

NEO Kim Teck Chairman 14 February 2008

Environmental Impact Assessment Ordinance Register Office 27/F, Southorn Centre 130 Hennessy Road Wanchai Hong Kong

Attention: Mr. Lawrence Ngo

Our Ref.: CPBEC/OTHS/ECPT/EPD/L/1220

Your Ref.:

Dear Sir,

Emission Control Project at the Castle Peak 'B' Power Station "B" Units Environmental Permit (No. EP-251/2006)

Monthly EM&A Report – January 2008

Pursuant to Condition 3.4 of the captioned Environmental Permit, we are pleased to submit four hard copies and one electronic copy of the Monthly EM&A Report for January 2008.

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Generation - EC Project Castle Peak Power Station

Kowloon, Hong Kong

青山發電廠

#### Please note that:-

- Baseline Water Quality Monitoring Programme was completed on 21 December 2007
  according to the monitoring schedule. A separate Baseline Water Quality Monitoring
  Report containing full set of data and the calculated Action Level and Limit Level for the
  Impact monitoring was submitted to EPD on 29 January 2008 as per the Environmental
  Permit.
- Bi-weekly Groundwater Monitoring Programme for the initial period of three months after the commencement of major piling and foundation works was successfully concluded on 25 January 2008. The monitoring results for the initial three-month period are all below the relevant RBRG values for TPH and therefore the remaining groundwater monitoring for 2008 will be conducted on a quarterly basis as per the discussion with EPD. The high frequency of monitoring (i.e. once every 2 weeks for 3 months) will be resumed if the results of quarterly monitoring show exceedances with the relevant RBRG values.
- The remediation programme according to the Remediation Action Plan (June 2006) for the potential contaminated project site area was completed in January 2008. A separate Verification Report containing details of the remediation programme as well as the verification data is being compiled and will be submitted to EPD for information.

Please direct any inquires to our Mr. David Yip, Environmental Team Leader or Mr. Marcus Ip, the Independent Environmental Checker.

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Our Ref.: CPBEC/OTHS/ECPT/EPD/L/1220

Yours faithfully, For and on behalf of Castle Peak Power Company Limited

Paul Ellingsen Project Director

CPPS Emission Control Project

TAEllingson

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**Emission Control Project at Castle Peak Power Station "B" Units** 







**Environmental Monitoring and Audit Monthly Report** 

January 2008

# Emissions Control Project at Castle Peak Power Station 'B' Units

# Environmental Monitoring and Audit Monthly Report

# January 2008

	Certified by:	Verified by:	
Name	David Yip	Marcus Ip	
Position	Environmental Team Leader	Independent Environmental Checker	
Signature	Dava /ci	W. Robin Kerene Be	
Date	12 Feb 2008	14 Feb 2008	

Revision No.	Date	Remarks
0	14 February 2008	Issue to EPD
	- 1911 - 1817 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 1918 - 191	

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### **Executive Summary**

This is the 3<sup>rd</sup> monthly Environmental Monitoring and Audit (EM&A) report for the Emissions Control Project at Castle Peak Power Station 'B' Units (EC Project) prepared by the Environmental Team (ET), with reference to the EPD's Environmental Monitoring and Audit – Guidelines for Development Projects in Hong Kong.

This report presents the implementation status of EM&A requirements in January 2008 as per the Project Environmental Impact Assessment (EIA) Report (EIAO Register No.: AEIAR-102/2006) and Environmental Permit (EP) No. EP-251/2006.

#### **Key Project Works in the reporting month**

The key project activities in the reporting month are summarized below:

- Civil Works
  - Bored piling and pre-drilling at the North Coal Stockyard (*Photo E.1*)
  - Utilities (pipes / cable) diversion (*Photo E.2*)
- Material Handling Berth Work
  - Land-based site investigation
- Relocation of Existing Facilities
  - Fuel Oil System tie-in at Castle Peak 'A' Station Fuel Oil Tank No. 2 (*Photo E.3*)
  - Construction of Temporary LPG compound
  - Construction of pipe support footing for relocation of underground pipe works (*Photo E.4*)

#### **Environmental Monitoring**

The implementation status of the Project EM&A programmes are summarized below:

- Groundwater monitoring
  - Groundwater monitoring programme was continued in the reporting month, with the monitoring frequency at a bi-weekly basis according to the Groundwater Monitoring Plan (Rev.3) submitted to EPD on 19 November 2007. Two monitoring tasks were carried out on 11<sup>th</sup> & 25<sup>th</sup> January 2008 respectively in the reporting month, and all results were below the Risk-based Remediation Goals (RBRGs) for groundwater for industrial area. The remaining groundwater monitoring for 2008 will be conducted on a quarterly basis as per the discussion with EPD. (Section 3.1)
- Marine water quality monitoring
  - Baseline water quality monitoring programme was completed on 21 December 2007 according to the schedule submitted to EPD on 6 November 2007. The monitoring data were processed to determine the Action Level and Limit Level for the Impact monitoring, which is

to be commenced in line with the dredging programme. A separate Baseline Water Quality Monitoring Report containing full set of monitoring data and the calculated Action Level and Limit Level for the Impact monitoring was submitted to EPD on 29 January 2008 under Condition 3.3 of the Environmental Permit.(Section 3.2)

#### • Ecology monitoring

- According to the EIA report, visual cetaceans monitoring is required solely during underwater percussive piling works. There was no underwater percussive piling works conducted during the reporting month and so visual cetaceans monitoring was not required. (Section 3.3)

#### • Land decontamination

- The remediation programme according to the Remediation Action Plan (June 2006) for the potential contaminated project site area was completed in the reporting month. A separate Verification Report containing details of the remediation programmes as well as the verification data is being compiled and will be submitted to EPD for information.

#### **Environmental Mitigation Implementation Schedule**

Environmental mitigation measures for the construction stage were implemented as per the EIA Report. (Section 4.1)

#### **Implementation Status of Event and Action Plan**

Dredging works was not yet commenced in the reporting month so impact monitoring for marine water quality was not required and hence the Event and Action Plan was not applicable. (Section 4.2)

#### **Site Environmental Inspection**

Joint site inspection was conducted by the ET and contractors on a weekly basis, and independent audit was conducted by the Independent Environmental Checker (IEC) on a bi-weekly basis. All required follow-up actions were implemented by the relevant contractors and verified by the Integrated Project Environmental Team in the subsequent site inspections. (Section 4.3)

### **Environmental Complaint and Enquiries**

No complaint or enquiries were received in the reporting month. (Section 4.4)

**Key Project Works in the reporting month** 



E. 1 Bored piling and pre-drilling at North Coal Stockyard



E. 2 Utilities (pipes / cable) diversion



E. 3 Fuel oil transfer line tie-in at CPA Fuel Oil Tank No. 2



E.4 Construction of pipe support footing for relocation of underground pipe works

#### 1. Basic Project Information

#### 1.1 Background

The Emissions Control Project at Castle Peak Power Station "B" Units (the Project) involves the installation of additional emissions control facilities to further reduce air emissions from the operation of these units. The emissions control facilities to be installed in the Castle Peak Power Station "B" Units (CPB) include NO<sub>x</sub> reduction facilities and Limestone Flue Gas Desulphurisation (LS FGD) for SO<sub>2</sub> reduction. The location of the Site is presented in *Figure 1.1*. An overview of the Project Site general arrangement is presented in *Figure 1.2*.

#### 1.2 Project Organisation

An Integrated Project Environmental Team has been set up to manage the environmental issues associated with the EC Project. The Project Environmental Team comprises the Project Environmental Team Leader (ETL), the Project Regulatory Compliance and Environmental Officer, and the EPCM (Note 1) Contractor Environmental Officer. The Project Environmental Team organisation is depicted in *Figure 1.3*.

#### 1.3 Construction Activities and Project Programme

The construction of the Project involves demolition and relocation of certain existing facilities. While the existing generating units will remain in their current locations, some of the auxiliary and common facilities to the south of the generating units at CPB will be demolished or relocated to provide space for the emission control and related facilities. The scope of the Project is as follows:

- Demolition of some existing facilities at CPB including the Fuel Oil Day Tank, Fuel Oil Pump House and Dangerous Goods (DG) Store;
- Relocation or re-routing of existing facilities including Ash and Dust Control Room, Underground Pipeworks, Carbon Dioxide (CO<sub>2</sub>) Storage Tank, Liquefied Petroleum Gas (LPG) Storage Tanks, Intermediate Pressure Reduction Station, Oil Interceptors, Oils Sump, Oil Sewer Manholes and Foul Water Pumping Station;
- Provision of Reagent and By-Product Handling and Storage Facilities including limestone silos, limestone slurry tanks, gypsum dewatering and storage facilities;
- Installation of new emission control equipment and facilities for NOx and SO<sub>2</sub> control;

Note (1) – EPCM stands for Management Contractor of the Engineering, Procurement and Construction (EPC)

• Provision of additional berthing facilities for loading and unloading of the additional reagents and gypsum.

The civil works of the EC Project were commenced on 26 September 2007. These included piling works, foundation works, roads and other civil engineering works and would be executed in a phased manner. Start-up of the retrofitted units are scheduled from end 2009 to 2011.

#### 1.4 Summary of EM&A Requirements

An Environmental Impact Assessment (EIA) for the Project was undertaken and the EIA Report was approved under the *Environmental Impact Assessment Ordinance* (EIAO) (Cap499) on 25 October 2006 (EIAO Register No.AEIAR-102/2006). Environmental Permit (EP) No. EP-251/2006 for the Project was granted on 10 November 2006. Condition 3.2 of the EP requires an EM&A programme to be implemented in accordance with the procedures and requirements set out in the approved EIA Report (EIAO Register No. AEIAR-102/2006).

The EM&A requirements for the EC Project are summarized below:

- Establish baseline water quality levels at designated locations;
- Implement construction impact monitoring programmes for water quality and dolphin monitoring;
- Implement inspection and audit programmes for water quality and dolphin monitoring;
- Liaise with, and provide environmental advice (as requested or when otherwise necessary) to construction site staff on the comprehension and consequences of the environmental monitoring data and exceedances;
- Identify and resolve environmental issues and other functions as they may arise from the works;
- Check and advice the Contractor's overall environmental performance, the implementation of Event and Action Plans (EAPs), and remedial actions taken to mitigate adverse environmental impacts as they may arise from the works;
- Conduct monthly reviews of monitored impact data as the basis for assessing compliance with the defined criteria and to ensure that necessary mitigation measures are identified and implemented, and to undertake additional ad hoc monitoring and auditing as required by special circumstances;
- Evaluate and interpret all environmental monitoring data to provide an early indication should any of the environmental control measures or practices fail to achieve the acceptable standards, and to verify the environmental impacts predicted in the EIA Report;
- Manage and liaise with other individuals or parties concerning other environmental issues deemed to be relevant to the construction process;

- Conduct regular site inspections to assess:
  - the level of the Contractor's general environmental awareness;
  - the Contractor's implementation of the conditions in the EP and the recommendations in the EIA Report;
  - the Contractor's performance as measured by the EM&A programme;
  - the need for specific mitigation measures to be implemented or the continued usage of those previously agreed; and
  - to advise the Site Staff of any identified potential environmental issues.
- Submit Monthly EM&A Reports which summarize environmental monitoring and auditing data, with interpretation illustrating the acceptability or otherwise of any environmental impacts and identification or assessment of the implementation status of agreed mitigation measures.

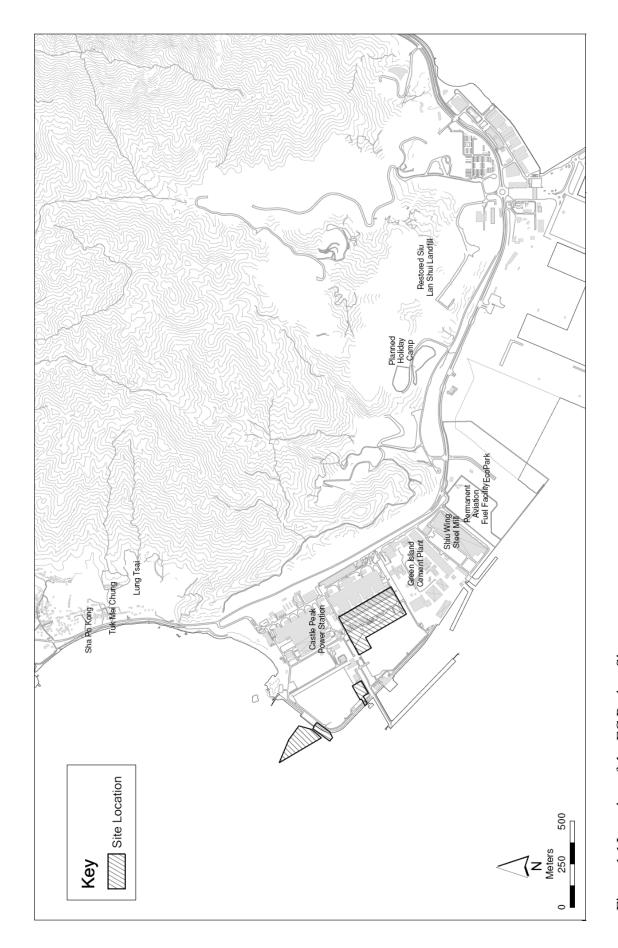


Figure 1.1 Location of the EC Project Site

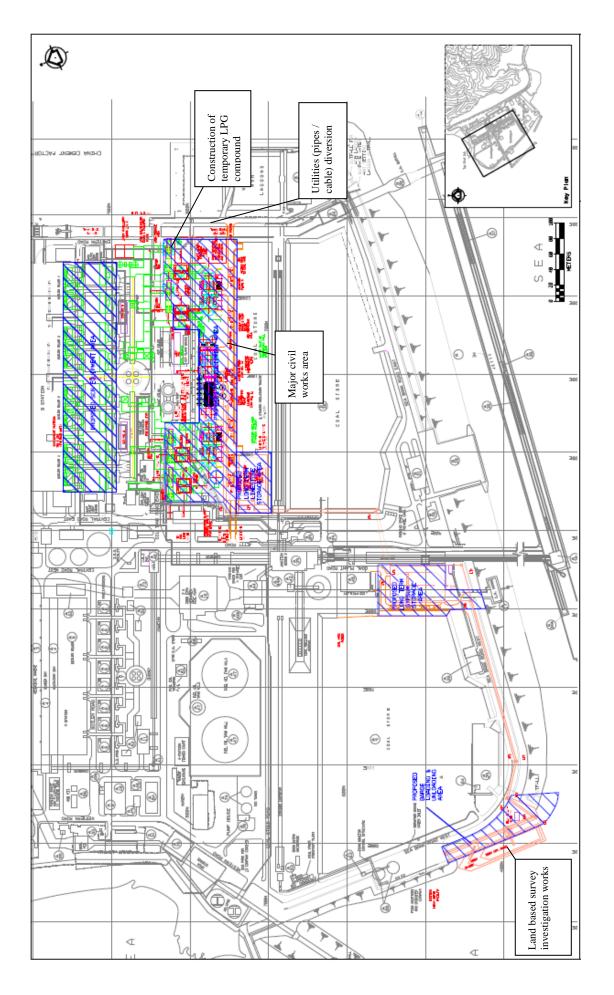


Figure 1.2 EC Project Site General Layout Arrangement

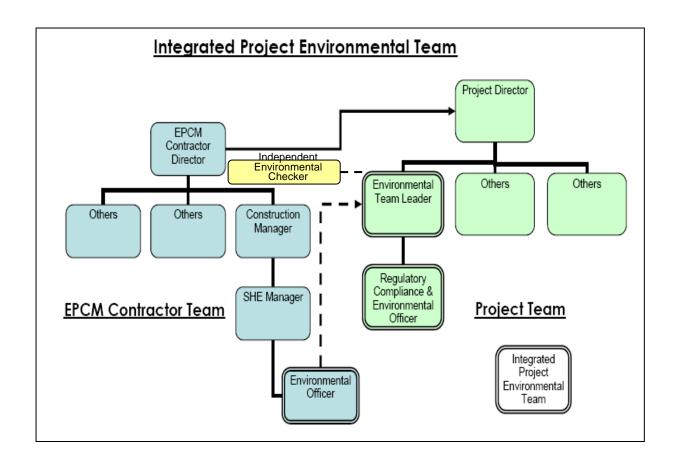


Figure 1.3 Integrated Project Environmental Team

### 2. Environmental Status

## 2.1 Project Works undertaken during the Reporting Month

The key site works undertaken in the reporting month and implementation of the required environmental protection measures are summarized in *Table 2.1* below.

Table 2.1 Key construction works undertaken in the reporting month

	Construction Activities	Environmental Protection Measures
Civil Works	<ul> <li>Bored piling and predrilling at the North Coal Stockyard</li> <li>Utilities (pipes / cable) diversion and preparation of steel work deck for bridge construction</li> </ul>	<ul> <li>Dust suppression on access roads;</li> <li>Temporary stockpiles were either wetted or covered by tarpaulin sheet to prevent dust emission;</li> <li>Wheel wash facility in place to prevent mud trail by vehicles leaving the project site;</li> <li>Spillage control measures (e.g. drip tray, spill kit) were implemented;</li> <li>Temporary stockpile of excavated potentially contaminated materials was contained within a bunded area covered by HDPE sheet on top.</li> </ul>
Relocation of Existing Facilities	<ul> <li>Fuel oil transfer line tie in</li> <li>Construction of temporary LPG compound</li> <li>Construction of pipe support footings for relocation of underground pipe work.</li> </ul>	<ul> <li>Spillage control measures         (e.g. drip tray, spill kit)         were implemented.</li> <li>Dust suppression         measures in place</li> </ul>
Material Handling Berth Work	Land-based site investigation	Spillage control measures (e.g. drip tray, spill kit) were implemented.

## 2.2 Construction Works to be undertaken in the Coming Month

The key site activities in the coming month are summarized below:

- Civil Works
  - Continue pre-drilling and bored piling at the North Coal Stockyard
  - Complete utilities (pipes / cable) diversion
- Relocation of Existing Facilities
  - Continue construction of pipe support footings
  - Demolition of existing LPG Compound
- Material Handling Berth Work
  - Complete land-based site investigation

#### 2.3 Status of Submissions to EPD

The status of submissions to EPD as required under the Environmental Permit No. EP-251/2006 is summarized in *Table 2.2* below.

Table 2.2 Environmental Permit No. EP-251/2006 - Submissions for Decommissioning / Construction Stage

EP	Submission	Timing for Submission	Target	Actual
Condition			Submissio	Submissio
Ref			n Date	n Date
General Cor	nditions			
1.11	Commencement Dates of decommissioning and	At least 2 weeks before the commencement	As per	4/7/07 &
	construction of the Project	of decommissioning and construction	schedule	20/8/07
		respectively		respectivel
Submission	before/after Commencement of Decommission	ing/Construction of the Project	l.	
2.3	Management organisation of the main	At least 1 month after commencement of	As per	26/10/07
	decommissioning/construction companies	decommissioning/construction of the Project	schedule	
	and/or any form of JV associated with the			
	Project (including organisation chart, names of			
	responsible persons and their contact details)			
2.4	Details of any change to emission reduction	At least 3 months before commencement of	If	
	process described and assessed in the EIA	construction of relevant facilities	applicable	
	Report (Register No.: AEIAR - 102/2006) for			
EM&A Req	uirements			·
3.1	Groundwater Monitoring Plan	At least 1 month before commencement of	As per	1st issue -
		construction of the Project	schedule	20/7/07
		-		2nd issue -
				5/9/07
				3rd issue -
				20/11/07
3.3	Baseline Water Quality Monitoring Report	At least 1 month before commencement of	As per	29/01/08
		dredging works	schedule	
3.4	Monthly EM&A Report	Within 10 working days at the end of the	As per	As per
		reporting month	schedule	schedule
3.5	Post-Project Monitoring Report for Dredging	Within 1 week of completion of the Post-	As per	
	Works	Project Monitoring for the dredging works	schedule	
Electronic R	Reporting of EM&A Information			
4.2	Written notification on the internet address of	Within 6 weeks after the commencement of	As per	06/11/07
	EM&A website to Director of Environmental	construction of the Project	schedule	
	Extent a coste to Bucctor of Environmental	tonication of the froject	STITUTE	

#### 3. Monitoring Results

## 3.1 Groundwater Monitoring

With respect to the requirement specified in the Environmental Permit No. EP-251/2006, monitoring of the total petroleum hydrocarbon (TPH) in the groundwater within the Project site during construction and operation of the Project is required. A Groundwater Monitoring Plan has been developed to define the groundwater monitoring locations, methodology for groundwater monitoring as well as the monitoring schedule.

#### 3.1.1 Monitoring Location

According to the Groundwater Monitoring Plan, three (3) groundwater monitoring well locations within the Project site, namely MW1 to MW3, have been installed for the groundwater monitoring during the construction of the Project, including:

- MW1: located adjacent to the north-east corner of the existing Coal Plant Substation;
- MW2: located north-west of the existing ACP Plant House; and
- MW3: located adjacent to the north-east corner of the existing ACP Plant House.

The location of the groundwater monitoring wells is shown in *Figure 3.1*.

#### 3.1.2 Monitoring Methodology

Purpose made HDPE slotted risers and blank pipes (50mm diameter) were used for installation the groundwater wells. Wells were purged (using new bailers) five times the volumes of the wells after installation to get rid of dirt or potential cross contamination during well installation, and purged three times the volumes of the wells before each sampling to ensure no stagnant groundwater was collected and that the representative samples from each well was collected.

After purging, groundwater was sampled from the monitoring wells using new disposable Teflon bailers for each sampling at each location to eliminate the risk of cross contamination. Any free-floating products in groundwater, if observed, were also collected for laboratory analysis.

The samples were then dispatched to an HOKLAS-accredited analytical laboratory for analysis as soon as practicable following sampling. All samples were handled under chain of custody protocols and relinquished to the laboratory representative at the site.

The samples were analysed for TPHs, using United States Environmental Protection Agency (US EPA) Methods 8260 and 8015, by the HOKLAS-accredited analytical laboratory.

#### 3.1.3 **Monitoring Parameters and Frequency**

According to the Groundwater Monitoring Plan, groundwater was sampled from the monitoring wells on a bi-weekly basis during the reporting month.

With respect to the requirement specified in the Environmental Permit No. EP-251/2006, the groundwater samples collected were analyzed for Total Petroleum Hydrocarbons (TPHs) concentrations for all three monitoring locations.

#### 3.1.4 **Monitoring Results**

The monitoring results for measurement of **TPHs** concentrations for all three monitoring locations are summarized in *Table 3.1* below.

a 11	m 15 1	1	~ 11 3			tuto no c
Sampling	Total Petroleum		Sampling Location			**RBRGs
Date	Hydrocarbons	MW1	MW1a*	MW2	MW3	for
	(TPHs)	μg/L	μg/L	μg/L	μg/L	Groundwater
		1.0		1.0	1.0	(Industrial)
						μg/L
28-Dec-	C6-C8	<20	<20	<20	<20	1.15E+06
$2007^{+}$	C9-C16	<100	<100	<100	<100	9.98E+06
	C17-C35	<150	<150	<150	<150	1.78E+05
11-Jan-	C6-C8	<20	<20	<20	<20	1.15E+06
2008	C9-C16	<100	<100	<100	<100	9.98E+06
	C17-C35	<150	<150	<150	<150	1.78E+05
25-Jan-	C6-C8	<20	<20	< 20	<20	1.15E+06
2008	C9-C16	<100	<100	<100	<100	9.98E+06

Table 3.1 Summary of groundwater monitoring results

C9-C16 C17-C35

<150

<150

The TPHs concentrations in all samples were well below the RBRGs for groundwater for industrial area. The Certificates of Analysis for the above groundwater monitoring are shown in Appendix A.

<150

<150

1.78E+05

Duplicate sample of MW1 for quality control purpose.

Risk-based Remediation Goals (RBRGs) quoted from the "EPD Guidance Note for Contaminated Land Assessment and Remediation".

Monitoring conducted in previous reporting month.

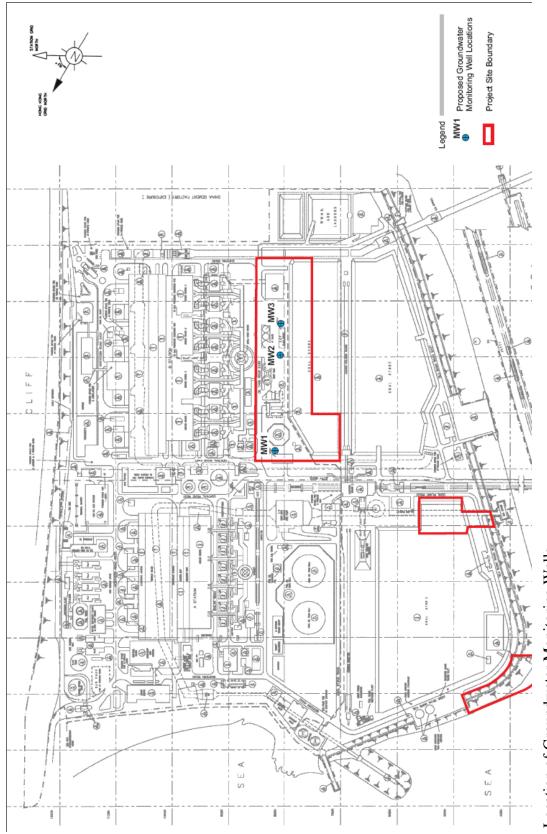


Figure 3.1 Location of Groundwater Monitoring Wells

#### 3.2 Marine Water Quality Monitoring

With respect to the requirement specified in the Environmental Permit No. EP-251/2006, monitoring of marine water quality during the construction phase is required to evaluate whether any impacts would be posed by the dredging operations on the surrounding waters during the construction period of the dredging works. Baseline monitoring (prior to the dredging works), impact monitoring (during any works related to the dredging works) and post-project monitoring (after completion of the dredging) shall be carried out according to the monitoring locations, monitoring parameters and frequency specified in the EIA Report.

Baseline monitoring programme was completed on 21 December 2007 according to the schedule submitted to EPD on 6 November 2007. The monitoring data were processed to determine the Action Level and Limit Level for the Impact monitoring, which is to be commenced in line with the dredging programme. A separate Baseline Water Quality Monitoring Report containing full set of data and the calculated Action Level and Limit Level for the Impact monitoring was submitted to EPD on 29 January 2008 under the Condition 3.3 of the Environmental Permit.

#### 3.3 Ecology Monitoring

According to the EIA report, visual cetaceans monitoring is required solely during underwater percussive piling works.

There was no underwater percussive piling works conducted during the reporting month and hence visual cetaceans monitoring was not required.

#### 4. Implementation Status of EIA Recommendations

#### 4.1 Environmental Mitigation Implementation Schedule

Environmental mitigation measures for the construction stage were implemented as per the EIA Report.

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in *Appendix B*.

#### 4.2 Implementation status of Event and Action Plan

Dredging works has not yet commenced in the reporting month so impact monitoring for marine water quality was not required and hence the Event and Action Plan was not applicable.

#### 4.3 Site Environmental Inspection and Audit

Independent Environmental Checker (IEC) conducted bi-weekly site inspection on 4<sup>th</sup> January 2008 and 18<sup>th</sup> January 2008 respectively. All the follow-up actions to respond to the IEC observations have been completed by the relevant contractors and verified in the subsequent site inspections by the Integrated Project Environmental Team.

Summary of the IEC site inspections is shown in *Table 4.1*.

Joint site audits were carried out by the Integrated Project Environmental Team (ET) with contractors on a weekly basis to monitor environmental issues at the construction sites to ensure that all mitigation measures were implemented timely and properly. All required mitigation measures were implemented by the relevant contractors and verified in the subsequent site inspections by the Integrated Project Environmental Team.

Summary of the weekly ET site inspections is shown in *Table 4.2*.

#### 4.4 Implementation status of Complaint Handling Procedure

There was no environmental complaint or enquiry received in the reporting month.

Table 4.1 Summary of Bi-weekly IEC Site Inspections

Date of	Observations	Follow-up action
Inspection		
04/01/2008	- Oily water was observed to have been collected in the drip tray for a water pump located in the predrilling works area for FGD equipment installation.	- Oily water was removed from the drip tray by the Contractor as chemical waste.
	- Water was dripping from the outlet of a drip tray within the pre-drilling works area for FGD equipment installation.	- The drip tray was properly plugged by the Contractor immediately to stop water dripping.
18/01/2008	- Water was observed to have been collected in the drip tray for a water pump located in the pre-drilling works area for FGD equipment installation.	- Water was removed from the drip tray by the Contractor.
	- Three small drums holding fuel / oil were observed to be placed on bare ground.	- The Contractor immediately removed these containers from their originally observed location to a drip tray.
	- Water was dripping from the outlet of a drip tray within the pre-drilling works area for FGD equipment installation.	- The drip tray was properly plugged by the Contractor immediately to stop water dripping.

Table 4.2 Summary of Weekly ET Site Inspection

Week of	Observations	Follow-up action
Inspection		
30/12/2007- 05/01/2008	- A few chemical containers to be properly labelled.	- The identified chemical containers were labelled properly by the Contractor.
	- The drain plug of a drip tray was found missing.	- The identified drip tray was properly plugged by the Contractor immediately.
06/01/2008- 12/01/2008	- Water spraying to be applied during excavation.	- Water spraying was applied by the Contractor immediately.
	- A few chemical containers to be properly labelled.	- The identified chemical containers were labelled properly by the Contractor.
	- Oily mud was observed to have been collected in a drip tray.	- Oily mud was removed immediately by the Contractor as chemical waste.
13/01/2008- 19/01/2008	- Nil.	- Nil.
20/01/2008- 26/01/2008	- Small amount of water was observed to have been collected in a drip tray for a water pump for site investigation work.	- The Contractor was reminded to clear water from the drip tray on a regularly basis.
	- Exposed stockpile to be properly covered.	- The exposed stockpile was covered with tarpaulin by the Contractor.
	- A few chemical containers to be properly labelled.	- The identified chemical containers were labelled properly by the Contractor.
	- The drain plug of a drip tray was found missing.	- The drip tray was properly plugged by the Contractor immediately.

# Appendices

### Appendix A Certificates of Analysis for groundwater monitoring

## ALS Technichem (HK) Pty Ltd

#### ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES



Authorised results for:-

#### **CERTIFICATE OF ANALYSIS**

CLP POWER HONG KONG LTD ALS Technichem (HK) Pty Ltd : 1 of 3 Client Laboratory Page Work Order MR C M TONG Alice Wong Contact Contact HK0718964 EC PROJECT DEPT. Address Address : 11/F., Chung Shun Knitting Centre, CASTLE PEAK POWER STATION. 1 - 3 Wing Yip Street, 1 LUNG YIU STREET, TUEN MUN, Kwai Chung, N.T., Hong Kong N.T., HONG KONG cmtong@clp.com.hk Alice.Wong@alsenviro.com E-mail E-mail 2678 5088 +852 2610 1044 Telephone Telephone Facsimile Facsimile · +852 2610 2021 CPPS LAND CONTAMINATION SURVEY Project Quote number Date received : 28 Dec 2007 Order number Date of issue : 11 Jan 2008 H000545 C-O-C number No. of samples Received 4 Analysed

#### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0718964 supersedes any previous reports with this reference. The completion date of analysis is 31 Dec 2007. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0718964 : Sample(s) were collected by ALS Technichem (HK) staff on 28 December, 2007.

Water sample(s) analysed and reported on an as received basis.

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Signatory Position

Anh Ngoc Huynh Senior Chemist Organics

ALS Laboratory Group

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Page Number

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Work Order HK0718964



Analytical Results			lent Sample ID : tory Sample ID :	MW1 HK0718964-001	MW2 HK0718964-002	MW3 HK0718964-003	MW1a HK0718964-004	
Submatrix: WATER		Sam	ple Date / Time :	28 Dec 2007	28 Dec 2007	28 Dec 2007	28 Dec 2007	
Method: Analysis Description	CAS number	LOR	Units	8:00	8:20	8:30	8:10	
EP-071/080: Total Petroleum Hydr	ocarbons (TPH Volat	ile) / BTEX						
C6 - C8 Fraction		0.02	mg/L	<0.02	<0.02	<0.02	<0.02	
EP-071: Total Petroleum Hydrocar	bons (TPH)		-00			237	44	
C9 - C16 Fraction		0.1	mg/L	<0.1	<0.1	<0.1	<0.1	
C17 - C35 Fraction		0.15	mg/L	<0.15	<0.15	<0.15	<0.15	
EP-080S: TPH(Volatile)/BTEX Surr	ogate		- 00			237	Surrogate control limits	listed at end of this report.
Dibromofluoromethane	1868-53-7	0.1	%	90.8	91.3	105	105	
Toluene-D8	2037-26-5	0.1	%	96.5	103	101	97.0	
4-Bromofluorobenzene	460-00-4	0.1	%	92.2	91.2	92.1	90.4	

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Client : CLP POWER HONG KONG LTD

Work Order HK0718964



### Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER	30			Duplicate (DUP) Results							
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)			
EP-071/080: Total Petrol	eum Hydrocarbons (TPH Volatile)	/ BT (QC Lot: 564562)	*					12			
HK0718964-001	MW1	C6 - C8 Fraction		0.02	mg/L	< 0.02	<0.02	0.0			

### Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: WATER	,		Method Blank (MB)	Results		Single Co	introl Spike (SCS) and	Duplicate Con	rol Spike (DCS)	Results	
	- 33	883	33.0		Spike	Spilke Re	covery (%)	Recovery	Limits (%)	RF	Ds (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EP-071/080: Total Petroleum Hydro	carbons (TPH Volatile) / B	T (QCLot: 5	64562)								
C6 - C8 Fraction		0.02	mg/L	< 0.02	0.15 mg/L	93.3		50	130		
P-071: Total Petroleum Hydrocarb	ons (TPH) (QCLot: 56445	4)									
C9 - C16 Fraction		0.5	mg/L	<0.5	0.3 mg/L	59.2	12.00	50	130		
C17 - C35 Fraction		0.5	mg/L	< 0.5	0.5 mg/L	74.9	00	50	130	11	

### Surrogate Control Limits

#### Submatrix Type: WATER

Method: Analysis Description	Units	Lower Limit	Upper Limit
EP-080S: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	%	86	118
Toluene-D8	%	88	110
4-Bromofluorobenzene	%	88	115

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## ALS Technichem (HK) Pty Ltd

#### **ALS Laboratory Group**

ANALYICAL CHEMISTRY & TESTING SERVICES



#### CERTIFICATE OF ANALYSIS

Client : CLP POWER HONG KONG LTD Laboratory : ALS Technichem (HK) Pty Ltd Page : 1 of 3

Contact : MR C M CHOI Contact : Alice Wong Work Order : HK0800603

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Project : CPPS LAND CONTAMINATION SURVEY Quote number : --- Date received : 11 Jan 2008
Order number : ---- Date of issue : 28 Jan 2008

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0800603 supersedes any previous reports with this reference. The completion date of analysis is 16 Jan 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0800603: Sample(s) were collected by ALS Technichem (HK) staff on 11 January, 2008.

Water sample(s) analysed and reported on an as received basis.

NAPL of groundwater samples are not observable in the aqueous layer during site investigation and monitoring.

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Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory Position Authorised results for:-

Anh Ngoc Huynh Senior Chemist Organics

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Page Number : 2 of 3

Client CLP POWER HONG KONG LTD

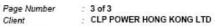
Work Order HK0800603



Analytical Results		CI	lent Sample ID :	MW1	MW2	MW3	MW1a	
Submatrix: WATER			tory Sample ID : ple Date / Time :	HK0800603-001 11 Jan 2008	HK0800603-002 11 Jan 2008	HK0800603-003 11 Jan 2008	HK0800603-004 11 Jan 2008	
Method: Analysis Description	CAS number	LOR	Units	8:00	8:20	8:30	8:10	
EP-071/080: Total Petroleum Hydro	carbons (TPH Volat	ile) / BTEX				2.0		
C6 - C8 Fraction		0.02	mg/L	<0.02	<0.02	<0.02	<0.02	
EP-071: Total Petroleum Hydrocart	bons (TPH)					34	(i)	
C9 - C16 Fraction		0.1	mg/L	<0.1	<0.1	<0.1	<0.1	
C17 - C35 Fraction	9	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	
EP-080\$: TPH(Volatile)/BTEX Surre	ogate					24	Surrogate control Im	its listed at end of this report.
Dibromofluoromethane	1868-53-7	0.1	%	100	98.8	92.2	108	
Toluene-D8	2037-26-5	0.1	%	93.0	94.0	91.7	91.9	
4-Bromofluorobenzene	460-00-4	0.1	%	101	102	98.4	104	

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Page Number



Work Order



### Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER	• *************************************					Duplicate (DUP)	Results	
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EP-071/080: Total Petro	leum Hydrocarbons (TPH Vo	olatile) / BT (QC Lot: 572460)			1		10:	0
HK0800603-001	MW1	C6 - C8 Fraction	- <del></del>	0.02	mg/L	< 0.02	< 0.02	0.0

## Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: WATER		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results							
					Spike	Spike Re	covery (%)	Recovery	Limits (%)	RF	Ds (%)	
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit	
EP-071/080: Total Petroleum Hydro	carbons (TPH Volatile) / E	T (QCLot: 5	72460)									
C6 - C8 Fraction	02025	0.02	mg/L	<0.02	0.15 mg/L	104	0.02	50	130		. 32	
EP-071: Total Petroleum Hydrocart	ons (TPH) (QCLot: 57288	16)			- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10				0.000.000.000			
C9 - C16 Fraction	<del></del> -	0.5	mg/L	<0.5	0.3 mg/L	61.4		50	130			
C17 - C35 Fraction	1400	0.5	mg/L	<0.5	0.5 mg/L	76.3		50	130	****		

#### Surrogate Control Limits

#### Submatrix Type: WATER

Method: Analysis Description	Units	Lower Limit	Upper Limit
EP-080S: TPH(Volatile)/BTEX Surrogate	70	W	
Dibromofluoromethane	%	86	118
Toluene-D8	%	88	110
4-Bromofluorobenzene	%	86	115

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## ALS Technichem (HK) Pty Ltd

#### **ALS Laboratory Group**

ANALYICAL CHEMISTRY & TESTING SERVICES



#### CERTIFICATE OF ANALYSIS

Client : CLP POWER HONG KONG LTD Laboratory : ALS Technichem (HK) Pty Ltd Page : 1 of 3

Contact : MR C M TONG Contact : Alice Wong Work Order : HK0801340

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Project : CPPS LAND CONTAMINATION SURVEY Quote number : --- Date received : 25 Jan 2008
Order number : --- Date of issue : 2 Feb 2008

#### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0801340 supersedes any previous reports with this reference. The completion date of analysis is 29 Jan 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0801340 : Sample(s) were collected by ALS Technichem (HK) staff on 25 January, 2008.

Water sample(s) analysed and reported on an as received basis.

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signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic

signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory Position Authorised results for:-

Anh Ngoc Huynh Senior Chemist Organics

ALS Laboratory Group Trading Name: ALS Technichem (HK) Pty Ltd

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: 2 of 3 : CLP POWER HONG KONG LTD Client

Work Order HK0801340



Analytical Results Submatrix: WATER		Labora	lent Sample ID ; tory Sample ID ; ple Date / Time ;	MW1 HK0801340-001 25 Jan 2008	MW2 HK0801340-002 25 Jan 2008	MW3 HK0801340-003 25 Jan 2008	MW1a HK0801340-004 25 Jan 2008	
Method: Analysis Description	CAS number	LOR	Units	7:45	8:15	8:30	8:00	
EP-071/080: Total Petroleum Hydro	ocarbons (TPH Volat	ile) / BTEX			X	ž.		
C6 - C8 Fraction		0.02	mg/L	<0.02	<0.02	<0.02	<0.02	
EP-071: Total Petroleum Hydrocart	bons (TPH)	1000000	***************************************	3.00000				
C9 - C16 Fraction		0.1	mg/L	<0.1	<0.1	<0.1	<0.1	
C17 - C35 Fraction		0.15	mg/L	<0.15	<0.15	<0.15	<0.15	
EP-080S: TPH(Volatile)/BTEX Surro	ogate			100000			Surrogate control limits	listed at end of this report.
Dibromofluoromethane	1868-53-7	0.1	%	102	105	103	108	
Toluene-D8	2037-26-5	0.1	%	99.2	100	100	104	
4-Bromofluorobenzene	460-00-4	0.1	%	97.9	97.6	100	99.3	

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Page Number : 3 of 3

Client CLP POWER HONG KONG LTD

Work Order HK0801340



#### Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER					v 5a	Duplicate (DUP)	Results	ē
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EP-071/080: Total Petrol	eum Hydrocarbons (TPH Volatile) /	BT (QC Lot: 581109)				511	10	
HK0801340-002	MW2	C6 - C8 Fraction	2000	0.02	mg/L	< 0.02	<0.02	0.0

## Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: WATER		1	Method Blank (MB)	Results		Single Co	ontrol Spike (SCS) and	d Duplicate Con	rol Spike (DCS	) Results	
		U 1			Spike	Spilke Re	covery (%)	Recovery	Limits (%)	RI	Ds (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EP-071/080: Total Petroleum Hydro	carbons (TPH Volatile) / E	T (QCLot: 5	81109)			The state of the s					
C6 - C8 Fraction	<del></del>	0.02	mg/L	<0.02	0.15 mg/L	86.7		50	130	****	
EP-071: Total Petroleum Hydrocart	ons (TPH) (QCLot: 58112	(5)		C.	- 10			72	72. 337		200
C9 - C16 Fraction	19 <u>111</u> 2	0.5	mg/L	<0.5	0.3 mg/L	55.1		50	130		
C17 - C35 Fraction		0.5	mg/L	< 0.5	0.5 mg/L	59.2	5000	50	130		

#### Surrogate Control Limits

#### Submatrix Type: WATER

Method: Analysis Description	Units	Lower Limit	Upper Limit
EP-080S: TPH(Volatile)/BTEX Surrogate	A 1000000		
Dibromofluoromethane	%	86	118
Toluene-D8	%	88	110
4-Bromofluorobenzene	%	86	115

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# Appendix B Construction Phase - Environmental Mitigation Implementation Schedule

Legends: C - Complied NC - Not complied N/A - Not Applicable

Ref.	<b>Environmental Protection Measures</b>	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during
				Design	Construction	the reporting month
Air Quality						
EIA S3.6.1	The area at which demolition work takes place should be sprayed with water prior to, during and immediately after the demolition activities so as to maintain the entire surface wet	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S3.6.1	Dust screens or sheeting should be provided to enclose the structure to be demolished to a height of at least 1 m higher than the highest level of the structure;	Within the construction site/Throughout the construction period	Contractor		1	N/A
EIA S3.6.1	Any dusty materials should be wetted with water to avoid any fugitive dust emission;	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S3.6.1	All temporary stockpiles should be wetted or covered by tarpaulin sheet to prevent fugitive emissions;	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S3.6.1	All the dusty areas and roads should be wetted with water;	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S3.6.1	All the dusty materials transported by lorries should be covered entirely by impervious sheet to avoid any leakage; and	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S3.6.1	The falling height of fill materials should be controlled.	Within the construction site/Throughout the construction period	Contractor		✓	С
Water Qua	lity					
EP Con 2.14, EIA S5.8.1	Silt curtains should be deployed around the closed grab dredger to contain suspended solids within the construction site during dredging.	Within the construction site/Throughout the construction period	Contractor		<b>√</b>	N/A

Ref.		Location/Duration of	Implementation	Implemen	tation Stage	Implementation Status during
		Measures/Timing of Completion of Measures	Agent	Design	Construction	the reporting month
EP Cons 2.13 & 2.15, EIA S5.8.1	• A daily dredging rate of a closed grab dredger (with a minimum grab size of 8 m³) should be less than 5,200 m³ day⁻¹, with reference to the maximum rate for dredging, which was derived in the EIA.	Within the construction site/Throughout the construction period	Contractor		~	N/A
EP Con 2.16, EIA S5.8.1	Barges or hoppers should have tight fitting seals to their bottom openings to prevent leakage of material.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	N/A
EP Con 2.9	Any groundwater arising from the decommissioning and construction of the Project shall be collected and recharged back to the site of the Project. No groundwater shall be used for any industrial or domestic purposes.	Within the construction site/Throughout the construction period	Contractor		✓	С
EP Con 2.10	All wastewater or effluent arising from the stockpiling, transportation and treatment of the excavated contaminated materials shall be properly collected and treated.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EP Con 2.11	Surface run-off from the construction site shall be directed into sand/silt removal facilities such as sand/silt traps and sediment basins before discharge. The sand/silt removal facilities shall be adequately designed and properly operated and maintained.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EP Con 2.12, EIA S5.8.2	All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks, where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or by other means.	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S5.8.1	Mechanical grabs should be designed and maintained to avoid spillage and should seal tightly while being lifted.	Within the construction site/Throughout the construction period	Contractor		1	N/A
EIA S5.8.1	Loading of barges or hoppers should be controlled to prevent splashing of dredged material to the surrounding water.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	N/A
EIA S5.8.1	Barges or hoppers should not be filled to a level which will cause overflow of materials or pollution of water during loading or	Within the construction site/Throughout the	Contractor		✓	N/A

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of	Implementation Agent	Implemen	tation Stage	Implementation Status during the reporting month
		Completion of Measures	Agent	Design	Construction	the reporting month
	transportation.	construction period				
EIA S5.8.1	Excess material should be cleaned from the decks and exposed fittings of barges or hoppers before the vessel is moved.	Within the construction site/Throughout the construction period	Contractor		1	N/A
EIA S5.8.1	Adequate freeboard should be maintained on barges to reduce the likelihood of decks being washed by wave action.	Within the construction site/Throughout the construction period	Contractor		1	N/A
EIA S5.8.1	All vessels should be sized such that adequate clearance is maintained between vessels and the seabed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	Within the construction site/Throughout the construction period	Contractor		<b>*</b>	N/A
EIA S5.8.1	The works should not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	N/A
EIA S5.8.2	• At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed and internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of efficient silt removal facilities should be based on the guidelines in <i>Appendix A1</i> of <i>ProPECC PN 1/94</i> .	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S5.8.2	All the surface runoff or extracted ground water contaminated by silt and suspended solids should be collected by the on-site drainage system and diverted through the silt traps prior to discharge into storm drain.	Within the construction site/Throughout the construction period	Contractor		<b>√</b>	С
EIA \$5.8.2	All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.	Within the construction site/Throughout the construction period	Contractor		<b>*</b>	С

Ref.		Location/Duration of Measures/Timing of Completion of Measures	Implementation	Implementation Stage		Implementation Status during
			Agent	Design	Construction	the reporting month
EIA S5.8.2	Measures should be taken to reduce the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S5.8.2	Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50 m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA \$5.8.2	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system.	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S5.8.2	• Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in <i>Appendix A2</i> of <i>ProPECC PN 1/94</i> . Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S5.8.2	Oil interceptors should be provided in the drainage system and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	N/A
EIA S5.8.2	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment traps should be regularly cleaned and maintained. The temporary diverted drainage should be reinstated to the original condition when the construction work has finished or the temporary diversion is no longer required.	Within the construction site/Throughout the construction period	Contractor		✓	С

Ref.		Location/Duration of	Implementation	Implemen	tation Stage	Implementation Status during
		Measures/Timing of Completion of Measures	Agent	Design	Construction	the reporting month
EIA S5.8.2	Sewage from toilets should be collected by a licensed waste collector.	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S5.8.2	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should, as far as possible, be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S5.8.2	Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	Within the construction site/Throughout the construction period	Contractor		<b>√</b>	С
EIA S5.8.2	Waste streams classifiable as chemical wastes should be properly stored, collected and treated for compliance with Waste Disposal Ordinance or Disposal (Chemical Waste) (General) Regulation requirements.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S5.8.2	The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S5.8.2	The Contractors should prepare guidelines and procedures for immediate clean-up actions following any spillages of oil, fuel or chemicals.	Within the construction site/Throughout the construction period	Contractor		<b>*</b>	С
EIA S5.8.2	Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	Within the construction site/Throughout the construction period	Contractor		<b>√</b>	N/A
Waste Ma	nagement					
EP Con 2.19	No wastes, spoil or excavated materials or materials alike arising from the demolition and/or decommissioning and construction works of the Project shall be dumped in any environmentally sensitive areas, including but not limited to Sites of Special Scientific Interest, coastal protection areas, conservation areas and agricultural land.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С

Ref.	Environmental Protection Measures		Implementation Agent	Implementation Stage		Implementation Status during the reporting month
			Agent	Design	Construction	the reporting month
EIA S6.6.1	Dredged sediments should be disposed of only at designated disposal sites allocated by the Marine Fill Committee (MFC) based on the findings of further sediment quality tests. A dumping licence should also be obtained from EPD prior to the commencement of the dredging works.	Within designated disposal site/prior to commencement of the dredging works	Contractor		<b>✓</b>	N/A
EIA S6.6.1	<ul> <li>Regardless of the disposal method and site, the Contractor should:</li> <li>Dredge the sediments using closed grabs;</li> <li>Use split barges of not less than 750 m³ capacity when transporting the sediment to the disposal site;</li> <li>Regularly maintain the barge hoppers to ensure that they are capable of rapid opening and discharge at the designated disposal site; and</li> <li>Monitor the barge load against loss of materials during transportation.</li> </ul>	Within the dredging area /Throughout the dredging works period	Contractor		<b>✓</b>	N/A
EIA S6.6.3	The contractor should open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the payment of disposal charges. Every waste load transferred to government waste disposal facilities such as public fill, sorting facilities, landfills or transfer station would required a valid "chit" which contain the information of the account holder to facilitate waste transaction recording and billing to the waste producer. A tripticket system should also be established in accordance with Works Bureau Technical Circular No. 21/2002 to monitor the disposal of solid wastes at transfer station/landfills, and to control fly-tipping. The billing "chit" and trip-ticket system should be included as one of the contractual requirements and implemented by the contractor.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S6.6.3	A recording system for the amount of waste generated, recycled and disposed of (including the disposal sites) should be established during the construction stage.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С

Ref.	<b>Environmental Protection Measures</b>		Implementation Agent	Implementation Stage		Implementation Status during
				Design	Construction	the reporting month
EIA S6.6.3	<ul> <li>Measures for the Reduction of C&amp;DM Generation during Planning and Design Stages</li> <li>The various waste management options can be categorized in terms of preference from an environmental viewpoint. The options considered to be more preferable have the least impacts and are more sustainable in the long term. Hence, the waste management hierarchy is as follows:</li> <li>Avoidance and minimization, that is, reduction of waste generation through changing or improving practices and design;</li> <li>Reuse of materials, thus avoiding disposal (generally with only limited reprocessing);</li> <li>Recovery and recycling, thus avoiding disposal (although reprocessing may be required); and</li> <li>Treatment and disposal, according to relevant law, regulations, guidelines and good practice.</li> <li>This hierarchy should be used to evaluate the waste management options, thus allowing maximum waste reduction and reduced disposal costs. Records of quantities of wastes generated, recycled and disposed (locations) should be kept.</li> </ul>	Within the construction site/Throughout the construction period	Contractor	•		С

Ref.	Environmental Protection Measures		Implementation	Implementa	tion Stage	Implementation Status during the reporting month
			Agent	Design	Construction	
EIA S6.6.3	<ul> <li>Measures for the Reduction of C&amp;DM Generation during Construction</li> <li>C&amp;D materials will be reused as far as possible within the Project. Public fill and construction waste should be segregated and stored in different containers or skips to facilitate reuse or recycling of materials and their proper disposal of construction waste. Specific areas of the work site should be designated for such segregation and temporary storage if immediate use is not practicable.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
	The construction waste should be collected by Contractor and transported to landfills for disposal.					
	The use of wooden hoardings should not be allowed. An alternative material, which can be reused or recycled, for example, metal (aluminium, alloy, etc) should be used.					
	• To reduce the potential dust impact, C&D materials should be wetted as quickly as possible during excavation works.					
EIA S6.6.4	<ul> <li>Containers used for storage of chemical wastes should:</li> <li>be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>have a capacity of less than 450 L unless the specifications have been approved by the EPD; and</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	С
	• display a label in English and Chinese in accordance with instructions prescribed in <i>Schedule 2</i> of the <i>Regulations</i>					

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implemen	tation Stage	Implementation Status during the reporting month
			Agent	Design	Construction	
EIA S6.6.4	<ul> <li>The storage area for chemical wastes should:</li> <li>be clearly labelled and used solely for the storage of chemical waste;</li> <li>be enclosed on at least 3 sides;</li> <li>have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;</li> <li>have adequate ventilation;</li> <li>be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and</li> <li>be arranged so that incompatible materials are appropriately</li> </ul>	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S6.6.4	separated.  Disposal of chemical waste should be:  • via a licensed waste collector; and  • to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S6.6.5	The sewage sludge from the portable toilet should be collected by a reputable collector on a regular basic.	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S6.6.6	General refuse should be stored in enclosed bins or compaction units separately from construction and chemical wastes.	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S6.6.6	General refuse should be removed from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts.	Within the construction site/Throughout the construction period	Contractor		✓	С
EIA S6.6.6	Burning of refuse on construction site is prohibited by law.	Within the construction site/Throughout the construction period	Contractor		✓	С

Ref.		Location/Duration of Measures/Timing of Completion of Measures	Implementation	Implemen	tation Stage	Implementation Status during
			Agent	Design	Construction	the reporting month
EIA S6.6.6	Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. As such, separate, labelled bins for their deposit should be provided if feasible. Materials recovered will be re-used on site or sold for recycling.	Within the construction site/Throughout the construction period	Contractor		<b>✓</b>	С
EIA S6.6.7	Training should be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the Contract.	Within the construction site/Throughout the construction period	Contractor		✓	С
Land Cont	amination		1			
EP Con 2.5	The oil tanks shall be properly cleaned before their demolition. All wastes and effluent arising from the cleaning of the oil tanks shall be properly collected, stored, treated and disposed of.	Within the contaminated area /Throughout the construction period	Contractor		1	N/A
EP Con 2.6	No contaminated soil arising from the demolition and/or decommissioning works shall be stockpiled, treated or disposed of outside the Castle Peak Power Station.	Within the contaminated area /Throughout the construction period	Contractor		1	С
EP Con 2.7	The excavated soil arising from the demolition and/or decommissioning works shall be properly contained in container(s) during storage and transportation to avoid any discharge or leakage.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	С
EP Con 2.8	The contaminated soil arising from the demolition and/or decommissioning works shall be decontaminated within the Castle Peak Power Station in accordance with the Land Contamination Remediation Action Plan contained in the EIA report (Register No. AEIAR-102/2006). Bio-remediation methods shall be used to remedy the petroleum hydrocarbon contamination in the excavated materials.	Within the contaminated area /Throughout the construction period	Contractor		✓	С
EIA Annex E	Potentially contaminated soil should be treated in accordance with the remediation actions specified in the Remediation Action Plan (RAP) of this EIA Report and the treated soil should be reused within the Project Site as far as possible.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	С
EIA Annex E	The temporary stockpile of excavated potentially contaminated materials should be contained in a container covered by HDPE sheet on top	Within the contaminated area /Throughout the construction period	Contractor		1	С
EIA Annex E	Bioremediation by applying nutrient to the soil should be employed for the on-site treatment of excavated materials potentially contaminated by TPH.	Within the contaminated area /Throughout the construction period	Contractor		1	С

Ref.		Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implemen	tation Stage	Implementation Status during the reporting month
			Agent	Design	Construction	
EIA Annex E	If disposal of the treated excavated soil to the public fill bank is required, vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or wastewater run-off, and truck bodies and tailgates will be sealed to minimise the risk of a discharge during transportation or during wet conditions.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Records of the quantities of soil generated for off-site disposal will be maintained.	Within the contaminated area /Throughout the construction period	Contractor		1	С
EP Con 2.9, EIA Annex E	As groundwater is not used for either domestic or industrial purposes at the site or in the adjacent areas, remediation of groundwater is not considered to be necessary for the Project to proceed. If groundwater is encountered during the construction of foundations, the groundwater abstracted or collected will be recharged back to the site.	Within the contaminated area /Throughout the construction period	Contractor		✓	С
EIA Annex E	The FODT and the oil separator serving it should be cleaned prior to demolition.	Within the contaminated area /Throughout the construction period	Contractor		1	N/A
EIA Annex E	Oily water and sludge collected from the cleaning should be treated at the on-site wastewater treatment facility. Oily water and sludge collected from the cleaning should be collected and disposed of as chemical waste at Government chemical waste treatment facility.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	N/A
EIA Annex E	Only licensed waste contractors should be used to collect and transport any chemical waste. The necessary waste disposal permits will be obtained, as required, from the appropriate authorities, in accordance with the <i>Waste Disposal Ordinance (Cap 354)</i> and <i>Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)</i> , as required.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	N/A
EIA Annex E	Prior to commence any remediation work, a health and safety risk assessment should be performed for the remediation work to identify potential work related hazards and prepare appropriate control measures.	Within the contaminated area /Throughout the construction period	Contractor		1	С
EIA Annex E	Appropriate Personal Protective Equipment (PPE) such as safety hat, chemical protective gloves, masks (for both dust and vapour), eye goggles, protective clothing and protective footwear should be provided to staff who would be involved in the tank cleaning and contaminated area (FODT and TP3) remediation works. No works should be allowed without the suitable PPE.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	С

Ref.	<b>Environmental Protection Measures</b>	Location/Duration of	Implementation	Implemen	tation Stage	Implementation Status during the reporting month
		Measures/Timing of Completion of Measures	Agent	Design	Construction	
EIA Annex E	The workers should inspect and check their PPE before, during and after use. In cases where any of the PPE is impaired, the workers should stop work immediately and inform their supervisor. The workers should not be allowed to re-start their work until the impaired PPE is replaced.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	С
EIA Annex E	The workers should always maintain basic hygiene standard (e.g. hand wash before leaving the contaminated work area). The workers should also be responsible for cleaning and storing their own PPE in a secure place before leaving the site.	Within the contaminated area /Throughout the construction period	Contractor		<b>*</b>	С
EIA Annex E	Eating, drinking and smoking should be strictly prohibited within the contaminated site area.	Within the contaminated area /Throughout the construction period	Contractor		<b>*</b>	С
EIA Annex E	The designated site management representatives must be informed if any workers feel uncomfortable physically or mentally during the remediation works. All workers should leave the work areas and the work should be temporarily suspended until the reason for the uncomfortable feeling has been identified.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	С
EIA Annex E	The works should be stopped or discontinued when Typhoon Signal No. 3 or Rainstorm Warning signals are hoisted. All stockpile materials (if any) should be covered immediately by tarpaulin or other similar protective and waterproof materials.	Within the contaminated area /Throughout the construction period	Contractor		<b>✓</b>	С
EIA Annex E	Bulk earth-moving excavator equipment should be used to minimise construction workers' potential contact with contaminated materials.	Within the contaminated area /Throughout the construction period	Contractor		<b>*</b>	С
Ecological	– Marine Mammal		1	•		
EP Con 2.17, EIA S8.9	To limit potential impacts to cetaceans from underwater percussive piling, the following steps should be taken:	Within the dredging area /Throughout the construction period	Contractor		<b>*</b>	N/A
36.9	Only hydraulic hammers should be used;	period				
	• An exclusion zone of 500 m radius should be scanned around the work area for at least 30 minutes prior to the start of piling. If cetaceans are observed in the exclusion zone, piling should be delayed until they have left the area; and,					
	Acoustic decoupling of noisy equipment on work barges should be undertaken. These techniques include the use of a soft sling to retain					

Ref.	Environmental Protection Measures		Implementation Agent	Implementa	tion Stage	Implementation Status during the reporting month
			Agent	Design	Construction	the reporting month
	the pile driving hammer, rubber tyred air compressor for bubble jacket/curtain, rubber pads on barge leaders and guides, and an air curtain around the pile barge.					
EP Con 2.18	To minimize potential construction and operation impacts on dolphins and porpoises, no dumping of rubbish, food, oil, or chemicals from the marine vessels shall be allowed.	Within the dredging area /Throughout the construction period	Contractor		<b>~</b>	N/A
EIA S8.9	<ul> <li>The following recommendations should be considered to minimize potential construction impacts on dolphins and porpoises.</li> <li>All vessel operators working on the Project construction should be given a briefing, alerting them to the possible presence of dolphins in the area, and the guidelines for safe vessel operation in the presence of cetaceans. If high speed vessels are used, they should be required to slow to 10 knots when passing through a high density dolphin area (west Lantau, Sha Chau and Lung Kwu Chau);</li> <li>The vessel operators should be required to use predefined and regular routes, as these will become known to dolphins using these waters;</li> <li>The vessel operators should be required to control and manage all effluent from vessels;</li> <li>A policy of no dumping of rubbish, food, oil, or chemicals should be strictly enforced. This should also be covered in the contractor briefings;</li> <li>Every attempt should be made to minimize the effects of construction of the Project on the water quality of the area;</li> </ul>	Within the marine works area /Throughout the construction period of the additional berthing facility	Contractor / CLP Power (as CAPCO operator)		<b>✓</b>	N/A
S9.3.5	The new structures associated with the Project, including those of the additional conveyor systems, should be painted in a colour scheme that complements the surrounding industrial setting of the existing CPPS.	New structures associated with the Project	Contractor		1	N/A