp (Tank Shell/Roof)	12	24MAR07	07APR07	20			1 1			1	1	1	1 1		1	1 1	1				1	1 1
	3171	FS - T2 - Install FS pipe/supp (Tank Shell/Roof)	12	09APR07	21APR07	20					1 1	1		1		⊠¦	1	1 1						1 1
	3297	FS - T5 - Install FS pipe/supp (Tank Shell/Roof)	12	23APR07	07MAY07	20											3							
	1259	FS - Risers Over Bund Wall Sea Side (T-1/2/5)	24	02JUN07	03JUL07	40																		
	1320	FS - Risers Over BnWall Future TF Side (T-3/4/6)	24	21JUL07	18AUG07	39			ii	li		i	l i		i i	i	i		- l	i l	ii		i	i i
	1327	FS - Piping to Tanks (T-1/2/5) (from sea side)	38	21AUG07	06OCT07	0			1 1			1	1	1	1 1	1	1				1 1			1 1
	1330	FS - Piping to Tanks(T-3/4/6 from future TFside)	38	08OCT07	20NOV07	0			1 1			1	1	1	1 1	1	1	1 1		3				1 1
	1336	FS - Paint Fire Services Piping - Tank Farm	72	08OCT07	05JAN08	30						1					1							
	1332	FS - Install Street Hydrants Admin/Accss Rd	12	27OCT07	09NOV07	111						į	li				į							
	1311	FS - Cntrl Stat/Mons BWall Future TFSide(T1/2/5)	12	31DEC07	14JAN08	47			ii	İ		İ	i		i i	i	İ	1 1	i		3		i	
	1258	FS - Detection & Controls - Within Bund Wall	36	07JAN08	20FEB08	30			1 1			1	1	1	1 1	1	1	1 1	1	E			1	1 1
	1312	FS - Pull UG CntrlCable BWall Perimiter SeaSide	36	07JAN08	20FEB08	0						1		1		1	1	1 1						
	1353	FS - Pull UG CntrlCbl BWall Perim Future TFSide	36	28JAN08	12MAR08	0						į					į		l i		11111			
	1299	FS - Cntrl Station/Mons BWall SeaSide (T-1/2/5)	12	31JAN08	16FEB08	9			ii	li		i	l i		ii		į		i i	1			<u> </u>	i i
	1313	FS -Terminate Cables BWall Perimiter SeaSide	12	21FEB08	05MAR08	6			1 I 1 I			I			1 I 1 I			1 1	1	1			1	
	1317	FS - Install Street Hydr Future TF Side T-3/4/6	12	21FEB08	05MAR08	6									1 1	1		1 1						
	1314	FS - Install Street Hydrants Sea Side T-1/2/5	12	06MAR08	19MAR08	6									1 1							1		
	1354	FS -Terminate Cables BWall Perim Future TFSide	12	13MAR08	26MAR08	0																<del>3</del>		
CC	-B.99 Testing	& Commissioning							1 I 1 I	1	1 1	i I	1	1	1 I 1 I			1 1	1	1		1	1	
		in Contractor Testing/Pre-commissioning										1			1 1	1	1		_					
P	OWB	Power to Admin Building	0		14SEP07	127												1						
	4427	Plumbing & Drainage Testing - Admin Bldg	12	15SEP07	29SEP07	169	_		i i	i		i	İ		i		i	i			i			
	4428	Small Power & Lighting Testing - Admin Bldg	12	15SEP07	29SEP07	169			1 I 1 I	1		1	1		1 I 1 I	1		1 1					1	1 I 1 I
	4429	HVAC Testing - Admin Bldg	12	15SEP07	29SEP07	169			1 1			1			1 1			1 1			1 1			
	4426	Fire Services Test/Commiss - Admin. Bldg	24	02OCT07	29OCT07	121									1 1									
	1078	Hydro Test of Process Pipe Work - Field	54	04DEC07	12FEB08	19																		

Act.	Activity	Orig	ES	EF	TF																			
ID	Description	Dur	ES	EF	11	2005 O N D	) J   E	- M A		006 J.J. A	S	) N I	D .I	F M	ΔΙΝ	20 1 J		S	O N	D J	FM	2008 A M	J .	ΔF
1108	Hydro Test U/G Pipe - S'wall - Rcpt Platf.	12	19JAN08	01FEB08	61	J 14 D	3 1	III   A	3		. 3			. 141	- N		-		- 14			-3 101		. , ,-
1065	Process Mech/Pipe Test & Pre-Commissioning	48	21FEB08	02MAY08	0									I			1							1
1114	E&I - Test/Precommiss. Power Distribution	24	21FEB08	19MAR08	0																			
1111	E&I - Test Earthing & Lightning	6	13MAR08	19MAR08	0			1	i i	l i	1	ii	l i	į	li		ij	i l	ii					i
POWTF	Power to Tank Farm Areas	0		19MAR08	0		- 1	1	1 1	1	I I	1 1	I	1	I	-	I I	I I	1 1			1 1		1
1112	E&I - Directional Test of Motors	6	20MAR08	26MAR08	0			1	1 1	1		1 1		1	1			1	1 1					1
1116	E&I - Loop checks; Instrumentation Checks; SCADA	30	20MAR08	24APR08	0												1					<b>=</b>		
1522	E&I - Test Lighting	12	20MAR08	02APR08	18									į	li		i	i						ij
1524	E&I - Telemetry Test/Precomm.	6	20MAR08	26MAR08	24		1	1	1 1	1	1	1 1	1	1	1	1	1	1	1 1		🛭	1 1		1
1080	FireServ Test Deluge/Foam Test/Commiss - Field	24	27MAR08	24APR08	0			1	1 1	1	i	1 1	- 1	1	1	-	1	i i	1 1					
1334	Fire Services Alarm & Detect Test/Comms - Field	18	27MAR08	17APR08	6							1 1		1				1	1 1		.   [			1
1239	Fire Serv Hydrants & Monitors Test/Comms - Field	12	11APR08	24APR08	0												- 1	i l						i
1189	E&I - Security System Test/Precommission	12	19APR08	03MAY08	24		İ	i	i i	i	i		i	i	İ	i	i	i	i i					i
1066	Process Lines Cleaning & N2 Purging	25	03MAY08	31MAY08	0			1	1 1	1	1	1 1	1	1	1	1	1		1 1					1
COMMSS	INTEGRATED COMMISSIONING	61	03MAY08	14JUL08	0							1 1		1										
TRIAL	TRIAL OPERATION	62	01JUN08	01AUG08	0									1								<b>E</b>		i
CC-B.99.20 S	tatutory Inspections & Approvals							İ	1 1	i	İ	1 1	i	i	i		i	i						
4753	Submit WWO 046 Part 4	0	06OCT07		163		1	1	1 I 1 I	1	1	1 1	1	1	1	1	1		7			1 1		1
4754	Submit Form H for Plumbing & Drainage	0	06OCT07		163			1	1 1	1		1 1		1			1	🔻	7					1
4757	Submit Form 5 for Lift Hoist	0	09OCT07		137													🔻	7					
4759	WSD Inspection	18	16OCT07	05NOV07	163								Hi	į	Hi		i	i l						i
4763	EMSD Inspection Lift Hoist	14	16OCT07	31OCT07	137		1	1	1 1	1		1 1	İ	i I	1		İ	1				1 1		1
4764	EMSD Issue Form 6 Lift	0		07NOV07	137		1	1	1 1	1	i i	1 1	1	I.	1	1	I	I I				1 1		1
4760	WSD Issue WWO 046 Part 5	0		13NOV07	163			1				1 1		1			- 1	1						1
4756	Submit FS 314 for FS Installation	0	27MAR08		0																	<b>'</b>		ij
4755	Submit Form FX 172 for Ventilation	0	11APR08		0		1	i	i i	İ	i I	ii	- Li	į	l i		ij	i	ii			<b>▼</b>		ij
4765	Submit FS 501	0	11APR08		0			1	1 1	1	1	1 1	1	1	1	1	1	1	1 1			<b>▼</b> ¦ ¦	1	1
4767	Prepare BA13 & associated documents	12	11APR08	24APR08	46			İ	1 1	1	1	1 1		1			-		1 1					
FSDTF	FSD Inspection	24	25APR08	23MAY08	0							1 1		-										
4768	AP Submit BA13 & Associated Documents	0		23MAY08	22									į	l i			i						i
4769	FSD Issue Fire Certificate	0		31MAY08	0			I	1 1			ii		İ	İ		İ		i i		İ	V	/	i
BDTF	BD Inspection	30	02JUN08	07JUL08	22		1	I I	1 I 1 I	1	1	1 1		1	1	1	I				1			1
4771	BD Issue Occupational Permt	0		07JUL08	22																			-
CC-C JETTY S	TRUCTURE & FACILITIES													-										-
CC-C.90 Const	ruction Works										i		1	į				1						i
CC-C.90.05 P	iling & Pile Testing Prior to Main Works						1	1	1 1	1	I	i i	- 1	İ	i		i	1	i i			ii		1
1418	Dolphin Monitoring	30	10OCT05A	23NOV05	0		1		1 1	1		1 1	- 1	1	1		1	1			1 1	1 1		1
1428	Initial Mobilisation for Test Piles	14	08NOV05	23NOV05	0	HE!			1 1			1 1	!	1			I.							1
		1	1	1	1	_																		_

Act.	Activity Description	Orig Dur	ES	EF	TF		2005		2006				007			2008	
1358	Drive Test Prelim. Pile & Temp Support Piles	20	24NOV05	16DEC05	0		N D J F M	AMJ	JAS	OND	JFM	AMJ	JAS	5   O   N	D J F	MAM	JJAE
1408	Acoustic Monitoring & Recording	3	24NOV05	26NOV05	42	1			1 1	i i	1 1	i i	i i	i i	iii	i	
1364	Set up platform & post-prove drilling	7	02DEC05	09DEC05	0	1			1 1	1 1	1 1	1 1	1 1	1 1		I I	
1365	Install Rock Anchor (pile no. 12A-N)	6	10DEC05	16DEC05	0		1 1					1 1		1 1		1	
1371	Set up test frame for compress. load test	16	14DEC05	06JAN06	0	1											
1372	Static compression load test	4	07JAN06	11JAN06	0	1			1 1	1 1	1 1	1 1		1 1	1 1		
1373	Test: Set up frame for tension load test	14	12JAN06	27JAN06	0	1											
1378	BD Approval of Pile Test No. 12-N at LP2	28	14JAN06	17FEB06	0	1											
1374	Test: Static tension load test	3	28JAN06	03FEB06	0			iii	1 1	1 1	1 1	i i	i	1 1	i	İ	I I I
1375	Test: Submission of Test Reports	2	04FEB06	06FEB06	10			1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1	
CC-C.90.10	Piling - Main Works	'		'										1 1			
CC-C.90.10.	0 Drive Casings			_													
1308	Pitching & Final Set Piles OLP 2 (7 piles)	5	18FEB06	23FEB06	0				1 1	1 1	1 1	1 1	1 1	1 1			
1425	Pitching & Final Set Piles BD6 (7 piles)	4	24FEB06	28FEB06	0					1 1	1 1						
1400	Pitching & Final Set Piles BD5 (7 piles)	4	01MAR06	04MAR06	0												
1401	Pitching & Final Set Piles OLP 1 (12 piles)	7	06MAR06	13MAR06	0												
1405	Pitching & Final Set Piles BD4 (7 piles)	4	14MAR06	17MAR06	0				i i	i i	İ	i	ii	i i		Ì	
1402	Pitching & Final Set Piles BD3 (7 piles)	4	18MAR06	22MAR06	0				1 1	1 1	1 1	1 1		1 1			
1424	Pitching & Final Set Piles BD2 (7 piles)	4	23MAR06	27MAR06	0												
1423	Pitching & Final Set Piles BD1 (7 piles)	4	28MAR06	31MAR06	0												
1481	Drive Piles - BA14 Submission	6	01APR06	08APR06	130				i i	iii	i i			i i		i	
1412	Drive Piles MD3 (3 piles)	3	03OCT06	05OCT06	119		1 1 1	1 1	1 1		1 1	1 1	1 1	1 1	1 1	1	
1413	Drive Piles MD4 (4 piles)	3	06OCT06	10OCT06	119					8							
1411	Drive Piles MD5 (3 piles)	3	11OCT06	13OCT06	119					1							
1427	Drive Piles MD2 (4 piles)	4	14OCT06	18OCT06	119				1 1		1 1	i i	i i	i i	i i	i	
1426	Drive Piles MD1 (3 piles)	3	19OCT06	21OCT06	119				1 1		1 1	1 1		1 1			
1432	Drive Piles EP1 (3 piles)	3	23OCT06	25OCT06	119		1 1 1							1 1		1	i i i
1429	Drive Piles MD6 (4 piles)	4	26OCT06	30OCT06	119	4				Щ ;							
1430	Drive Piles MD7 (3 piles)	3	01NOV06	03NOV06	119	1			1 1		1 1	1 1		1 1			
1431	Drive Piles EP2 (3 piles)	3	04NOV06	07NOV06	165			1 1	1 1	11 1	1 1	1 1		1 1			
	20 Pile Cut Off & Bracing		0.455000	00144 D00	0.4												
1382	Cut off/Bracing/Platform OPL2 (12 piles)	9	24FEB06	06MAR06	34												
1434	Cut off/Bracing/Platfor BD5 (7 piles; 2 anchors)	7	06MAR06	13MAR06	88	-			1 1	1 1	1 1	1 1		1 1			
1435	Cut off/Bracing/Platform OLP1 (12 piles)	9	14MAR06	23MAR06	25				1 1	1 1	1 1	1 1	1 1	1 1	1 1		1 1 1 1 1 1
1433	Cut off/Bracing/Platfor BD6 (7 piles; 2 anchors)	7	31MAR06	08APR06	34												1 1 1
1445	Cut off/Bracing/Platfor BD3 (7 piles; 2 anchors)	7	19APR06	26APR06	25				1 1								
1446	Cut off/Bracing/Platfor BD2 (7 piles; 2 anchors)	7	27MAY06	05JUN06	25				a i							į	1 1 1
1444	Cut off/Bracing/Platfor BD4 (7 piles; 2 anchors)	7	17JUN06	24JUN06	34		1 1 1			1 1	1 1	1 1	1 1	1 1			
1447	Cut off/Bracing/Platfor BD1 (7 piles; 2 anchors)	7	03JUL06	11JUL06	25				B	1 1				1 1		1	

	A at	A astivity.	Orie	FC	ГГ	ТС																
	Act.	Activity Description	Orig Dur	ES	EF	TF	2005 O N D J F N	4   A	200 M				I E M			007	e   c	) AI	D .	E M	2008	
	1459	Cut off/Bracing/Platfor MD3 (4 piles; 2 anchors)	6	06OCT06	13OCT06	131	O N D J F N	A	IVI J	JAS		שוו	JFIV	IAIN	VI J	JA	3 10	N	ט ט	F   WI	AIWI	JJA
	1453	Cut off/Bracing/Platfor MD2 (7 piles; 2 anchors)	6	19OCT06	25OCT06	137		1	1	1 1	B	1	1 1	1	1	1		1 1		1	1 1	1 1
	1461	Cut off/Bracing/Platform MD4 (4 piles)	6	03NOV06	09NOV06	131			1		0	!										
	1455	Cut off/Bracing/Platfor MD1 (7 piles; 2 anchors)	6	15NOV06	21NOV06	137						ı¦			1						1 1	
	1463	Cut off/Bracing/Platform MD5 (4 piles)	6	15NOV06	21NOV06	131			i	ii		ıi l	- i i	l i	į	i	<u> </u>	ii	i	i	iii	
	1465	Cut off/Bracing/Platform MD6 (4 piles)	6	27NOV06	02DEC06	131			1	1 1	1	₫	1 1	1	1	1	1	1 1	1	1	1 I 1 I	1 1
	1466	Cut off/Bracing/Platform MD7 (4 piles)	6	08DEC06	14DEC06	131			1	1 1					I I			1 1			1 1	
	1457	Cut off/Bracing/Platform EP1 (3 piles, 1 anchor)	6	11DEC06	16DEC06	137			i													
	1470	Cut off/Bracing/Platform EP2 (3 piles; 1 anchor)	6	18DEC06	27DEC06	131			i	ii	l i	₽	ii	i	į	i	i	ii	i	i	ii	
	CC-C.90.10.30	Pile Internal Works							I I		-	I I		1	I		i		1			
	1319	Pile Internal Works OPL2 (12 piles)	28	07MAR06	08APR06	34	]		1	1 1		1			1			1 1			1 1	
	1420	Pile Internal Works BD6 (7 piles; 2 anchors)	32	10APR06	17MAY06	34	1		⊞¦∥													
	1421	Pile Internal Works BD5 (7 piles; 2 anchors)	32	18MAY06	24JUN06	34					11				į	i		ii				
	1440	Pile Internal Works BD4 (7 piles; 2 anchors)	32	26JUN06	03AUG06	34		i			i	i I	i i	İ	İ	i	i I	1 1	i	i	1 1	
	1422	Pile Internal Works OLP1 (12 piles)	28	24MAR06	26APR06	25	1		1	1 1	1		1 1	1	I	1		1 1	1	1	1 1	1 1
	1441	Pile Internal Works BD3 (7 piles; 2 anchors)	32	27APR06	05JUN06	25		Ė										1 1				
	1442	Pile Internal Works BD2 (7 piles; 2 anchors)	29	06JUN06	11JUL06	25																
	1443	Pile Internal Works BD1 (7 piles; 2 anchors)	29	12JUL06	14AUG06	25		li	i		l i	i	ii	i	į	i	i	i i	i	i	iii	
	1482	Submit BA14 Internal Works OLP1 & OLP2 Areas	6	08AUG06	14AUG06	25			1	B		1	1 1	1	1	1		1 1	1	1	1 1	1 1
	1469	BD Select & Coring Test OLP1 & OLP2 Areas	24	15AUG06	11SEP06	25			1			1		1	1	1		1 1		!	1 1	
	1483	BD Consent Superstructure OLP1 & OLP2 Areas	28	04SEP06	01OCT06	31					<b>I</b>							1 1				
	1452	Pile Internal Works MD2 (4 piles; 2 anchors)	22	26OCT06	21NOV06	137			i		🖮				i			1 1				
	1454	Pile Internal Works MD1 (4 piles; 2 anchors)	22	22NOV06	16DEC06	137			i I	1 1			1 1	1	İ	1	1	1 1		1	1 1	
	1456	Pile Internal Works EP1 (3 piles; 1 anchor)	13	18DEC06	05JAN07	137			1	1 1	1		]	1	I	1	1	1 1		1	1 1	
	1458	Pile Internal Works MD3 (4 piles; 2 anchors)	22	14OCT06	09NOV06	131						1									1 1	
	1460	Pile Internal Works MD4 (4 piles)	10	10NOV06	21NOV06	131			i	1 1	E			İ				1 1	i		1 1	
	1462	Pile Internal Works MD5 (4 piles)	10	22NOV06	02DEC06	131		i	i	ii	l i		ii	i	i	i	i	i i	i	i	iii	
	1464	Pile Internal Works MD6 (4 piles)	10	04DEC06	14DEC06	131			I		1	H	1 1	1	I	1	I I			1	1 1	
	1468	Pile Internal Works MD7 (4 piles)	8	15DEC06	27DEC06	131			I			┆⊞										
	1467	Pile Internal Works EP2 (3 piles; 1 anchor)	13	28DEC06	12JAN07	131			1			į										
	1484	BA14 Internal Works - Balance	6	06JAN07	12JAN07	131			İ	i	İ			i	İ	i					1 1	
	1473	BD Select & Coring Test - Balance	24	13JAN07	09FEB07	131				1 1				1	I	İ		1 1	1	İ	1 1	1 1
	1485	BD Consent Superstructure - Balance	28	02FEB07	01MAR07	162			1	1 1		1		1		1					1 1	1 1
C	C-C.90.20 Jet	ty Superstructure																				
	CC-C.90.20.10	Opearational Platform OLP1 Concrete Works							i I	1 1		1	1 1		İ					i		
	1379	OLP1 - Install Headstocks on Raking Piles	9	03OCT06	13OCT06	24			1	1 1		1	1 1	1	I	İ	1	1 1	İ	1	1 1	1 1
	1380	OLP1 - Install Longitudinal Beam Shells	15	14OCT06	01NOV06	24			1	1 1	Щ	1	1 1	1	1	1			1	1	1 1	
	1381	OLP1 - Infill Concrete (top pile; beam shells)	30	02NOV06	06DEC06	24						1 1							i i			
	1383	OLP1 - Install Precast Deck Units Between Beams	18	07DEC06	30DEC06	24			İ			Ш										

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Act.	Activity Description	Orig Dur	ES	EF	TF	2005 O N D J F	NA		006	6 0	N P		M A		2007		O N	, ,	E 14	2008	JJA
1384	OLP1 - Install Oil Intercept & Water Pre-cast Ta	6	02JAN07	08JAN07	24	O N D J F	IVI A	A   IVI   J	JA	5 0	N D	J   F	IWI A	INI J	JA	.   3   (	O   N	DJ	F   IVI	A   W	JJA
P1S	OLP1 - Cast In-situ Top Slab	12	09JAN07	22JAN07	24						1						1 1		1	1	
1388	OLP1 - Load Arm Kerbs and Plinths	12	23JAN07	05FEB07	85		 				i						1 1		1	- 1	
1395	OLP1 - Accomodation Kiosk Slab	6	23JAN07	29JAN07	24						1	в									
1403	OLP1 - Accomodation Kiosk External Walls	9	30JAN07	08FEB07	24			i i			į	i i				i	ii		i	į	
1437	OLP1 - Install N2 store Plinth	4	06FEB07	09FEB07	135		l I	1 1	1 1		1	18			1	1	1 I 1 I		1	1	
1404	OLP1 - Accomodation Kiosk Internal Walls	7	09FEB07	16FEB07	24						1	I							1		
1410	OLP1 - Accomodation Kiosk Roof	9	17FEB07	02MAR07	24						į								i		
1414	OLP1 - Accomodation Kiosk Roof W'proof & Tiling	6	10MAR07	16MAR07	108			i i	1 1		İ	i i	8			i	1 1		İ	i	
1415	OLP1 - Accomodation Kiosk ABWF/BS Works	18	31MAR07	21APR07	96		1		1 1		I I				1		1 1		1	1	
CC-C.90.20.20	Operational Platfrom OLP2 Concrete Works				'						1								i	-	
3400	OLP2 - Install Headstocks on Raking Piles	9	03OCT06	13OCT06	28					В											
3401	OLP2 - Install Longitudinal Beam Shells	15	14OCT06	01NOV06	28			ii			i	l i i		i i	İ	i l	ii		į	į	
3402	OLP2 - Infill Concrete (top pile; beam shells)	30	02NOV06	06DEC06	28		I I	1 1	1 1	ļ.	Щ	1 1			1	1	1 1		I I	1	
3403	OLP2 - Install Precast Deck Units Between Beams	18	07DEC06	30DEC06	28		 				ļ						1 1		ļ.	- 1	
3404	OLP2 - Install Oil Intercept & Water Pre-cast Ta	6	02JAN07	08JAN07	28						İ	B									
P2S	OLP2 - Cast In-situ Top Slab	12	09JAN07	22JAN07	28						i			i			ii			i	
3406	OLP2 - Load Arm Kerbs and Plinths	12	23JAN07	05FEB07	31			1 1			I I	#					1 1		i i		
3408	OLP2 - Accomodation Kiosk Slab	6	23JAN07	29JAN07	28			1 1	1 1			<b>=</b>			1	1	1 1		I I	1	
3412	OLP2 - Accomodation Kiosk External Walls	9	30JAN07	08FEB07	28						ĺ						1 1		1	1	
3416	OLP2 - Install N2 store Plinth	4	06FEB07	09FEB07	81			1 1			 								 	İ	
3414	OLP2 - Accomodation Kiosk Internal Walls	7	09FEB07	16FEB07	48		i I	i i	i i		İ			i i	i	i	iii		İ	i	
3422	OLP2 - Accomodation Kiosk Roof	9	17FEB07	02MAR07	48		 	1 1	1 1		1				1	1	1 1		1	1	
3424	OLP2 - Accomodation Kiosk Roof W'proof & Tiling	6	03MAR07	09MAR07	96								1				1 1		1	1	
3425	OLP2 - Accomodation Kiosk ABWF/BS Works	18	10MAR07	30MAR07	96						İ		Ш						i		
CC-C.90.20.30 E	Berthing Dolphins Concrete Works							ii		l i	i	l i i		i i	İ	i	iii		i	į	
1439	Construct BD4 (pre-cast; in-situ RC)	36	03MAR07	14APR07	24		1	1 1	1 1		1		ш		1	1	1 1		I I	1	
1449	Construct BD6 (pre-cast; in-situ RC)	36	03MAR07	14APR07	48						1						1 1		1	1	
1438	Construct BD3 (pre-cast; in-situ RC)	36	16APR07	28MAY07	24						-		■	Ш							
1448	Construct BD5 (pre-cast; in-situ RC)	36	16APR07	28MAY07	48						į					i l	ii		i	i	
1392	Construct BD1 (pre-cast; in-situ RC)	36	29MAY07	12JUL07	48			<u> </u>			i	iii		-	#	i	ii		i	i	
1416	Construct BD2 (pre-cast; in-situ RC)	36	29MAY07	12JUL07	24			 	1 1		I I					1	1 1		I	I	
CC-C.90.20.40 M	Morring Dolphins & End Protection RC Works							1 1			1						1 1		1	- 1	
1474	Construct MD3	24	13JUL07	10AUG07	48						 										
1476	Construct MD5	24	13JUL07	10AUG07	24					1	i					i					
1451	Construct MD2	24	11AUG07	07SEP07	73		I	i i	1 1		1	i							i	i	
1475	Construct MD4	24	11AUG07	07SEP07	24		l	1 1	1 1	1	1	1 1		 			1 1		1	I I	
1417	Construct MD1	24	08SEP07	09OCT07	73			1 1	1 1	1	1								1	1	
1477	Construct MD6	24	08SEP07	09OCT07	49						1						1 1		1		

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Act.	Activity Description	Orig Dur	ES	EF	TF	2005 2006 2007 2008
1478	Construct MD7	24	10OCT07	06NOV07	49	0 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 E
1479	Construct EP1 (in-situ)	36	10OCT07	20NOV07	73	3
1480	Construct EP2 (in-situ)	36	07NOV07	18DEC07	49	
CC-C.90.30 F	Pipe Bridges; Walkways; Marine Equipment	' <u> </u>	1	1	1	
3407	OLP2 - Install Access Stairs	18	23JAN07	12FEB07	73	3   <mark> </mark>
1394	OLP1 - Install Access Stairs	18	13FEB07	08MAR07	109	
3439	Install Wallkway BD5 to BD6 (OLP2)	6	29MAY07	04JUN07	132	32
3440	Install Wallkway BD1 to BD4 (OLP1)	18	13JUL07	03AUG07	114	<u>4</u>
3441	Install Wallkway BD4 to BD5 (MD3/4/5)	30	08SEP07	16OCT07	24	
3443	Install Wallkway BD1 to MD1	12	17OCT07	30OCT07	72	
3442	Install Wallkway BD6 to MD7	12	07NOV07	20NOV07	66	
1226	Install Marine Eqp (bollards; Fenders; End Prot)	48	19DEC07	20FEB08	49	
1393	OLP1 - Install Fenders	18	21FEB08	12MAR08	49	
3413	OLP2 - Install Fenders	18	13MAR08	02APR08	49	9   1   1   1   1   1   1   1   1   1
CC-C.90.40 1	Top Side Mechanical Works					
3419	OLP2 - Install Product Recovery Pump	3	09FEB07	12FEB07	28	
3415	OLP2 - Install Product Recovery Header	3	13FEB07	15FEB07	28	
3418	OLP2 - Install Lifting Davit	6	13FEB07	22FEB07	73	3
3417	OLP2 - Install Marine Loading Arms (2 off)	14	16FEB07	07MAR07	50	
3421	OLP2 - Install Proces Piping	30	16FEB07	26MAR07	28	8
3423	OLP2 - Install Valves/In-Line Eqp	6	27FEB07	17APR07	28	
3426	OLP2 - Install Small Bore Piping	12	27MAR07	10APR07	28	B
1304	Substantially Complete Product Mechanical - OLP2	0		17APR07	28	
1491	OLP1 - Install Lifting Davit	6	18APR07	24APR07	76	
1495	OLP1 - Install Product Recovery Pump	3	18APR07	20APR07	28	
1436	OLP1 - Install Product Recovery Header	3	21APR07	24APR07	28	
1487	OLP1 - Install Proces Piping	30	25APR07	30MAY07	28	
1490	OLP1 - Install Marine Loading Arms (3 off)	18	25APR07	16MAY07	46	<del>_</del>
1489	OLP1 - Install Valves/In-Line Eqp	6	03MAY07	21JUN07	28	<u>8</u>
1488	OLP1 - Install Small Bore Piping	12	31MAY07	13JUN07	28	
1254	Substantially Complete Product Mechanical - OLP1	0		21JUN07	28	
3437	OLP2 - Paint Product Piping	24	31JUL07	27AUG07	58	
1502	OLP1 - Install Fuel Risers	12	31AUG07	14SEP07	63	
3411	OLP2 - Install Fuel Risers	12	31AUG07	14SEP07	63	
1511	OLP1 - Paint Product Piping	24	05OCT07	01NOV07	28	8
CC-C.90.50 E	Electrical & Controls					
3445	Commence Electrical Works	0	14MAY07*		79	9   <mark> </mark>
3429	OLP2 - Install Pillar Box	6	22JUN07	28JUN07	46	
3434	OLP2 - Install Security Cameras/Emrg. Break Cont	6	22JUN07	28JUN07	70	

	A .	A		FO			
	Act. ID	Activity Description	Orig Dur	ES	EF	TF	2005 2006 2007 2008
3	431	OLP2 - Install Cable Trays	12	29JUN07	14JUL07	46	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $
	428	OLP2 - Install Earthing/Lightning	6	16JUL07	21JUL07	58	<del>_</del>   <mark> </mark>
	432	OLP2 - Install Lighting Fixtures	6	16JUL07	21JUL07	52	
	433	OLP2 - Pull Control/Power Cables	12	16JUL07	30JUL07	46	<del>_</del>   <mark> </mark>
3.	435	OLP2 - Terminate Power/Control Cables	6	31JUL07	06AUG07	46	
3.	444	Substantially Complete OLP2 Electrical	0		06AUG07	46	
1.	492	OLP1 - Install Pillar Box	6	28AUG07	03SEP07	28	
1.	494	OLP1 - Install Lighting Fixtures	6	28AUG07	03SEP07	106	
1:	519	OLP1 - Install Security Cameras/Emrg. Break Cont	6	28AUG07	03SEP07	106	
1-	493	OLP1 - Install Cable Trays	12	04SEP07	18SEP07	28	
1-	497	OLP1 - Pull Control/Power Cables	12	19SEP07	04OCT07	28	
1:	508	OLP1 - Install Earthing/Lightning	6	19SEP07	25SEP07	94	
3-	438	OLP2 - Terminate Incomming Cables from Tank Farm	6	02OCT07	08OCT07	151	
1:	509	OLP1 - Terminate Power/Control Cables	6	05OCT07	11OCT07	82	
1:	515	Substantially Complete OLP1 Electrical	0		11OCT07	82	
1:	227	Install Cable Trays OLP1 to MD1	12	31OCT07	13NOV07	90	
1:	252	Install Lighting Fixtures OLP1 to MD1	12	14NOV07	27NOV07	90	
1:	221	Earthing & Lightninig Dolphins/Walkways	24	21NOV07	18DEC07	66	
1:	222	Install Cable Support System OLP2 to MD7	10	21NOV07	01DEC07	78	
1:	231	Pull Power/Lighting Cables OLP1 to MD1	12	28NOV07	11DEC07	90	
1:	233	Install Cable Support System OLP2 to OLP1	18	28NOV07	18DEC07	42	
1:	250	Install Lighting Fixtures OLP2 to MD7	10	03DEC07	13DEC07	78	
1:	224	Terminate Power/Lighting Cables OLP1 to MD1	6	12DEC07	18DEC07	90	)
1:	237	Pull Power/Lighting Cables OLP2 to MD7	10	14DEC07	28DEC07	78	
1:	251	Install Lighting Fixtures OLP2 to OLP1	18	19DEC07	12JAN08	42	
1:	503	Earthing Cable Between OPL1 and OLP2	12	19DEC07	05JAN08	54	
1:	322	Terminate Power/Lighting Cables OLP2 to MD7	6	29DEC07	05JAN08	78	
1:	238	Pull Power/Lighting Cables OLP2 to OLP1	18	14JAN08	02FEB08	42	
1:	325	Terminate Power/Lighting Cables OLP2 to OLP1	12	04FEB08	20FEB08	42	
CC-0	C.90.60 Fire	e Services					
1:	504	Install BD6 Foam Monitor Structure/Monitors	12	16APR07	28APR07	201	
3	420	OLP2 - Install FS Mechanical Equipment	6	18APR07	24APR07	28	
34	427	OLP2 - Install FS Piping/Valves	30	25APR07	30MAY07	28	
1:	506	Install BD4 Foam Monitor Structure/Monitors	12	30APR07	14MAY07	201	
1:	505	Install BD5 Foam Monitor Structure/Monitors	12	29MAY07	11JUN07	177	7
34	430	OLP2 - Install Drencher Piping	18	31MAY07	21JUN07	28	
1:	512	Install FS Piping/Eqp to BD5/6 Foam Monitors	18	05JUN07	26JUN07	168	
1:	344	Substantialy Complete FS Mechanical - OLP2	0		21JUN07	28	
1-	498	OLP1 - Install FS Mechanical Equipment	6	22JUN07	28JUN07	28	

Act.	Activity	Orig	ES	EF	TF	
ID	Description	Dur	Lo	LI	- ' '	2005   2006   2007   2008     2008     2007   2008     2008     2007   2008     2008
1499	OLP1 - Install FS Piping/Valves	30	29JUN07	06AUG07	28	
1507	Install BD1 Foam Monitor Structure/Monitors	12	13JUL07	27JUL07	141	
3436	OLP2 - Paint - FS Piping	12	31JUL07	13AUG07	112	
1520	Install FS Piping/Eqp to BD4/1 Monitors	24	04AUG07	31AUG07	114	
1500	OLP1 - Install Drencher Piping	18	07AUG07	27AUG07	28	
1338	Substantialy Complete FS Mechanical - OLP1	0		27AUG07	28	
1326	Fire Detection and Alarm Installation	24	19SEP07	18OCT07	130	
3410	OLP2 - Install Water/Foam Risers	12	02OCT07	15OCT07	79	
1510	OLP1 - Paint - FS Piping	18	05OCT07	25OCT07	70	
1323	Fire Services Piping between Loading Platforms	36	17OCT07	27NOV07	24	
1331	Paint FS Piping between Loading Platforms	36	07NOV07	18DEC07	24	
CC-C.99 Testir	ng & Commissioning					
CC-C.99.10 M	lain Contractor Testing/Pre-commissioning					
1229	J - Hydrotest Product Piping	36	02NOV07	13DEC07	28	
1302	J - Hydrotest Fire Services Piping	36	19DEC07	02FEB08	24	
1310	J - Power Supply to Jetty Test/Precommission	12	18FEB08	01MAR08	15	
1301	J - Test & Pre-Commission Earthing/Lightning	6	25FEB08	01MAR08	15	
POWJ	J - Power to Jetty Available from TF	0		01MAR08*	15	
1241	J - Test & Commis Fire Services Drencher & Spray	12	03MAR08	15MAR08	15	
1248	J - Test & Pre-Commission Lighting & Power	12	03MAR08	15MAR08	33	
1300	J - Test & Pre-Commission Security System	6	03MAR08	08MAR08	70	
1303	J - Precommission Product Mechanical/Piping	48	03MAR08	28APR08	28	
1328	J - Test & Commiss Fire Services Hydrant System	12	17MAR08	29MAR08	15	
1329	J - Test & Commission Fire Services Foam System	12	17MAR08	29MAR08	15	
1307	J - Test & Commission Fire Detection & Alarm	6	31MAR08	07APR08	15	
	tatutory Inspection & approvals					
3866	J - Submit FS 314 for FS Installation	0	19DEC07		78	
3873	J - EMSD Inspection Lifting Davits	14	03MAR08	18MAR08	31	
3875	J - Submit FS 501	0	24MAR08	1	15	
3876	J - FSD Inspection	24	08APR08	06MAY08	15	
3877	J - Prepare BA13 & associated documents	12	22APR08	06MAY08	43	
3878	J - AP Submit BA13 & Associated Documents	0		06MAY08	43	
3879	J - FSD Issue Fire Certificate	0		14MAY08	15	
3880	J - BD Inspection	12	15MAY08	28MAY08	43	
3881	J - BD Issue Occupational Permt	0		11JUN08	43	

	Act. ID	Activity Description	Orig Dur		EF	TF	2005
D S	SUB-MAR	RINE PIPE LINE					
		uction Works					
	.90.10 Dre						
133		Mobilise Dredging Equipment	24	03OCT06*	01NOV06	70	
110	02	Dredge Pipe Trench (Ch 0 - 1900)	14	02NOV06	17NOV06	70	<mark>1                                    </mark>
128	85	Dredge Pipe Trench (Ch 1900 - 4200)	8	18NOV06	27NOV06	70	
128	86	Dredge Shau Chau Turning Circle	10	28NOV06	08DEC06	132	
129	98	Dredge from TF to Jetty (for utility services)	12	23JAN07	05FEB07	182	
CC-D	.90.20 Su	ipply and Install Pipe					
129	•	Set Up Winches at Ch 0	78	03OCT06	08JAN07	38	
129	92	Set Up Barge/Fab. & L'way Fclty @ Ch 2458 bend	78	03OCT06	08JAN07	38	
110	03	Fabricate & Pull Pipes (Ch 0-2458)	42	09JAN07	01MAR07	38	
129	93	Prepare Pipe Laying Barge for Lay Barge Method	6	02MAR07	08MAR07	38	
128	87	Fab & Pull Pipes; Install Bends (Ch 2458 - 4310)	48	09MAR07	05MAY07	38	
129	96	Install Risers to Sha Chau Jetty	24	07MAY07	02JUN07	38	
129	97	Modification Works @ Sha Chau and Connections	36	07MAY07	16JUN07	135	
113	38	Install Riser Pipe Through Seawall	6	04JUN07	09JUN07	38	
129	95	Set up Pulling Eqp (TF to Jetty)	24	11JUN07	11JUL07	38	
130	05	Install Sub-marine Fuel Pipe to OLP1	12	12JUL07	25JUL07	38	
130	06	Install Sub-marine Fuel Pipe to OLP2	18	27JUL07	16AUG07	38	
130	09	Install Sub-marine Fuel Pipe Loop OLP1 to OLP2	12	17AUG07	30AUG07	38	
129	94	Lay Utility Pipes & Power Cable from TF to Jetty	24	31AUG07	29SEP07	38	
CC-D	.90.30 Bad	ckfill					
110	09	Backfill Utility Trench (TF to Jetty)	6	02OCT07	08OCT07	69	
111	13	Backfill Fuel Line Loop OLP1 to OLP2	9	16OCT07	25OCT07	63	
110	04	Backfill Pipe Trench (Ch 0 - 2458)	60	26OCT07	08JAN08	63	
128	89	Backfill Pipe Trench (Ch 2458 - 4310)	30	09JAN08	15FEB08	63	
CC-D.9	9 Testing	g & Commissioning					
1105	5	Preliminary Hydrotest	24	15SEP07	15OCT07	63	
1106	<u></u>	Clean & Pig the Pipelines	26	16FEB08	17MAR08	63	

## Annex E

Summary of Environmental Licensing, Notification, Permit and Report Submission Status

Annex E Summary of Environmental Licensing, Notification, Permit and Report Submission Status

Permit/ Licenses/ Notification/Reports	Reference	Validity Period	Remarks
Environmental Permit	EP-139/2002	Throughout Project	Issued on 2 August 2002
Variation of Environmental Permit	VEP-133/2004	Throughout Project	Issued on 28 January 2004
Amended Environmental Permit	EP-139/2002/A	Throughout Project	Issued on 24 February 2004
Chemical Waste Producer Registration	WPN 5111-421-L2174- 25	Throughout Project	Issued on 10 November 2005
Notification of Construction Works under Air Pollution Control (Construction Dust) Regulation	001004989	Throughout Project	Notification on 5 November 2005 (Tank Farm at TM Area 38, Jetty at Urmston Road and Fuel Pipeline
Construction Noise Permit	PP-RW0024-05	12 Nov 05 to 31 Mar 06	Issued on 7 November 2005, for Hydraulic Hammer (single acting) driving steel pile
Construction Noise Permit	GW-RW0785-05	7 Dec 05 to 31 Mar 06	Issued on 7 December 2005, for General Works (Welding) at Jetty Area
Wastewater Discharge License			Applied on 23 January 2006
Waste Management Plan (Rev 1)	VEP-133/2004 (Condition 3.6)	Throughout Project	Submitted on 27 February 2006
Revised EM&A Manual (updated version)	VEP-133/2004 (Condition 2.4)	Throughout Project	Submitted on 10 February 2006
Pre-Construction Phase Dolphin Monitoring Report (updated version)	VEP-133/2004 (Condition 3.3)	Throughout Project	Submitted on 6 February 2006
Dolphin Visual Monitoring during	VEP-133/2004 (Condition 3.22)	Throughout Piling activities	Submitted in Monthly EM&A Reports
Piling Spot Acoustic Monitoring	VEP-133/2004 (Condition 3.23)	Throughout Project	Submitted with 1st Monthly EM&A Report
Underwater Noise Monitoring	VEP-133/2004 (Condition 3.24, 3.25)	Throughout Project	Submitted with 3 <sup>rd</sup> Monthly EM&A Report

Permit/ Licenses/ Notification/Reports	Reference	Validity Period	Remarks
Set up of a Web cam and web site	VEP-133/2004 (Condition 5.8, 6.2)	Throughout Project	Submitted on 8 February 2006
1st Monthly EM&A Report (updated version)	VEP-133/2004 (Condition 5)	Throughout Project	Submitted on 7 March 2006
2 <sup>nd</sup> Monthly EM&A Report (updated version)	VEP-133/2004 (Condition 5)	Throughout Project	Submitted on 7 March 2006
3 <sup>rd</sup> Monthly EM&A Report (first submission)	VEP-133/2004 (Condition 5)	Throughout Project	Submitted on 8 March 2006

## Annex F

# Action/Limit Levels and Action Plan for the EM&A

#### ANNEX F ACTION/LIMIT LEVELS AND ACTION PLANS FOR THE EM&A

### Action and Limit Levels for Water Quality

Parameters	Action (mg/L)	Limit (mg/L)
DO in mg/L	Depth Average	Depth Average
	4.5 mg/l	4.0 mg/l
(Depth	and	and
Average &	upstream control stations' mean	upstream control stations' mean DO
Bottom)	DO (at the same tide of the same	(at the same tide of the same day)
	day)	
DO in mg/L	<u>Bottom</u>	<u>Bottom</u>
(Depth	2.5 mg/l	2.0 mg/l
Average &	and	and
Bottom)	upstream control stations' mean	upstream control stations' mean DO
	DO (at the same tide of the same	(at the same tide of the same day)
	day)	
Suspended	30 mg/l	39 mg/l
Solids	and	and
(Depth	130% of upstream control stations' mean SS (at the same tide of the	130% of upstream control stations' mean SS (at the same tide of the
averaged)	same day)	same day)
	carrie any	Same any
Turbidity in	130% of upstream control stations'	N/A
NTU	mean Turbidity (at the same tide of	
(Depth	the same day)	
averaged)		

#### Notes:

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- For SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- All the figures given in the table are for reference only and these may be amended with the agreement of DEP.
- "Depth Averaged" is calculated by taking the arithmetic mean of the in-situ parameters readings at all three depths. For suspended solids "depth averaged" is calculated by combining all three samples into one mixed sample which is analysed to produce a physical arithmetic mean.

## Event and Action Plan for Water Quality

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

EVENT	ACTION					
EVENI	ET	IEC	FSR	Contractor		
Limit Level being exceeded by one consecutive sampling day	<ol> <li>Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform the IEC, the Contractor and the DEP;</li> <li>Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>Discuss mitigation measures with the IEC, the FSR and the Contractor;</li> <li>Ensure mitigation measures are implemented;</li> </ol>	<ol> <li>Discuss with the ET / Contractor on the mitigation measures;</li> <li>Review proposals on mitigation measures submitted by the Contractor and advise the FSR accordingly;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol> <li>Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures;</li> <li>Request the Contractor to critically review the working methods;</li> <li>Make agreement on the mitigation measures to be implemented;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol> <li>Inform the Engineer and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with the ET, the IEC and the FSR and propose mitigation measures to the IEC and the FSR within 3 working days;</li> <li>Implement the agreed mitigation measures.</li> </ol>		
Limit Level being exceeded by more than one consecutive sampling days	<ol> <li>Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform the IEC, the Contractor and DEP;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with the IEC, the FSR and the Contractor;</li> <li>Ensure mitigation measures are implemented;</li> </ol>	<ol> <li>Discuss with ET and Contractor on the mitigation measures;</li> <li>Review proposals on mitigation measures submitted by the Contractor and advise the FSR accordingly;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol> <li>Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures;</li> <li>Request Contractor to critically review working methods;</li> <li>Make agreement on the mitigation measures to be implemented;</li> <li>Assess effectiveness of the implemented mitigation measures;</li> <li>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.</li> </ol>	<ol> <li>Inform the FSR and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with the ET, the IEC and the FSR and propose mitigation measures to the IEC and the FSR within 3 working days;</li> <li>Implement the agreed mitigation measures;</li> <li>As directed by the FSR, slow down or stop all or part of the construction activities.</li> </ol>		

## Action Plan for Dolphin Monitoring

EVENT	ACTION						
	ET	IEC	FSR	Contractor			
Dolphin numbers recorded in the post-construction monitoring are significantly lower than those recorded in the pre-construction monitoring	<ol> <li>Repeat statistical data analysis to confirm findings;</li> <li>Review historical data to ensure differences are as a result of natural variation or previously observed seasonal differences;</li> <li>Identify source(s) of impact;</li> <li>Inform the IEC, FSR and Contractor;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures, such as additional dolphin monitoring, with the IEC and Contractor.</li> </ol>	<ol> <li>Discuss with the ET and the Contractor on the mitigation measures;</li> <li>Review proposals on mitigation measures submitted by the Contractor and advise the FSR accordingly;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol> <li>Discuss with the IEC on the proposed mitigation measures;</li> <li>Make agreement on the mitigation measures to be implemented.</li> </ol>	<ol> <li>Inform the FSR and confirm notification of the noncompliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with the ET and the IEC and propose mitigation measures to the IEC and the FSR;</li> <li>Implement the agreed mitigation measures.</li> </ol>			

# Event / Action Plan for Landscape and Visual Design Phase

Action Level	Landscape and Visual Auditor	Project Engineer (PE)	Project Landscape Architect (PLA)
Non Conformity	Identify Source	Notify PLA	Amend designs
(with Design Standards and	• Inform PE and PLA	Discuss remedial     actions with PLA	Discuss remedial actions     with PE
Specification)	<ul> <li>Discuss remedial actions with PE, PLA</li> </ul>	Ensure remedial	
	Verify remedial actions when complete	designs are fully incorporated	

## Event / Action Plan for Landscape and Visual Construction Phase

Action Level	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	FSR <sup>(1)</sup>	Contractor <sup>(1)</sup>
Non-conformity on one	1. Identify Source	1. Check report	Notify Contractor	Amend working methods
occasion	2. Inform the Contractor, IEC and the FSR	Check the Contractor's working method	<ol><li>Ensure remedial measures are properly implemented</li></ol>	<ol><li>Rectify damage and undertake any necessary replacement</li></ol>
	3. Discuss remedial actions with the IEC, the FSR and the Contractor  4. Monitor remedial actions until	3. Discuss with the ES and the Contractor on possible remedial measures		
	4. Monitor remedial actions until rectification has been completed	Advise the FSR on effectiveness of proposed remedial measures.		
		5. Check implementation of remedial measures.		
Repeated Non-conformity	1. Identify Source	Check monitoring report	1. Notify the Contractor	1. Amend working methods
	2. Inform the Contractor, IEC and the	Check the Contractor's working method	2. Ensure remedial measures are properly implemented	<ol><li>Rectify damage and undertake any necessary replacement</li></ol>
	4. Discuss remedial actions with the IEC, the FSR and the Contractor	3. Discuss with the ES and the Contractor on possible remedial measures		
	5. Monitor remedial actions until rectification has been completed	4. Advise the FSR on effectiveness of proposed remedial measures		
	6. If exceedance stops, cease additional monitoring	5. Supervise implementation of remedial measures.		

Note: (1) ET – Environmental Team, IEC – Independent Environmental Checker, FSR – Franchisee's Site Representative

#### Annex G

Required Submissions
Specified in Environmental
Permit (Implementation
Status of Mitigation
Measures)

## ANNEX G REQUIRED SUBMISSIONS SPECIFIED IN ENVIRONMENTAL PERMIT (IMPLEMENTATION STATUS OF MITIGATION MEASURES)

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
1A General S	Submission Requirements				
1.9	During Submissions	All submissions, as required under this Permit, shall be rectified in accordance with the comments, if any, made by the Director within one month of the receipt of the Director's comments or otherwise as specified by the Director.	All parties, as appropriate.		Ongoing
1.10	During Submissions	All submissions approved by the Director, all submissions deposited without comments by the Director, or all submissions rectified in accordance with comments by the Director under this Permit shall be construed as part of the permit conditions described in Part C of this Permit. Any variation of the submissions shall be approved by the Director in writing or as prescribed in the relevant permit conditions. All submissions or any variation of the submissions shall be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) referred to in Conditions 2.1 and 2.2 below, before submitting to the Director under this Permit.	All parties, as appropriate.		Ongoing
1.11	During Submissions	The Permit Holder shall release all finalized submissions as required under this Permit to the public by depositing copies in the Environmental Impact Assessment Ordinance Register Office, or in any other places, or any internet websites as specified by the Director, or by any other means as specified by the Director for public inspection. For this purpose, the Permit Holder shall provide sufficient copies of the submissions.	All parties, as appropriate.		Ongoing
1.12	During Submissions	All submissions to the Director required under this Permit shall be delivered either in person or by registered mail to the Environmental Impact Assessment Ordinance Register Office (currently at 27/F, Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong). Electronic copies of all finalized submissions required under this Permit shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by the Director, and shall be submitted at the same time as the hard copies.	All parties as appropriate.		Ongoing

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
1.14	Timing consideration for interpreting submissions.	For the purpose of this Permit, "commencement of construction" does N not include works related to site clearance and preparations, or other works as agreed by the Director.	Jone.		
1.13	1	AA to inform EPD of		Completed	
	construction	The Permit Holder shall notify the Director in writing the commencement date of construction of the Project no later than one month prior to the commencement of construction of the Project. The Permit Holder shall notify the Director in writing immediately if there is any change of the commencement date of the construction.	commencement date (cc to ERM/LCAS).		
2.1 (PART – see EM&A Section)	At least 1 month prior to construction (BC)	An ET shall be established by the Permit Holder no later than one month before commencement of construction of the Project. The ET shall not be in any way an associated body of the Contractor or the IEC for the Project. The ET shall be headed by an ET Leader. The ET leader shall be a person who has at least 7 years' of experience in environmental monitoring and auditing (EM&A) or environmental management. The ET and the ET Leader shall be responsible for the implementation of the EM&A programme in accordance with the requirements as contained in the EM&A Manual.	AA to inform EPD that ERM have been appointed as the ET (cc to ERM/LCAS).		Completed
2.2 (PART – see EM&A Section)	At least 1 month prior to construction (BC)	Independent Environmental Consultant:  An IEC shall be employed by the Permit Holder no later than one month before commencement of construction of the Project. The IEC shall not be in any way an associated body of the Contractor or the ET for the Project. The IEC shall be a person who has at least 7 years' of experience in EM&A or environmental management.	AA to inform EPD that Hyder have been appointed as the IEC (cc to ERM/LCAS/Hyder)		Completed

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
2.3	2.3 At least 1 month prior to construction (BC)	*	<ul> <li>ERM to provide the qualified person and submit his/her qualification and experience with the certification to LCAS/IEC</li> </ul>		Complete
			<ul> <li>Hyder to forward         Verification Form to AA (cc         to LCAS/ERM)</li> </ul>		
2.4	At least 1 month prior to construction (BC)	Updating of EM&A Manual:  The Permit Holder shall, no later than one month before the commencement of the Project, submit to the Director for approval four hard copies and one electronic copy of an updated EM&A  Manual for the Project. The updated EM&A Manual shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report. The	<ul> <li>ET to prepare and certify updated EM&amp;A manual to IEC/AA (cc to LCAS)</li> <li>IEC to forward verification Form to AA (cc to ERM/LCAS)</li> <li>AA to forward updated</li> </ul>		Completed
		updated EM&A Manual shall include the setting up of additional water quality monitoring stations for all marine construction activities.	EM&A manual, certification & verification Forms to EPD (cc to ERM/ Hyder/LCAS)		
	Within 1 month after start of construction (C)	Management Organization:  The Permit Holder shall, within one month after commencement of construction of the Project, inform the Director in writing the management organization of the main construction companies	<ul> <li>LCAS to provide their management organization to AA (cc to ERM)</li> <li>AA to forward this</li> </ul>		Completed
		and/or any form of joint ventures associated with the construction of the Project. The submitted information shall include at least an organization chart, names of responsible persons and their contact details.	information to EPD (cc to ERM/ LCAS/Hyder)		

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
3.2	At least 2 months prior to commencement of the works (BC)	Trial of bubble jacket shall be carried out to demonstrate noise attenuation effect of 3 dB or more as recommended in the approved EIA Report (Register No. AEIAR-062/2002). The Permit Holder shall, at least 2 months before commencement of piling works, submit the testing results of the bubble jacket trial to the Director for approval and shall deposit 15 copies of the testing results of the bubble jacket trial to the Secretary of the EIA Sub-committee of the Advisory Council on the Environment (ACE) at 10/F., Citibank Tower, 3 Garden Road, Central, Hong Kong. The Director may require the Permit Holder to make a presentation to the ACE on the bubble jacket trial to seek approval prior to commencement of construction. The submission shall be certified by ET Leader and verified by the IEC before submission to the Director.	LCAS to provide testing result of the Bubble Jacket Trail to ET and IEC. ET to forward certification Form to AA/IEC (cc to LCAS) IEC to forward verification form to AA (cc to ERM/LCAS) AA to forward testing result, certificate & verification Forms to EPD (cc to ERM/Hyder/LCAS)		Completed
3.3	At least 1 month prior to marine construction (BC)	Dolphin Monitoring Programme and Action Plan  Dolphin monitoring for pre- and post-construction activities shall be carried out. The Permit Holder shall submit the dolphin monitoring programme and the action plan to the Director for approval at least 1 month before commencement of marine construction works of the Project. The action plan shall include recommendations for further monitoring should dolphin numbers be significantly different to the pre-construction activity. The submission shall be certified by ET Leader and verified by the IEC before submission to the Director. The monitoring shall be undertaken by a qualified person (minimum requirement of graduate qualification in marine biology of equivalent biological science with 5 yrs experience).	ET to prepare the monitoring programme and the action plan and submit to IEC/AA (cc to LCAS)  IEC to forward verification Form to AA (cc to ERM/LCAS)  AA to forward the monitoring programme and action; and verification Forms to EPD (cc to ERM/Hyder/LCAS)		Completed

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
	At least 2 months before the commence of the survey	Marine Archaeology Investigation:  A qualified marine archaeologist shall be engaged to carry out a marine archaeological investigation of the pipeline route. The Permit	ET to provide the qualified person and methodology of the survey.		Completed
		Holder shall submit the methodology for the survey and the curriculum vitae of the qualified marine archaeologist to the Director for approval at least one month before commencement of any field	<ul> <li>ET to provide the marine archaeological investigation result to LCAS/IEC.</li> </ul>		
		Form to A LCAS)  thin 2 months after The Permit Holder shall, within 2 months after completion of the marine archaeological investigation, submit the results of the survey  Form to A LCAS)  • IEC to form to A LCAS)	Form to AA/IEC (cc to		
	Within 2 months after completion of the survey		• IEC to forward verification Form to AA (cc to ERM/LCAS)		
		archaeological impact to the Director for approval. The submissions shall be certified by ET Leader and verified by the IEC before submission to the Director.	<ul> <li>AA to forward the result, certificate &amp; verification</li> <li>Forms to EPD (cc to ERM/ IEC/LCAS)</li> </ul>		

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
3.6	Within 1 month after the commencement of construction (C)	Waste Management Plan (WMP)  The Permit Holder shall, within one month after the commencement of construction of the Project, deposit with the Director three hard copies and one electronic copy of a Waste Management Plan (WMP) for the construction stage of the Project. The WMP shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the approved EIA Report (Register No. AEIAR-062/2002). The WMP shall describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and shall include the recommended mitigation measures on waste management in Section 14.7 of the approved EIA Report (Register No. AEIAR-062/2002). The WMP shall indicate the disposal location(s) of all surplus excavated spoil and other waste. A trip ticket system shall be included in the WMP. Surplus excavated spoil and other wastes shall only be disposed of at designated disposal locations unless otherwise approved by the Director. All measures recommended in the approved WMP shall be fully and properly implemented by the Permit Holder and any person working on the Project throughout the construction period.	<ul> <li>LCAS to provide the WMP to ET and IEC.</li> <li>ET to forward certification Form to AA/IEC (cc to LCAS)</li> <li>IEC to forward verification Form to AA (cc to ERM/LCAS)</li> <li>AA to forward the WMP, certificate &amp; verification Forms to EPD (cc to ERM/IEC/LCAS)</li> </ul>		Contractor submitted the draft WMP, in the progress of review

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
3.8	At least 1 month before construction in these areas (BC)	At least one month before commencement of the landscape works, the Permit Holder shall deposit with the Director 3 sets of the landscape plan prepared for the Project. The landscape plan shall include the locations, design details, implementation schedules, and drawings in the scale of 1:1000 or other appropriate scale showing the landscape and visual mitigation measures. The measures shall include 1.5m high perimeter landscaped bund, 4m high landscape mound and landscape works for the area of the site which is not initially required for fuel tanks. The landscape plan shall be certified by the ET Leader and verified by the IEC as conforming to the requirements set out in Section 8.10 of the approved EIA Report (Register No. AEIAR-062/2002) before deposit.	Form to AA/IEC (cc to LCAS)  IEC to forward verification Form to AA (cc to ERM/LCAS)		Ongoing, first submission was made on 23 December 2006
3.9 (PART – see Table 2)	At least 1 month before commencement of the implementation (BO).	Measures to Prevent Fuel Spill, Land Contamination and Water Quality Impact during Operation:  The Permit Holder shall, at least one month before commencement of implementation of the measures to prevent fuel spill, land contamination and water quality impact during operation of relevant parts of the Project, deposit with the Director 3 sets of design drawings with explanatory statements showing details of measures to be used in relevant parts of the Project. Before submission to the Director, the drawings shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the approved EIA Report (Register No. AEIAR-062/2002).	LCAS to provide the design drawing to ET and IEC.  ET to forward certification Form to AA/IEC (cc to LCAS)  IEC to forward verification Form to AA (cc to ERM/LCAS)  AA to forward the design drawing, certificate & verification Forms to EPD (cc to ERM/IEC/LCAS		Pending

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
4.1	At least 3 months before operation of the Project	Measures to Prevent Fuel Spill, Land Contamination and Water Quality Impacts during Operation	AA to implement		Pending
(BO)	(BO)	The Permit Holder shall be fully responsible for monitoring and audit the effectiveness of the measures and systems specified in Condition 3.9 of this Permit to prevent fuel spill, land contamination and water quality impact during operation of the Project. The Permit Holder shall, at least three month before operation of the Project, deposit with the Director 3 sets of audit report showing the incorporation of the measures and systems in the Project and the effectiveness of the measures and systems.			
4.2	Annually	The effectiveness of the measures and systems specified in Condition 3.9 of this Permit shall be tested and audited at least once a year.  Annual audit report of the performance of the measures and systems shall be deposited with the Director.	AA to implement		Pending
4.3	At least 2 months before	Contingency Plan	AA to provide the		Pending
	operation of relevant parts (BO)	The Permit Holder shall formulate a comprehensive contingency plan to handle the event of fire, fuel spillage and fuel leakage. The contingency plan shall at least detail the remedial actions, the emergency response planning and procedures, the logistic arrangements and coordination and the notification arrangements for the event of fire, fuel spillage and fuel leakage. Oil dispersant shall not be used. The Permit Holder shall carry out regular rehearsal of the contingency plan to ensure the effectiveness of the plan. The Permit Holder shall, at least two month before operation of relevant parts of the Project, deposit with the Director 5 sets of the contingency plan.	contingency plan for the event of fire, fuel spillage and fuel leakage to EPD.		

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
4.4	Prior operation (BO)	The Permit Holder shall, before the operation of the Project or otherwise agreed by the Director, develop and implement an Environmental Management System (EMS) for the operation of the Project. The EMS is to ensure that the operation of the Project is in environmentally friendly manner and in accordance with all relevant environmental legislations. The EMS shall include at least regular audit of the Project to ensure that it is properly operated and maintained to avoid or minimize any environmental impact. The Permit Holder shall engage an Environmental Manager to oversee and implement the EMS. The Environmental Manager shall be a person who has at least 7 years' of experience in Environmental Monitoring and Audit (EM&A) or environmental management. The EMS shall be certified under ISO 14000 within 1 year after the operation of the Project or otherwise agreed by the Director.	LCAS to implement the EMS.		Pending
5.2 (PART – see Table 2	At least 2 weeks before construction (BC)	The Permit Holder shall submit two hard copies and one electronic copy of the Baseline Monitoring Report to the Director at least 2 weeks before commencement of construction of the Project. The submissions shall be certified by the ET Leader and verified by the IEC before submission to the Director. Additional copies of the submission shall be provided upon request by the Director.	ET to prepare baseline monitoring report and forward to AA/IEC (cc to LCAS)  IEC to forward verification Form to AA (cc to LCAS/ERM)  AA to forward baseline monitoring report, certification & verification Form to EPD (cc to ERM/IEC/LCAS)		Dolphin Baseline Report was completed.

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
end o	Within 2 weeks after the end of the reporting month. (C/AC)	ad of the reporting  The Permit Holder shall submit two hard copies and one electronic	ET to prepare EM&A report and forward to AA/IEC (cc to LCAS)		Ongoing
		after the end of the reporting month. The submissions shall be • certified by the ET Leader and verified by the IEC before submission to the Director. Additional copies of the submission shall be	IEC to forward verification Form to AA (cc to LCAS/ERM)		
		provided upon request by the Director.	AA to forward monthly EM&A report, certification & verification Form to EPD (cc to ERM/ Hyder/LCAS)		
5.8	Within 1 month after the commencement of the Project	Web Cameras Plan  Within three months of the commencement of construction of the Project, the Permit Holder shall install and thereafter maintain a system of web cameras covering the works areas at Tuen Mun site.  The system shall provide real time visual monitoring of the site condition accessible by public through the dedicated web site set up by the Permit Holder under Condition 6.2 below. Within one month of the commencement of the Project, the Permit Holder shall propose a plan and a system of web cameras for the Director's agreement.	LCAS to prepare the web camera plan to AA (cc to ERM)  AA to forward the web camera plan to EPD (cc to ERM/ LCAS/IEC)		Revised plan was submitted to EPD on 8

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
6.1	At the same time as hard copies as described in Conditions 5.2 and 5.3.	To facilitate public inspection of the EM&A Reports via the EIAO Internet Website and at the EIAO Register Office, electronic copies of these Reports shall be prepared in the Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by the Director and shall be submitted at the same time as the hard copies as described in Conditions 5.2 and 5.3 of this Permit. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of these Reports shall be included in the beginning of the document. Hyperlinks to all figures, drawings and tables in these Reports shall be provided in the main text from where the respective references are made. All graphics in these Reports shall be in interlaced GIF format unless otherwise agreed by the Director. The content of the electronic copies of these Reports must be the same as the hard copies.	ET to prepare the EM&A report in the HTML and PDF format.		Ongoing
6.2	Within 6 weeks after the start of Construction (C)	The Permit Holder shall, set up a dedicated web site and notify the Director in writing the internet address where the environmental monitoring and project data is to be placed, within six weeks after the commencement of the Project. All environmental monitoring results described in Condition 6.1 above shall be made available to the public via a dedicated web site to be set up by the Permit Holder in the shortest possible time and in no event later than 2 weeks after the relevant environmental monitoring data are collected or become available, unless otherwise agreed with the Director.	LCAS to prepare the web site and submit the internet address to AA (cc to ERM)  AA to forward the address to EPD (cc to ERM/ IEC/LCAS)		Ongoing

Table 2 General Conditions of the Environmental Permit

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
1A General Envi	ironmental Permit Con	ditions			
1.1	At all times (BC/C/AC)	The Permit Holder and any person working on the Project shall comply with all conditions set out in this Permit. Any non-compliance by any person may constitute a contravention of the Environmental Impact Assessment Ordinance (Cap. 499) and may become the subject of appropriate action being taken under the Ordinance.	AA to write to LCAS to remind them of their obligation to comply with EP condition (cc to ERM).		Ongoing
1.2	At all times (BC/C/AC)	The Permit Holder shall ensure full compliance with all legislation from time to time in force including, without limitation to, the Noise Control Ordinance (Cap. 400), Air Pollution Control Ordinance (Cap. 311), Water Pollution Control Ordinance (Cap. 358), Dumping at Sea Ordinance (Cap. 466), Waste Disposal Ordinance (Cap. 354), Dangerous Goods Ordinance (Cap. 295), Shipping and Port Control Ordinance (Cap. 313), Marine Parks Ordinance (Cap. 476), Occupational Safety and Health Ordinance (Cap.509) and Factories and Industrial Undertakings Ordinance (Cap.59). This Permit does not of itself constitute any ground of defence against any proceedings instituted under any legislation or imply any approval under any legislation.	AA to write to LCAS to remind them of their obligation to comply with all environmental legislation in force (cc to ERM).		Ongoing
1.3	At all times (BC/C/AC)	The Permit Holder shall ensure full compliance with all fire safety • requirements formulated by the Fire Services Department to address the potential fire risks of all possible areas within the Project site including the jetty. Implementation of measures under this Permit does not of itself constitute any ground of defense against any fire safety requirements instituted by the Fire Services Department.	AA to write to LCAS to remind them of their obligation to comply with all fire safety requirement (cc to ERM).		Ongoing

1B Posting and Notification of EP Requirements

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
1.4	At all times (BC/C/AC)	The Permit Holder shall make copies of this Permit together with all • documents referred to in this Permit and the documents referred to in Part A of the Permit readily available at all times for inspection by the Director or his authorised officers at all sites/offices covered by this	LCAS to advise AA whether they have all necessary document (cc to ERM)		Ongoing
		Permit. Any reference to the Permit shall include all documents referred to in the Permit and also the relevant documents in the Register.	AA to provide document to LCAS, as required (cc to ERM)		
		•	LCAS to keep document at all sites/offices covered by this EP.		
1.5	At start of construction works and during	The Permit Holder shall give a copy of this Permit to the person(s) in • charge of the site(s) and ensure that such person(s) fully understands all conditions and all requirements incorporated by the Permit. The site(s)	LCAS to advise AA of "Person in charge" for the site (cc to ERM)		Completed
	introduction of new site staff (C)	new refers to site(s) of construction and operation of the Project and shall mean the same hereafter.	AA to write to LCAS provide copy of EP to person in charge (cc to ERM)		
1.6	Immediately prior to and during construction (BC/C)	The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).	LCAS to display copy of full permit at all vehicular site entrances/exits or at a convenient location for public information at all times.		Completed
1C Design and C	Construction in Accordance	e with EIA/EP/EM&A			
1.7	During Construction and Operation (C/O)	The Permit Holder shall construct and operate the Project in accordance • with the project description in Part B of this Permit.	AA to write to LCAS to remind them of their obligation to comply with EP condition (cc to ERM)		Ongoing

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
1.8	At all times (BC/C/AC)	The Permit Holder shall ensure that the Project is designed, constructed and operated in accordance with the information and all recommendations described in the approved EIA Report (Register No. AEIAR-062/2002), other relevant documents in the Register, the information and mitigation measures described in this Permit, mitigation measures to be recommended in submissions that shall be deposited with or approved by the Director as a result of permit conditions contained in this Permit, and mitigation measures to be recommended under on-going surveillance and monitoring activities during all stages of the Project. Where recommendations referred to in the documents of the Register are not expressly referred to in this Permit, such recommendations are nevertheless to be implemented unless expressly excluded or impliedly amended in this Permit.	AA to write to LCAS to remind them of their obligation to comply with all recommendations described in the approved EIA report, other relevant documents in the Register and the EP condition (c to ERM)		Completed
5.1	At all times	The EM&A programme shall be implemented in accordance with the procedures and requirements in the updated EM&A Manual approved under Condition 2.4 of this Permit. Any changes to the EM&A programme shall be justified by the ET Leader and verified by the IEC as conforming to the requirements set out in the EM&A Manual and shall seek the prior approval from the Director before their implementation.	ERM to implement the EM&A programme		Ongoing
5.4	At all times	The actions described in the Event /Action Plans of the EM&A Manual • shall be fully and properly carried out in accordance with the time frame as set out in the Event/Action Plans, or as agreed by the Director.	LCAS/ERM to implement Event/Action plans		Ongoing
5.5	At all times	All environmental monitoring and audit data submitted under this • Permit shall be true, valid and correct.	ERM to submit the valid EM&A data		Ongoing
5.6	At all times	To ensure a high degree of transparency regarding the monitoring data • and results in view of the public concern about the Project, all environmental monitoring and audit data and results and all submissions and all performance test data and results required by this Permit shall be made available by the Permit Holder to the public through a dedicated web site to be set up by the Permit Holder under Condition 6.2 below, in the shortest possible time and in no event later than 2 weeks after such information is available.	ERM to upload the EM&A data, result and all submissions and all performance test data and results required by this Permit to the web site.		Ongoing

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
6.1	At all times	To facilitate public inspection of the EM&A Reports via the EIAO • Internet Website and at the EIAO Register Office, electronic copies of these Reports shall be prepared in the Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by the Director and shall be submitted at the same time as the hard copies as described in Conditions 5.2 and 5.3 of this Permit. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of these Reports shall be included in the beginning of the document. Hyperlinks to all figures, drawings and tables in these Reports shall be provided in the main text from where the respective references are made. All graphics in these Reports shall be in interlaced GIF format unless otherwise agreed by the Director. The content of the electronic copies of these Reports must be the same as the hard copies.	ERM to prepare the electronic copies of the EM&A reports in the HTML and PDF format		Ongoing
1D Measures to	Prevent Fuel Spill, Land	Contamination and Water Quality Impact During Operation			
	During Operation	The measures shall include, but not limited to, the following requirements:  a) Bunding system of tank farm for storage of aviation fuel  All fuel tanks shall be located in bunded compounds with capacity of at least 110% of the largest individual tank in each compound. A security wall of breeze-block type shall be provided outside the bund wall to act as secondary containment in the event of overtopping of the bund. The security gate at the security wall shall be provided with a ramp and leak tight seal at the bottom of the gate up to the first hinge to contain any spill within the site. A drainage ditch with sloping catchment shall be provided outside the security wall to trap any liquid splash over the security wall and the security gate.	LCAS to implement ER to enforce		Pending
		<ul> <li>b) <u>Drainage isolation and containment system of tank farm for storage of aviation fuel</u></li> <li>Impermeable layer under fuel tanks shall be used to prevent seepage of aviation fuel to ground. Storm drainage system shall be equipped with valve, collection sump and oil separator to retain spilled fuel.</li> </ul>			Pending

ENVIRONMENTAL RESOURCES MANAGEMENT

LEIGHTON CONTRACTORS (ASIA) LIMITED

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
		c) <u>Tank overfill monitoring system</u>			
		Overfill monitoring system with automatic shutdown inlet valve shall be provided for fuel tanks.			Pending
		d) <u>Installations at the jetty</u>			
		Installations at the jetty shall include the provision of defensive fenders to prevent possible collision from small craft and the provision of coupling points with slop collection utilities to prevent minor fuel spill during unloading. Slop collection utilities shall be connected to oil separator.			Pending
		e) <u>Fuel pipelines protective measures</u>			
		Fuel pipelines shall be covered with a protective rock armour layer of minimum thickness of 1m to prevent the pipelines from damaging by anchors.			Pending
		f) <u>Leak detection system for fuel pipelines</u>			
		Continuous leak detection system with automatic shut-off device shall be provided for fuel pipelines.			Pending
1E Measures to	Mitigate Water Quality I	mpact During Construction			
3.10	During construction	No more than one dredger shall be in operation at any time during construction.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Pending
3.11	During construction	No Lean Material Overboard (LMOB) system shall be used.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Pending
3.12	During construction	No hopper dredger with leaking pipe shall be used during construction.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Pending
3.13	During construction	to prevent leakage of dredged materials. Freehoard on harges shall be	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Pending
3.14	During construction	No dredged material shall be splashed to the surrounding water during loading of dredged material to barges and hopper dredgers.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Pending

EP PART C	Timing	Timing Condition		Latest Date for Completion of Action*	Status
e e		No dredged material shall be overflowed from barges and hopper dredgers during loading or transportation.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Pending
3.16	During construction	To mitigate environmental impacts due to site runoff and other potential water pollution caused by construction activities, mitigation measures described in Appendix A shall be implemented throughout the construction period.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing
Appendix A (a) (i)	During construction	Surface run-off from the construction site shall be directed into adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins before discharge into storm drains. Channels, earth bunds or sand bag barriers shall be provided on site to properly direct stormwater to such silt removal facilities.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing
Appendix A (a) (ii)	During construction	Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing
Appendix A (a) (iii)	During construction	Silt removal facilities, channels and manholes shall be maintained with the deposited silt and grit being removed at least once a week, and at the onset of and after each rainstorm to ensure that these facilities are functioning at all times.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing
Appendix A (a) (iv)	During construction	Open stockpiles of construction materials (e.g. aggregates and sand) on site shall be covered with tarpaulin or similar fabric during rainstorms. Measures such as providing sand bag barriers shall be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing
Appendix A (a) (v)	During construction	Manholes (including any newly constructed ones) shall always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharges of surface run-off into foul sewers shall always be prevented in order not to unduly overload the foul sewerage system.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
Appendix A (b)	During construction	At all parts of all works areas and construction sites, and throughout the full duration of the construction contract(s), debris and rubbish on site shall be handled and disposed of to avoid entering the water column and causing water quality impacts. Temporary on-site storage of excavated materials shall be covered with tarpaulin or similar fabric during rainstorms. Any washout of construction or excavated materials should be diverted to the drainage system via sediment traps. Stockpiling of the excavated material can be minimised by scheduling the construction programme in a way that one section of the alignment can be constructed and completed before the excavation works of the next section commence.	1		Ongoing
F Measures to P	rotect Marine Park (Sha	Chau & Lung Kwu Chau) and Avoid or Mitigate Ecological Impact During (	Construction		
3.17	During construction	No construction work shall be carried out from shore or land within the Marine Park.	1		Pending
3.18	During construction	No hydraulic dredging shall be carried out within the Marine Park.			Pending
3.19	During construction	Pipeline trench dredging within the Marine Park shall be scheduled to coincide with maintenance dredging for marine access channel for Sha Chau Aviation Fuel Receiving Facility.	·		Pending
3.20	During construction	A 250m dolphin exclusion zone during dredging within the Maine Park shall be implemented. Dredging work shall not be carried out until the area is certified by a qualified person to ensure continuously clear of dolphins within the 250m exclusion zone for 30 minutes.	LCAS to implement the 250m dolphin exclusion zone  ER to enforce  ERM to provide the qualified person		Pending

ENVIRONMENTAL RESOURCES MANAGEMENT

LEIGHTON CONTRACTORS (ASIA) LIMITED

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
3.21	During construction	Piling works shall not be carried out during April to June of the year to	LCAS to implement		Ongoing
		avoid peak calving period of dolphin.	• ER to enforce		
			<ul> <li>ET to monitor whether piling works is undertaken during April to June</li> </ul>		
3.22	During construction	A 500m dolphin exclusion zone during piling activities for the jetty shall be implemented. Piling work shall not be carried out until the area is	-		Ongoing
		certified by a qualified person to ensure continuously clear of dolphins	dolphin exclusion zone		
		within the 500m exclusion zone for 30 minutes. Piling work shall cease if dolphins move into the 500m exclusion zone during piling. Piling work shall not be resumed until the area is certified by a qualified person to ensure continuously clear of dolphins for 30 minutes.	ER to enforce		
3.23	During construction	Spot acoustic monitoring of the 500m dolphin exclusion zone during piling activities shall be conducted for three days of the first week of piling to confirm that dolphins are not missed in the visual inspection carried out under Condition 3.22 of this Permit. The spot acoustic monitoring shall be conducted in accordance with the procedures and requirements in the updated EM&A Manual approved under Condition 2.4 of this Permit.	LCAS to provide spot acoustic monitoring		Completed
3.24	During construction	Bubble jacket shall be used for piling work to reduce underwater piling	• LCAS to implement		Ongoing
		noise to achieve the following underwater mitigated noise levels: $162\ dE$ at $250m$ , $152\ dB$ at $500m$ and $145dB$ at $1000m$ .			
3.25	During construction	Underwater noise monitoring shall be conducted during piling to	LCAS to provide		Completed.
		ensure that the underwater mitigated noise levels as specified in Condition 3.24 of this Permit are achieved. Underwater mitigated noise levels shall be recorded over the initial three days of the first week of piling work. Underwater noise monitoring shall be conducted in accordance with the procedures and requirements in the updated EM&A Manual approved under Condition 2.4 of this Permit.	underwater noise monitoring		Summary Report was included in the 3 <sup>rd</sup> Monthly EM&A Report

EP PART C	Timing	Condition	Responsibility for Action	Latest Date for Completion of Action*	Status
3.26	During construction	Piling hammer at the beginning of each piling session shall be ramped up gradually. Piling activities shall be continuous without short-break and shall avoid sudden random loud noise emission. Piling activities shall occur on a regular basis, be scheduled to occur with similar activities and commence at the same time each day. No piling works shall be carried out during 11:00 p.m. to 7:00 a.m.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing
3.27	During construction	Piling and related equipment installed on the piling barge shall be acoustically decoupled from the hull of the barge.	<ul><li>LCAS to implement</li><li>ER to enforce</li></ul>		Ongoing

 Table 3
 Project Specific Mitigation Measures

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
1. Air Qua	lity Measures			
	Land based areas / During construction	S 4.5.3	Twice daily watering of all exposed site areas shall be undertaken.	Contractor
	Land based areas / During construction	S 4.5.3	No debris or other materials shall be burnt on the works areas.	Contractor
	Land based areas / During construction	S 4.5.3	All exposed road surfaces and dust sources shall be maintained as wet.	Contractor
	Land based areas / During construction	S 4.5.3	Watering shall be undertaken during rock/concrete breaking.	Contractor
	Land based areas / During construction	S 4.5.3	Open dropping heights for excavated materials shall be controlled to a maximum height of 2m.	Contractor
	Land based areas / During construction	S 4.5.3	Stockpiles of imported material kept on site shall be contained within hoardings, dampened and/or covered during dry and windy weather.	Contractor
	Land based areas / During construction	S 4.5.3	Site hoarding not less than 2.4m at site boundary shall be provided.	Contractor
	Land based areas / During construction	S 4.5.3	Dust creating activities shall be reprogrammed in periods of high winds.	Contractor
	Land based areas / During construction	S 4.5.3	Areas of exposed soil shall be minimised to areas in which works have been completed shall be restored as soon as is practicable.	Contractor
	Land based areas / During construction	S4.5.3	Stockpiling of the excavated material can be minimised by scheduling the construction programme in a way that one section of the alignment can be constructed and completed before the excavation works of the next section commence.	Contractor
	Land based areas / During construction	S 4.5.3	Any vehicle used for moving materials which have the potential to create dust shall have properly fitting side and tail boards. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	Contractor
	Site entrances and exits / During construction	S 4.5.3	No earth, mud, debris, dust and the like shall be deposited on public facility shall be usable prior to any earthworks roads. Wheel washing excavation activity on the Site.	Contractor
	Land based Site / During construction	S 4.9.1	EM&A in the form of site audit of dusty activities.	Contractor
	PAFF/Operational	S 4.7.1	Best practicable means as specified by the Air Pollution Control Ordinance for Part IV	Franshisee
	phase		specified process shall be adhered to.	

2. Noise

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	Land based Site / During construction	S 5.7.1	Use quiet equipment with suitable noise levels and labels.	Franchisee
	Land based Site / During construction	S 5.7.1	Regular maintenance of equipment.	Contractor
	Land based Site / During construction	S 5.7.1	Ensure noise attenuation devices are fitted to plant and equipment.	Contractor
	Land based Site / During construction	S 5.7.1	Fitting more efficient exhaust sound reduction equipment and ensuring the Manufacturers' enclosure panels are kept closed on dump trucks, lorries, excavators and cranes.	Contractor
	Land based Site / During construction	S 5.7.1	Fitting suitably designed muffler or sound reduction equipment and using dampened bit to eliminate ringing on breakers.	Contractor
	Land based Site / During construction	S 5.7.1	Ensure all leaks in air lines are sealed on all pneumatic equipment.	Contractor
	Land based Site / During construction	S 5.7.1	Use temporary noise barriers where applicable.	Contractor
	Land based Site / During construction	S 5.7.1	Restrict or modify working hours to minimise high noise activities.	Contractor
	Land based Site / During construction	S 5.7.1	Provide awareness training in the need to minimise noise.	Contractor
	Land based Site / During construction	S 5.7.1	Proper planning of work area.	Contractor
	Land base Site/ During construction	S 5.7.1	Good site practice to limit noise emissions at source	Contractor
	Land based Site / During construction	S 5.9.1	EM&A in the form of site audit of noise activities	Contractor
3. Water Q	Quality			
	Dredged areas/Design Phase	S 6.7.1.4	Standard good dredging practice measures shall be written into the dredging contract.	Franchisee
	Marine Park / Pipeline Dredging	S 6.7.1.1	There should be no access to the shore or working from land within the Marine Park. No marine anchors shall be used within the Marine Park.	Contractor
	Marine Park / Pipeline Dredging	S 6.7.1.2	No hydraulic dredging within Marine Park.	Contractor
	Sha Chau AFRF Marine access channel	S 6.7.1.3	Dredging for pipeline trench should be timed to coincide with maintenance dredging for Sha Chau AFRF marine access channel.	Airport Authority
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	Use of Lean Material Overboard (LMOB) systems shall be prohibited. No mud overflow is to be permitted for dredging using trailer suction hopper dredgers.	Contractor
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	Mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted.	Contractor
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	Barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material.	Contractor
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes.	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	Loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.	Contractor
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.	Contractor
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action.	Contractor
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	Contractor
	Dredged areas/ Pipeline Dredging	S 6.7.1.4	The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.	Contractor
	Pipeline trench / Pipeline Dredging	S 6.7.1.5	Placement of pipeline trench backfill should be undertaken in a controlled manner to minimize impacts. Backfilling with rock should be undertaken either down pipe or by a reverse grab operation or other controlled technique to ensure that this material does not mound on the seabed.	Contractor
	Land Site / During Construction	S 6.7.1.6	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	Contractor
	Land Site / During Construction	S 6.7.1.6	Sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided.	Contractor
	Land Site / During Construction	S 6.7.1.6	Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sandbag barriers should be provided on site to properly direct stormwater to such silt removal	Contractor
			facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	
	Land Site / During Construction	S 6.7.1.6	Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.	Contractor
	Land Site / During Construction	S 6.7.1.6	Temporary access roads should be surfaced with rushed stone or gravel.	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	Land Site / During Construction	S 6.7.1.6	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Contractor
	Land Site / During Construction	S 6.7.1.6	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	Contractor
	Land Site / During Construction	S 6.7.1.6	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	Contractor
	Land Site / During Construction	S 6.7.1.6	Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	Contractor
	Land Site / During Construction	S 6.7.1.6	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Contractor
	Land Site / During Construction	S 6.7.1.6	All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit.	
	Land Site / During Construction	S 6.7.1.6	Wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain.	Contractor
	Land Site / During Construction	S 6.7.1.6	The section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	Contractor
	Land Site / During Construction	S 6.7.1.6	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	Contractor
	Land Site / During Construction	S 6.7.1.6	Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal.	Contractor
	Land Site / During Construction	S 6.7.1.6	The contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned, up immediately.	Contractor
	Land Site / During Construction	S 6.7.1.6	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	Contractor
	Land Site / During Construction	S 6.7.1.6	All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank.	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	Land Site / During Construction	S 6.7.1.6	Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	Contractor
	All works / During construction	S 6.10.1	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	Contractor
	Submarine Pipeline / During Design and construction	S 6.7.2.1	Submarine section of aviation fuel pipeline shall be covered with rock armour protection which shall not protrude above the level of the adjacent natural seabed.	Franchisee
	Jetty / During construction	S 6.7.2.2	Coupling points on the jetty will be protected with slop collection utilities.	Franchisee
	Tank farm / During construction	S 6.7.2.2	Oily drainage systems and slop collection systems will connect to an oil/water separator.	Franchisee
	Tank farm / During construction	S 6.7.2.2	All tanks shall be bunded to a capacity of at least 110% of the largest individual tank in each compound. Tank pits shall be protected by an impermeable bed (e.g. geotextile sheeting) to prevent seepage of aviation fuel	Franchisee
			to ground. A leak detection system shall be installed beneath The containment membrane.	
	Tank farm / During construction	S 6.7.2.2	Valves shall be installed within the storm drainage system to facilitate the retention of spillages.	Franchisee
	Impact monitoring stations located 500m north/northwest and south/south east of any dredger during dredging works at a distance greater than 1000m outside of the Marine Park	S 6.10.2	Water quality monitoring shall be undertaken for suspended solids, turbidity, and dissolved oxygen.	Contractor
	Designated monitoring stations as defined in EM&A Manual <i>Section 7</i> Construction period when dredging takes place within 1000m of Marine Park.	S 6.10.2	Water quality monitoring shall be undertaken for suspended solids, turbidity, and dissolved oxygen.	Contractor
	All facilities / Operational phase	S 6.7.2.2	Detailed emergency response procedures shall be drawn up. These will include requirements to maintain floating oil booms, absorbent materials and skimmers on site at all times.	Franchisee
	Tank farm / Operational phase	S 6.7.2.2	Auxiliary tanks shall be permanently maintained at the tank farm for recovered fuel and slops.	Franchisee

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	Tank farm/Operational phase	S 6.7.2.2	There shall be no direct outlet from the bund. A collection sump shall be included in the base. Removal of accumulated rainwater shall be activated manually and discharged to storm drain via an oil / water separator.	Franchisee
	Tank farm/Operational phase	S 6.7.2.2	Contingency procedures shall be drawn up to ensure containment and safe disposal of any fuel lost from tanks or pipework. Suitable absorbent materials (e.g. sand or earth) shall be kept on site to deal with spillages.	Franchisee
	Tank Farm / Tank farm Commissioning	S 6.7.1.7	Wastewater from pipe commissioning de-watering exercises shall be stored on site and for chemical analysis and safe disposal in accordance with the WPCO.	Franchisee
4. Ecology				
	Detailed Design Phase (D)	S 7.8.2.7	Specification for 500m dolphin exclusion zone during piling shall be prepared.	Consultant
	Detailed Design Phase (D)	S 7.8.2.8	Specification for 250m dolphin exclusion zone during dredging in the Marine Park shall be prepared.	Consultant
	Detailed Design Phase (D)	S 7.8.2.18	Specification for pre and post construction dolphin abundance monitoring.	Consultant
	Detailed Design Phase (D)	S 7.8.2.10	Specification for underwater noise monitoring during piling shall be prepared.	Consultant
	Detailed Design Phase (D)	S 7.8.2.9	Specification for acoustic monitoring shall be prepared.	Consultant
	Detailed Design Phase (D)	S 7.8.2.5	Design of bubble jacket for pile shall be prepared.	Consultant
	Detailed Design Phase (D)	S 7.8.2.13	Design of acoustic decoupling methods.	Consultant
	Prior to piling. (C)	S 7.8.2.17	Data review shall be undertaken using available long term data set prior to the works to check that dolphin distribution patterns are consistent with those assumed in the EIA.	Contractor
	Around each jetty pile / During piling activities. (C)	S 7.8.2.5	Implementation of bubble jacket to achieve a 3-5 dB reduction. Specific underwater noise targets are as follows: 162 dB at 250m, 152 dB at 500m and 145dB at 1000m.	Contractor
	500m around piling barge/ During piling activities. (C)	S 7.8.2.7	A 500m dolphin exclusion zone shall be implemented and piling shall not begin until the observer has confirmed that the area has been clear for 30 minutes.	Contractor
	250m around dredger in Marine Park / During dredging in Marine Park (C)	S 7.8.2.8	A 250m dolphin exclusion zone shall be implemented and dredging shall not begin until the observer has confirmed that the area has been clear for 30 minutes.	Contractor
	Within dolphin exclusion zone/ 3 days in first week of piling (C)	S 7.8.2.9	Spot acoustic monitoring shall be undertaken for 3 days in the first week of piling.	Contractor
	250m, 500m and 1000m from piling barge/during piling. (C)	S 7.8.2.10	Underwater noise monitoring during percussive piling activities.	Contractor
	April to June	S 7.8.2.12	Piling shall be scheduled outside the period April to June.	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	Piling barge/During piling. (C)	S 7.8.2.13	Implement acoustic decoupling measures in accordance with specifications prepared during the design phase.	Contractor
	Piling barge/During piling. (C)	S 7.8.2.14	Ramping up of the piling hammer shall be implemented at the start of each piling session.	Contractor
	Piling barge/During piling. (C)	S 7.8.2.15	Piling activities shall be continuous and short breaks and random sudden noises avoided.	Contractor
	During piling. (C)	S 7.8.2.15	Piling events shall be scheduled to occur on a regular basis and commence at the same time each day.	Contractor
	Jetty / During piling. (C)	S 7.8.2.15	The piling shall be scheduled to allow a rest period of 7 hours during the night-time.	Contractor
	Jetty / During piling. (C)	S 7.8.2	All mitigation measures shall be audited to ensure effectiveness.	Contractor
	Jetty / During piling. (C)	S 7.11	Design and construction phase EM&A to prepared specifications and undertaken monitoring and audit during piling.	Contractor
5. Landsca	pe and Visual			
	PAFF site/ During construction (D/C)	S8.10.2.1	Screen mounding including hydroseeded and part tree planted would be constructed and planted early on in the construction programme prior to the building of the Phase 1 tanks	Contractor
	PAFF site/ During construction (D/C)	S 8.10.2.3	The construction programme for the PAFF should be reduced to the shortest possible period and should be executed in phases with future phases of tanks built in sets of 2-4.	Contractor
	PAFF site/ During construction (C/O)	S 8.10.2.3	The extent and periphery of the works areas should be managed so that they are as small as possible and do not appear cluttered, untidy and unattractive, particularly to road traffic along Lung Mun Road.	Contractor
	PAFF site/ During construction (D/C)	S 8.10.2.3	Temporary hoarding barriers should be of a recessive visual appearance in both colour and form.	Contractor
	PAFF site/ During construction (C/O)	S 8.10.2.3	Materials should be stored in areas with the least obstruction to residents, pedestrians and traffic.	Contractor
	PAFF site/ During construction (C/O)	S 8.10.2.3	All material stockpiles should be covered with an impermeable material and sandbagging diversions should be placed around exposed soil.	Contractor
	PAFF site/ Construction period of fuel tank expansion (O)	S 8.10.2.2	Conservation of existing and imported soil resources. Existing soil resources on site will be conserved in stockpiles with a maximum height of 2m, and re-used in the formation of the proposed screen bund	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	PAFF site/ On commencement of construction (D/C)	S 8.10.3.1	Transplantation of existing road side whips affected by the proposed works and new compensatory planting works should be carried as early as possible in the construction period.	Project Proponent
	PAFF site/ On commencement of construction (D/C)	S 8.10.3	Temporary earth mounding, tree planting and hydroseeding should be implemented on the area of site not initially required for tanks.	Project Proponent
	PAFF site/ During construction (D/C/O)	S 8.10.3.1	A raised bund/earth mound comprising containment bund-wall, access road and planting buffer shall be built and maintained around the tank farm.	Project Proponent
	PAFF site/ During construction (D/C)	S8.10.3.1	The existing whips in the amenity areas and along the access road are proposed to be transplanted to form a planting buffer around the site at phase 2005. The planting buffer will comprise a mix of native species and species that have a tall habit and are fast growing.	Project Proponent
	PAFF site / During construction (C)	S.8.10.3.2	A 24-month maintenance period will be needed to ensure transplantation/plant establishment is successful	Project Proponent
	PAFF site / Design (D/C)	S 8.10.4.3	The design of the PAFF should incorporate materials, details and textures which are visually recessive.	Project Proponent
	PAFF site tanks /Design (D/C)	S 8.10.4.2	Colours should be of low chromatic intensity to reduce the potential contrast between the structures and their background.	Project Proponent
	Site perimeter $(D/C/O)$ )	S 8.10	Visually permeable security fencing should be used around the perimeter.	Project Proponent
	Tanks / Operational phase (D/C/O)	S 8.10.5.1	Minimum amount of lighting for the tanks shall be used, only applied for safety at the key access points and staircases.	Project Proponent
	PAFF site/Operational phase (D/C/O)	S 8.10.5.1	Limited lighting intensity on the site.	Project Proponent
	PAFF site/ Operational phase	S 8.10.5.1	Directional down lighting is suggested to minimise light spill to the surrounding area	Project Proponent
	PAFF site/Operational phase (D/C/O)	S 8.13.10	Construction and operational stage EM&A to prepared and undertaken monitoring and audit of the compensatory planting/transplantation and planting establishment.	Contractor
6. Cultural	Heritage			
	Along pipeline alignment / Prior to dredging works	S 9.7.7	A complete marine archaeological investigation shall be carried by a qualified marine archaeologist of the pipeline route before any construction works start.	Franchisee
	Along pipeline alignment / Prior to dredging works	S 9.7.7	The marine archaeological investigation shall comprise a geophysical survey followed by a diver survey, if required, to confirm the results of the geophysical survey.	Franchisee

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	Along pipeline alignment / Prior to dredging works	S 9.7.7	The methodology for the survey shall be submitted to the Director of Environmental Protection for approval no less than one month before any field work commences and the results of the survey and any mitigation measures shall be to the approval of the Director of Environmental Protection.	Franchisee
	Along pipeline alignment / Prior to dredging works	S 9.7.7	The CV of the marine archaeologist shall be submitted to the EPD for approval prior to the start of the investigation at the time of submission of the methodology.	Franchisee
	Along pipeline alignment / Prior to dredging works	S 9.7.7	The MAI shall be carried out by a qualified marine archaeologist who shall apply for a license under the Antiquities and Monuments Ordinance, Cap 53.	Franchisee
	Along pipeline alignment/Prior to dredging works	S9.7.7	The Project Proponent shall comply with the recommendations of the MAI	Franchisee
	During dredging (c)		During the dredging of the pipe trench, a watching brief will be implemented where the trench intersects sub-surface targets SS1 and SS2.	Contractor
	During dredging ( c )		Dredge operators to be made aware of the likely presence of a shipwreck near the coordinates given for SS1 and SS2 and are to report any unusual resistance or slowing down of the dredging in these areas.	Contractor
	During dredging (c)		Dredging to cease in the nominated areas, SS1 and SS2, after a few 3 and 2 m of sediment has been removed respectively. Divers, under the supervision of a licensed maritime archaeologist, are then to examine the trench for possible cultural remains of significance.	Contractor
7. Waste M	<b>l</b> anagement			
	Contract mobilisation / During construction (C)	S 14.7.2	The Contractor shall identify a coordinator for the management of waste.	Contractor
	Contract mobilisation / During construction (C)	S 14.7.2	The waste coordinator shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed.	Contractor
	Contract mobilisation / During construction (C)	S 14.7.2	The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contractor
	PAFF Site / During construction	S 14.7.2	No waste shall be burnt on site.	Contractor
	All sites / During construction (C)	S 14.7.2	Excavated material shall be used on site for purposes of landscaping or formation of bund walls.	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	All areas / During construction (C)	S 14.7.2	All material shall be reused on site as far as practicable, including formwork plywood, topsoil and excavated material.	Contractor
	Contract preparation stage (D)	S 14.7.2	Suitable provisions shall be included in the construction contract to ensure that the Contractor sorts and recycles waste.	HyD
	All areas / During construction (C)	S 14.7.2	Re-use and recycling of waste must always be considered first. Waste disposal shall only be undertaken in the last resort. Any surplus material generated shall be sorted on site into construction and demolition (C&D) waste and the public fill fraction. A sorting facility shall be set up on the site.	Contractor
	All areas / During construction (C)	S 14.7.2	The site and surroundings shall be kept tidy and litter free.	Contractor
	CED public fill stockpile in Mui Wo, North Lantau or Mui Wo refuse transfer stations/ During construction (C)	S 14.7.2	The C&D waste shall be disposed of at a licensed landfill or deposited at an authorised waste transfer facility and the material suitable for public fill delivered to a public filling area, public filling barging point or public fill stockpile area after obtaining the appropriate licence.	Contractor
	Along alignment of haulage road and road link / Site Clearance activities (C)	S 14.7.2	Vegetation shall be stripped prior to site clearance, chopped and compacted using a mobile compactor to reduce the volume of material to be transported and disposed of.	Contractor
	All areas / During construction (C)	S 14.7.2	Stockpiled material shall avoid vegetated areas.	Contractor
	All areas / During construction, particularly dry season (C)	S 14.7.2	Stockpiles shall be covered by tarpaulins and/or watered as required.	Contractor
	All areas / During construction (C)	S 14.7.2	Storage of material on site should be kept to a minimum.	Contractor
	All areas, particularly at site exits / During construction (C)	S 14.7.2	Excavated material in trucks shall be covered by tarpaulins.	Contractor
	Site entrances and exits / During construction (C)	S 14.7.2	Wheel washing facilities shall be used by all trucks leaving the site to prevent the transfer of mud onto public roads.	Contractor
	Works site / During construction (C)	S 14.7.2	Suitable chemical waste storage areas should be formed at the works site for temporary storage pending collection	Contractor
	Chemical waste treatment facility at Tsing Yi/ During construction (C)	S 14.7.2	A licensed contractor shall be employed to collect chemical waste for delivery to a licensed treatment facility.	Contractor
	All areas / During construction (C)	S 14.7.2	Temporary storage areas for general refuse should be enclosed to avoid environmental impacts.	Contractor
	All areas / During construction (C)	S 14.7.2	Sufficient dustbins should be provided for storage of waste.	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	All areas, WENT Landfill or NWNT refuse transfer stations/ During construction (C)	S 14.7.2	General refuse should be cleared daily and should be disposed of to the nearest licensed facility.	Contractor
	Site offices, along alignments / During construction (C)	S 14.7.2	Nightsoil arising from chemical toilets and chemical treatment facilities should be transported by a licensed contractor to government Sewage Treatment Works for disposal.	Contractor
	PAFF site / During construction (C)	S 14.7.2	Waste oils, chemicals or solvents shall not be disposed of to drain.	Contractor
	PAFF site / During construction (C)	S 14.7.2	Good site practice shall be implemented to avoid waste generation and promote waste minimisation.	Contractor
	PAFF site / During construction (C)	S 14.7.2	Waste materials such as paper, metal, timber and waste oil shall be recycled as far as practicable.	Contractor
	PAFF site / During construction (C)	S 14.7.2	Temporary structures used during construction shall be provided in the form of proprietary Portakabin type units sited on areas of permanent hard paving units as far as practicable.	Contractor
		S 14.7.2	Dredged marine mud shall be disposed of in a gazetted marine disposal ground under the requirements of the Dumping at Seas Ordinance.	Contractor
	PAFF site / During construction (C)	S 14.7.2	All waste containers shall be in good condition and fitted with lids or covers to prevent waste from escaping or the ingress of water.	Contractor
	PAFF site / During construction (C)	S 14.7.2	All waste containers shall be in a secure area on hardstanding.	Contractor
	PAFF site / During construction (C)	S 14.7.2	Emergency equipment to deal with any spillage or fire shall be kept on site.	Contractor
	PAFF site / During construction (C)	S 14.7.2	All containers used for storage of chemical waste shall be maintained in good condition and clearly labelled in both English and Chinese.	Contractor
	PAFF site / During construction (C)	S 14.7.2	All storage areas for chemical waste shall be:	Contractor
			1. clearly labelled;	
			2. enclosed on at least 3 sides;	
			<ol> <li>have impermeable floor and bunding sufficient to fully retain any spillage or leakages; ventilated; and</li> </ol>	
			4. covered to prevent rainfall from entering.	
	PAFF site / During construction (C)	S 14.7.2	All types of asbestos including sources (such as clutch linings) shall be treated as chemical waste, Asbestos containing wastes shall be kept separate from other wastes.	Contractor
	PAFF site / During construction (C)	S 14.7.2	All leaking containers shall be contained and removed from site as soon as is reasonably practicable.	Contractor

Item No.	Location/Timing	EIA Reference	Mitigation Measures	Implementation Agent
	PAFF site / During construction (C)	S 14.7.2	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.	Contractor
	All areas / During construction (C)	S 14.10.1	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	Contractor

#### Annex H

### Interim Reports and Complaint Logs

## FAXED

**BY POST AND FAX (2415 7191)** 

25th November 2005

Mr Suk Lun Leung
Env Protection Officer (Regional West)

Environmental Protection Department Environmental Compliance Division Regional Office (West) 7/F Tsuen Wan Government Offices 38 Sai Lau Kok Road Tsuen Wan New Territories

Our Ref: C2475\_0018105\_25Nov04\_Letter01.doc

Dear Mr Leung

#### PERMANENT AVIATION FUEL FACILITY

Interim Report and Complaint Log -

Further to your email dated 16th November 2005 providing details of an anonymous complaint received with regard to the above project, please find attached the Environmental Team's Interim Report on the event. Please note this report has been prepared in accordance with the procedures outlined in the Environmental Monitoring and Audit (EM&A) Manual for the project.

The report provides a record of the complaint (see Complaint Log attached the report), as well as details on the investigation, the subsequent actions and the future reporting requirements in the forthcoming EM&A reports.

We trust you will find the attached assures you that the matter has been adequately dealt with and that procedures are now in place to prevent similar such complaints from arising in the future.





Environmental Resources Management

21/F Lincoln House 979 King's Road Taikoo Place Island East Hong Kong

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Registered Office ERM-Hong Kong, Ltd 21/F Lincoln House 979 King's Road Taikoo Place Island East Hong Kong Thank you in advance and please don't hesitate to contact us should you have any questions.

Yours sincerely

For ERM Hong Kong, Ltd

Craig A Reid

Senior Consultant on behalf of the Environmental Team Leader

Direct Tel: 2271 3179 E-mail: craig.reid@erm.com

cc Mr Martin Putnam, Airport Authority Hong Kong, by fax, 2183 3186 Mr Brian Gillon, Leighton Contractors (Asia) Limited, by fax, 2529 8784

# PERMANENT AVIATION FUEL RECEIVING FACILITY EP-139/2002/A

#### - INTERIM REPORT -

#### 1. Introduction

This report presents the handling procedure for complaints received through the Environmental Protection Department (EPD) during the construction of the Permanent Aviation Fuel Facility (PAFF). The complaints procedures have been based on the Environmental Monitoring and Audit (EM&A) Manual for the study and in accordance with the Environmental Permit (EP-139/2002/A).

#### 2. Details of Complaint

A complaint was received by the Environmental Team (ET), ERM-Hong Kong, Ltd, through the EPD on 16<sup>th</sup> November 2005. According to the information provided by the EPD, an anonymous complaint against dust emission from construction site of PAFF was received by the department on 31<sup>st</sup> October 2005.

On 2<sup>nd</sup> November 2005, representatives from the EPD visited the PAFF construction site and found that no activity was carried out on that day. The EPD, however, notified the Contractor of the complaint and advised to take measures to reduce the dust emission.

A following site visit by representatives of the EPD was made on 14<sup>th</sup> November 2005 and it appeared the construction site was dry and the access road was not paved. Dust was generated when vehicles were driven inside the construction site. As a result, the EPD issued a record of inspection to the Contractor.

In accordance with the EM&A Manual, a completed complaints log is attached in *Attachment A*.

#### 3. Details of Investigation

Following the receipt of complaint, the ET contacted the Contractor and was informed that the work being undertaken that could cause dust relates to the access road. Immediately when advised by the EPD the Contractor's Site Supervisor engaged a water truck to cover the site (*Figure 1*). Subsequent site visits have indicated the site has been watered and there is no indication of dust.

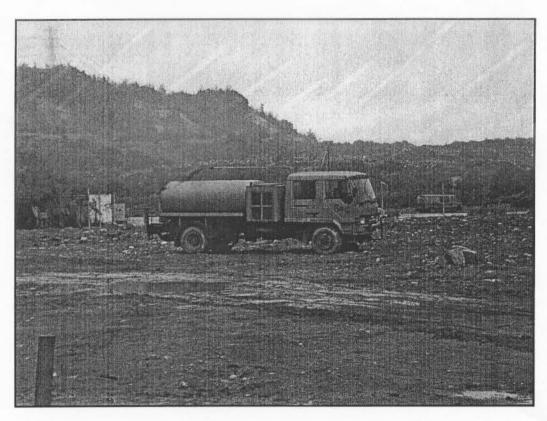


Figure 1 Water Truck stationed at Permanent Aviation Fuel Facility (PAFF)
Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)

#### 4. Follow-up Actions

The ET will conduct weekly site visits to the construction site of PAFF. As part of the site visits, visual monitoring of the potential for dust emissions will be made. The ET will ensure site watering has been conducted, where appropriate, and make reference to such in the site visit report. Site visit reports will be presented in the monthly EM&A reports during construction works.

Attachment A

Complaints Log

# COMPLAINT LOG

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File Closed	Yes
Investigation / Mitigation Action	The work being undertaken that could cause dust relates to the access road. Immediately when advised by the EPD the Contractor's Site Supervisor engaged a water truck to cover the site. Subsequent site visits have indicated the site has been watered and there is no indication of dust.  The ET will conduct weekly site visits to the construction site of PAFF. As part of the site visits, visual monitoring of the potential for dust emissions will be made. The ET will ensure site watering has been conducted, where appropriate, and make reference to such in the site visit report. Site visit reports will be presented in the monthly EM&A reports during construction works.
Details of Complaint	Dust emission
Complainant/ Date of Contract	Anonymous
Date / Location	31st October 2005; Construction Site of Permanent Aviation Fuel Facility
Log Ref.	0

25/11/05 Date:

Filed by Environmental Team Leader:

#### By Post and Fax (2415 7191) ✓

5th December 2005

Mr Suk Lun Leung
Env Protection Officer (Regional West)

Environmental Protection Department Environmental Compliance Division Regional Office (West) 7/F Tsuen Wan Government Offices 38 Sai Lau Kok Road Tsuen Wan New Territories

Our Ref: C2475\_0018105\_05Dec05\_Letter01.doc

Dear Mr Leung

#### PERMANENT AVIATION FUEL FACILITY

Interim Report and Complaint Log -

Further to your email dated 29th November 2005 providing details of an anonymous complaint received with regard to the above project, please find attached the Environmental Team's Interim Report on the event. Please note this report has been prepared in accordance with the procedures outlined in the Environmental Monitoring and Audit (EM&A) Manual for the project.

The report provides a record of the complaint (see Complaint Log attached the report), as well as details on the investigation, the subsequent actions and the future reporting requirements in the forthcoming EM&A reports.

We trust you will find the attached assures you that the matter has been adequately dealt with and that procedures are now in place to prevent similar such complaints from arising in the future.

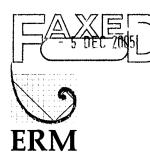




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Registered Office ERM-Hong Kong, Ltd 21/F Lincoln House 979 King's Road Taikoo Place Island East Hong Kong Thank you in advance and please don't hesitate to contact us should you have any questions.

Yours sincerely For ERM Hong Kong, Ltd

Freeman Cheung

Environmental Team Leader

Direct Tel: 2271 3104

E-mail: freeman.cheung@erm.com

cc Mr Martin Putnam, Airport Authority Hong Kong, by fax, 2183 3186 V Mr Brian Gillon, Leighton Contractors (Asia) Limited, by fax, 2529 8784 Mr Guiyi Li, Hyder Consulting Limited, by fax, 2805 5028



Figure 1 Water Truck stationed at Permanent Aviation Fuel Facility (PAFF)
Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)

#### 4. Follow-up Actions

The ET will conduct weekly site visits to the construction site of PAFF. As part of the site visits, visual monitoring of the potential for dust emissions will be made. The ET will ensure site watering has been conducted, where appropriate, and make reference to such in the site visit report. Site visit reports will be presented in the monthly EM&A reports during construction works.

# PERMANENT AVIATION FUEL RECEIVING FACILITY EP-139/2002/A

#### - INTERIM REPORT -

#### 1. Introduction

This report presents the handling procedure for complaints received through the Environmental Protection Department (EPD) during the construction of the Permanent Aviation Fuel Facility (PAFF). The complaints procedures have been based on the Environmental Monitoring and Audit (EM&A) Manual for the study and in accordance with the Environmental Permit (*EP*-139/2002/A).

#### 2. Details of Complaint

A complaint was received by the Environmental Team (ET), ERM-Hong Kong, Ltd, through the EPD on 29<sup>th</sup> November 2005. According to the information provided by the EPD, an anonymous complaint against dust emission from construction site of PAFF was received by the department on 24<sup>th</sup> November 2005. The EPD have stated they will follow up on the complaint.

In accordance with the EM&A Manual, a completed complaints log is attached in *Attachment A*.

#### 3. Details of Investigation

Following the receipt of complaint, the ET contacted the Contractor and was informed that the Contractor will take the following actions to mitigate dusts on site:

- Water trucks will spray water on the site at least twice per day, or more if necessary, to keep dust down. The water truck in operation on site is presented in *Figure 1*;
- Cover the surplus stockpile excavated material as far as possible. Stockpiles on site are presented on *Figure 2* and the water truck shown watering the stockpiles are presented in *Figure 3*;
- Cover up the complete sand surcharge with tarpaulin (*Figure 4*). The partially covered sand surcharge is presented on *Figure 5*;
- Water small surplus stockpiles by the water truck (*Figure 6*).

In addition to the above, the general condition of the site entrance and access road are presented in *Figures* 7 and 8. The effects of the water trucks dousing the road to prevent dust generation are visible in both these pictures.



Figure 1 Water Truck stationed at PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)



Figure 2 Stockpile at PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)



Figure 3 Water Truck dousing stockpile at PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)



Figure 4 Sand surcharge at PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)



Figure 5 Sand surcharge partially covered with tarpaulin at PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)



Figure 6 Small stockpile doused with water at PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)



Figure 7 General condition of entrance to PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)



Figure 8 General condition of access road to PAFF Construction Site (Photo: Leighton Contractors (Asia) Limited, November 2005)

#### 4. Follow-up Actions

The ET will conduct weekly site visits to the construction site of PAFF. As part of the site visits, visual monitoring of the potential for dust emissions will be made. The ET will ensure site watering has been conducted, where appropriate, and make reference to such in the site visit report. Site visit reports will be presented in the monthly EM&A reports during construction works.

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