

## Permanent Aviation Fuel Facility (EP-262/2007/B)

Seventh Quarterly Environmental Monitoring and Audit Report – July 2008 to September 2008

17 October 2008

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# Permanent Aviation Fuel Facility (EP-262/2007/B) Seventh Quarterly Environmental Monitoring and Audit Report July 2008 to September 2008

17 October 2008

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For and on behalf of Environmental Resources Management	
Approved by:	Craig A Reid
Signed:	
Position:	Environmental Team Leader
Date:	17 October 2008

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## Permanent Aviation Fuel Facility for Hong Kong International Airport

### Environmental Certification Sheet EP-262/2007/B


#### Reference Document/Plan

Document/ <del>Plan to be Certified</del> / Verified:	Seventh Quarterly EM&A Report - Jul 2008 to Sep 2008
Date of Report:	17 October 2008
Date received by ET:	17 October 2008
Date received by IEC:	17 October 2008


#### Reference EM&A Manual Recommendation

EM&A Manual Recommendation:	Sections 13.5 and 13.5.3
Content:	EM&A Reports
<p>13.5 A maximum of 4 copies of each EM&amp;A Report shall be submitted</p> <p>13.5.3 The ET Leader will submit Quarterly EM&amp;A Summary Reports for the construction phase EM&amp;A works only.</p>	

#### ET Certification

I hereby certify that the above referenced document/ <del>plan</del> complies with the above referenced sections of the EM&A Manual recommendation	
Craig A Reid, Environmental Team Leader:	
Date:	17 October 2008

#### IEC Verification

I hereby verify that the above referenced document/ <del>plan</del> complies with the above referenced sections of the EM&A Manual recommendation	
Dr Guiyi Li, Independent Environmental Checker:	
Date:	28 Oct 2008

Notes: EP-262/2007/B has replaced the former EP-262/2007/A, EP-262/2007 and EP-139-2002/A for the PAFF project after the resubmission of revised EM&A Manual and revised EIA Report respectively.

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## **EXECUTIVE SUMMARY**

The construction works for the Permanent Aviation Fuel Facility resumed on 9 July 2007. This **seventh** quarterly Environmental Monitoring and Audit (EM&A) report presents the EM&A work carried out during the period from **1 July to 30 September 2008** in accordance with the *EM&A Manual*.

### *Breaches of all Action and Limit Levels*

Exceedance of the Action Limit Level for Depth-averaged Dissolved Oxygen (DO) was found on 4, 8, 9, 10, 11 and 12 September 2008 while exceedance of the Action Limit Level for Bottom DO was found on 9, 10, 11 and 12 September 2008. Exceedance of Action Level of Suspended Solids was found on 4 and 18 September 2008. Following review of data in accordance with the procedures specified with the *EM&A Manual*, these exceedances were considered likely due to natural fluctuation from the Pearl River discharge rather than the Project Works.

### *Complaint Log*

No environmental complaint was received during the reporting period.

### *Notifications of any Summons and Successful Prosecutions*

No environmental summon or prosecutions was received in this reporting period.

### *Reporting Changes*

There were no reporting changes in the reporting period.

### *Future Key Issues*

- Dust release and suppression;
- Dredging activities; and
- Water quality monitoring and dolphin monitoring during dredging activities.

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.

The construction works for PAFF commenced in November 2005 based upon the previous EIA (EIAO Register Number AEIAR-062-2002) conducted and the Environmental Permit EP-139/2002 granted on the 28<sup>th</sup> August 2002. Due to minor changes to the detailed layout of the site and the site boundary, application for Variation to the Environmental Permit (VEP) (VEP-133/2004) was submitted to the Director of Environmental Protection (DEP) for approval. The variation to the EP (EP-139/2002/A) was granted by EPD in February 2004.

However, the decision by EPD to grant the above Environmental Permit was subject to a Judicial Review. The Judicial Review sided in the favour of the DEP, as did the subsequent Judgement from the Court of Appeal from the High Court for Judicial Review in March 2005. However, the DEP's decision to grant the EP was quashed by the Judgement of the Court of Final Appeal of July 2006.

The construction works were stopped following the Judgement of the Court of Final Appeal of July 2006. As such, in order to continue with the construction of the project, the project went through the statutory procedures under the EIAO again with a new design in order to obtain an environmental permit. The revised EIA was submitted in 2007 and the environmental permit (EP-262/2007) was granted in May 2007. EP-262/2007 has been amended to EP262/2007/A and issued by the EPD on 30 November 2007.

It should be noted that at the time of reporting, a further Variation to the Environmental Permit has been approved, primarily to allow for dredging works to continue during March 2008. As such, EP-262/2007/A has been amended to EP-262/2007/B and issued by the EPD on 27 February 2008.

The construction works and EM&A requirements resumed on 9 July 2007 following the latest requirements of the EP-262/2007 and EM&A Manual. Details regarding the EM&A requirements and changes should refer to the updated EM&A Manual. For the marine works, all piling activities were completed before the previous suspension of construction works in 2006.

## 1.1

### **PURPOSE OF THE REPORT**

This is the **seventh** EM&A Report which summarizes the monitoring results and audit findings for the EM&A programme during the reporting period from **1 July** to **30 September 2008**.

## 1.2 KEY CONTACT INFORMATION

Key contact information of the Project is presented in *Table 1.1*.

**Table 1.1** *Contact Information*

Name	Position	Telephone	Facsimile	E-mail
<b>Airport Authority Hong Kong - Environmental Permit Holder</b>				
Mr Amin Ebrahim	Assistant General Manager Aviation Logistics	2183 3108	2824 2786	ebraa@hkairport.com
<b>Contractor - Leighton (Asia) Construction Limited</b>				
Brian Gillon	Project Director	2823 1111	2529 8784	brian.gillon@leightonasia.com
Boyd Merrett	Project Manager	2404 8900	2404 0081	boyd.merrett@leightonasia.com
<b>Franchisee's Site Representative - ECO Aviation Fuel Development Limited</b>				
Philip Siu	Franchisee's Site Representative	2963 2820	2563 6311	philip.siu@towngas.com
<b>Environmental Team - ERM-Hong Kong Limited</b>				
Craig Reid	Environmental Team Leader	2271 3000	2723 5660	craig.reid@erm.com
<b>Independent Environmental Checker - Hyder Consulting Limited</b>				
Dr Kwok-leung Pun	Independent Environmental Checker	2911 2233	2805 5028	KwokLeung.Pun@hyderconsulting.com



## 2 ENVIRONMENTAL STATUS

### 2.1 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 A*.

### 2.2 ENVIRONMENTAL SENSITIVE RECEIVERS

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

### 2.3 MAJOR CONSTRUCTION ACTIVITIES

A summary of the major works undertaken in this reporting period is shown in *Table 2.1*. Dredging operation has been suspended from 1 April to 31 August 2008 and was resumed on 1 September 2008. *Table 2.2* presented the cumulative quantity of excavated materials up to 30 September 2008. Daily and cumulative dredging production rates are illustrated in *Figure 2.1*.

*Table 2.1 Summary of Works Undertaken During the Reporting Period*

Area	Works undertaken
Tuen Mun Area 38	Tank Farm and Bund Wall Construction Permanent Drainage Construction Operational & Fire Services Buildings Construction Jetty Works (Non-piling)
Submarine Pipeline Route	Dredging Operations

*Table 2.2 Cumulative Quantity of Excavated Materials up to 30 September 2008*

Type of Excavated Materials	Cumulative Bulk Volume (m <sup>3</sup> )
<i>From 17 December 2007 to 31 March 2008</i>	
Contaminated Mud	105,974
Uncontaminated Mud	97,815
<i>From 1 September to 30 September 2008</i>	
Contaminated Mud	3,107
Uncontaminated Mud	0

### 2.4 MONITORING SCHEDULE OF THE REPORTING PERIOD

Daily water quality monitoring during dredging activities (except public holidays and weekends) recommenced on 1 September 2008. The monitoring schedule conducted in September 2008 is presented in *Annex C*.

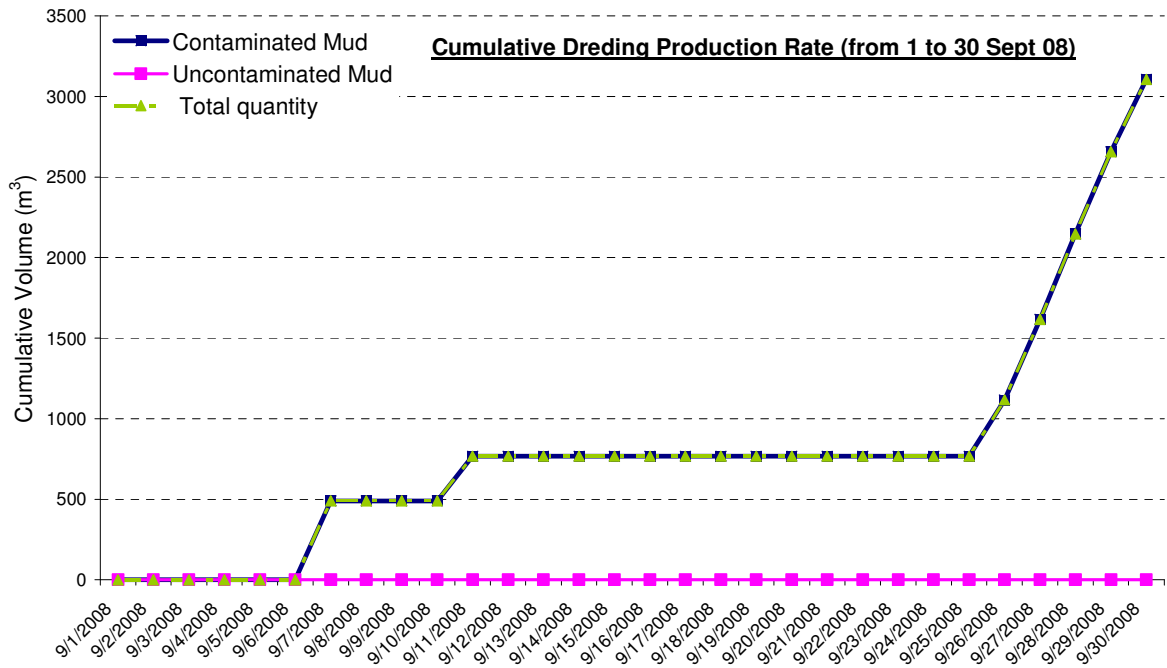
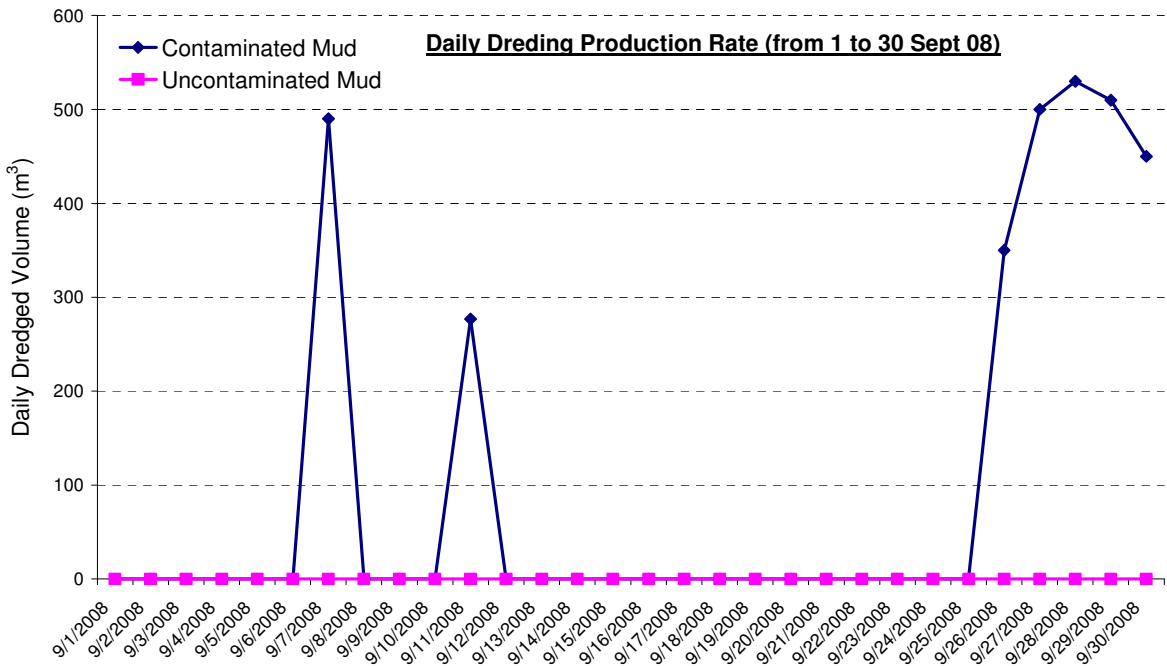


Figure 2.1 Daily and cumulative volumes (m³) of excavated materials from 1 September to 31 September 2008.



A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since July 2007 is presented in *Table 2.3*.

*Table 2.2 Summary of Environmental Licensing, Notification and Permit Status*

Permit/ Licenses/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-262/2007/B	Throughout Project	Issued on 27 February 2008 (EP-262/2007/A on 30 November 2007, EP-262/2007 issued on 31 May 2007, EP-139/2002 originally granted on 28 August 2002 and EP-139/2002/A granted on 24 February 2004 were superseded)
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	H2104/UIID/5542/DG/DH/PL	Throughout Project	Notification on 6 July 2007
Construction Noise Permit	GW-RW0676-07	21 December 2007 to 19 June 2008	For land-based works including air compressors, breakers, excavators, wheeled loaders, mobile cranes, concrete lorry mixers, hand-held pokers, bar benders/cutters, wood saws, grinders, submarine water pump, lorries with crane, dump trucks, rollers, ventilation fans and generators
	GW-RW0677-07	21 December 2007 to 29 February 2008	For marine dredging operation including grab dredger, tug boat, split hopper barge and motor sampan
	GW-RW0678-07	21 December 2007 to 18 June 2008	For marine jetty works including concrete pump derrick barges, hand-held grinders, generators, air compressors, boring machines, water pumps, tug boat, grout mixers and grout pumps
	GW-RW0094-08	1 March to 31 March 2008	For marine dredging operation including grab dredger, tug boat, split hopper barge and motor sampan

<b>Permit/ Licenses/ Notification</b>	<b>Reference</b>	<b>Validity Period</b>	<b>Remarks</b>
	GW-RW0312-08	04 July 2008 to 22 December 2008	For marine jetty works including concrete pump derrick barges, hand-held grinders, generators, air compressors, boring machines, water pumps, tug boat, grout mixers and grout pumps
	GW-RW0313-08	04 July 2008 to 19 December 2008	For land-based works including air compressors, breakers, excavators, wheeled loaders, mobile cranes, concrete lorry mixers, hand-held pokers, bar benders/cutters, wood saws, grinders, submarine water pump, lorries with crane, dump trucks, rollers, ventilation fans and generators
	GW-RW0373-08	1 August 2008 to 20 January 2009	For land-based works including air compressors, breakers, excavators, wheeled loaders, mobile cranes, concrete lorry mixers, hand-held pokers, bar benders/cutters, wood saws, grinders, submarine water pump, lorries with crane, dump trucks, rollers, ventilation fans, generators, stirrer, jet chisel, water jet machine and dehumidifier
	GW-RW0368-08	1 September to 30 November 2008	For marine dredging operation including grab dredger, tug boat, split hopper barge and motor sampan
Marine Dumping Permit	EP/MD/08-064	13 December 2007 to 29 February 2008	For Type 1 – Open Sea Disposal
	EP/MD/08-065	13 December 2007 to 12 January 2008	For Type 1d & Type 2 marine disposal
	EP/MD/08-071	13 January 2008 to 12 February 2008	For Type 1d & Type 2 marine disposal
	EP/MD/08-090	3 March to 31 March 2008	For Type 1d & Type 2 marine disposal
	EP/MD/08-091	3 March to 31 March 2008	For Type 1 – Open Sea Disposal
	EP/MD/09-018	1 September to 30 September 2008	For Type 1d & Type 2 marine disposal

Permit/ Licenses/ Notification	Reference	Validity Period	Remarks
	EP/MD/09-032	1 October to 31 October 2008	For Type 1d & Type 2 marine disposal
	EP/MD/09-017	1 September to 30 November 2008	For Type 1 - Open Sea Disposal
Wastewater Discharge License	EP760/421/011399/1	15 March 2006 to 31 March 2011	Issued on 15 March 2006

## 2.6 COMMUNITY LIAISON GROUP MEETING

According to the EP requirements, a Community Liaison Group (CLG) shall be established within three months after commencement of construction of the Project. The major duty of CLG is to advise on and monitor the proper design, construction and operation of the Project. The CLG comprises representatives from Airport Authority, members of Tuen Mun community and academics. During the reporting month, a meeting was organised by the CLG on 10 September 2008. The details of the CLG (including Membership and its Terms of Reference) and the meeting minutes can be found on the Project website (<http://www.paffhk.com>).

## 2.7 SUMMARY OF NON-COMPLIANCE WITH THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

Water quality monitoring during dredging activities recorded exceedances of the Action Limit Level for Depth-averaged Dissolved Oxygen (DO) on 4, 8, 9, 10, 11 and 12 September 2008. There were exceedances of the Action Limit Level for Bottom DO on 9, 10, 11 and 12 September 2008. Exceedance of Action Level of Suspended Solids was found on 4 and 18 September 2008. A description of the actions taken following these non-compliances is discussed in *Section 3.2*.

## 2.8 SUMMARY OF ENVIRONMENTAL COMPLAINTS

No environmental complaint was received during the reporting period. A statistical summary of environmental complaints since project commencement is presented in *Annex D*.

## 2.9 SUMMARY OF ENVIRONMENTAL SUMMONS

No summons was received in this reporting period. A statistical summary of legal proceeding since project commencement is presented in *Annex D*.

### 3.1 PREVIOUS ENVIRONMENTAL DEFICIENCIES AND FOLLOW-UP ACTIONS

As no environmental complaint was received over the last reporting period, no follow-up action was required.

Weekly site inspections were carried out by the ET on 4, 10, 18, and 24 July 2008, 1, 8, 15, and 29 August 2008, and 5, 12, 18, and 26 September 2008. Overall, the site was in good orderly manner and no non-compliances were found. Environmental deficiencies and follow-up actions/mitigation measures were identified during the inspections and summarised in *Table 3.1*.

**Table 3.1** *Environmental Deficiencies (Observations) from Site Inspections during Reporting Period*

Reporting Month	Observation	Follow-up Action
July 2008	Chemical waste storage area was observed to be full.	Contractor arranged chemical waste collection.
	General waste skips were observed to be full near the oil pumping facility and the operation building.	Contractor arranged more frequent collection of general wastes.
	Stagnant water pools were observed at some locations on site.	Contractor arranged clearance of stagnant water pools.
	Oil sheens were observed on the ground in the workshop and near the diesel storage tank.	Contractor arranged clearance of oil sheens and provided spillage control measures.
August 2008	Stagnant water pools were observed at some locations on site.	Contractor arranged clearance of stagnant water pools.
	Tank wall preparatory works were observed to be generating excessive dust without mitigation measures.	Contractor provided enclosure around dust generating works to minimize dust impact.
	Dry soil materials were piled up near the surcharge area and near the operation building.	Contractor implemented water spraying to control wind erosion.
	Sediment plume was observed at discharge sewer in the surcharge area.	Contractor adopted practice to settle muddy water in sedimentation tank prior to discharge.
	General waste skips were observed to be full near the tank farms and the operation building.	Contractor arranged more frequent collection of general wastes.
	Some chemical wastes were not properly labelled.	Contractors put suitable labels onto chemical waste containers.

Reporting Month	Observation	Follow-up Action
	Oil sheens were observed on ground near the tank farms. Temporary storage of oil products and chemical wastes were not provided with drip trays.	Contractor cleared oil sheens and implemented spillage control measures.
September 2008	Silt curtains were not properly installed in the dredging area.	Contractor checked and ensured silt curtains were properly installed prior to commencement of future dredging activities.
	Sediment plumes were observed on the rear end of hopper barge.	Contractor stopped dredging activities, investigated the cause of sediment plumes and ensured no further leakages of sediments from barge.
	Sediment plumes were observed in the marine area near the water discharge outlet.	Contractor checked efficiency of sedimentation facilities and reviewed effluent discharge arrangements.
	Oil sheens were observed on the sea surface near the operation building.	Contractor arranged clearance of oil sheens.
	General waste skips were observed to be full near the tank farms and the operation building.	Contractor arranged more frequent collection of general wastes.
	Chemical wastes on the hopper barge were not stored with spillage preventive measures.	Contractor transported chemical wastes to banded areas on the barge.
	Oil sheens were observed on the ground near the workshop. Temporary storage of oil products and chemical wastes were not provided with drip trays.	Contractor cleared oil sheens and implemented spillage control measures.
	General wastes were piled up on the ground near the operation building.	Contractor provided waste skips for collection of general wastes produced.

Overall, the site was in a good orderly manner. The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

### 3.2

#### ***DESCRIPTION OF ACTIONS TAKEN IN EVENT OF NON-COMPLIANCE AND DEFICIENCY REPORTING***

Water quality monitoring during dredging activities recorded exceedances of the Action Limit Level for Depth-averaged Dissolved Oxygen (DO) on 4, 8, 9, 10, 11 and 12 September 2008. There were exceedances of the Action Limit Level for Bottom DO on 9, 10, 11 and 12 September 2008. Exceedance of the Action Level of Suspended Solids was found on 4 and 18 September 2008. Details of exceedance were presented in the monitoring results as *Annex G*.

Although dredging operations were undertaken during the reporting period, the exceedances were unlikely to be caused by the Project and were considered to be an isolated case due to the following reasons:

- Exceedance of the Action Limit Level for depth-averaged DO was found on 8 September when no dredging was undertaken. These values were comparable to those of days with dredging operations; and,
- Depth-averaged Turbidity did not show the same trend of exceedances indicating no potential relationship to a sediment plume generated by dredging activities.

The exceedance was hence considered to be isolated case and may likely be due to the regional natural fluctuation.

As per the requirements of the *EM&A Manual*, the incident was notified to the Franchisee's Site Representative, the Contractor and the Independent Environmental Checker upon identification of an exceedance.

The temporal and spatial trend of the results collected during the impact monitoring have been plotted against those collected during the baseline monitoring and are discussed below. Results are illustrated in *Figure G3* in *Annex G*.

#### *Dissolved Oxygen*

During impact monitoring, depth-averaged DO and bottom DO levels at all stations are generally comparable with those levels recorded during the baseline monitoring. It is noted that there appeared to be a decreasing trend in both DO levels at Impact Stations between 8 and 12 September, however, as this pattern was also observed in both upstream and control stations, it is considered unlikely that these levels are attributable to Project works.

#### *Suspended Solids*

During impact monitoring on the flood tide, SS levels at all stations were found to be generally comparable with those recorded during the baseline monitoring. An exception was noted on 4 and 18 September where maximum levels were higher than those recorded during other monitoring events. As levels returned to levels comparable with other monitoring events the following day, such fluctuations are not considered to be of a concern but rather isolated events. Furthermore, it is noted that upstream Control Station C2 also recorded similar high levels on 5 September at mid ebb, indicating potentially natural fluctuations.

Based on the above, it is likely that the waters in the vicinity of the works site are influenced by other factors, such as natural fluctuations of DO and SS observed in the Pearl River Estuary.



### 3.3

#### ***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 E*.

## 4 ENVIRONMENTAL MONITORING

### 4.1 AIR AND NOISE

Air and Noise monitoring was not required for the project.

### 4.2 WATER QUALITY

In accordance to the EM&A Manual water quality monitoring recommenced on 1 September 2008 alongside dredging activities. QA/QC reports for Suspended Solids testing are presented in *Annex F*. Monitoring data and graphical presentations of the results are included in *Annex G*.

Results of the monitoring demonstrated that all measured turbidity levels of all Impact Stations were compliant with the Action and Limit (AL) Levels specified in the EM&A Manual. Exceedance of the Action Limit Levels for Depth-averaged Dissolved Oxygen (DO) was found on 4, 8, 9, 10, 11 and 12 September 2008 while exceedance of the Action Limit Levels for Bottom DO was found on 9, 10, 11 and 12 September 2008. Exceedance of the Action Level of Suspended Solids was found on 4 and 18 September 2008. A review of the above exceedances concluded that these were not attributable to Project works and were likely due to natural variation (see *Section 3.2* for further details).

### 4.3 POPs MONITORING

Biweekly monitoring of POPs in water samples was conducted on 3 and 17 September. All POPs parameters (ie total PCBs, total DDTs and total PAHs) were below detection limits. Monitoring results and QA/QC reports for POPs testing are presented in *Annex H*.

### 4.4 WASTE MANAGEMENT

The Contractor's revised Waste Management Plan (Revision 4) (WMP) was submitted to EPD on 20 September 2007. Pursuant to EP *Condition 3.3*, the Contractor submitted the updated and revised WMP (Revision 5) to the ET. The revised WMP has been certified by the ET and IEC.

### 4.5 CULTURAL HERITAGE

The *Watching Brief Report*, verified by the Independent Environmental Checker, was submitted to the EPD and AMO on 9 May 2008.

#### 4.6 *LANDSCAPE AND VISUAL*

According to the EIA report and EM&A Manual, mitigation measures and site inspection are required during the landscaping/planting works. The berm/landscaping bund was dominated by vegetation which was grown during the project suspension period. The transplanted trees were in good and healthy condition.

The weekly site inspections included audits on landscape and visual issues to ensure that the site was in orderly acceptable manner.

#### 4.7 *LAND CONTAMINATION, HAZARD TO LIFE AND FUEL SPILL RISK*

The ET and IEC verified updated design audit plan was submitted to the EPD on 7 November 2007.

Weekly site inspection covered the waste management aspects which included measures to prevent land contamination by chemical wastes.

#### 4.8 *ECOLOGY*

##### *Dolphin Visual Monitoring*

In accordance with *EM&A Manual*, dolphin monitoring has been undertaken during dredging activities since 1 September 2008. During the reporting period, a total of 11 dolphin sightings were recorded. Appropriate action was taken in accordance with the *EM&A Manual*. The sighting locations and field records are presented in *Annex I*.

#### 4.9 *EM&A MANUAL*

The *EM&A Manual* for the Project has been updated by the ET to include the detailed arrangements of setting up a Community Liaison Group, carrying out design audit, and monitoring of Persistent Organic Pollutants (POPs) during construction of the Project. No further actions regarding the *EM&A manual* were required during the reporting period.

#### 4.10 *BASELINE WATER QUALITY MONITORING*

The *Final Baseline Monitoring Report* was submitted to the EPD on 20 February 2008 and placed under the EIAO register.

## 5 *FUTURE KEY ISSUES AND CONCLUSION*

### 5.1 *KEY ISSUES FOR THE NEXT REPORTING PERIOD*

Key issues to be considered in the next one month will be:

- Dust release and suppression;
- Operation of dredging activities; and,
- Water quality monitoring and dolphin monitoring during the dredging activities.

### 5.2 *IMPACT PREDICTION FOR THE NEXT REPORTING PERIOD*

Provided that environmental mitigation measures including good on-site practises are properly implemented, it is not expected that unacceptable adverse impact will arise.

Based on the water quality monitoring results recorded to date, it may be expected that further exceedances in Dissolved Oxygen and possibly Suspended Solids may be recorded. However, as with those recorded so far, it is not expected that such exceedances would be attributable to Project Works.

### 5.3 *WORKS AND MONITORING SCHEDULE FOR THE NEXT REPORTING PERIOD*

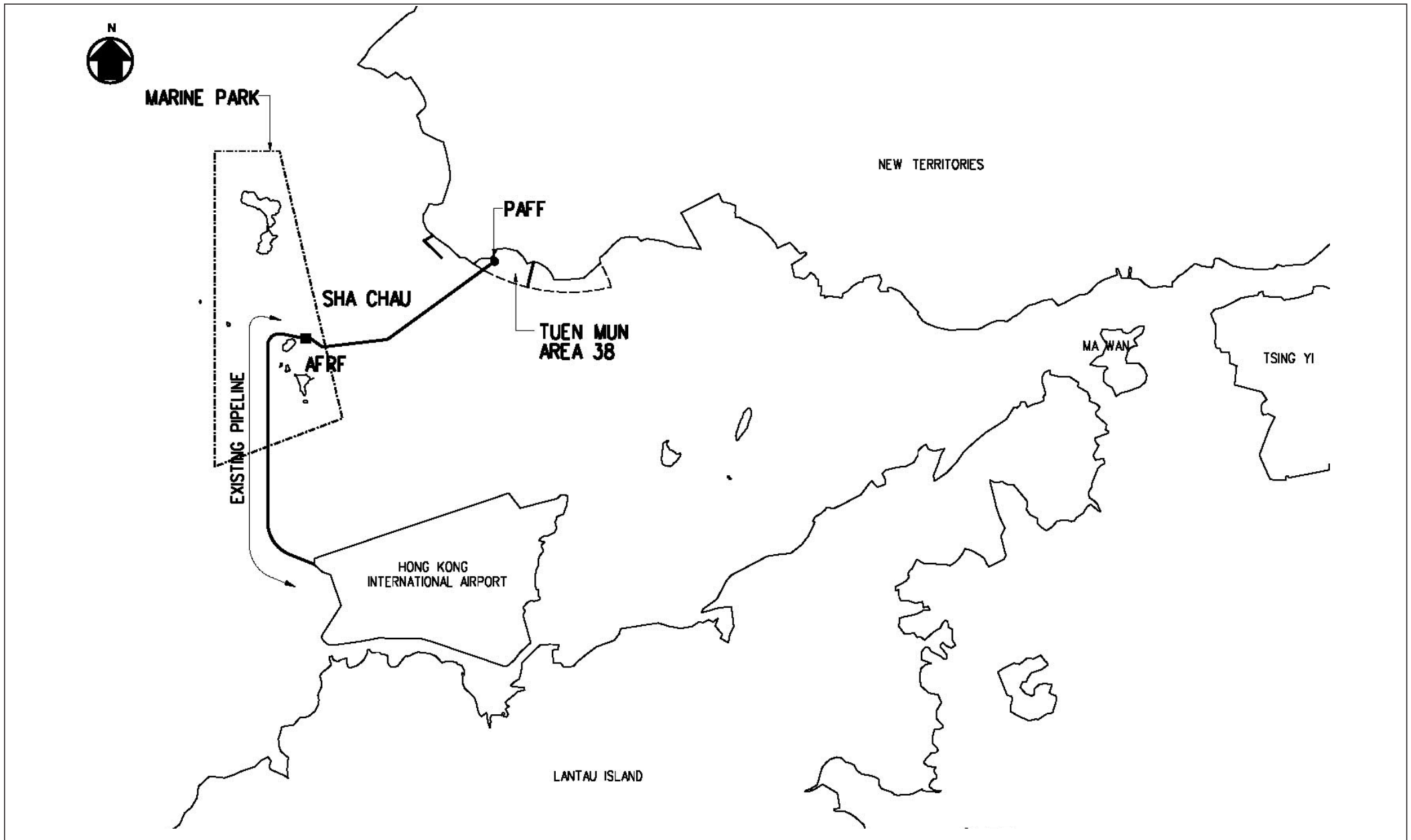
Work programme for the next reporting period includes jetty platform works (non-piling), site works (construction works for tank farm, operational and fire services buildings, pump platform, drainages, bund wall, security wall etc) and dredging operation. Weekly site inspections will be undertaken in accordance with the *EM&A Manual*.

### 5.4 *CONCLUSION*

The EM&A works were conducted throughout the construction period and the relevant monitoring was conducted in accordance with the EP's requirements. Mitigation measures were used to minimise the environmental impacts, where appropriate. Some environmental deficiencies were observed during the site inspections and the Contractor implemented corrective action to mitigate the issues. Overall, the site was in an orderly manner.

Annex A

## Project Location



Annex A

Location of PAFF

FILE: 0018105bb1  
DATE: 12/11/2007






Environmental  
Resources  
Management



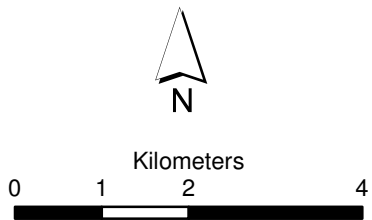
Annex B

Water Quality Monitoring  
Stations, Water Quality and  
Ecological Sensitive  
Receivers

**KEY**

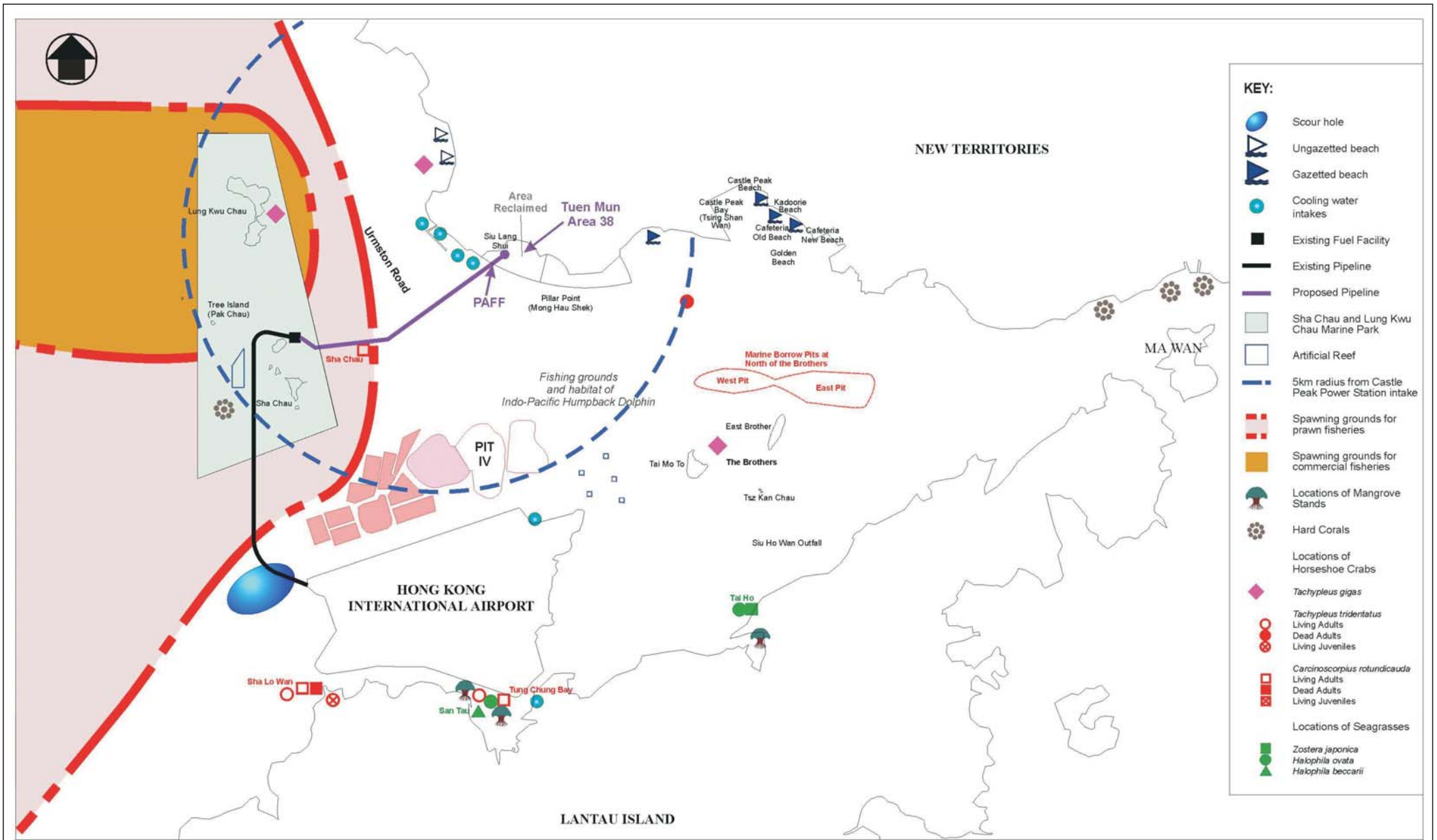
-  Control Stations
-  Impact Stations
-  Marine Park
-  Proposed Pipeline
-  Potential IMO1 & IMO2 Monitoring Zone

Marine Park  
(Water Sensitive Receiver)



Water Sensitive Receiver and Water Quality Monitoring Locations





Annex B

Water Quality and Ecological Sensitive Receivers

FILE: C2475aa  
DATE: 12/11/2007

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

Environmental  
Resources  
Management



Annex C

## Monitoring Schedule for the Reporting Period and Next Month

**PAFF**  
**Tentative Impact Water Quality Monitoring Schedule for September 2008**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep
	Mid-Ebb 14:02 Mid-Flood 20:21	Mid-Flood 08:12 Mid-Ebb 14:33	POP sampling Mid-Flood 08:52 Mid-Ebb 15:02	Mid-Flood 09:34 Mid-Ebb 15:30	Mid-Flood 10:21 Mid-Ebb 16:02	
07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep
	Mid-Ebb 06:57 Mid-Flood 19:31	Mid-Ebb 08:16 Mid-Flood 20:55	Mid-Ebb 09:20 Mid-Flood 21:58	Mid-Ebb 10:16 Mid-Flood 18:04	Mid-Ebb 11:03 Mid-Flood 18:22	
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
	Mid-Ebb 12:56 Mid-Flood 19:21	Mid-Ebb 13:29 Mid-Flood 19:41	POP sampling Mid-Ebb 14:03 Mid-Flood 20:06	Mid-Ebb 14:39 Mid-Flood 20:32	Mid-Flood 09:35 Mid-Ebb 15:18	
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
	Mid-Ebb 05:43 Mid-Flood 18:15	Mid-Ebb 07:02 Mid-Flood 20:01	Mid-Flood 16:59 Mid-Ebb 22:04	Mid-Ebb 09:54 Mid-Flood 17:23	Mid-Ebb 10:51 Mid-Flood 17:51	
28-Sep	29-Sep	30-Sep				
	Mid-Ebb 12:58 Mid-Flood 19:04	Mid-Ebb 13:31 Mid-Flood 19:26				

### Tentative Impact Water Quality Monitoring Schedule for October 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28-Sep	29-Sep	30-Sep	01-Oct	02-Oct	03-Oct	04-Oct
			Mid-Ebb 14:02 Mid-Flood 19:48	Mid-Flood 8:46 Mid-Ebb 14:33	Mid-Flood 9:28 Mid-Ebb 15:04	Mid-Flood 10:18 Mid-Ebb 15:37
05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct
Mid-Ebb 11:22 Mid-Flood 16:09	Mid-Ebb 4:48 Mid-Flood 17:06	Mid-Ebb 5:44 Mid-Flood 18:13	(POP sampling) Mid-Ebb 6:58 Mid-Flood 19:48	Mid-Flood 16:57 Mid-Ebb 22:16	Mid-Ebb 9:24 Mid-Flood 17:05	Mid-Ebb 10:17 Mid-Flood 17:24
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
Mid-Ebb 11:02 Mid-Flood 17:44	Mid-Ebb 11:42 Mid-Flood 18:02	Mid-Ebb 12:21 Mid-Flood 18:25	Mid-Ebb 13:00 Mid-Flood 18:51	Mid-Ebb 13:40 Mid-Flood 19:20	Mid-Ebb 8:47 Mid-Flood 14:22	Mid-Flood 9:48 Mid-Ebb 15:09
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
Mid-Flood 10:54 Mid-Ebb 15:57	Mid-Flood 12:08 Mid-Ebb 16:41	Mid-Ebb 5:26 Mid-Flood 18:04	(POP sampling) Mid-Ebb 6:41 Mid-Flood 19:44	Mid-Flood 16:02 Mid-Ebb 21:47	Mid-Ebb 9:28 Mid-Flood 16:34	Mid-Ebb 10:24 Mid-Flood 17:01
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	01-Nov
Mid-Ebb 11:10 Mid-Flood 17:25	Mid-Ebb 11:52 Mid-Flood 17:49	Mid-Ebb 12:30 Mid-Flood 18:12	Mid-Ebb 13:06 Mid-Flood 18:36	Mid-Ebb 13:40 Mid-Flood 19:00	Mid-Flood 14:13 Mid-Ebb 19:23	

Annex D

## Cumulative Complaints Statistics

*Summary of Environmental Complaints*

Reporting Period	Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
Before construction works	1	1	Dust
18/11/05 - 15/12/05	1	2	Dust
15/12/05 - 14/01/06	0	2	Nil
15/01/06 - 14/02/06	0	2	Nil
15/02/06 - 14/03/06	0	2	Nil
15/03/06 - 14/04/06	0	2	Nil
15/04/06 - 14/05/06	0	2	Nil
15/05/06 - 14/06/06	0	2	Nil
15/06/06 - 14/07/06	0	2	Nil

Re-commencement of construction works on 9<sup>th</sup> July 2007

09/07/07 - 31/07/07	0	2	Nil
01/08/07 - 31/08/07	0	2	Nil
01/09/07 - 30/09/07	0	2	Nil
01/10/07 - 31/10/07	0	2	Nil
01/11/07 - 30/11/07	0	2	Nil
01/12/07 - 31/12/07	0	2	Nil
01/01/08 - 31/01/08	0	2	Nil
01/02/08 - 29/02/08	0	2	Nil
01/03/08 - 31/03/08	0	2	Nil
01/04/08 - 30/04/08	0	2	Nil
01/05/08 - 31/05/08	0	2	Nil
01/06/08 - 30/06/08	0	2	Nil
01/07/08 - 31/07/08	0	2	Nil
01/08/08 - 31/08/08	0	2	Nil
01/09/08 - 30/09/08	0	2	Nil

## Summary of Environmental Summons

Reporting Period	Environmental Summons		
	Frequency	Cumulative	Summon Nature
18/11/05 - 15/12/05	0	0	Nil
16/12/05 - 14/01/06	0	0	Nil
15/01/06 - 14/02/06	0	0	Nil
15/02/06 - 14/03/06	0	0	Nil
15/03/06 - 14/04/06	0	0	Nil
15/04/06 - 14/05/06	0	0	Nil
15/05/06 - 14/06/06	0	0	Nil
15/06/06 - 14/07/06	0	0	Nil

Re-commencement of construction works on 9<sup>th</sup> July 2007

09/07/07 - 31/07/07	0	0	Nil
01/08/07 - 31/08/07	0	0	Nil
01/09/07 - 30/09/07	0	0	Nil
01/10/07 - 31/10/07	0	0	Nil
01/11/07 - 30/11/07	0	0	Nil
01/12/07 - 31/12/07	0	0	Nil
01/01/08 - 31/01/08	0	0	Nil
01/02/08 - 29/02/08	0	0	Nil
01/03/08 - 31/03/08	0	0	Nil
01/04/08 - 30/04/08	0	0	Nil
01/05/08 - 31/05/08	0	0	Nil
01/06/08 - 30/06/08	0	0	Nil
01/07/08 - 31/07/08	0	0	Nil
01/08/08 - 31/08/08	0	0	Nil
01/09/08 - 30/09/08	0	0	Nil

Annex E

Implementation  
Programme of Mitigation  
Measures



## ANNEX E IMPLEMENTATION SCHEDULE

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
<b>Water Quality</b>										
6.7	6.8.1	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.	Marine Park / Pipeline Dredging	Contractor	TMEIA		Y		N/A	On going
6.7	6.8.1	No hydraulic dredging within Marine Park.	Marine Park / Pipeline Dredging	Contractor	TMEIA		Y		N/A	Completed
6.7	6.8.1	Dredging for pipeline trench should be timed to coincide with maintenance dredging for Sha Chau AFRF marine access channel if relevant.	Sha Chau AFRF Marine access channel	Airport Authority	TMEIA		Y		N/A	On going
6.4		The work rate for dredging should not exceed 4,000 m <sup>3</sup> /hr for the TSHD and 7,000 m <sup>3</sup> /day for the grab dredger.	Marine Park / Pipeline Dredging	Contractor	TMEIA		Y		N/A	On going
6.7	6.8.1	Standard good dredging practice measures shall be written in the dredging contract.	Marine Park / Pipeline Dredging	Franchisee	TMEIA		Y		N/A	On going
6.7	6.8.1	Use of Lean Material Overboard (LMOB) systems shall be prohibited. No mud overflow is to be permitted for dredging using TSHD.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	Not applicable
6.7	6.8.1	Mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	On going
6.7	6.8.1	Barges and hopper dredgers shall have tight fittings seals to their bottom openings to prevent leakage of material.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	On going

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
6.7	6.8.1	Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	Not applicable
6.7	6.8.1	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.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	On going
6.7	6.8.1	Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	On going
6.7	6.8.1	Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	On going
6.7	6.8.1	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.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	On going
6.7	6.8.1	The works shall not cause foam, oil, grease, letter or other objectionable matter to be present in the water within and adjacent to the works site.	Dredged areas/ Pipeline Dredging	Contractor	TMEIA Marine Fill Committee Guidelines. DASO permit conditions		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
6.7	6.8.1	Placement of pipeline trench backfill should be undertaken in a controlled manner to minimise 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	Pipeline trench/ Pipeline Dredging	Contractor	TMEIA Minimise disturbance		Y		N/A	Pending
6.7	6.8.1	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	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.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Storm drainage should 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 facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	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.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
6.7	6.8.1	Temporary access roads should be surfaced with crushed stone or gravel.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	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.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
6.7	6.8.1	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/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	The section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	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.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	The contractors shall prepare oil/chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
6.7	6.8.1	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	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.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	Land site/ Throughout construction period	Contractor	TMEIA ProPECC Note 1/94. WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	6.8.1	Wastewater from pipe commissioning dewatering exercises shall be stored on site and for chemical analysis and safe disposal in accordance with the WPCO.	Tank Farm/Tank farm commissioning	Franchisee	TMEIA WPCO TM on Effluent Standards		Y		N/A	Ongoing
6.7	Section 6	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	Land site/ Throughout construction period	Contractor	EM&A Manual		Y		N/A	Ongoing
6.7	Section 6	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.	Submarine pipeline	Franchisee	TMEIA Rock armour to minimum thickness of 1m	Y	Y		Franchisee	On going
6.7	Section 6	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.	All facilities	Franchisee	TMEIA Industry Standards e.g. Oil Companies International Marine Forum			Y	Franchisee	Pending

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
6.7	Section 6	Coupling points on the jetty will be protected with slop collection utilities.	Jetty	Franchisee	TMEIA Rock armour to minimum thickness of 1m	Y			Franchisee	On going
6.7	Section 6	Auxiliary tanks shall be permanently maintained at the tank farm for recovered fuel and slops.	Tank farm	Franchisee	TMEIA			Y	Franchisee	Pending
6.7	Section 6	Oily drainage systems and slop collection systems will connect to an oil/water separator.	Tank farm	Franchisee	TMEIA Industry Standards e.g. Oil Companies International Marine Forum		Y		Franchisee	On going
6.7	Section 6	All tanks shall be bunded to a capacity of at least 150% of the largest individual tank in each compound by 2040. Tank pits shall be protected by an impermeable bed (e.g. geotextile sheeting) to prevent seepage of aviation fuel to ground. A leak detection system shall be installed beneath the containment membrane.	Tank farm	Franchisee	TMEIA Hong Kong Code of Practice for Oil Installations, 1992		Y		Franchisee	On going
6.7	Section 6	There shall be no direct outlet from the bund. A collection pump shall be included in the base. Removal of accumulated rainwater shall be activated manually and discharged to storm drain via an oil/water separator.	Tank farm	Franchisee	TMEIA		Y		Franchisee	On going
6.7	Section 6	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.	Tank farm	Franchisee	TMEIA Hong Kong Code of Practice for Oil Installations, 1992			Y	Franchisee	Pending
6.7	Section 6	Valves shall be installed within the storm drainage system to facilitate the retention of spillages.	Tank farm	Franchisee	TMEIA		Y		Franchisee	On going

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
6.10	Section 6	Water quality monitoring shall be undertaken for suspended solids, turbidity, and dissolved oxygen.	Design monitoring stations as defined in EM&A Manual, section 6. Construction period when dredging takes place within 1000m of Marine Park and along entire length of the pipeline	Contractor	EM&A Manual		Y		N/A	Ongoing
6.10	Section 6	Routine water quality monitoring in the vicinity of the PAFF site to check the effectiveness of the proposed precautionary measures implemented for on-site spill control. The details of the monitoring to be undertaken will be prepared by the Franchisee as part of the PAFF Operations Manual and the details will be agreed with the relevant authorities within 3 months of the commencement of operation of the PAFF. Monitoring should include but not be limited to the parameters of TPH and PAH and reference should be made to the existing monitoring programme undertaken for the fuel tank farm on the HKIA platform.	Operational phase. Location and frequency to be determined and agreed with relevant authorities	Franchisee	EM&A Manual			Y	N/A	Pending
<b>Ecology</b> 7.8	5.3	Undertake post construction dolphin abundance monitoring.	Construction	Contractor	TMEIA		Y		N/A	Pending



EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
7.8	5.3	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.	250m around dredger/throughout dredging in Marine Park and along the length of pipeline	Contractor	TMEIA		Y		N/A	Ongoing
7.8	5.3	Avoidance of dolphin main calving season between March and August.	Throughout dredging in Marine Park and along the length of the pipeline	Contractor	TMEIA		Y		N/A	Ongoing
<b>Landscape &amp; Visual</b>										
8.10	7.2.1	The construction programme for the PAFF should be reduced to the shortest possible period.	PAFF site / throughout construction period	Contractor	TMEIA	Y	Y		N/A	Ongoing
8.10	7.2.1	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.	PAFF site / throughout construction period	Contractor	TMEIA		Y	Y	N/A	Ongoing
8.10	7.2.1	Temporary hoarding barriers should be of a recessive visual appearance in both colour and form.	PAFF site / throughout construction period	Contractor	TMEIA	Y	Y		N/A	Ongoing
8.10	7.2.1	Materials should be stored in areas with the least obstruction to residents, pedestrians and traffic.	PAFF site / throughout construction period	Contractor	TMEIA		Y	Y	N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
8.10	7.2.1	All material stockpiles should be covered with an impermeable material and sandbagging diversions should be placed around exposed soil.	PAFF site / throughout construction period	Contractor	TMEIA		Y	Y	N/A	Ongoing
8.10	7.2.1	Conservation of existing and imported soil resources.	PAFF site / throughout construction period of fuel tank expansion	Contractor	TMEIA			Y	N/A	Ongoing
8.10	7.2.1	A landscape perimeter bund comprising containment bund-wall, access road and planting buffer shall be built and maintained around the tank farm.	PAFF site / throughout construction period	Project Proponent	TMEIA	Y	Y	Y	Franchisee	Ongoing
8.10	7.2.1	The design of the PAFF should incorporate materials, details and textures which are visually recessive.	PAFF site / design	Project Proponent	TMEIA	Y	Y		N/A	Ongoing
8.10	7.2.1	Colours should be of low chromatic intensity to reduce the potential contrast between the structure and their background.	PAFF site tanks / design	Project Proponent	TMEIA	Y	Y		N/A	Ongoing
8.10	7.2.1	Visually permeable security fencing should be used around the perimeter.	Site perimeter	Project Proponent	TMEIA	Y	Y	Y	N/A	Ongoing
8.10	7.2.1	Minimum amount of lighting for the tanks shall be used, only applied for safety at the key access points and staircases.	Tanks / Operational phase	Project Proponent	TMEIA	Y	Y	Y	N/A	Ongoing
8.10	7.2.1	Limited lighting intensity on the site.	PAFF site / Operational phase	Project Proponent	TMEIA	Y	Y	Y	N/A	Ongoing
8.10	7.2.1	Directional down lighting is suggested to minimise light spill to the surrounding area.	PAFF site / Operational phase	Project Proponent	TMEIA	Y	Y	Y	N/A	Ongoing

### Cultural Heritage

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
9.8.1	9.2.1	Undertake a watching brief during dredging of the pipeline within 25m either side of anomalies SS1 and SS2. This should comprise: <ul style="list-style-type: none"> <li>Dredge operators to be made aware of the potential presence of cultural heritage material. The operators would be required to report to the AMO any unusual resistance and/or recovery of timbers, anchors or other wreck related material. Any obstacles encountered during the dredging that are of timber should be reported to the marine archaeologist. The obstacle should be avoided and not removed until it has been assessed by the marine archaeologist as to whether the obstacle is of cultural heritage importance;</li> <li>A marine archaeologist shall be on board the dredging barge during dredging within 25m either side of SS1 and SS2 in the event of any unusual resistance occurring or blockages which requires the dredge head to be brought on deck for cleaning and examination; and,</li> </ul>	Within vicinity of SS1 and SS2	Franchisee	TMEIA		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
		<ul style="list-style-type: none"> <li>Dredging to cease in the nominated area SS1 after 3 meters of sediment removal and after 1 metre for SS2. A dive survey will then be undertaken to examine the trench for possible cultural remains.</li> </ul>								
9.8.2	9.2.1	During the course of the watching brief, if the targets are identified as being potentially archaeologically important, then an immediate marine archaeological impact assessment in accordance with EIAO TM Annex 19 will be required to be undertaken by a qualified marine archaeologist.	With vicinity of SS1 and SS2	Franchisee	TMEIA		Y		N/A	Ongoing
9.8.4	9.2.1	Any changes, additions or alterations to the dredging method and alignment should be further assessed by marine archaeologist to determine if any further assessment is required.	Pipeline alignment	Franchisee	TMEIA		Y		N/A	Ongoing
<b>Fuel Spill Risk</b>										
11.4.1	10.2	Tank farms will be constructed in a bunded area surrounding the tanks which will have collection capacity of 150% of the maximum content of the largest tank.	Tank farm / Design Phase	Franchisee	TMEIA		Y		N/A	On going
11.4.1	10.2	Emergency shut down valves shall be installed within the wider site storm drainage system.	Tank farm / Design Phase	Franchisee	TMEIA		Y		N/A	On going
11.4.1	10.2	An impermeable membrane shall be installed in the tank foundation beneath the tank bottom.	Tank farm / Design Phase	Franchisee	TMEIA		Y		N/A	On going
11.4.1	10.2	Pipeline to be covered with a protective rock armour layer.	Pipelines/ Design Phase	Franchisee	TMEIA		Y		Franchisee	On going
11.4.1	10.2	An integrated leak detection system shall be installed to all pipelines to provide early detection of any leak.	Pipelines/ Design Phase	Franchisee	TMEIA		Y		N/A	On going

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
11.4.1	10.2	An automatic shut-off system shall be implemented for pipelines.	Pipelines/ Design Phase	Franchisee	TMEIA	Y			N/A	On going
11.4.1	10.2	A workboat shall be on standby at the jetty during tanker berthing.	Jetty/ During Tanker Berth	Franchisee	TMEIA	Y	Y		N/A	Pending
11.4.1	10.2	Skimmers shall be available for quick deployment in case of a spill.	Jetty/ During Tanker Berth	Franchisee	TMEIA	Y	Y		N/A	Pending
11.4.1	10.2	An emergency response plan shall be prepared prior to the operation of the PAFF.	Jetty/ During Tanker Berth	Franchisee	TMEIA	Y	Y		N/A	Pending
11.4.1	10.2	Operator-training programme shall be implemented.	Jetty/ During Tanker Berth	Franchisee	TMEIA	Y	Y		N/A	Pending
11.6	10.4	During the planning of the later phase of the tank farm development, in order to ensure that the required mitigation measures are undertaken at that time, review the EIA report only if the latest technology, industrial standards and statutory requirements have changed by that time.	During planning stage for future tank construction	Franchisee	TMEIA		Y		N/A	Pending

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
11.6	10.4	Regular inspections and audits will be undertaken by the Franchisee during the operational phase of the facility: <ul style="list-style-type: none"> <li>Two inspections every year of the tank farm, jetty and pipelines including one undertaken pursuant to the Joint Inspection Group (JIG) explained above;</li> <li>Inspection of the whole sub sea pipelines every 5 to 10 years;</li> <li>Health, Safety and Environmental audit of the facility once every 3 years; and,</li> <li>Inspection of the structural integrity of the tanks once per year.</li> </ul>	Operation	Franchisee	TMEIA			Y	N/A	Pending
11.6	10.4	Prepare an Environmental Management Plan to ensure the on-going adequacy of the fuel spill contingency plan and that it is being implemented as required and that the above mitigation measures have been incorporated and are effective.	Within 3 months of start of operation of the PAFF with audits every 24 months	Franchisee	TMEIA			Y	N/A	Pending
<b>Land Contamination</b>										
13.5.1	10.2	Bunding shall be provided by all fuel storage areas to at least 150% of largest individual tank in each compound.	Tank farm / Design	Franchisee	TMEIA	Y			N/A	On going
13.5.1	10.2	Relevant design standards for storage tanks, pipework, containment and drainage shall be adhered to.	Tank farm / Design	Franchisee	TMEIA	Y			N/A	On going
13.5.1	10.2	Plant inspections and maintenance shall be undertaken once per month.	Tank farm / Design	Franchisee	TMEIA	Y	Y	Y	N/A	On going
13.5.1	10.2	Impermeable lining shall be provided for all tank pits.	Tank farm / Design	Franchisee	TMEIA	Y			N/A	On going

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
13.5.1	10.2	Leak detection systems shall be provided to all valves.	Tank farm / Design	Franchisee	TMEIA	Y			N/A	On going
13.5.1	10.2	Surface drainage shall be contained and treated prior to discharge.	Tank farm / Design	Franchisee	TMEIA	Y	Y	Y	N/A	On going
13.5.1	10.2	Emergency spill response plans shall be prepared.	Tank farm / Design	Franchisee	TMEIA	Y		Y	N/A	Pending
13.5.1	10.2	Spill control materials and equipment shall be provided on site.	Tank farm / Design	Franchisee	TMEIA	Y		Y	N/A	Pending
13.5.1	10.2	Runoff from the roof of site buildings and landscaped areas shall be conveyed in closed drains to the nearest storm water drain to prevent the generation of excessive quantities of surface water which may be polluted.	Tank farm / Design	Franchisee	TMEIA	Y		Y	N/A	On going
13.5.5	10.2	Suitable absorbent materials (e.g. sand or earth) shall be kept on site to deal with spills. Chemical dispersants shall not be employed.	Tank farm / Design	Franchisee	TMEIA	Y			N/A	Pending
13.5.5	10.2	The facility shall be designed, constructed, operated and maintained in full accordance with the Code of Practice for Oil Installations, 1992.	Tank farm / Design	Franchisee	TMEIA	Y	Y	Y	N/A	On going
13.5.5	10.2	Tank pressure testing shall be carried out routinely to check for possible tank leaks. Product inventory monitoring shall be integrated into site management procedures to check for any abnormal or unexpected product loss.	Tank farm / Design	Franchisee	TMEIA	Y	Y	Y	N/A	On going
13.5.5	10.2	Tank overflow monitoring systems shall be installed and regularly tested. Inlet valves shall be designed to automatically shutdown on exceedance of "high-high level" to prevent over-filling.	Tank farm / Design	Franchisee	TMEIA	Y	Y	Y	N/A	On going
13.5.5	10.2	Pipe leakages shall be routinely checked for by means of a pressure sensitive leak detection system and routine inventory control.	Tank farm / Design	Franchisee	TMEIA	Y	Y	Y	N/A	On going

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
13.5.5	10.2	Drainage from areas of hardstanding shall be treated by means of oil/ water separators prior to discharge to storm drain. All surface drainage shall be fitted with closure valves to provided additional containment and facilitate clean up of any leaks.	Tank farm / Design	Franchisee	TMEIA	Y	Y	Y	N/A	On going
13.5.5	10.2	The delivery pipeline from the jetty and the supply line to the airport shall be fitted with pressure sensitive leak detectors.	Tank farm / Design	Franchisee	TMEIA	Y	Y		N/A	On going
<b>Waste Management</b>										
14.7.2	8.3.1	The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	The waste coordinator shall prepare and implement a Waste Management Plan which specifies procedures such as ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of waste does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposal.	Contract mobilisation	Contractor	TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material		Y		N/A	Ongoing



EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
14.7.2	8.3.1	The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.		Y		N/A	Ongoing
14.7.2	8.3.1	No waste shall be burnt on site.	PAFF Site throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Excavated material shall be used on site for purposes of landscaping or formation of bund walls as far as possible.	All site / throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	All material shall be reused on site as far as practicable, including formwork plywood, topsoil and excavated material.	All site / throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Suitable provisions shall be included in the construction contract to ensure that the Contractor sorts and recycles waste.	Contract preparation stage	HyD	TMEIA		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
14.7.2	8.3.1	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.	All areas / throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	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.	CEDD public fill stockpile in Mui Wo, North Lantau or Mui Wo refuse transfer stations / Throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Stockpile material shall avoid vegetated areas.	All areas / throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Stockpiles shall be covered by tarpaulin and/or watered as required.	All areas / throughout construction period, particularly during dry season	Contractor	TMEIA, Public Health and Municipal Services Ordinance (Cap 132) and the Public Cleansing and Prevention of Nuisances (Regional Council) By-laws		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
14.7.2	8.3.1	Storage of material on site should be kept to a minimum.	All areas / throughout construction period	Contractor	TMEIA, Public Cleansing and Prevention of Nuisances (Regional Council) By-laws		Y		N/A	Ongoing
14.7.2	8.3.1	Excavated material in trucks shall be covered by tarpaulins.	All areas, particularly at site exits / throughout construction period	Contractor	TMEIA, Reduce the potential for spillage and dust. Public Health and Municipal Services Ordinance (Cap 132) and the Public Cleansing and Prevention of Nuisances (Regional Council) By-laws		Y		N/A	Ongoing
14.7.2	8.3.1	Wheel washing facilities shall be used by all trucks leaving the site to prevent the transfer of mud onto public roads.	Site entrances and exits / throughout construction period	Contractor	TMEIA, Public Cleansing and Prevention of Nuisances (Regional Council) By-laws		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
14.7.2	8.3.1	Suitable chemical waste storage areas should be formed at the works site for temporary storage pending collection.	Works site/ throughout construction period	Contractor	TMEIA, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. A Guide to the Chemical Waste Control Scheme		Y		N/A	Ongoing
14.7.2	8.3.1	A licensed contractor shall be employed to collect chemical waste for delivery to a licensed treatment facility.	Chemical waste treatment facility at Tsing Yi / throughout construction period	Contractor	TMEIA, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. A Guide to the Chemical Waste Control Scheme		Y		N/A	Ongoing
14.7.2	8.3.1	Temporary storage areas for general refuse should be enclosed to avoid environmental impacts.	All areas/ throughout construction period	Contractor	TMEIA, Public Health and Municipal Services Ordinance		Y		N/A	Ongoing
14.7.2	8.3.1	Sufficient dustbins should be provided for storage of waste.	All areas/ throughout construction period	Contractor	TMEIA, Public Cleansing and Prevention of Nuisances Ordinance (Regional Council) By-laws, Public Health and Municipal Services Ordinance		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
14.7.2	8.3.1	General refuse should be cleared daily and should be disposed of to the nearest licensed facility.	All areas, WENT landfill or NWNT refuse transfer stations/ throughout construction period	Contractor	TMEIA, Sanitation and Conservancy (Regional Council) By-laws		Y		N/A	Ongoing
14.7.2	8.3.1	Waste oils, chemicals or solvents shall not be disposed of to drain.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Good site practice shall be implemented to avoid waste generation and promote waste minimisation.	PAFF site/ throughout construction period	Contractor	TMEIA		Y			Ongoing
14.7.2	8.3.1	Waste materials such as paper, metal, timber and waste oil shall be recycled as far as practicable.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Temporary structures used during construction shall be provided in the form of proprietary Protakabin type units sited on areas of permanent hard paving units as far as practicable.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Dredged marine mud shall be disposed of in a gazetted marine disposal ground under the requirements of the Dumping at Sea Ordinance.	PAFF site/ throughout construction period				Y		N/A	Ongoing
14.7.2	8.3.1	All waste containers shall be in good condition and fitted with lids or covers to prevent waste from escaping or the ingress of water.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	All waste containers shall be in a secure area on hardstanding.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
14.7.2	8.3.1	Emergency equipment to deal with any spillage or fire shall be kept on site.	PAFF site/ throughout construction period		TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	All containers used for storage of chemical waste shall be maintained in good condition and clearly labelled in both English and Chinese.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	All storage areas for chemical waste shall be: <ul style="list-style-type: none"> <li>Clearly labelled;</li> <li>Enclosed on at least 3 sides;</li> <li>Have impermeable floor and bunding sufficient to fully retain any spillage or leakages;</li> <li>Ventilated; and,</li> <li>Covered to prevent rainfall from entering.</li> </ul>	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	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.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	All leaking containers shall be contained and removed from site as soon as is reasonably practicable.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing
14.7.2	8.3.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.	PAFF site/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location / Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Schedule			Maintenance Agency	Implementation Status
						D	C	O		
14.7.2 Section 5	8.3.1	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All areas/ throughout construction period	Contractor	TMEIA		Y		N/A	Ongoing

Annex F

QA/QC Results for  
Laboratory Testing of  
Suspended Solids





### CERTIFICATE OF ANALYSIS

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*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

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*Quote number* : ----

*Page* : 1 of 4  
*Work Order* : HK0813876

*Date received* : 01-SEP-2008

*Date of issue* : 04-SEP-2008

*No. of samples* - *Received* : 52  
                  - *Analysed* : 52

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0813876 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0813876 : **Sample(s) were collected by ALS Technichem (HK) staff on 01 September, 2008.**  
**Water sample(s) analysed and reported on an as received basis.**

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hona Kona. Chapter 553. Section 6.

<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:-</u>
Fung Lim Chee, Richard	General Manager	Inorganics

#### ALS Laboratory Group

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A Campbell Brothers Limited Company



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 746125)</b>								
HK0813876-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	7	7	0.0
HK0813876-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 746126)</b>								
HK0813876-047	C2 (NM5) B ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	5	17.5
HK0813876-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	9	9	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 746127)</b>								
HK0813876-091	C1 (NM3) S MF	EA025: Suspended Solids (SS)	----	1	mg/L	12	11	8.6
HK0813876-102	C3 (NM6) B DUP MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 746125)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	108	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 746126)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 746127)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



### CERTIFICATE OF ANALYSIS

<i>Client</i>	: ERM HONG KONG	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MS KAREN LUI	<i>Contact</i>	: Wong Wai Man, Alice	<i>Work Order</i>	: <b>HK0813886</b>
<i>Address</i>	: 21/F, LINCOLN HOUSE, 979 KING'S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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<i>Facsimile</i>	: +852 2723 5660	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: EM&A FOR THE PERMANENT AVIATION FUEL FACILITY	<i>Quote number</i>	: ---	<i>Date received</i>	: 02-SEP-2008
<i>Order number</i>	: ---			<i>Date of issue</i>	: 05-SEP-2008
<i>C-O-C number</i>	: ---			<i>No. of samples</i>	- <i>Received</i> : 72
<i>Site</i>	: ---				- <i>Analysed</i> : 72

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0813886 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0813886 : **Sample(s) were collected by ALS Technichem (HK) staff on 02 September, 2008.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

#### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 747384)</b>								
HK0813886-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0
HK0813886-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 747385)</b>								
HK0813886-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	14	16	14.0
HK0813886-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	9	8	21.6
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 747386)</b>								
HK0813886-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	4	28.1
HK0813886-066	MPB2 B DUP MF	EA025: Suspended Solids (SS)	----	1	mg/L	34	34	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 747387)</b>								
HK0813886-091	C1 (NM3) S MF	EA025: Suspended Solids (SS)	----	1	mg/L	7	6	0.0
HK0813886-094	C1 (NM3) M DUP MF	EA025: Suspended Solids (SS)	----	1	mg/L	10	11	11.6

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 747384)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	109	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 747385)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	110	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 747386)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	108	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 747387)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	104	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



### CERTIFICATE OF ANALYSIS

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          FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

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*Quote number* : ----

*Page* : 1 of 4  
*Work Order* : **HK0813887**

*Date received* : 03-SEP-2008

*Date of issue* : 08-SEP-2008

*No. of samples* - *Received* : 70  
                  - *Analysed* : 70

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0813887 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0813887 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:-</u>
Fung Lim Chee, Richard	General Manager	Inorganics

#### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 748494)</b>								
HK0813887-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	16.0
HK0813887-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 748495)</b>								
HK0813887-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
HK0813887-047	C2 (NM5) B ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	15.4
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 748496)</b>								
HK0813887-059	MPB1 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	9	10	17.1
HK0813887-069	IMO1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 748497)</b>								
HK0813887-093	C1 (NM3) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	7	7	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 748494)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	90.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 748495)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 748496)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	88.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 748497)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	110	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

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*Page* : 1 of 5  
*Work Order* : **HK0813888**

*Date received* : 04-SEP-2008

*Date of issue* : 09-SEP-2008

*No. of samples* - *Received* : 74  
- *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0813888 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0813888 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 749598)</b>								
HK0813888-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
HK0813888-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 749599)</b>								
HK0813888-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	47	47	0.0
HK0813888-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	7	8	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 749600)</b>								
HK0813888-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	14	14	0.0
HK0813888-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 749601)</b>								
HK0813888-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	62	59	4.0
HK0813888-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 749598)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 749599)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	90.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 749600)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	91.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 749601)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	101	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.





### CERTIFICATE OF ANALYSIS

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*Order number* : ----  
*C-O-C number* : ----  
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*Page* : 1 of 5  
*Work Order* : **HK0813889**

*Date received* : 05-SEP-2008

*Date of issue* : 10-SEP-2008

*No. of samples* - *Received* : 74  
                  - *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0813889 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0813889 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

#### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 750937)</b>								
HK0813889-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	4	0.0
HK0813889-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 750938)</b>								
HK0813889-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	23	23	0.0
HK0813889-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 750939)</b>								
HK0813889-049	MP S MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
HK0813889-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 750940)</b>								
HK0813889-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	18	19	8.3
HK0813889-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	10	9	12.7

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 750937)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	104	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 750938)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	107	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 750939)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 750940)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.0	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



### CERTIFICATE OF ANALYSIS

*Client* : ERM HONG KONG  
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*Project* : EM&A FOR THE PERMANENT AVIATION FUEL  
          FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK0813890**

*Date received* : 08-SEP-2008

*Date of issue* : 11-SEP-2008

*No. of samples* - *Received* : 74  
                  - *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0813890 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0813890 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 752315)</b>								
HK0813890-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
HK0813890-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 752316)</b>								
HK0813890-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	5	0.0
HK0813890-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 752317)</b>								
HK0813890-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
HK0813890-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	20.1
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 752318)</b>								
HK0813890-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	26.6
HK0813890-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 752315)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	104	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 752316)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 752317)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	101	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 752318)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	90.5	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

*Client* : ERM HONG KONG  
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FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK0814211**

*Date received* : 09-SEP-2008

*Date of issue* : 12-SEP-2008

*No. of samples* - *Received* : 74  
- *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814211 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814211 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754098)</b>								
HK0814211-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
HK0814211-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	29.1
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754099)</b>								
HK0814211-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	5	0.0
HK0814211-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754100)</b>								
HK0814211-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	5	0.0
HK0814211-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	6	20.6
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754101)</b>								
HK0814211-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
HK0814211-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	32.9

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754098)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	92.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754099)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	108	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754100)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	104	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754101)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	110	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

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*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

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*Page* : 1 of 5  
*Work Order* : **HK0814206**

*Date received* : 10-SEP-2008

*Date of issue* : 13-SEP-2008

*No. of samples* - *Received* : 74  
                  - *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814206 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814206 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:-</u>
Fung Lim Chee, Richard	General Manager	Inorganics

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754942)</b>								
HK0814206-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	20.2
HK0814206-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754943)</b>								
HK0814206-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	18.9
HK0814206-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754944)</b>								
HK0814206-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	3	4	0.0
HK0814206-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 754945)</b>								
HK0814206-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
HK0814206-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	5	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754942)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	95.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754943)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	103	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754944)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	94.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 754945)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.





## CERTIFICATE OF ANALYSIS

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*C-O-C number* : ----  
*Site* : ----

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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK0814207**

*Date received* : 11-SEP-2008

*Date of issue* : 17-SEP-2008

*No. of samples* - *Received* : 74  
                  - *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814207 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814207 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:-</u>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 756413)</b>								
HK0814207-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
HK0814207-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 756414)</b>								
HK0814207-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	9	9	0.0
HK0814207-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	16.2
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 756415)</b>								
HK0814207-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
HK0814207-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	9	8	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 756416)</b>								
HK0814207-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
HK0814207-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	7	6	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 756413)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	110	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 756414)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	110	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 756415)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 756416)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.0	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: ERM HONG KONG	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MS KAREN LUI	<i>Contact</i>	: Wong Wai Man, Alice	<i>Work Order</i>	: <b>HK0814208</b>
<i>Address</i>	: 21/F, LINCOLN HOUSE, 979 KING'S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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<i>Facsimile</i>	: +852 2723 5660	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: EM&A FOR THE PERMANENT AVIATION FUEL FACILITY	<i>Quote number</i>	: ---	<i>Date received</i>	: 12-SEP-2008
<i>Order number</i>	: ---			<i>Date of issue</i>	: 18-SEP-2008
<i>C-O-C number</i>	: ---			<i>No. of samples</i>	- <i>Received</i> : 74
<i>Site</i>	: ---				- <i>Analysed</i> : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814208 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814208 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 758821)</b>								
HK0814208-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	5	0.0
HK0814208-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 758822)</b>								
HK0814208-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	18	18	0.0
HK0814208-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 758823)</b>								
HK0814208-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	5	0.0
HK0814208-068	IMO1 S DUP MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 758824)</b>								
HK0814208-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	11	12	12.8
HK0814208-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 758821)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	92.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 758822)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	91.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 758823)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	92.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 758824)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.0	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

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          FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK0814209**

*Date received* : 16-SEP-2008

*Date of issue* : 19-SEP-2008

*No. of samples* - *Received* : 98  
                  - *Analysed* : 98

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814209 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814209 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 760247)</b>								
HK0814209-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	11	10	12.6
HK0814209-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	10	20.9
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 760248)</b>								
HK0814209-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0
HK0814209-033	IMO3 M ME	EA025: Suspended Solids (SS)	----	1	mg/L	9	10	11.3
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 760249)</b>								
HK0814209-043	C2 (NM5) S ME	EA025: Suspended Solids (SS)	----	1	mg/L	9	8	15.6
HK0814209-055	MPB1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	9	10	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 760250)</b>								
HK0814209-065	MPB2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	9	10	14.6
HK0814209-075	IMO2 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	9	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 760251)</b>								
HK0814209-085	IMO4 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	9	14.6
HK0814209-095	C1 (NM3) B MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 760247)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	104	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 760248)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	94.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 760249)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	107	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 760250)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 760251)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	90.5	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

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          FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
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*Page* : 1 of 5  
*Work Order* : **HK0814210**

*Date received* : 17-SEP-2008

*Date of issue* : 22-SEP-2008

*No. of samples* - *Received* : 74  
                  - *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814210 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814210 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 762435)</b>								
HK0814210-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	11	10	15.4
HK0814210-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	9	14.2
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 762436)</b>								
HK0814210-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	10	10	0.0
HK0814210-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	7	8	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 762437)</b>								
HK0814210-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	20	20	0.0
HK0814210-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	16	16	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 762438)</b>								
HK0814210-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	12	11	0.0
HK0814210-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	7	8	16.5

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 762435)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 762436)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	95.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 762437)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	95.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 762438)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.





### CERTIFICATE OF ANALYSIS

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*C-O-C number* : ----  
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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : HK0814213

*Date received* : 18-SEP-2008

*Date of issue* : 23-SEP-2008

*No. of samples* - *Received* : 74  
                  - *Analysed* : 74

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814213 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814213 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 763696)</b>								
HK0814213-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	17	17	0.0
HK0814213-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	18	17	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 763697)</b>								
HK0814213-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	10	10	0.0
HK0814213-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	12	11	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 763698)</b>								
HK0814213-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	15	14	0.0
HK0814213-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	12	13	11.2
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 763699)</b>								
HK0814213-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	11	12	0.0
HK0814213-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	13	11	16.7

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 763696)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	94.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 763697)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	104	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 763698)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 763699)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

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*Order number* : ----  
*C-O-C number* : ----  
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*Laboratory* : ALS Technichem (HK) Pty Ltd  
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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK0814212**

*Date received* : 19-SEP-2008

*Date of issue* : 24-SEP-2008

*No. of samples* - *Received* : 98  
                  - *Analysed* : 98

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0814212 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0814212 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
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<u>Signatory</u>	<u>Position</u>	<u>Authorised results for:-</u>
Fung Lim Chee, Richard	General Manager	Inorganics

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 764915)</b>								
HK0814212-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	3	3	0.0
HK0814212-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	4	23.6
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 764916)</b>								
HK0814212-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
HK0814212-033	IMO3 M ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 764917)</b>								
HK0814212-043	C2 (NM5) S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	26.3
HK0814212-055	MPB1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 764918)</b>								
HK0814212-065	MPB2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
HK0814212-075	IMO2 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	7	8	14.9
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 764919)</b>								
HK0814212-085	IMO4 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	4	0.0
HK0814212-095	C1 (NM3) B MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	22.2

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 764915)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 764916)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	93.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 764917)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 764918)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 764919)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	112	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



### CERTIFICATE OF ANALYSIS

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*Project* : EM&A FOR THE PERMANENT AVIATION FUEL  
          FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : HK0815350

*Date received* : 22-SEP-2008

*Date of issue* : 25-SEP-2008

*No. of samples* - *Received* : 94  
                  - *Analysed* : 94

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0815350 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0815350 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 766404)</b>								
HK0815350-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	21.9
HK0815350-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 766405)</b>								
HK0815350-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
HK0815350-035	IMO3 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 766406)</b>								
HK0815350-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
HK0815350-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 766407)</b>								
HK0815350-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	3	4	0.0
HK0815350-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	11	11	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 766408)</b>								
HK0815350-089	IMO4 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0
HK0815350-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	7	7	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 766404)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	88.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 766405)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	93.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 766406)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	94.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 766407)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 766408)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: ERM HONG KONG	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS KAREN LUI	<i>Contact</i>	: Wong Wai Man, Alice	<i>Work Order</i>	: <b>HK0815079</b>
<i>Address</i>	: 21/F, LINCOLN HOUSE, 979 KING'S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: Karen.Lui@erm.com	<i>E-mail</i>	: Alice.Wong@alsenviro.com		
<i>Telephone</i>	: +852 2271 3000	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: +852 2723 5660	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: EM&A FOR THE PERMANENT AVIATION FUEL FACILITY	<i>Quote number</i>	: ---	<i>Date received</i>	: 23-SEP-2008
<i>Order number</i>	: ---			<i>Date of issue</i>	: 26-SEP-2008
<i>C-O-C number</i>	: ---			<i>No. of samples</i>	- Received : 44
<i>Site</i>	: ---				- Analysed : 44

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0815079 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0815079 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 768578)</b>								
HK0815079-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.0
HK0815079-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	3	39.7
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 768579)</b>								
HK0815079-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.0
HK0815079-035	IMO3 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	4	21.8
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 768580)</b>								
HK0815079-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	2	4	60.5

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 768578)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	92.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 768579)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	90.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 768580)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.0	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.





## CERTIFICATE OF ANALYSIS

<i>Client</i>	: ERM HONG KONG	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MS KAREN LUI	<i>Contact</i>	: Wong Wai Man, Alice	<i>Work Order</i>	: <b>HK0815201</b>
<i>Address</i>	: 21/F, LINCOLN HOUSE, 979 KING'S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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<i>Telephone</i>	: +852 2271 3000	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: +852 2723 5660	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: EM&A FOR THE PERMANENT AVIATION FUEL FACILITY	<i>Quote number</i>	: ---	<i>Date received</i>	: 25-SEP-2008
<i>Order number</i>	: ---			<i>Date of issue</i>	: 30-SEP-2008
<i>C-O-C number</i>	: ---			<i>No. of samples</i>	- <i>Received</i> : 94
<i>Site</i>	: ---				- <i>Analysed</i> : 94

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0815201 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0815201 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 770077)</b>								
HK0815201-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	20	21	6.8
HK0815201-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	8	25.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 770078)</b>								
HK0815201-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	21	22	0.0
HK0815201-035	IMO3 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	18.2
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 770079)</b>								
HK0815201-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	12	11	0.0
HK0815201-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	6	26.2
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 770080)</b>								
HK0815201-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	21	22	0.0
HK0815201-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	12	12	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 770081)</b>								
HK0815201-089	IMO4 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	10	8	17.0
HK0815201-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	11	11	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 770077)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 770078)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 770079)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 770080)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	103	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 770081)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	94.0	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

*Client* : ERM HONG KONG  
*Contact* : MS KAREN LUI  
*Address* : 21/F, LINCOLN HOUSE, 979 KING'S ROAD,  
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*Project* : EM&A FOR THE PERMANENT AVIATION FUEL  
FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

*Laboratory* : ALS Technichem (HK) Pty Ltd  
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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK0815202**

*Date received* : 26-SEP-2008

*Date of issue* : 03-OCT-2008

*No. of samples* - *Received* : 94  
- *Analysed* : 94

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0815202 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0815202 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

Trading Name: **ALS Technichem (HK) Pty Ltd**

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 771047)</b>								
HK0815202-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
HK0815202-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 771048)</b>								
HK0815202-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0
HK0815202-035	IMO3 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	9	9	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 771049)</b>								
HK0815202-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	7	0.0
HK0815202-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 771050)</b>								
HK0815202-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	0.0
HK0815202-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	6	22.5
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 771051)</b>								
HK0815202-089	IMO4 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	5	0.0
HK0815202-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 771047)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 771048)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 771049)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	107	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 771050)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 771051)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	108	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



### CERTIFICATE OF ANALYSIS

<i>Client</i>	: ERM HONG KONG	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MS KAREN LUI	<i>Contact</i>	: Wong Wai Man, Alice	<i>Work Order</i>	: <b>HK0815200</b>
<i>Address</i>	: 21/F, LINCOLN HOUSE, 979 KING'S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: Karen.Lui@erm.com	<i>E-mail</i>	: Alice.Wong@alsenviro.com		
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<i>Project</i>	: EM&A FOR THE PERMANENT AVIATION FUEL FACILITY	<i>Quote number</i>	: ---	<i>Date received</i>	: 29-SEP-2008
<i>Order number</i>	: ---			<i>Date of issue</i>	: 06-OCT-2008
<i>C-O-C number</i>	: ---			<i>No. of samples</i>	- <i>Received</i> : 94
<i>Site</i>	: ---				- <i>Analysed</i> : 94

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0815200 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0815200 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

#### ALS Laboratory Group

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### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773242)</b>								
HK0815200-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	7	6	0.0
HK0815200-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773243)</b>								
HK0815200-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	5	5	0.0
HK0815200-035	IMO3 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	8	8	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773244)</b>								
HK0815200-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	6	6	0.0
HK0815200-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	22.7
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773245)</b>								
HK0815200-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	5	6	0.0
HK0815200-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	7	7	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773246)</b>								
HK0815200-089	IMO4 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	8	7	0.0
HK0815200-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	6	8	18.9

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773242)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	96.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773243)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773244)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	99.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773245)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	93.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773246)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

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*Project* : EM&A FOR THE PERMANENT AVIATION FUEL  
          FACILITY  
*Order number* : ----  
*C-O-C number* : ----  
*Site* : ----

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*Quote number* : ----

*Page* : 1 of 5  
*Work Order* : **HK0815257**

*Date received* : 30-SEP-2008

*Date of issue* : 08-OCT-2008

*No. of samples* - *Received* : 94  
                  - *Analysed* : 94

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0815257 supersedes any previous reports with this reference. The completion date of analysis is . 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 HK0815257 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**  
**Water sample(s) analysed and reported on an as received basis.**

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hona Kona. Chapter 553. Section 6.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics

### ALS Laboratory Group

Trading Name: **ALS Technichem (HK) Pty Ltd**

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A Campbell Brothers Limited Company



Sub-Matrix: MARINE WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	1 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
IMO2 B MF	[30-SEP-2008]	HK0815257-077	12				
IMO2 B DUP MF	[30-SEP-2008]	HK0815257-078	13				
IMO3 S MF	[30-SEP-2008]	HK0815257-079	13				
IMO3 S DUP MF	[30-SEP-2008]	HK0815257-080	13				
IMO3 B MF	[30-SEP-2008]	HK0815257-083	7				
IMO3 B DUP MF	[30-SEP-2008]	HK0815257-084	5				
IMO4 S MF	[30-SEP-2008]	HK0815257-085	13				
IMO4 S DUP MF	[30-SEP-2008]	HK0815257-086	12				
IMO4 M MF	[30-SEP-2008]	HK0815257-087	13				
IMO4 M DUP MF	[30-SEP-2008]	HK0815257-088	13				
IMO4 B MF	[30-SEP-2008]	HK0815257-089	13				
IMO4 B DUP MF	[30-SEP-2008]	HK0815257-090	15				
C1 (NM3) S MF	[30-SEP-2008]	HK0815257-091	15				
C1 (NM3) S DUP MF	[30-SEP-2008]	HK0815257-092	14				
C1 (NM3) M MF	[30-SEP-2008]	HK0815257-093	15				
C1 (NM3) M DUP MF	[30-SEP-2008]	HK0815257-094	13				
C1 (NM3) B MF	[30-SEP-2008]	HK0815257-095	13				
C1 (NM3) B DUP MF	[30-SEP-2008]	HK0815257-096	13				
C3 (NM6) S MF	[30-SEP-2008]	HK0815257-097	10				
C3 (NM6) S DUP MF	[30-SEP-2008]	HK0815257-098	8				
C3 (NM6) M MF	[30-SEP-2008]	HK0815257-099	10				
C3 (NM6) M DUP MF	[30-SEP-2008]	HK0815257-100	8				
C3 (NM6) B MF	[30-SEP-2008]	HK0815257-101	11				
C3 (NM6) B DUP MF	[30-SEP-2008]	HK0815257-102	8				





### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773924)</b>								
HK0815257-001	MP S ME	EA025: Suspended Solids (SS)	----	1	mg/L	12	12	0.0
HK0815257-013	MPB2 S ME	EA025: Suspended Solids (SS)	----	1	mg/L	17	19	14.7
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773925)</b>								
HK0815257-023	IMO1 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	17	19	12.6
HK0815257-035	IMO3 B ME	EA025: Suspended Solids (SS)	----	1	mg/L	10	9	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773926)</b>								
HK0815257-045	C2 (NM5) M ME	EA025: Suspended Solids (SS)	----	1	mg/L	12	10	10.0
HK0815257-057	MPB1 M MF	EA025: Suspended Solids (SS)	----	1	mg/L	14	14	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773927)</b>								
HK0815257-067	IMO1 S MF	EA025: Suspended Solids (SS)	----	1	mg/L	14	15	10.0
HK0815257-077	IMO2 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	12	14	14.7
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 773928)</b>								
HK0815257-089	IMO4 B MF	EA025: Suspended Solids (SS)	----	1	mg/L	13	14	0.0
HK0815257-099	C3 (NM6) M MF	EA025: Suspended Solids (SS)	----	1	mg/L	10	11	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773924)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773925)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	108	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773926)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	93.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773927)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	110	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 773928)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	105	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

Annex G

## Impact Water Quality Monitoring Results

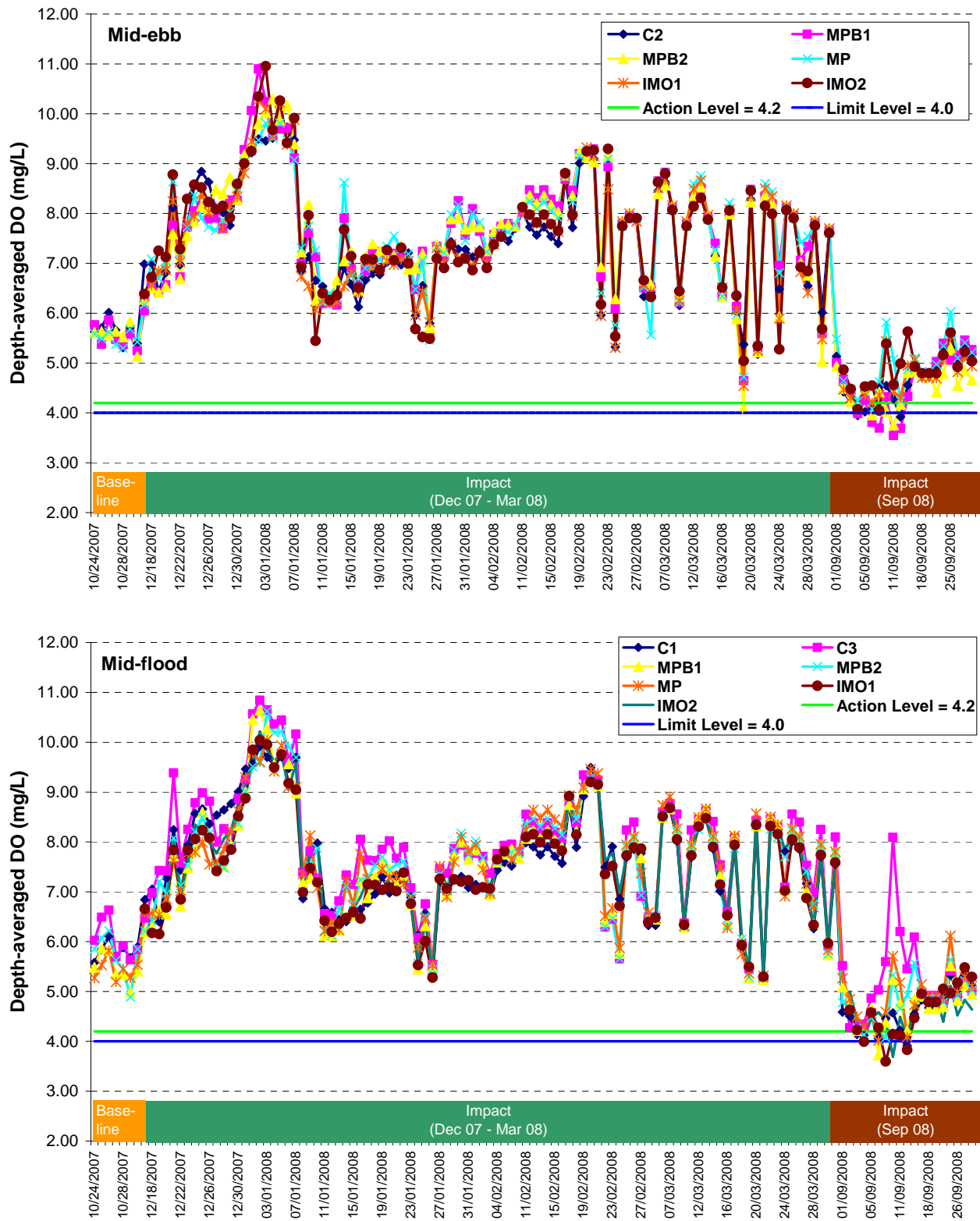


Figure G1 Dissolved oxygen concentration (depth-averaged) (mg/L) of water samples from the eight sampling locations at mid-ebb and mid-flood between 1 Sep to 30 Sep 08, and previous monitoring periods (24 to 30 Oct 07 for baseline monitoring; 17 Dec 07 to 31 Mar 08 for impact monitoring). No monitoring was conducted during public holidays and weekends, and typhoon event on 23 and 24 Sep 08 since no dredging operation was undertaken.



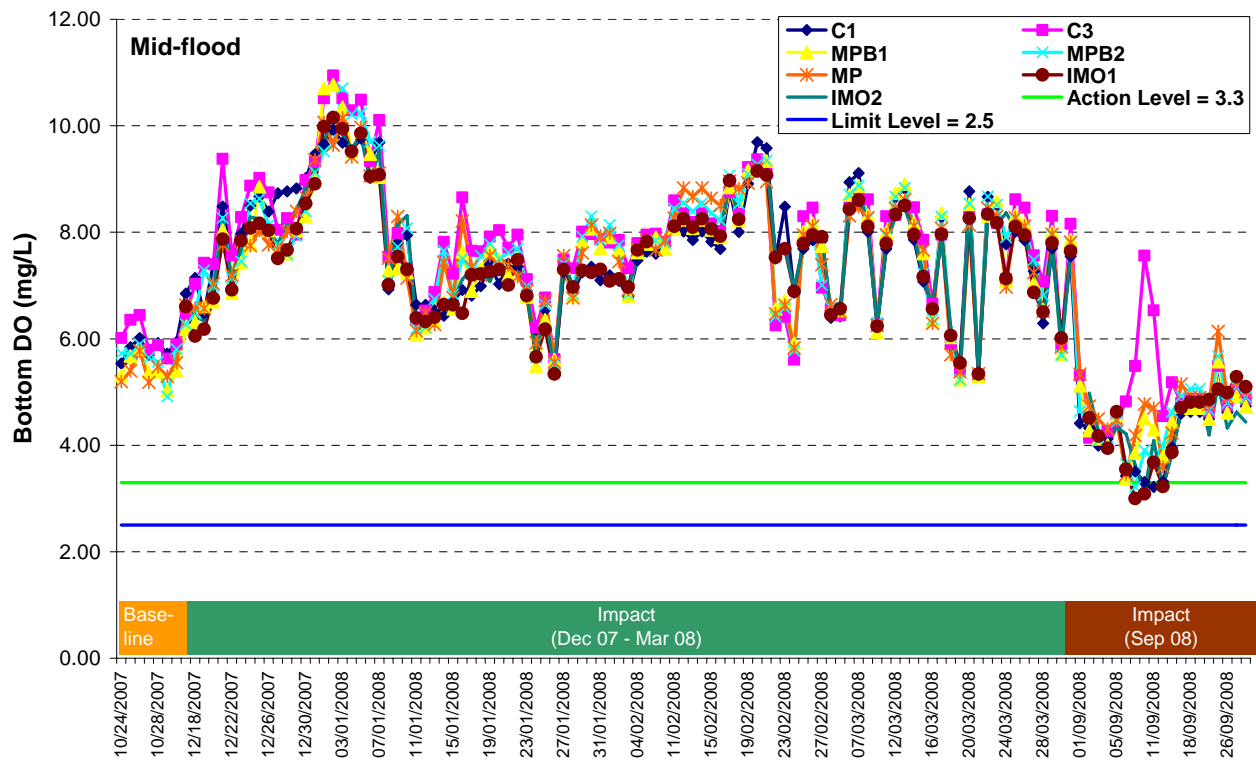
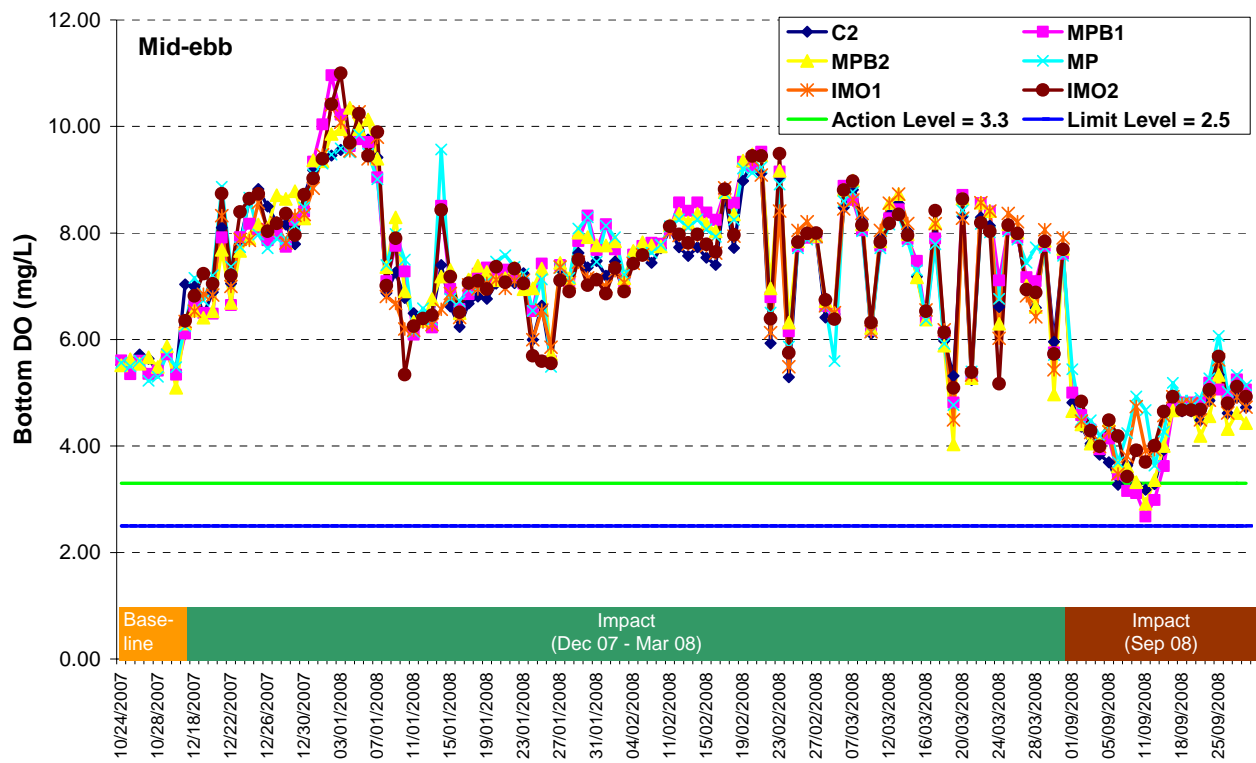


Figure G2 Dissolved oxygen concentration (bottom) (mg/L) of water samples from the eight sampling locations at mid-ebb and mid-flood between 1 Sep to 30 Sep 08, and previous monitoring periods (24 to 30 Oct 07 for baseline monitoring; 17 Dec 07 to 31 Mar 08 for impact monitoring). No monitoring was conducted during public holidays and weekends, and typhoon event on 23 and 24 Sep 08 since no dredging operation was undertaken.



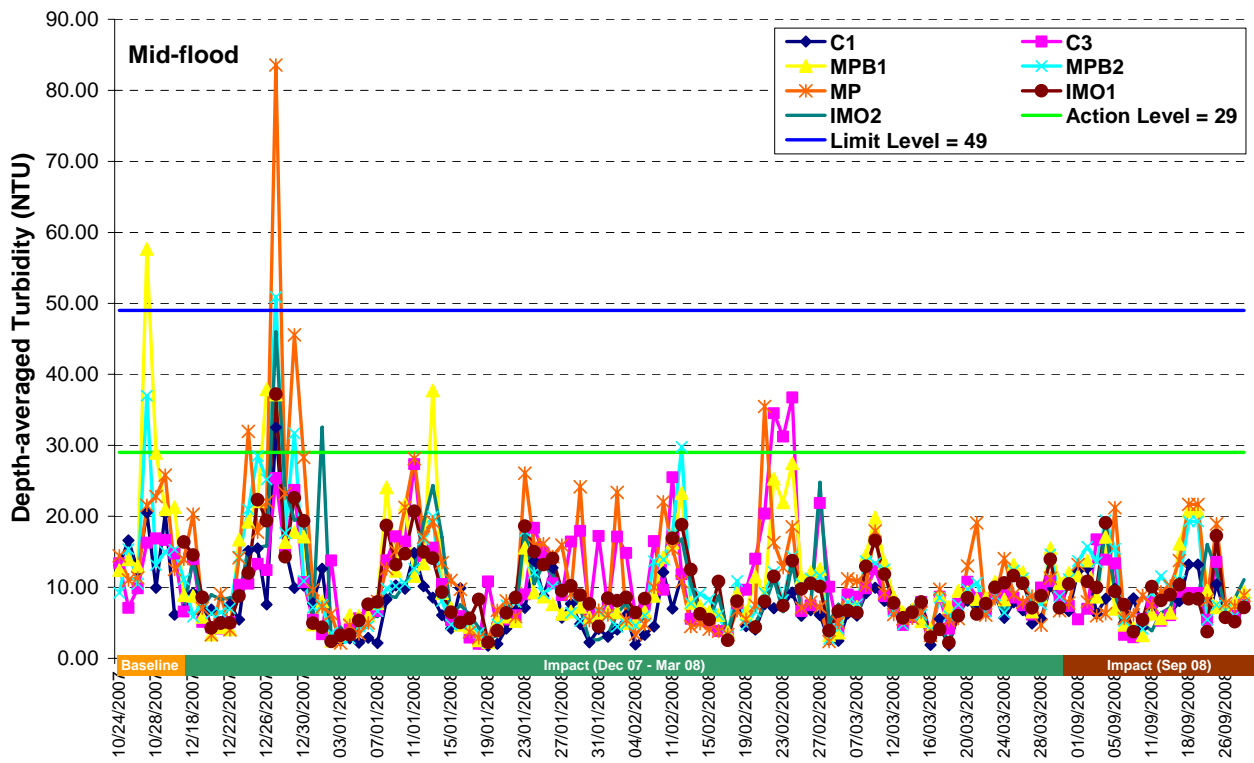
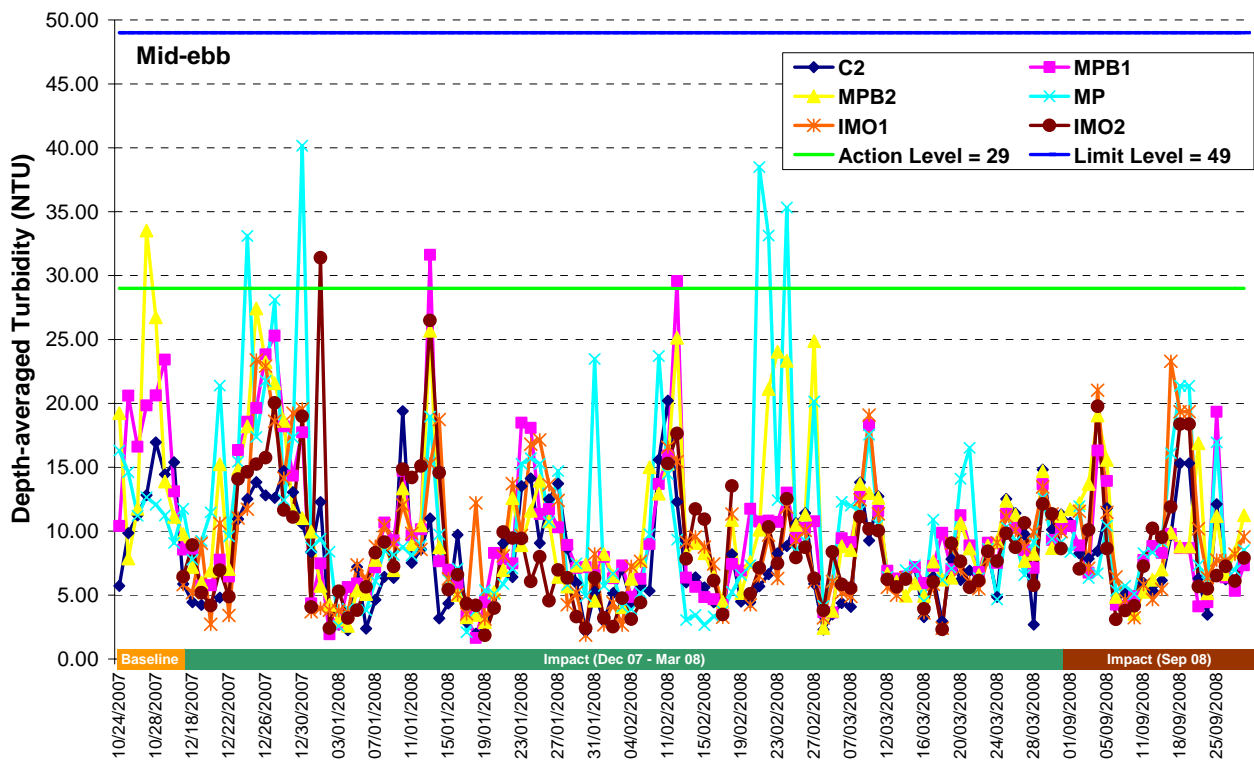


Figure G3 Depth-averaged turbidity (NTU) of water samples from the eight sampling locations at mid-ebb and mid-flood between 1 Sep to 30 Sep 08, and previous monitoring periods (24 to 30 Oct 07 for baseline monitoring; 17 Dec 07 to 31 Mar 08 for impact monitoring). No monitoring was conducted during public holidays and weekends, and typhoon event on 23 and 24 Sep 08 since no dredging operation was undertaken.



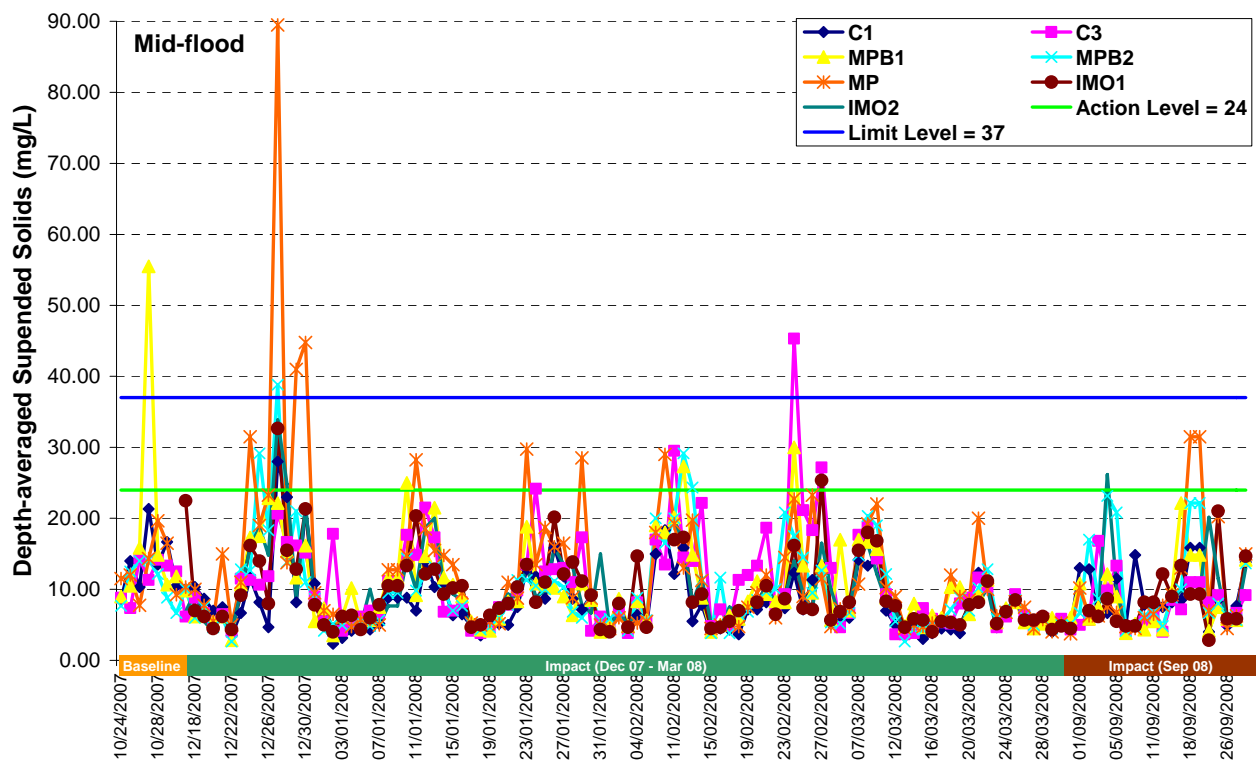
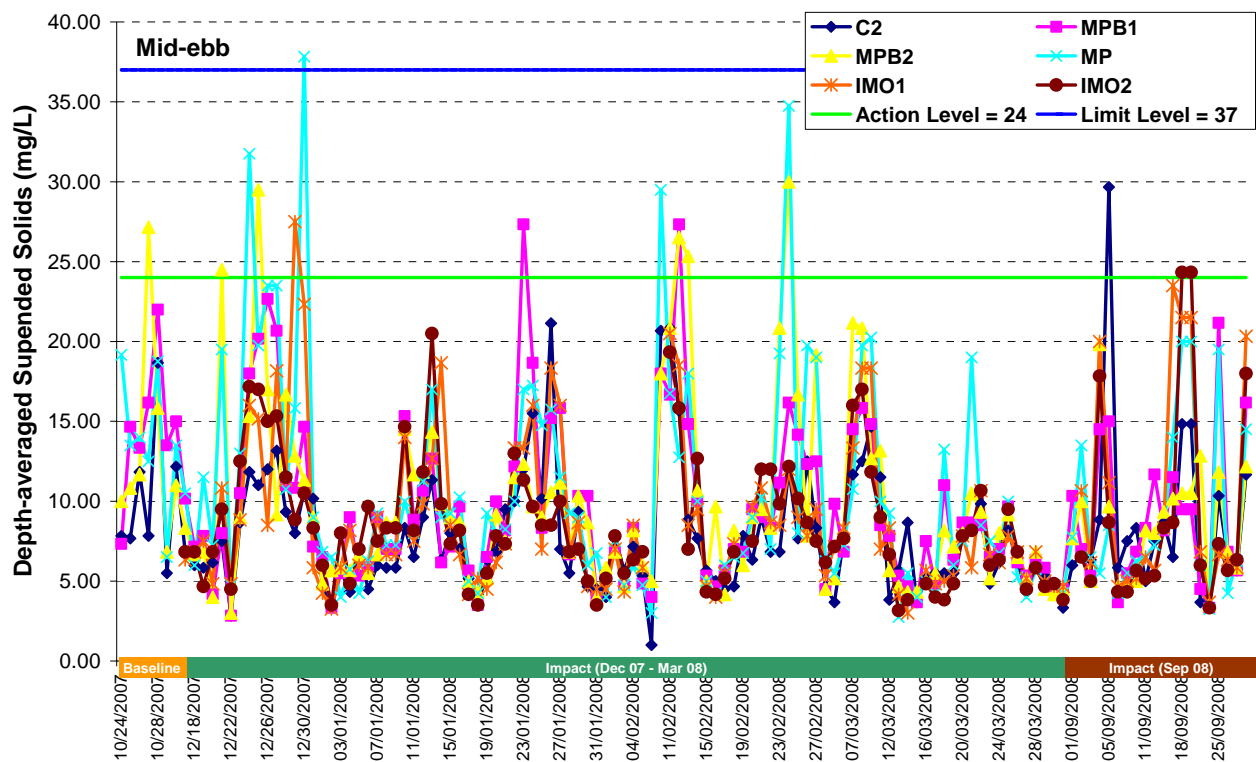


Figure G4 Depth-averaged suspended solids concentration (mg/L) of water samples from the eight sampling locations at mid-ebb and mid-flood between 1 Sep to 30 Sep 08, and previous monitoring periods (24 to 30 Oct 07 for baseline monitoring; 17 Dec 07 to 31 Mar 08 for impact monitoring). No monitoring was conducted during public holidays and weekends, and typhoon event on 23 and 24 Sep 08 since no dredging operation was undertaken.



Sampling Date	01/09/2008
Weather & Ambient Temperature	Fine, 31C

Station	C2 (NM5)							
Time (hh:mm)	14:00-14:04							
Water Depth (m)	20.2							
Monitoring Depth (m)	1.0		10.1		19.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.3	29.5	27.8	27.8	27.0	27.0	28.04	-
Salinity (ppt)	16.9	16.4	23.0	22.8	26.1	26.0	21.83	-
pH	7.2	7.4	7.2	7.4	7.1	7.3	7.26	-
D.O. Saturation (%)	80.4	79.1	74.2	70.9	73.6	66.2	74.07	-
D.O. (mg/L)	5.6	5.5	5.1	4.9	5.1	4.6	5.13	4.82
Turbidity (NTU)	4.9	5.3	6.6	6.4	20.3	20.4	10.65	-
SS (mg/L)	6.0	5.0	6.0	6.0	6.0	7.0	6.00	-
Remarks	No dredging works was observed.							

\*At the time of monitoring, dredger had not been mobilized yet and hence no monitoring was conducted at Stations IMO1 and IMO2.

Mid-Ebb

Station	MPB1							
Time (hh:mm)	14:27-14:29							
Water Depth (m)	8.0							
Monitoring Depth (m)	1.0		4.0		7.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	28.8	28.2	28.2	28.1	28.2	28.39	-
Salinity (ppt)	17.8	17.7	20.5	20.5	20.8	20.7	19.66	-
pH	7.4	7.4	7.4	7.4	7.4	7.4	7.41	-
D.O. Saturation (%)	72.4	72.5	70.9	71.5	70.9	72.8	71.83	-
D.O. (mg/L)	5.1	5.1	4.9	5.0	4.9	5.1	5.01	5.00
Turbidity (NTU)	9.2	8.8	11.5	10.6	11.5	10.9	10.42	-
SS (mg/L)	7.0	6.0	9.0	9.0	15.0	16.0	10.33	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	14:36-14:39							
Water Depth (m)	8.6							
Monitoring Depth (m)	1.0		4.3		7.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	29.1	28.5	28.5	26.8	27.5	28.22	-
Salinity (ppt)	18.0	17.2	19.4	19.5	26.8	24.8	20.95	-
pH	7.4	7.4	7.4	7.5	7.5	7.4	7.41	-
D.O. Saturation (%)	75.0	73.3	73.7	69.6	67.2	68.2	71.17	-
D.O. (mg/L)	5.2	5.1	5.1	4.9	4.6	4.7	4.94	4.66
Turbidity (NTU)	6.7	6.5	7.9	7.8	20.6	20.8	11.72	-
SS (mg/L)	6.0	6.0	8.0	9.0	9.0	8.0	7.67	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	14:20-14:21							
Water Depth (m)	4.4							
Monitoring Depth (m)	1.0		-		3.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.5	29.5	-	-	28.2	28.1	28.81	-
Salinity (ppt)	17.3	17.3	-	-	20.1	21.8	19.14	-
pH	7.3	7.3	-	-	7.3	7.3	7.31	-
D.O. Saturation (%)	81.6	77.5	-	-	77.0	79.4	78.88	-
D.O. (mg/L)	5.7	5.4	-	-	5.4	5.5	5.48	#DIV/0!
Turbidity (NTU)	8.3	8.2	-	-	8.4	8.6	8.38	-
SS (mg/L)	7.0	7.0	-	-	9.0	8.0	7.75	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%	
	Action Level	Limit Level	Action Level	Limit Level
DO (Bottom)	3.3	2.5	4.8	4.8
DO (Depth-averaged)	4.2	4.0	5.1	5.1
Turbidity (Depth-averaged)	29.0	49.0	13.8	13.8
SS (Depth-averaged)	24.0	37.0	7.8	7.8

	MPB1	MPB2	MP
Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
N	N	N	N
N	N	N	N
N	N	N	N
N	N	N	N

Sampling Date	01/09/2008
Weather & Ambient Temperature	Sunny, 30C

Mid-Flood

Station	C1 (NM3)								
Time (hh:mm)	20:41-20:44								
Water Depth (m)	15.4								
Monitoring Depth (m)	1.0		7.7		14.4				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.5	28.6	26.8	26.8	26.5	26.2	27.22	-	
Salinity (ppt)	21.4	21.0	26.8	26.5	27.7	28.6	25.35	-	
pH	7.2	7.2	7.3	7.3	7.3	7.3	7.24	-	
D.O. Saturation (%)	70.8	71.9	64.9	63.9	63.8	64.3	66.60	-	
D.O. (mg/L)	4.9	5.0	4.5	4.4	4.4	4.4	4.59	4.41	
Turbidity (NTU)	10.8	10.9	12.3	11.9	13.9	14.2	12.33	-	
SS (mg/L)	12.0	11.0	14.0	12.0	15.0	14.0	13.00	-	
Remarks	No dredging works was observed.								

Station	C3 (NM6)								
Time (hh:mm)	20:02-20:07								
Water Depth (m)	6.4								
Monitoring Depth (m)	1.0		3.2		5.4				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	29.9	29.9	29.6	29.1	28.7	28.7	29.33	-	
Salinity (ppt)	15.6	15.5	16.5	17.8	19.4	19.9	17.44	-	
pH	7.3	7.3	7.3	7.3	7.3	7.3	7.31	-	
D.O. Saturation (%)	82.7	82.0	78.8	79.8	78.3	74.9	79.42	-	
D.O. (mg/L)	5.8	5.7	5.5	5.6	5.4	5.2	5.52	5.32	
Turbidity (NTU)	4.7	4.6	5.1	4.9	6.9	6.7	5.48	-	
SS (mg/L)	4.0	5.0	5.0	6.0	5.0	5.0	5.00	-	
Remarks	No dredging works was observed.								

\*At the time of monitoring, dredger had not been mobilized yet and hence no monitoring was conducted at Stations IMO1 and IMO2.

Station	MPB1								
Time (hh:mm)	19:40-19:42								
Water Depth (m)	8.4								
Monitoring Depth (m)	1.0		4.2		7.4				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.6	29.0	28.1	28.1	28.1	28.0	28.31	-	
Salinity (ppt)	19.1	18.6	20.8	20.8	21.2	21.2	20.28	-	
pH	7.4	7.3	7.3	7.4	7.3	7.3	7.33	-	
D.O. Saturation (%)	72.1	75.8	73.1	71.1	75.7	71.7	73.25	-	
D.O. (mg/L)	5.0	5.3	5.1	5.0	5.3	5.0	5.09	5.12	
Turbidity (NTU)	8.6	8.4	12.6	12.8	13.5	14.2	11.68	-	
SS (mg/L)	9.0	9.0	9.0	8.0	16.0	14.0	10.83	-	
Remarks	No dredging works was observed.								

Station	MPB2								
Time (hh:mm)	19:49-19:51								
Water Depth (m)	8.8								
Monitoring Depth (m)	1.0		4.4		7.8				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.9	28.9	27.9	28.0	27.0	27.3	27.98	-	
Salinity (ppt)	18.1	18.1	22.3	21.4	25.1	25.0	21.67	-	
pH	7.5	7.5	7.5	7.5	7.6	7.5	7.51	-	
D.O. Saturation (%)	71.3	72.5	67.4	67.4	69.4	64.8	68.80	-	
D.O. (mg/L)	5.0	5.1	4.7	4.7	4.8	4.5	4.78	4.64	
Turbidity (NTU)	7.9	7.7	14.7	14.7	18.9	18.4	13.72	-	
SS (mg/L)	6.0	6.0	6.0	6.0	8.0	8.0	6.67	-	
Remarks	No dredging works was observed.								

Station	MP								
Time (hh:mm)	19:31-19:32								
Water Depth (m)	6.0								
Monitoring Depth (m)	1.0		3.0		5.0				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	29.5	29.7	28.4	28.5	27.5	27.8	28.56	-	
Salinity (ppt)	17.1	16.8	19.7	19.7	24.0	22.8	20.00	-	
pH	7.4	7.4	7.4	7.4	7.3	7.4	7.36	-	
D.O. Saturation (%)	77.2	78.2	73.6	72.2	77.5	76.8	75.92	-	
D.O. (mg/L)	5.4	5.4	5.1	5.0	5.4	5.3	5.27	5.34	
Turbidity (NTU)	9.5	9.1	14.3	14.8	16.0	15.7	14.90	-	
SS (mg/L)	7.0	7.0	12.0	11.0	12.0	12.0	10.17	-	
Remarks	No dredging works was observed.								

Compliance with Action and Limit Level

Parameter	As in EM&A		Mean(C1+C3)*130%	
	Action Level	Limit Level	Action Level	Limit Level
DO (Bottom)	3.3	2.5	4.9	4.9
DO (Depth-averaged)	4.2	4.0	5.1	5.1
Turbidity (Depth-averaged)	29.0	49.0	11.6	11.6
SS (Depth-averaged)	24.0	37.0	11.7	11.7

Exceedance of Action Level	MPB1		MPB2		MP	
	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level
N	N	N	N	N	N	N
N	N	N	N	N	N	N
N	N	N	N	N	N	N
N	N	N	N	N	N	N



Sampling Date	02/09/2008
Weather & Ambient Temperature	Fine, 31C

Station	C2 (NM5)								
Time (hh:mm)	14:41-14:43								
Water Depth (m)	19.0								
Monitoring Depth (m)	1.0		9.5		18.0				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	27.8	27.8	26.7	26.7	26.2	26.4	26.93	-	
Salinity (ppt)	22.2	22.7	27.0	27.3	29.1	28.2	26.08	-	
pH	7.2	7.3	7.2	7.3	7.2	7.2	7.23	-	
D.O. Saturation (%)	69.3	66.5	62.1	59.7	62.7	64.4	64.12	-	
D.O. (mg/L)	4.8	4.6	4.3	4.1	4.3	4.4	4.42	4.37	
Turbidity (NTU)	5.8	6.3	8.0	8.5	10.1	10.9	8.27	-	
SS (mg/L)	4.0	4.0	9.0	9.0	7.0	7.0	6.67	-	
Remarks	Dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	13:50-13:53						Northing	Easting
Water Depth (m)	7.0						22.20.957	113.53.241
Monitoring Depth (m)	1.0		3.5		6.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.1	28.4	27.7	27.8	27.2	26.8	27.67	-
Salinity (ppt)	21.4	20.4	22.6	21.8	25.0	26.7	22.99	-
pH	7.1	7.1	7.1	7.1	7.1	7.0	7.07	-
D.O. Saturation (%)	65.8	65.9	62.6	63.3	64.8	64.8	64.53	-
D.O. (mg/L)	4.6	4.6	4.3	4.4	4.5	4.46	4.47	4.47
Turbidity (NTU)	7.7	7.8	11.3	11.5	15.4	15.6	11.55	-
SS (mg/L)	6.0	6.0	11.0	12.0	14.0	15.0	10.67	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	14:18-14:20						Northing	Easting
Water Depth (m)	6.0						22.20.957	113.53.423
Monitoring Depth (m)	1.0		3.0		5.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.8	28.8	28.3	28.2	28.0	27.7	28.31	-
Salinity (ppt)	19.1	19.2	21.1	21.5	22.1	22.9	20.99	-
pH	7.0	7.0	7.0	7.0	7.0	7.0	7.01	-
D.O. Saturation (%)	72.1	72.4	69.0	68.0	68.6	71.0	70.18	-
D.O. (mg/L)	5.0	5.0	4.8	4.7	4.8	4.92	4.87	4.84
Turbidity (NTU)	5.9	5.9	7.3	7.4	7.5	8.3	7.05	-
SS (mg/L)	5.0	6.0	6.0	8.0	7.0	7.0	6.50	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.4	4.4	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.4	4.4	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	10.7	10.7	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	8.7	8.7	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	13:59-14:01							
Water Depth (m)	8.2							
Monitoring Depth (m)	1.0		4.1		7.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	28.9	28.2	28.1	27.6	27.6	28.20	-
Salinity (ppt)	19.0	18.9	20.5	20.6	23.2	23.4	20.95	-
pH	7.1	7.1	7.1	7.1	7.1	7.1	7.08	-
D.O. Saturation (%)	71.1	71.6	64.0	64.8	65.9	66.4	67.30	-
D.O. (mg/L)	4.9	5.0	4.5	4.5	4.6	4.6	4.67	4.58
Turbidity (NTU)	5.5	5.5	9.4	9.9	11.4	11.6	8.88	-
SS (mg/L)	4.0	6.0	6.0	8.0	8.0	10.0	7.00	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	14:08-14:10							
Water Depth (m)	8.8							
Monitoring Depth (m)	1.0		4.4		7.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.4	28.2	27.7	27.8	27.3	27.1	27.73	-
Salinity (ppt)	20.9	21.3	23.0	22.5	24.7	25.6	23.00	-
pH	7.2	7.2	7.1	7.2	7.1	7.2	7.16	-
D.O. Saturation (%)	67.6	68.0	64.0	62.2	66.6	61.0	64.90	-
D.O. (mg/L)	4.7	4.7	4.4	4.3	4.6	4.2	4.49	4.41
Turbidity (NTU)	7.2	7.8	9.3	9.7	19.4	19.8	12.20	-
SS (mg/L)	8.0	7.0	10.0	8.0	15.0	12.0	10.00	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	13:42-13:44							
Water Depth (m)	5.5							
Monitoring Depth (m)	1.0		2.7		4.5			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	28.8	-	-	27.2	27.2	28.04	-
Salinity (ppt)	19.5	19.9	-	-	25.1	24.8	22.30	-
pH	7.1	7.1	-	-	7.0	7.1	7.06	-
D.O. Saturation (%)	70.2	68.7	-	-	67.4	62.5	67.20	-
D.O. (mg/L)	4.9	4.8	-	-	4.7	4.3	4.65	4.49
Turbidity (NTU)	7.1	7.3	-	-	16.6	16.8	11.95	-
SS (mg/L)	8.0	8.0	-	-	20.0	18.0	13.50	-
Remarks	Dredging works was observed.							







Sampling Date	04/09/2008
Weather & Ambient Temperature	Fine, 30C

Station	C2 (NM5)								
Time (hh:mm)	14:37-14:40								
Water Depth (m)	19.8								
Monitoring Depth (m)	1.0		9.9		18.8				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.5	28.3	27.5	27.5	26.7	26.6	27.51	-	
Salinity (ppt)	18.9	19.7	24.4	24.6	27.0	27.1	23.61	-	
pH	7.0	7.0	7.1	7.1	7.1	7.1	7.07	-	
D.O. Saturation (%)	59.1	59.6	56.1	56.0	55.5	55.8	57.02	-	
D.O. (mg/L)	4.1	4.2	3.9	3.9	3.8	3.8	3.95	3.84	
Turbidity (NTU)	6.2	6.0	8.3	8.5	10.6	11.1	8.45	-	
SS (mg/L)	5.0	6.0	7.0	8.0	14.0	13.0	8.83	-	
Remarks	Dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	15:03-15:05						Northing	Easting
Water Depth (m)	6.6						22.21.610	113.53.236
Monitoring Depth (m)	1.0		3.3		5.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.3	28.4	28.0	28.0	27.5	27.5	27.93	-
Salinity (ppt)	19.6	19.3	20.7	20.6	23.5	23.5	21.19	-
pH	7.0	6.9	7.0	7.0	7.0	7.0	6.97	-
D.O. Saturation (%)	58.3	59.7	59.3	56.7	59.0	56.1	58.18	-
D.O. (mg/L)	4.1	4.2	4.1	4.0	4.1	3.89	4.05	3.99
Turbidity (NTU)	7.9	7.5	11.6	11.7	43.4	44.1	21.03	-
SS (mg/L)	6.0	6.0	9.0	8.0	47.0	44.0	20.00	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	15:33-15:35						Northing	Easting
Water Depth (m)	8.2						22.20.879	113.53.588
Monitoring Depth (m)	1.0		4.1		7.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.7	28.7	28.0	28.0	27.2	27.3	27.99	-
Salinity (ppt)	16.2	16.1	21.0	21.0	24.7	24.7	20.61	-
pH	6.9	6.9	6.9	7.0	7.0	7.0	6.95	-
D.O. Saturation (%)	60.1	59.4	57.8	57.1	58.0	57.6	58.33	-
D.O. (mg/L)	4.3	4.2	4.0	4.0	4.0	3.98	4.07	4.00
Turbidity (NTU)	7.2	6.6	10.8	10.6	41.6	41.8	19.77	-
SS (mg/L)	6.0	5.0	8.0	8.0	40.0	40.0	17.83	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	3.8	3.8	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	3.9	3.9	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	11.0	11.0	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	11.5	11.5	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	15:12-15:15							
Water Depth (m)	8.2							
Monitoring Depth (m)	1.0		4.1		7.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.5	27.7	27.7	27.5	27.5	27.90	-
Salinity (ppt)	18.7	19.0	22.7	22.7	23.7	23.8	21.78	-
pH	6.9	6.9	7.0	7.0	7.0	7.0	6.96	-
D.O. Saturation (%)	58.9	59.2	55.9	56.0	57.0	57.0	57.33	-
D.O. (mg/L)	4.1	4.1	3.9	3.9	3.9	3.9	3.98	3.94
Turbidity (NTU)	6.1	5.8	11.6	11.9	30.9	31.6	16.32	-
SS (mg/L)	5.0	5.0	13.0	12.0	25.0	27.0	14.50	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	15:21-15:23							
Water Depth (m)	8.6							
Monitoring Depth (m)	1.0		4.3		7.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.6	28.5	28.1	28.2	27.4	27.4	28.01	-
Salinity (ppt)	17.1	17.3	20.3	19.6	24.1	24.0	20.40	-
pH	6.9	6.9	6.9	6.9	7.0	7.0	6.92	-
D.O. Saturation (%)	60.6	59.9	58.3	58.9	57.9	59.6	59.20	-
D.O. (mg/L)	4.3	4.2	4.1	4.1	4.0	4.1	4.14	4.07
Turbidity (NTU)	8.4	8.7	10.5	10.6	38.3	37.9	19.07	-
SS (mg/L)	4.0	6.0	6.0	7.0	49.0	47.0	19.83	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	14:54-14:56							
Water Depth (m)	5.3							
Monitoring Depth (m)	1.0		2.6		4.3			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.3	28.3	-	-	27.8	27.7	28.02	-
Salinity (ppt)	18.3	18.6	-	-	22.4	22.6	20.51	-
pH	7.0	7.0	-	-	7.1	7.1	7.04	-
D.O. Saturation (%)	61.3	60.1	-	-	61.9	59.1	60.60	-
D.O. (mg/L)	4.3	4.2	-	-	4.3	4.1	4.23	4.20
Turbidity (NTU)	5.9	6.1	-	-	7.2	7.6	6.70	-
SS (mg/L)	4.0	4.0	-	-	8.0	6.0	5.50	-
Remarks	Dredging works was observed.							

Sampling Date	04/09/2008
Weather & Ambient Temperature	Fine, 30C

Mid-Flood

Station	C1 (NM3)							
Time (hh:mm)	9:31-9:34							
Water Depth (m)	16.4							
Monitoring Depth (m)	1.0		8.2		15.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.0	27.8	26.6	26.4	25.9	26.0	26.79	-
Salinity (ppt)	22.3	22.9	26.7	27.2	29.4	29.1	26.25	-
pH	7.0	7.1	7.1	7.2	7.1	7.1	7.10	-
D.O. Saturation (%)	65.0	62.3	57.6	53.7	57.3	62.3	59.70	-
D.O. (mg/L)	4.5	4.3	4.0	3.7	4.0	4.3	4.12	4.12
Turbidity (NTU)	5.8	6.2	8.5	8.7	10.5	10.6	8.38	-
SS (mg/L)	5.0	5.0	8.0	9.0	6.0	7.0	6.67	-
Remarks	Dredging works was observed.							

Station	C3 (NM6)							
Time (hh:mm)	9:57-9:59							
Water Depth (m)	6.8							
Monitoring Depth (m)	1.0		3.4		5.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.4	28.3	28.0	27.9	27.1	27.2	27.90	-
Salinity (ppt)	17.8	18.1	20.7	21.0	25.3	25.3	21.36	-
pH	6.8	6.9	6.9	6.9	6.8	6.9	6.87	-
D.O. Saturation (%)	63.9	63.0	63.0	60.1	62.7	60.8	62.25	-
D.O. (mg/L)	4.5	4.4	4.4	4.2	4.3	4.2	4.34	4.27
Turbidity (NTU)	6.3	6.5	10.1	10.3	25.2	25.0	13.90	-
SS (mg/L)	4.0	5.0	6.0	6.0	20.0	18.0	9.83	-
Remarks	Dredging works was observed.							

Station	IMO1						Co-ordinates	
Time (hh:mm)	10:38-10:40						Northing	Easting
Water Depth (m)	7.0						22.21.608	113.53.239
Monitoring Depth (m)	1.0		3.5		6.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.3	28.2	27.9	27.8	27.4	27.5	27.85	-
Salinity (ppt)	19.3	19.8	21.3	21.2	23.7	23.7	21.49	-
pH	7.0	7.0	7.0	7.0	7.0	7.0	7.01	-
D.O. Saturation (%)	58.3	58.0	57.8	56.1	56.0	57.8	57.33	-
D.O. (mg/L)	4.1	4.1	4.0	3.9	3.9	4.0	4.00	3.95
Turbidity (NTU)	7.1	6.8	8.7	8.7	41.9	41.4	19.10	-
SS (mg/L)	6.0	7.0	9.0	9.0	10.0	11.0	8.67	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	10:11-10:14						Northing	Easting
Water Depth (m)	8.7						22.20.878	113.53.587
Monitoring Depth (m)	1.0		4.3		7.7			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.7	27.7	28.0	27.5	27.1	27.93	-
Salinity (ppt)	15.9	15.9	22.7	21.1	23.7	24.9	20.70	-
pH	6.9	6.9	7.0	7.0	7.0	7.0	6.96	-
D.O. Saturation (%)	58.5	59.3	56.3	56.5	59.3	56.5	57.73	-
D.O. (mg/L)	4.1	4.2	3.9	3.9	4.1	3.9	4.02	4.01
Turbidity (NTU)	6.6	6.9	14.9	14.5	34.2	33.8	18.48	-
SS (mg/L)	6.0	6.0	12.0	11.0	62.0	60.0	26.17	-
Remarks	Dredging works was observed.							

Station	MPB1							
Time (hh:mm)	10:29-10:32							
Water Depth (m)	8.6							
Monitoring Depth (m)	1.0		4.3		7.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.6	28.7	27.7	27.7	27.5	27.5	27.94	-
Salinity (ppt)	18.5	17.2	22.8	22.8	23.9	23.9	21.51	-
pH	6.9	6.9	7.0	7.0	7.0	7.0	6.97	-
D.O. Saturation (%)	59.8	60.8	56.0	57.6	59.4	56.4	58.33	-
D.O. (mg/L)	4.2	4.3	3.9	4.0	4.1	3.9	4.06	4.01
Turbidity (NTU)	5.7	6.1	13.6	14.7	31.2	31.4	17.12	-
SS (mg/L)	6.0	6.0	14.0	14.0	17.0	16.0	12.17	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	10:22-10:25							
Water Depth (m)	9.0							
Monitoring Depth (m)	1.0		4.5		8.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.6	28.6	28.1	28.1	27.2	27.3	27.97	-
Salinity (ppt)	17.1	17.2	20.2	20.2	24.6	24.3	20.59	-
pH	6.9	6.9	6.9	6.9	7.0	7.0	6.92	-
D.O. Saturation (%)	60.5	61.2	60.3	58.1	57.3	57.4	59.13	-
D.O. (mg/L)	4.3	4.3	4.2	4.1	4.0	4.0	4.13	3.97
Turbidity (NTU)	6.3	6.0	9.5	9.7	43.5	41.7	19.45	-
SS (mg/L)	6.0	5.0	7.0	6.0	57.0	58.0	23.17	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	10:47-10:48							
Water Depth (m)	5.6							
Monitoring Depth (m)	1.0		2.8		4.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.3	28.3	-	-	27.8	27.7	28.03	-
Salinity (ppt)	18.7	18.3	-	-	22.5	22.6	20.51	-
pH	7.0	7.0	-	-	7.1	7.1	7.03	-
D.O. Saturation (%)	61.6	60.8	-	-	60.8	63.3	61.63	-
D.O. (mg/L)	4.3	4.3	-	-	4.2	4.4	4.30	4.31
Turbidity (NTU)	6.1	5.9	-	-	6.5	6.7	6.30	-
SS (mg/L)	7.0	6.0	-	-	8.0	9.0	7.50	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		Mean(C1+C3)*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.2	4.2	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.2	4.2	Y	Y	Y	N	Y	N	Y	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	14.5	14.5	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	10.7	10.7	N	N	Y	N	Y	N	N	N	N	N

Sampling Date	05/09/2008
Weather & Ambient Temperature	Cloudy, 31C

Station	C2 (NM5)								
Time (hh:mm)	16:08-16:10								
Water Depth (m)	21.0								
Monitoring Depth (m)	1.0		10.5		20.0				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	29.5	29.5	27.2	27.1	26.1	26.1	27.59	-	
Salinity (ppt)	17.1	17.0	25.3	25.3	28.8	28.7	23.70	-	
pH	7.1	7.2	7.2	7.2	7.2	7.2	7.19	-	
D.O. Saturation (%)	68.0	66.4	54.6	53.0	52.8	54.5	58.22	-	
D.O. (mg/L)	4.7	4.6	3.8	3.7	3.6	3.8	4.02	3.70	
Turbidity (NTU)	4.9	5.0	7.9	8.2	22.7	22.1	11.80	-	
SS (mg/L)	5.0	5.0	8.0	8.0	82.0	70.0	29.67	-	
Remarks	Dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	15:25-15:28						Northing	Easting
Water Depth (m)	7.8						22.21.385	113.53.322
Monitoring Depth (m)	1.0		3.9		6.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.2	29.2	27.7	27.7	27.5	27.3	28.07	-
Salinity (ppt)	16.9	17.0	22.6	22.7	23.9	23.9	21.16	-
pH	7.3	7.2	7.3	7.3	7.4	7.4	7.31	-
D.O. Saturation (%)	66.6	68.3	58.8	59.0	61.2	61.9	62.63	-
D.O. (mg/L)	4.7	4.8	4.1	4.1	4.2	4.29	4.36	4.27
Turbidity (NTU)	4.8	4.9	7.3	7.5	22.1	22.3	11.48	-
SS (mg/L)	4.0	5.0	6.0	6.0	23.0	23.0	11.17	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	15:13-15:15						Northing	Easting
Water Depth (m)	6.8						22.20.939	113.58.486
Monitoring Depth (m)	1.0		3.4		5.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.7	28.9	27.7	27.8	27.6	27.6	28.05	-
Salinity (ppt)	17.5	17.5	22.3	22.3	23.0	22.9	20.90	-
pH	7.4	7.3	7.3	7.3	7.3	7.3	7.32	-
D.O. Saturation (%)	69.8	68.9	60.5	61.7	63.9	65.5	65.05	-
D.O. (mg/L)	4.9	4.8	4.2	4.3	4.4	4.54	4.53	4.49
Turbidity (NTU)	5.1	5.4	8.4	8.5	12.3	12.1	8.63	-
SS (mg/L)	5.0	6.0	8.0	8.0	12.0	13.0	8.67	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	3.7	3.7	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.0	4.0	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	15.3	15.3	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	38.6	38.6	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	15:34-15:36							
Water Depth (m)	8.5							
Monitoring Depth (m)	1.0		4.3		7.5			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.6	28.8	27.6	27.7	27.2	27.2	27.86	-
Salinity (ppt)	18.3	18.2	23.0	22.8	24.8	25.0	22.01	-
pH	7.3	7.3	7.3	7.3	7.3	7.3	7.32	-
D.O. Saturation (%)	65.1	65.7	58.7	58.2	60.5	59.4	61.27	-
D.O. (mg/L)	4.6	4.6	4.1	4.0	4.2	4.1	4.26	4.14
Turbidity (NTU)	4.1	4.3	7.9	8.1	29.1	30.1	13.93	-
SS (mg/L)	4.0	5.0	7.0	8.0	34.0	32.0	15.00	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	15:04-15:07							
Water Depth (m)	9.4							
Monitoring Depth (m)	1.0		4.7		8.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.7	29.5	27.6	27.6	27.4	27.4	28.18	-
Salinity (ppt)	15.2	15.3	23.2	23.1	24.5	24.3	20.93	-
pH	7.3	7.4	7.4	7.4	7.4	7.4	7.39	-
D.O. Saturation (%)	69.4	68.0	60.5	59.3	65.3	64.4	64.48	-
D.O. (mg/L)	4.9	4.8	4.2	4.1	4.5	4.5	4.48	4.49
Turbidity (NTU)	4.8	4.9	14.6	15.1	27.1	26.9	15.57	-
SS (mg/L)	6.0	7.0	7.0	7.0	15.0	16.0	9.67	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	15:47-15:48							
Water Depth (m)	6.0							
Monitoring Depth (m)	1.0		3.0		5.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.0	29.0	-	-	27.7	27.7	28.33	-
Salinity (ppt)	17.6	17.8	-	-	22.7	22.7	20.19	-
pH	7.2	7.2	-	-	7.2	7.3	7.23	-
D.O. Saturation (%)	66.8	66.4	-	-	63.5	62.6	64.83	-
D.O. (mg/L)	4.7	4.7	-	-	4.4	4.3	4.51	4.37
Turbidity (NTU)	4.3	4.4	-	-	16.7	16.3	10.43	-
SS (mg/L)	5.0	4.0	-	-	13.0	12.0	8.50	-
Remarks	Dredging works was observed.							









Sampling Date	09/09/2008
Weather & Ambient Temperature	Fine, 30C

Station	C2 (NM5)								
Time (hh:mm)	9:18-9:20								
Water Depth (m)	19.2								
Monitoring Depth (m)	1.0		9.6		18.2				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.5	28.4	26.9	26.8	26.0	26.2	27.12	-	
Salinity (ppt)	21.8	21.9	26.8	27.0	29.7	29.1	26.05	-	
pH	7.6	7.6	7.4	7.5	7.4	7.4	7.49	-	
D.O. Saturation (%)	88.7	89.2	56.2	56.6	53.2	52.7	66.10	-	
D.O. (mg/L)	6.1	6.1	3.9	3.9	3.7	3.6	4.54	3.64	
Turbidity (NTU)	3.7	3.8	4.9	4.4	6.9	6.8	5.08	-	
SS (mg/L)	6.0	5.0	8.0	10.0	8.0	8.0	7.50	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	8:26-8:28						Northing	Easting
Water Depth (m)	19.8						22.21.689	113.54.636
Monitoring Depth (m)	1.0		9.9		18.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.6	26.2	26.3	24.9	25.1	26.60	-
Salinity (ppt)	21.1	20.8	28.8	28.7	31.9	31.5	27.15	-
pH	7.4	7.4	7.4	7.3	7.4	7.3	7.37	-
D.O. Saturation (%)	74.4	71.7	43.2	41.1	44.0	47.4	53.63	-
D.O. (mg/L)	5.1	5.0	3.0	2.8	3.0	3.27	3.70	3.16
Turbidity (NTU)	3.7	3.8	3.9	4.0	4.6	4.9	4.15	-
SS (mg/L)	6.0	4.0	7.0	6.0	5.0	5.0	5.50	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	8:16-8:19						Northing	Easting
Water Depth (m)	11.6						22.21.879	113.54.622
Monitoring Depth (m)	1.0		5.8		10.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.3	27.1	27.1	26.2	26.2	27.23	-
Salinity (ppt)	22.4	22.6	26.1	26.1	28.6	28.6	25.73	-
pH	7.5	7.5	7.5	7.5	7.4	7.4	7.49	-
D.O. Saturation (%)	80.1	77.4	60.9	62.0	51.6	53.5	64.25	-
D.O. (mg/L)	5.5	5.3	4.2	4.3	3.6	3.68	4.42	3.62
Turbidity (NTU)	3.0	3.1	3.4	3.5	5.0	5.1	3.85	-
SS (mg/L)	4.0	4.0	5.0	5.0	5.0	5.0	4.67	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	3.6	3.6	Y	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.5	4.5	Y	Y	N	N	N	N	Y	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	6.6	6.6	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	9.8	9.8	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	8:51-8:54							
Water Depth (m)	8.6							
Monitoring Depth (m)	1.0		4.3		7.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.8	29.4	27.8	27.6	26.8	27.0	28.05	-
Salinity (ppt)	12.6	13.4	22.5	23.3	25.9	25.3	20.49	-
pH	7.2	7.3	7.3	7.3	7.2	7.2	7.25	-
D.O. Saturation (%)	74.7	72.7	58.2	58.4	55.1	55.0	62.35	-
D.O. (mg/L)	5.3	5.2	4.0	4.0	3.8	3.8	4.36	3.81
Turbidity (NTU)	6.0	5.6	3.4	3.3	4.8	4.6	4.62	-
SS (mg/L)	6.0	8.0	4.0	4.0	4.0	4.0	5.00	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	8:42-8:44							
Water Depth (m)	9.0							
Monitoring Depth (m)	1.0		4.5		8.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	29.0	27.8	27.6	26.3	26.3	27.64	-
Salinity (ppt)	15.7	15.5	21.1	22.6	27.3	28.4	21.77	-
pH	7.4	7.4	7.3	7.3	7.3	7.3	7.33	-
D.O. Saturation (%)	71.1	71.4	53.1	52.4	49.1	50.1	57.87	-
D.O. (mg/L)	5.0	5.1	3.7	3.6	3.4	3.5	4.05	3.43
Turbidity (NTU)	4.2	4.5	3.2	3.2	3.7	3.9	3.78	-
SS (mg/L)	5.0	4.0	4.0	3.0	6.0	4.0	4.33	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	9:00-9:01							
Water Depth (m)	5.8							
Monitoring Depth (m)	1.0		2.9		4.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.1	29.1	-	-	26.6	26.7	27.88	-
Salinity (ppt)	16.9	16.7	-	-	27.3	27.3	22.04	-
pH	7.5	7.4	-	-	7.4	7.3	7.40	-
D.O. Saturation (%)	70.7	72.1	-	-	61.8	61.5	66.53	-
D.O. (mg/L)	5.0	5.1	-	-	4.3	4.2	4.62	4.24
Turbidity (NTU)	5.0	4.9	-	-	6.7	6.3	5.73	-
SS (mg/L)	5.0	4.0	-	-	6.0	7.0	5.50	-
Remarks	No dredging works was observed.							



Sampling Date	10/09/2008
Weather & Ambient Temperature	Fine, 30C

Station	C2 (NM5)								
Time (hh:mm)	10:21-10:24								
Water Depth (m)	19.6								
Monitoring Depth (m)	1.0		9.8		18.6				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.0	28.1	26.7	26.6	25.0	24.8	26.53	-	
Salinity (ppt)	23.0	22.8	27.5	27.8	31.9	32.3	27.56	-	
pH	8.2	8.3	7.9	7.9	7.9	7.9	7.98	-	
D.O. Saturation (%)	98.9	99.6	51.8	50.9	47.6	47.5	66.05	-	
D.O. (mg/L)	6.8	6.9	3.6	3.5	3.3	3.3	4.55	3.28	
Turbidity (NTU)	2.8	2.8	3.5	3.4	6.3	6.5	4.22	-	
SS (mg/L)	10.0	13.0	4.0	4.0	9.0	10.0	8.33	-	
Remarks	Dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	9:28-9:31						Northing	Easting
Water Depth (m)	18.4						22.21.991	113.55.215
Monitoring Depth (m)	1.0		9.2		17.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.7	28.7	27.0	26.5	25.9	26.6	27.22	-
Salinity (ppt)	19.9	20.1	27.6	28.0	30.7	30.1	26.04	-
pH	8.0	8.0	7.7	7.7	7.7	7.7	7.78	-
D.O. Saturation (%)	95.2	93.0	51.7	45.8	45.0	46.5	62.87	-
D.O. (mg/L)	6.6	6.4	3.5	3.2	3.1	3.15	4.32	3.12
Turbidity (NTU)	3.5	3.8	5.3	5.2	5.8	5.9	4.92	-
SS (mg/L)	6.0	6.0	6.0	7.0	8.0	8.0	6.83	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	9:17-9:21						Northing	Easting
Water Depth (m)	12.4						22.21.663	113.55.895
Monitoring Depth (m)	1.0		6.2		11.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.4	28.0	26.3	26.3	26.1	25.6	26.77	-
Salinity (ppt)	20.3	21.5	28.9	28.9	29.6	31.0	26.68	-
pH	7.9	7.8	7.6	7.7	7.6	7.7	7.72	-
D.O. Saturation (%)	82.3	80.6	45.1	45.8	47.9	48.9	58.43	-
D.O. (mg/L)	5.7	5.6	3.1	3.1	3.3	3.35	4.03	3.32
Turbidity (NTU)	3.5	3.9	2.8	3.0	3.8	4.1	3.52	-
SS (mg/L)	6.0	6.0	5.0	5.0	4.0	4.0	5.00	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit
DO (Bottom)	3.3	2.5	3.3	3.3	Y	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.5	4.5	N	N	Y	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	5.5	5.5	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	10.8	10.8	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	9:52-9:54							
Water Depth (m)	9.2							
Monitoring Depth (m)	1.0		4.6		8.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.3	29.1	27.8	27.8	27.3	27.6	28.15	-
Salinity (ppt)	13.4	14.7	21.9	22.0	24.4	23.7	20.02	-
pH	8.1	8.0	7.8	7.8	7.8	7.8	7.88	-
D.O. Saturation (%)	96.8	93.9	68.5	69.2	68.4	68.8	77.60	-
D.O. (mg/L)	6.9	6.7	4.8	4.8	4.7	4.8	5.43	4.74
Turbidity (NTU)	3.6	3.3	2.6	2.8	3.4	3.7	3.23	-
SS (mg/L)	5.0	6.0	5.0	5.0	5.0	5.0	5.17	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	9:43-9:45							
Water Depth (m)	8.6							
Monitoring Depth (m)	1.0		4.3		7.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.8	28.9	28.4	28.5	26.3	26.3	27.86	-
Salinity (ppt)	16.5	15.2	18.7	18.5	28.6	28.3	20.96	-
pH	8.0	8.0	8.0	8.0	7.7	7.6	7.89	-
D.O. Saturation (%)	100.0	96.9	77.7	73.1	59.7	54.3	76.95	-
D.O. (mg/L)	7.1	6.9	5.4	5.1	4.1	3.7	5.39	3.92
Turbidity (NTU)	3.5	3.5	3.7	3.8	5.1	5.4	4.17	-
SS (mg/L)	6.0	6.0	5.0	6.0	5.0	6.0	5.67	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	10:01-10:02							
Water Depth (m)	5.2							
Monitoring Depth (m)	1.0		2.6		4.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.0	29.0	-	-	27.4	27.1	28.11	-
Salinity (ppt)	17.7	17.8	-	-	24.4	25.7	21.40	-
pH	7.9	8.0	-	-	7.7	7.5	7.77	-
D.O. Saturation (%)	94.5	97.8	-	-	71.2	71.8	83.83	-
D.O. (mg/L)	6.6	6.8	-	-	4.9	5.0	5.82	4.93
Turbidity (NTU)	4.3	3.9	-	-	6.0	6.2	5.10	-
SS (mg/L)	5.0	5.0	-	-	8.0	7.0	6.25	-
Remarks	Dredging works was observed.							



Sampling Date	11/09/2008
Weather & Ambient Temperature	Cloudy, 30C

Station	C2 (NM5)							
Time (hh:mm)	9:49-9:52							
Water Depth (m)	20.6							
Monitoring Depth (m)	1.0		10.3		19.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.8	29.7	27.0	27.0	25.6	25.6	27.44	-
Salinity (ppt)	10.2	10.3	25.5	25.4	30.3	30.4	22.01	-
pH	7.4	7.4	7.5	7.5	7.3	7.3	7.40	-
D.O. Saturation (%)	82.6	82.8	53.4	54.8	45.7	46.8	61.02	-
D.O. (mg/L)	5.9	5.9	3.7	3.8	3.1	3.2	4.28	3.18
Turbidity (NTU)	6.9	6.6	3.5	3.6	7.5	7.6	5.95	-
SS (mg/L)	5.0	6.0	6.0	5.0	4.0	4.0	5.0	-
Remarks	No dredging works was observed.							

Station	IMO1						Co-ordinates	
Time (hh:mm)	9:23-9:27						Northing	Easting
Water Depth (m)	18.8						22.22.055	113.55.239
Monitoring Depth (m)	1.0		9.4		17.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.6	28.5	26.3	26.3	25.2	25.2	26.68	-
Salinity (ppt)	17.6	17.7	29.3	29.3	31.5	31.5	26.15	-
pH	7.8	7.7	7.8	7.8	7.7	7.7	7.74	-
D.O. Saturation (%)	71.8	72.1	41.9	42.8	39.5	38.3	51.07	-
D.O. (mg/L)	5.1	5.1	2.9	2.9	2.7	2.63	3.55	2.68
Turbidity (NTU)	5.1	4.8	7.4	7.1	10.8	11.2	7.73	-
SS (mg/L)	5.0	6.0	12.0	10.0	9.0	8.0	8.3	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	9:11-9:14						Northing	Easting
Water Depth (m)	14.6						22.21.619	113.55.933
Monitoring Depth (m)	1.0		7.3		13.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	28.8	26.2	26.3	25.5	25.5	26.87	-
Salinity (ppt)	19.2	19.1	29.0	29.0	31.0	31.0	26.39	-
pH	7.7	7.7	7.7	7.7	7.6	7.6	7.67	-
D.O. Saturation (%)	74.0	74.2	45.7	46.4	42.0	42.8	54.18	-
D.O. (mg/L)	5.2	5.2	3.1	3.2	2.9	2.94	3.76	2.92
Turbidity (NTU)	5.6	5.5	2.6	2.9	7.6	7.4	5.27	-
SS (mg/L)	7.0	8.0	11.0	11.0	6.0	6.0	8.2	-
Remarks	No dredging works was observed.							

**Compliance with Action and Limit Level**

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	3.2	3.2	Y	N	Y	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.3	4.3	Y	Y	Y	Y	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	7.7	7.7	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	6.5	6.5	N	N	N	N	N	N	N	N	N	N

**Mid-Ebb**

Station	MPB1							
Time (hh:mm)	10:14-10:17							
Water Depth (m)	7.6							
Monitoring Depth (m)	1.0		3.8		6.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	28.9	27.6	27.5	27.0	27.0	27.82	-
Salinity (ppt)	12.4	12.5	22.2	22.3	25.5	25.7	20.10	-
pH	7.4	7.4	7.4	7.5	7.4	7.5	7.43	-
D.O. Saturation (%)	71.9	72.0	59.8	59.7	56.2	57.1	62.78	-
D.O. (mg/L)	5.2	5.2	4.2	4.2	3.9	3.9	4.42	3.91
Turbidity (NTU)	6.3	6.4	5.4	5.5	5.7	5.6	5.82	-
SS (mg/L)	6.0	5.0	7.0	8.0	7.0	6.0	6.5	-
Remarks	No dredging works was observed.							

Station	MPB2						Co-ordinates	
Time (hh:mm)	10:23-10:26						Northing	Easting
Water Depth (m)	8.8						22.22.055	113.55.239
Monitoring Depth (m)	1.0		4.4		7.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	28.9	28.6	28.7	26.5	26.5	28.01	-
Salinity (ppt)	13.3	13.4	15.0	15.0	28.1	28.2	18.83	-
pH	7.6	7.6	7.6	7.6	7.5	7.5	7.56	-
D.O. Saturation (%)	75.1	75.5	65.1	63.6	53.4	54.5	64.53	-
D.O. (mg/L)	5.4	5.4	4.6	4.5	3.7	3.7	4.57	3.70
Turbidity (NTU)	5.7	5.6	5.0	5.2	10.8	11.3	7.27	-
SS (mg/L)	5.0	6.0	4.0	5.0	5.0	6.0	5.2	-
Remarks	No dredging works was observed.							

Station	MP						Co-ordinates	
Time (hh:mm)	10:05-10:07						Northing	Easting
Water Depth (m)	5.5						22.21.619	113.55.933
Monitoring Depth (m)	1.0		2.8		4.5			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.7	28.7	-	-	27.3	27.3	28.03	-
Salinity (ppt)	16.0	15.9	-	-	24.5	24.6	20.25	-
pH	7.7	7.6	-	-	7.4	7.4	7.51	-
D.O. Saturation (%)	77.2	77.8	-	-	67.5	68.0	72.63	-
D.O. (mg/L)	5.4	5.5	-	-	4.7	4.7	5.08	4.68
Turbidity (NTU)	5.3	5.0	-	-	11.2	11.6	8.28	-
SS (mg/L)	5.0	7.0	-	-	7.0	7.0	6.5	-
Remarks	No dredging works was observed.							







Sampling Date	12/09/2008
Weather & Ambient Temperature	Fine, 31C

Station	C2 (NM5)								
Time (hh:mm)	11:40-11:43								
Water Depth (m)	19.8								
Monitoring Depth (m)	1.0		9.9		18.8				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	27.7	28.0	26.4	26.5	25.0	25.0	26.42	-	
Salinity (ppt)	25.1	24.6	28.5	28.4	31.9	31.9	28.41	-	
pH	7.9	8.0	7.9	7.9	8.0	7.9	7.92	-	
D.O. Saturation (%)	72.1	71.5	52.3	51.7	47.7	47.6	57.15	-	
D.O. (mg/L)	4.9	4.9	3.6	3.5	3.3	3.3	3.92	3.29	
Turbidity (NTU)	3.3	3.6	3.5	3.9	8.9	8.9	5.35	-	
SS (mg/L)	5.0	6.0	5.0	5.0	12.0	12.0	7.50	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	10:38-10:42						Northing	Easting
Water Depth (m)	18.8						22.22.065	113.55.216
Monitoring Depth (m)	1.0		9.4		17.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	27.9	28.1	26.6	26.6	25.3	25.3	26.64	-
Salinity (ppt)	24.1	23.8	27.6	27.9	31.2	31.3	27.65	-
pH	7.9	7.9	7.9	7.9	7.9	7.9	7.88	-
D.O. Saturation (%)	68.3	70.8	47.6	49.0	41.9	44.7	53.72	-
D.O. (mg/L)	4.7	4.8	3.3	3.4	2.9	3.08	3.69	2.99
Turbidity (NTU)	5.3	5.1	7.3	7.5	13.9	13.9	8.83	-
SS (mg/L)	7.0	6.0	10.0	11.0	18.0	18.0	11.67	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	10:28-10:31						Northing	Easting
Water Depth (m)	13.2						22.21.651	113.55.904
Monitoring Depth (m)	1.0		6.6		12.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.3	28.4	27.1	27.2	25.6	25.6	27.04	-
Salinity (ppt)	23.5	23.5	26.9	26.6	31.0	31.0	27.10	-
pH	8.0	7.9	7.9	7.9	7.8	7.9	7.91	-
D.O. Saturation (%)	77.1	75.2	57.8	57.6	49.0	49.0	60.95	-
D.O. (mg/L)	5.3	5.1	4.0	3.9	3.4	3.4	4.2	3.36
Turbidity (NTU)	4.7	4.5	6.3	6.1	7.5	8.1	6.20	-
SS (mg/L)	7.0	6.0	7.0	7.0	11.0	10.0	8.00	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit	Exceedance of Action	Exceedance of Limit
DO (Bottom)	3.3	2.5	3.3	3.3	Y	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	3.9	3.9	Y	Y	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	7.0	7.0	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	9.8	9.8	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	11:10-11:12							
Water Depth (m)	9.0							
Monitoring Depth (m)	1.0		4.5		8.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.9	29.1	26.9	27.0	26.9	26.7	27.59	-
Salinity (ppt)	17.4	17.1	26.7	26.3	26.8	27.4	23.62	-
pH	8.0	8.0	7.8	7.8	7.8	7.8	7.84	-
D.O. Saturation (%)	74.4	79.8	52.4	52.7	58.1	56.2	62.27	-
D.O. (mg/L)	5.2	5.6	3.6	3.6	4.0	3.9	4.31	3.93
Turbidity (NTU)	3.5	3.4	5.0	4.9	5.6	5.5	4.65	-
SS (mg/L)	4.0	5.0	6.0	6.0	6.0	7.0	5.67	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	11:00-11:02							
Water Depth (m)	9.6							
Monitoring Depth (m)	1.0		4.8		8.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.3	29.1	28.3	28.5	27.2	27.5	28.31	-
Salinity (ppt)	17.0	17.3	19.8	18.9	26.4	21.6	20.17	-
pH	8.0	8.0	7.9	8.0	7.8	7.8	7.90	-
D.O. Saturation (%)	92.5	91.9	67.0	62.8	60.2	55.4	71.63	-
D.O. (mg/L)	6.5	6.4	4.7	4.4	4.1	3.9	4.99	4.01
Turbidity (NTU)	4.8	4.9	9.9	9.5	15.9	16.3	10.22	-
SS (mg/L)	5.0	5.0	6.0	5.0	6.0	5.0	5.33	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	11:19-11:20							
Water Depth (m)	5.8							
Monitoring Depth (m)	1.0		2.9		4.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.0	-	-	27.0	27.0	27.53	-
Salinity (ppt)	21.5	22.3	-	-	26.7	26.7	24.29	-
pH	7.8	7.8	-	-	7.6	7.6	7.69	-
D.O. Saturation (%)	71.2	68.7	-	-	56.9	48.8	61.40	-
D.O. (mg/L)	4.9	4.8	-	-	3.9	3.4	4.24	3.63
Turbidity (NTU)	5.9	6.2	-	-	10.6	10.7	8.35	-
SS (mg/L)	6.0	7.0	-	-	7.0	9.0	7.25	-
Remarks	No dredging works was observed.							



Sampling Date	9/16/2008
Weather & Ambient Temperature	Sunny, 32C

Station	C2 (NM5)								
Time (hh:mm)	13:48-13:51								
Water Depth (m)	19.4								
Monitoring Depth (m)	1.0		9.7		18.4				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.7	29.0	27.4	27.5	26.0	26.0	27.45	-	
Salinity (ppt)	26.6	26.1	30.0	29.9	33.4	33.5	29.92	-	
pH	8.0	8.0	8.0	8.0	8.0	8.0	8.00	-	
D.O. Saturation (%)	85.3	84.7	65.5	64.9	60.8	60.9	70.35	-	
D.O. (mg/L)	5.6	5.5	4.2	4.2	3.9	3.9	4.56	3.93	
Turbidity (NTU)	4.1	4.4	4.3	4.7	9.7	9.7	6.15	-	
SS (mg/L)	9.0	8.0	8.0	9.0	8.0	10.0	8.67	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	12:48-12:49						Northing	Easting
Water Depth (m)	17.8						22.22.068	113.55.298
Monitoring Depth (m)	1.0		8.9		16.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.0	29.1	27.7	27.6	26.3	26.3	27.67	-
Salinity (ppt)	25.6	25.3	29.1	29.4	32.7	32.8	29.16	-
pH	8.0	8.0	8.0	8.0	8.0	8.0	7.96	-
D.O. Saturation (%)	81.5	84.0	60.8	62.2	55.1	57.9	66.92	-
D.O. (mg/L)	5.3	5.5	3.9	4.0	3.5	3.72	4.33	3.63
Turbidity (NTU)	6.1	5.9	8.1	8.3	10.7	10.7	8.30	-
SS (mg/L)	9.0	8.0	9.0	7.0	8.0	8.0	8.17	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	12:36-12:39						Northing	Easting
Water Depth (m)	12.9						22.21.691	113.55.875
Monitoring Depth (m)	1.0		6.5		11.9			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.4	29.4	28.1	28.3	26.7	26.6	28.07	-
Salinity (ppt)	25.1	25.0	28.4	28.1	32.5	32.6	28.61	-
pH	8.1	8.0	8.0	8.0	7.9	8.0	7.99	-
D.O. Saturation (%)	90.3	88.4	71.0	70.8	62.2	62.2	74.15	-
D.O. (mg/L)	5.9	5.8	4.6	4.6	4.0	4.00	4.81	4.00
Turbidity (NTU)	5.5	5.3	7.1	6.9	8.3	8.9	7.00	-
SS (mg/L)	10.0	10.0	10.0	8.0	10.0	8.0	9.33	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	3.9	3.9	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.6	4.6	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	8.0	8.0	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	11.3	11.3	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	13:18-13:19							
Water Depth (m)	8.2							
Monitoring Depth (m)	1.0		4.1		7.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.0	30.2	27.9	28.0	27.7	27.9	28.62	-
Salinity (ppt)	18.9	18.7	28.2	27.9	28.9	28.3	25.13	-
pH	8.1	8.1	7.8	7.8	7.9	7.9	7.92	-
D.O. Saturation (%)	87.6	93.0	65.6	65.9	69.4	71.3	75.47	-
D.O. (mg/L)	5.8	6.2	4.2	4.3	4.5	4.6	4.95	4.57
Turbidity (NTU)	4.3	4.2	5.8	5.7	6.3	6.4	5.45	-
SS (mg/L)	9.0	8.0	8.0	9.0	8.0	8.0	8.33	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	13:08-13:10							
Water Depth (m)	8.6							
Monitoring Depth (m)	1.0		4.3		7.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.3	30.1	29.3	29.6	28.6	28.2	29.34	-
Salinity (ppt)	18.5	18.8	21.4	20.4	23.1	27.9	21.68	-
pH	8.1	8.1	8.0	8.0	7.9	7.8	7.98	-
D.O. Saturation (%)	105.7	105.1	80.2	76.0	68.6	73.4	84.83	-
D.O. (mg/L)	7.1	7.1	5.3	5.0	4.5	4.8	5.63	4.65
Turbidity (NTU)	5.6	5.7	10.7	10.3	12.1	12.7	9.52	-
SS (mg/L)	8.0	8.0	9.0	10.0	8.0	7.0	8.33	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	13:27-13:28							
Water Depth (m)	5.5							
Monitoring Depth (m)	1.0		2.7		4.5			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.2	29.0	-	-	28.0	28.0	28.56	-
Salinity (ppt)	23.0	23.8	-	-	28.2	28.2	25.80	-
pH	7.9	7.9	-	-	7.7	7.6	7.77	-
D.O. Saturation (%)	84.4	81.9	-	-	70.1	62.0	74.60	-
D.O. (mg/L)	5.6	5.4	-	-	4.6	4.0	4.88	4.27
Turbidity (NTU)	6.7	7.0	-	-	11.4	11.5	9.15	-
SS (mg/L)	11.0	9.0	-	-	6.0	7.0	8.25	-
Remarks	No dredging works was observed.							



Sampling Date	09/17/08
Weather & Ambient Temperature	Fine, 31C

Station	C2 (NM5)								
Time (hh:mm)	15:05-15:08								
Water Depth (m)	19.8								
Monitoring Depth (m)	1.0		9.9		18.8				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.4	28.6	27.6	27.7	27.2	27.2	27.77	-	
Salinity (ppt)	28.5	28.5	29.1	29.1	29.8	29.8	29.12	-	
pH	7.6	7.5	7.5	7.5	7.3	7.2	7.42	-	
D.O. Saturation (%)	84.1	82.5	70.4	68.7	69.8	71.1	74.43	-	
D.O. (mg/L)	5.6	5.5	4.7	4.6	4.7	4.8	4.98	4.74	
Turbidity (NTU)	4.6	4.4	8.2	7.9	16.2	16.7	9.67	-	
SS (mg/L)	6.0	8.0	7.0	6.0	6.0	6.0	6.50	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	13:57-14:0						Northing	Easting
Water Depth (m)	18.8						22.21.891	113.55.214
Monitoring Depth (m)	1.0		9.4		17.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.2	30.2	28.5	28.4	27.6	27.7	28.58	-
Salinity (ppt)	26.8	26.8	27.9	27.7	29.4	29.3	27.99	-
pH	7.4	7.3	7.5	7.5	7.5	7.5	7.44	-
D.O. Saturation (%)	76.2	79.3	73.9	73.1	69.8	70.2	73.75	-
D.O. (mg/L)	5.1	5.2	4.9	4.9	4.7	4.70	4.91	4.69
Turbidity (NTU)	7.4	7.7	8.9	8.8	12.8	13.1	9.78	-
SS (mg/L)	14.0	14.0	10.0	11.0	10.0	10.0	11.50	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	13:47-13:49						Northing	Easting
Water Depth (m)	16.0						22.21.648	113.55.897
Monitoring Depth (m)	1.0		8.0		15.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.4	28.3	28.3	27.4	27.4	28.03	-
Salinity (ppt)	27.3	27.3	28.0	27.8	29.5	29.5	28.24	-
pH	7.5	7.4	7.5	7.5	7.5	7.6	7.50	-
D.O. Saturation (%)	75.0	74.1	72.7	72.9	69.3	69.7	72.28	-
D.O. (mg/L)	5.0	5.0	4.9	4.9	4.7	4.68	4.84	4.67
Turbidity (NTU)	6.9	6.8	8.6	8.3	14.5	14.2	9.88	-
SS (mg/L)	9.0	11.0	11.0	9.0	11.0	10.0	10.17	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.7	4.7	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	5.0	5.0	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	12.6	12.6	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	8.5	8.5	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	14:26-14:28							
Water Depth (m)	8.6							
Monitoring Depth (m)	1.0		4.3		7.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.1	28.1	28.0	28.0	27.9	28.0	28.01	-
Salinity (ppt)	27.8	28.5	29.0	28.7	29.4	29.0	28.76	-
pH	7.4	7.4	7.4	7.4	7.4	7.4	7.38	-
D.O. Saturation (%)	81.6	82.2	72.2	71.3	74.4	73.0	75.78	-
D.O. (mg/L)	5.5	5.5	4.8	4.8	5.0	4.9	5.07	4.93
Turbidity (NTU)	18.5	19.8	25.3	25.3	25.2	25.7	23.30	-
SS (mg/L)	10.0	9.0	30.0	30.0	32.0	30.0	23.50	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	14:14-14:16							
Water Depth (m)	9.2							
Monitoring Depth (m)	1.0		4.6		8.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.2	29.3	28.5	28.3	28.1	28.0	28.56	-
Salinity (ppt)	27.3	27.2	28.3	28.6	28.8	28.9	28.17	-
pH	7.4	7.4	7.4	7.4	7.4	7.4	7.39	-
D.O. Saturation (%)	77.2	77.0	72.0	70.5	74.9	72.7	74.05	-
D.O. (mg/L)	5.1	5.1	4.8	4.7	5.0	4.9	4.92	4.93
Turbidity (NTU)	8.2	7.5	12.5	12.8	15.5	14.9	11.90	-
SS (mg/L)	8.0	9.0	8.0	9.0	10.0	8.0	8.67	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	14:39-14:40							
Water Depth (m)	5.5							
Monitoring Depth (m)	1.0		2.8		4.5			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.8	-	-	28.4	28.3	28.48	-
Salinity (ppt)	27.2	27.0	-	-	28.1	28.3	27.62	-
pH	7.3	7.3	-	-	7.3	7.4	7.31	-
D.O. Saturation (%)	75.8	74.5	-	-	78.1	77.3	76.43	-
D.O. (mg/L)	5.1	5.0	-	-	5.2	5.2	5.10	5.19
Turbidity (NTU)	14.0	13.6	-	-	18.3	18.5	16.10	-
SS (mg/L)	11.0	12.0	-	-	17.0	16.0	14.00	-
Remarks	No dredging works was observed.							



Sampling Date	09/18/08
Weather & Ambient Temperature	Fine, 31C

Station	C2 (NM5)								
Time (hh:mm)	15:21-15:23								
Water Depth (m)	19.2								
Monitoring Depth (m)	1.0		9.6		18.2				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.2	28.2	28.1	28.0	27.5	27.5	27.91	-	
Salinity (ppt)	28.0	28.0	28.3	28.2	29.5	29.5	28.59	-	
pH	7.3	7.4	7.4	7.3	7.3	7.4	7.33	-	
D.O. Saturation (%)	71.2	72.6	71.6	69.3	68.2	70.7	70.60	-	
D.O. (mg/L)	4.8	4.9	4.8	4.6	4.6	4.7	4.72	4.65	
Turbidity (NTU)	7.5	7.8	9.7	9.6	28.5	28.8	15.32	-	
SS (mg/L)	11.0	9.0	12.0	13.0	23.0	21.0	14.83	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	14:28-14:30						Northing	Easting
Water Depth (m)	16.4						22.21.892	113.55.226
Monitoring Depth (m)	1.0		8.2		15.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.5	28.3	28.3	28.0	27.9	28.25	-
Salinity (ppt)	26.2	26.3	27.5	27.5	28.5	28.6	27.41	-
pH	7.2	7.2	7.3	7.3	7.3	7.2	7.25	-
D.O. Saturation (%)	71.2	71.8	71.3	72.0	71.7	72.5	71.75	-
D.O. (mg/L)	4.8	4.8	4.8	4.8	4.8	4.84	4.80	4.82
Turbidity (NTU)	8.7	8.6	8.3	8.7	8.6	9.1	8.67	-
SS (mg/L)	10.0	11.0	8.0	9.0	10.0	9.0	9.50	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	14:18-14:20						Northing	Easting
Water Depth (m)	15.2						22.21.658	113.55.898
Monitoring Depth (m)	1.0		7.6		14.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.2	28.1	28.2	27.9	27.9	28.08	-
Salinity (ppt)	27.9	27.9	28.1	28.0	28.6	28.6	28.18	-
pH	7.3	7.3	7.3	7.3	7.3	7.3	7.32	-
D.O. Saturation (%)	72.6	72.2	70.0	70.6	70.1	72.4	71.32	-
D.O. (mg/L)	4.9	4.8	4.7	4.7	4.7	4.84	4.77	4.77
Turbidity (NTU)	7.0	7.0	9.1	8.8	10.5	10.4	8.80	-
SS (mg/L)	7.0	8.0	8.0	10.0	15.0	15.0	10.50	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.7	4.7	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.7	4.7	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	19.9	19.9	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	19.3	19.3	N	N	N	N	N	N	Y	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	14:53-14:55							
Water Depth (m)	8.4							
Monitoring Depth (m)	1.0		4.2		7.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.5	28.4	28.4	28.3	28.3	28.40	-
Salinity (ppt)	26.5	26.4	27.4	27.0	28.1	28.1	27.24	-
pH	7.3	7.3	7.3	7.3	7.3	7.3	7.29	-
D.O. Saturation (%)	69.2	69.8	70.7	68.8	69.0	74.7	70.37	-
D.O. (mg/L)	4.6	4.7	4.7	4.6	4.6	5.0	4.71	4.79
Turbidity (NTU)	12.1	12.6	17.6	17.2	28.2	28.4	19.35	-
SS (mg/L)	14.0	13.0	19.0	17.0	33.0	33.0	21.50	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	14:44-14:46							
Water Depth (m)	9.0							
Monitoring Depth (m)	1.0		4.5		8.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.5	28.5	28.5	28.5	28.5	28.46	-
Salinity (ppt)	26.6	26.6	26.7	26.6	26.9	26.8	26.70	-
pH	7.3	7.3	7.3	7.3	7.3	7.3	7.30	-
D.O. Saturation (%)	76.5	76.4	69.0	68.0	71.0	68.8	71.62	-
D.O. (mg/L)	5.1	5.1	4.6	4.6	4.8	4.6	4.80	4.68
Turbidity (NTU)	14.0	13.0	19.5	19.2	22.4	22.2	18.38	-
SS (mg/L)	18.0	17.0	28.0	26.0	29.0	28.0	24.33	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	15:02-15:03							
Water Depth (m)	5.6							
Monitoring Depth (m)	1.0		2.8		4.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.5	-	-	28.4	28.4	28.44	-
Salinity (ppt)	27.1	27.1	-	-	27.4	27.5	27.29	-
pH	7.3	7.3	-	-	7.3	7.3	7.29	-
D.O. Saturation (%)	72.4	71.4	-	-	73.6	71.6	72.25	-
D.O. (mg/L)	4.8	4.8	-	-	4.9	4.8	4.83	4.85
Turbidity (NTU)	14.0	14.3	-	-	28.8	28.4	21.38	-
SS (mg/L)	17.0	16.0	-	-	23.0	24.0	20.00	-
Remarks	No dredging works was observed.							











Sampling Date	09/22/08
Weather & Ambient Temperature	Cloudy, 30C

Station	C2 (NM5)								
Time (hh:mm)	7:02-7:05								
Water Depth (m)	19.4								
Monitoring Depth (m)	1.0		9.7		18.4				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	29.2	29.2	29.0	28.9	28.0	27.9	28.68	-	
Salinity (ppt)	26.3	26.1	26.4	26.4	28.5	28.7	27.05	-	
pH	7.0	7.0	7.0	7.0	6.9	6.9	6.97	-	
D.O. Saturation (%)	82.5	80.7	76.0	72.6	65.7	68.9	74.40	-	
D.O. (mg/L)	5.5	5.3	5.0	4.8	4.4	4.6	4.94	4.49	
Turbidity (NTU)	2.0	1.9	4.1	3.8	12.8	13.2	6.30	-	
SS (mg/L)	5.0	2.0	4.0	4.0	4.0	3.0	3.67	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	5:51-5:54						Northing	Easting
Water Depth (m)	16.2						22.21.892	113.55.213
Monitoring Depth (m)	1.0		8.1		15.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.2	29.2	28.7	28.6	28.6	28.4	28.78	-
Salinity (ppt)	25.5	25.5	26.9	27.1	27.2	27.6	26.63	-
pH	6.9	6.9	6.9	6.9	6.9	6.8	6.90	-
D.O. Saturation (%)	79.0	79.9	76.2	74.1	74.1	71.0	75.72	-
D.O. (mg/L)	5.2	5.3	5.1	4.9	4.9	4.72	5.03	4.82
Turbidity (NTU)	2.9	2.8	4.0	3.8	5.3	5.9	4.12	-
SS (mg/L)	4.0	4.0	5.0	4.0	5.0	5.0	4.50	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	5:41-5:43						Northing	Easting
Water Depth (m)	14.2						22.21.651	113.55.899
Monitoring Depth (m)	1.0		7.1		13.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.5	28.5	28.0	28.4	27.8	27.8	28.18	-
Salinity (ppt)	27.5	27.5	28.5	27.7	28.8	28.8	28.13	-
pH	7.0	7.0	7.0	7.0	7.0	6.9	6.96	-
D.O. Saturation (%)	70.4	71.2	63.8	68.1	63.2	62.7	66.57	-
D.O. (mg/L)	4.7	4.7	4.3	4.5	4.2	4.17	4.42	4.19
Turbidity (NTU)	8.6	8.7	15.7	15.1	26.7	26.5	16.88	-
SS (mg/L)	14.0	16.0	13.0	14.0	10.0	10.0	12.83	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.5	4.5	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	4.9	4.9	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	8.2	8.2	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	4.8	4.8	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	6:32-6:35							
Water Depth (m)	8.4							
Monitoring Depth (m)	1.0		4.2		7.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.8	29.6	29.1	29.1	28.7	28.7	29.16	-
Salinity (ppt)	17.9	18.6	22.2	22.1	25.1	24.9	21.78	-
pH	6.6	6.7	6.8	6.8	6.8	6.8	6.72	-
D.O. Saturation (%)	74.4	72.0	68.5	68.3	66.4	67.7	69.55	-
D.O. (mg/L)	5.1	4.9	4.6	4.6	4.4	4.5	4.70	4.49
Turbidity (NTU)	7.9	7.1	10.5	10.2	12.8	12.7	10.20	-
SS (mg/L)	6.0	4.0	6.0	4.0	11.0	10.0	6.83	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	6:22-6:24							
Water Depth (m)	9.4							
Monitoring Depth (m)	1.0		4.7		8.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.6	29.8	28.9	29.0	28.8	28.9	29.18	-
Salinity (ppt)	18.1	17.7	23.5	22.4	24.4	23.9	21.68	-
pH	6.7	6.7	6.8	6.8	6.8	6.8	6.74	-
D.O. Saturation (%)	74.3	73.9	68.9	69.0	69.4	70.4	70.98	-
D.O. (mg/L)	5.1	5.0	4.6	4.7	4.7	4.7	4.80	4.69
Turbidity (NTU)	6.1	6.4	5.7	5.5	5.2	5.1	5.67	-
SS (mg/L)	6.0	6.0	5.0	5.0	8.0	6.0	6.00	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	6:49-6:51							
Water Depth (m)	5.6							
Monitoring Depth (m)	1.0		2.8		4.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.7	29.6	-	-	28.9	29.0	29.30	-
Salinity (ppt)	19.3	17.9	-	-	23.2	23.6	20.99	-
pH	6.6	6.6	-	-	6.7	6.6	6.63	-
D.O. Saturation (%)	74.3	73.9	-	-	70.7	75.1	73.50	-
D.O. (mg/L)	5.0	5.1	-	-	4.8	5.0	4.97	4.90
Turbidity (NTU)	6.4	6.2	-	-	8.1	8.6	7.33	-
SS (mg/L)	5.0	5.0	-	-	7.0	7.0	6.00	-
Remarks	No dredging works was observed.							



Sampling Date	09/23/08
Weather & Ambient Temperature	Cloudy, 31C

Station	C2 (NM5)								
Time (hh:mm)	9:14-9:16								
Water Depth (m)	19.4								
Monitoring Depth (m)	1.0		9.7		18.4				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	29.1	29.1	28.8	28.7	27.8	27.8	28.55	-	
Salinity (ppt)	26.5	26.4	26.6	26.6	28.7	28.9	27.29	-	
pH	7.5	7.5	7.4	7.4	7.3	7.3	7.40	-	
D.O. Saturation (%)	87.2	85.4	80.7	77.3	70.4	73.6	79.10	-	
D.O. (mg/L)	5.8	5.7	5.4	5.2	4.8	5.0	5.31	4.86	
Turbidity (NTU)	2.1	2.2	4.1	3.8	4.4	4.2	3.47	-	
SS (mg/L)	5.0	3.0	2.0	3.0	4.0	4.0	3.50	-	
Remarks	Dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	8:03-8:05						Northing	Easting
Water Depth (m)	16.4						22.21.888	113.55.216
Monitoring Depth (m)	1.0		8.2		15.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.0	29.0	28.6	28.5	28.5	28.3	28.65	-
Salinity (ppt)	25.8	25.7	27.2	27.3	27.4	27.8	26.87	-
pH	7.4	7.3	7.4	7.3	7.3	7.3	7.33	-
D.O. Saturation (%)	83.7	84.6	80.9	78.8	78.8	75.7	80.42	-
D.O. (mg/L)	5.6	5.7	5.4	5.3	5.3	5.09	5.40	5.19
Turbidity (NTU)	3.9	3.8	4.0	3.8	5.3	5.9	4.45	-
SS (mg/L)	5.0	3.0	4.0	4.0	2.0	2.0	3.33	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	7:52-7:55						Northing	Easting
Water Depth (m)	14.0						22.21.655	113.55.903
Monitoring Depth (m)	1.0		7.0		13.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.4	28.4	27.9	28.3	27.7	27.7	28.05	-
Salinity (ppt)	27.7	27.7	28.7	28.0	29.0	29.0	28.37	-
pH	7.4	7.4	7.4	7.4	7.4	7.4	7.39	-
D.O. Saturation (%)	75.1	75.9	68.5	72.8	67.9	67.4	71.27	-
D.O. (mg/L)	5.0	5.1	4.6	4.9	4.6	4.54	4.79	4.56
Turbidity (NTU)	4.6	4.7	5.3	5.1	5.7	5.5	5.15	-
SS (mg/L)	3.0	2.0	4.0	4.0	5.0	3.0	3.50	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.9	4.9	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	5.3	5.3	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	4.5	4.5	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	4.6	4.6	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

\*No monitoring was conducted during the mid-flood tidal period due to the hoisted typhoon signal (T3)

Station	MPB1							
Time (hh:mm)	8:44-8:47							
Water Depth (m)	8.4							
Monitoring Depth (m)	1.0		4.2		7.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.7	29.5	28.9	29.0	28.6	28.6	29.03	-
Salinity (ppt)	18.1	18.8	22.4	22.3	25.3	25.2	22.02	-
pH	7.1	7.1	7.2	7.2	7.2	7.2	7.15	-
D.O. Saturation (%)	79.1	76.7	73.2	73.0	71.1	72.4	74.25	-
D.O. (mg/L)	5.4	5.3	5.0	5.0	4.8	4.9	5.07	4.86
Turbidity (NTU)	5.9	6.1	6.5	6.2	6.8	6.7	6.37	-
SS (mg/L)	4.0	4.0	4.0	3.0	4.0	3.0	3.67	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	8:34-8:36							
Water Depth (m)	9.2							
Monitoring Depth (m)	1.0		4.6		8.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.5	29.7	28.8	28.9	28.7	28.8	29.05	-
Salinity (ppt)	18.4	17.9	23.7	22.7	24.7	24.2	21.92	-
pH	7.1	7.1	7.2	7.2	7.2	7.2	7.17	-
D.O. Saturation (%)	79.0	78.6	73.6	73.7	74.1	75.1	75.68	-
D.O. (mg/L)	5.4	5.4	5.0	5.0	5.0	5.1	5.17	5.06
Turbidity (NTU)	5.1	5.4	5.2	5.5	5.7	6.1	5.50	-
SS (mg/L)	4.0	2.0	5.0	3.0	4.0	2.0	3.33	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	9:01-9:03							
Water Depth (m)	5.6							
Monitoring Depth (m)	1.0		2.9		4.7			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.6	29.5	-	-	28.8	28.9	29.17	-
Salinity (ppt)	19.6	18.1	-	-	23.4	23.8	21.23	-
pH	7.0	7.0	-	-	7.1	7.1	7.06	-
D.O. Saturation (%)	79.0	78.6	-	-	75.4	79.8	78.20	-
D.O. (mg/L)	5.4	5.4	-	-	5.1	5.4	5.34	5.27
Turbidity (NTU)	5.4	5.2	-	-	6.8	6.6	6.00	-
SS (mg/L)	2.0	3.0	-	-	4.0	4.0	3.25	-
Remarks	Dredging works was observed.							

Sampling Date	09/25/08
Weather & Ambient Temperature	Sunny, 31C

Station	C2 (NM5)								
Time (hh:mm)	10:13-10:16								
Water Depth (m)	20.0								
Monitoring Depth (m)	1.0		10.0		19.0				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.0	28.0	27.4	27.4	27.2	27.2	27.52	-	
Salinity (ppt)	23.1	23.1	28.1	28.0	29.1	29.1	26.76	-	
pH	7.0	7.0	7.1	7.1	7.1	7.1	7.06	-	
D.O. Saturation (%)	79.8	78.9	75.7	76.7	79.1	79.3	78.25	-	
D.O. (mg/L)	5.5	5.4	5.1	5.2	5.3	5.4	5.32	5.34	
Turbidity (NTU)	10.9	10.6	11.5	11.7	13.8	14.2	12.12	-	
SS (mg/L)	9.0	11.0	12.0	10.0	10.0	10.0	10.33	-	
Remarks	Dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	10:00-10:03						Northing	Easting
Water Depth (m)	19.6						22.21.924	113.55.210
Monitoring Depth (m)	1.0		9.8		18.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.3	28.3	26.9	26.9	26.8	26.8	27.33	-
Salinity (ppt)	29.1	29.0	30.1	30.0	30.5	30.5	29.86	-
pH	7.1	7.1	7.1	7.1	7.2	7.2	7.13	-
D.O. Saturation (%)	79.1	78.5	72.4	73.7	75.3	75.0	75.67	-
D.O. (mg/L)	5.3	5.3	4.9	4.8	5.1	5.05	5.06	5.06
Turbidity (NTU)	17.7	17.4	19.6	19.2	20.9	21.3	19.35	-
SS (mg/L)	20.0	22.0	21.0	22.0	21.0	21.0	21.17	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	9:50-9:52						Northing	Easting
Water Depth (m)	14.6						22.21.646	113.55.888
Monitoring Depth (m)	1.0		7.3		13.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	27.7	27.7	26.9	26.9	26.7	26.7	27.09	-
Salinity (ppt)	29.6	29.6	30.5	30.4	30.7	30.7	30.24	-
pH	7.1	7.1	7.1	7.1	7.0	7.1	7.07	-
D.O. Saturation (%)	79.6	80.3	78.3	77.4	79.3	77.9	78.80	-
D.O. (mg/L)	5.3	5.4	5.3	5.2	5.4	5.32	5.30	5.34
Turbidity (NTU)	10.0	10.3	10.8	11.2	12.3	12.5	11.18	-
SS (mg/L)	11.0	12.0	11.0	13.0	12.0	12.0	11.83	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	5.3	5.3	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	5.3	5.3	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	15.8	15.8	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	13.4	13.4	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	10:53-10:55							
Water Depth (m)	7.0							
Monitoring Depth (m)	1.0		3.5		6.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.2	27.9	27.8	27.6	27.7	27.90	-
Salinity (ppt)	23.0	22.9	25.2	25.2	26.9	26.9	24.98	-
pH	7.0	7.0	7.0	7.1	7.1	7.1	7.04	-
D.O. Saturation (%)	81.3	80.1	80.3	79.7	83.3	82.3	81.17	-
D.O. (mg/L)	5.6	5.5	5.5	5.4	5.7	5.6	5.54	5.62
Turbidity (NTU)	7.1	6.8	7.8	7.9	8.3	8.5	7.73	-
SS (mg/L)	6.0	7.0	6.0	6.0	7.0	8.0	6.67	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	11:02-11:04							
Water Depth (m)	8.2							
Monitoring Depth (m)	1.0		4.1		7.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.2	27.9	27.9	27.8	27.8	27.97	-
Salinity (ppt)	23.2	23.3	25.4	25.5	25.7	25.9	24.82	-
pH	7.0	7.0	7.1	7.1	7.1	7.1	7.06	-
D.O. Saturation (%)	81.3	81.1	81.9	82.2	82.9	83.9	82.22	-
D.O. (mg/L)	5.6	5.6	5.6	5.6	5.7	5.7	5.61	5.68
Turbidity (NTU)	6.0	6.1	6.5	6.4	7.2	6.9	6.52	-
SS (mg/L)	6.0	7.0	8.0	8.0	8.0	7.0	7.33	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	10:37-10:39							
Water Depth (m)	5.5							
Monitoring Depth (m)	1.0		2.8		4.5			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.2	-	-	27.8	27.8	27.99	-
Salinity (ppt)	24.3	24.5	-	-	25.4	25.5	24.90	-
pH	7.0	7.1	-	-	7.1	7.1	7.06	-
D.O. Saturation (%)	87.7	86.8	-	-	89.5	89.0	88.25	-
D.O. (mg/L)	6.0	6.0	-	-	6.1	6.0	6.02	6.07
Turbidity (NTU)	15.8	16.1	-	-	17.9	18.0	16.95	-
SS (mg/L)	5.3	5.4	-	-	20.0	18.0	12.17	-
Remarks	Dredging works was observed.							



Sampling Date	09/25/08
Weather & Ambient Temperature	Sunny, 31C

Station	C2 (NM5)								
Time (hh:mm)	10:13-10:16								
Water Depth (m)	20.0								
Monitoring Depth (m)	1.0		10.0		19.0				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	28.0	28.0	27.4	27.4	27.2	27.2	27.52	-	
Salinity (ppt)	23.1	23.1	28.1	28.0	29.1	29.1	26.76	-	
pH	7.0	7.0	7.1	7.1	7.1	7.1	7.06	-	
D.O. Saturation (%)	79.8	78.9	75.7	76.7	79.1	79.3	78.25	-	
D.O. (mg/L)	5.5	5.4	5.1	5.2	5.3	5.4	5.32	5.34	
Turbidity (NTU)	10.9	10.6	11.5	11.7	13.8	14.2	12.12	-	
SS (mg/L)	9.0	11.0	12.0	10.0	10.0	10.0	10.33	-	
Remarks	Dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	10:00-10:03						Northing	Easting
Water Depth (m)	19.6						22.21.924	113.55.210
Monitoring Depth (m)	1.0		9.8		18.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.3	28.3	26.9	26.9	26.8	26.8	27.33	-
Salinity (ppt)	29.1	29.0	30.1	30.0	30.5	30.5	29.86	-
pH	7.1	7.1	7.1	7.1	7.2	7.2	7.13	-
D.O. Saturation (%)	79.1	78.5	72.4	73.7	75.3	75.0	75.67	-
D.O. (mg/L)	5.3	5.3	4.9	4.8	5.1	5.05	5.06	5.06
Turbidity (NTU)	17.7	17.4	19.6	19.2	20.9	21.3	19.35	-
SS (mg/L)	20.0	22.0	21.0	22.0	21.0	21.0	21.17	-
Remarks	Dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	9:50-9:52						Northing	Easting
Water Depth (m)	14.6						22.21.646	113.55.888
Monitoring Depth (m)	1.0		7.3		13.6			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	27.7	27.7	26.9	26.9	26.7	26.7	27.09	-
Salinity (ppt)	29.6	29.6	30.5	30.4	30.7	30.7	30.24	-
pH	7.1	7.1	7.1	7.1	7.0	7.1	7.07	-
D.O. Saturation (%)	79.6	80.3	78.3	77.4	79.3	77.9	78.80	-
D.O. (mg/L)	5.3	5.4	5.3	5.2	5.4	5.32	5.30	5.34
Turbidity (NTU)	10.0	10.3	10.8	11.2	12.3	12.5	11.18	-
SS (mg/L)	11.0	12.0	11.0	13.0	12.0	12.0	11.83	-
Remarks	Dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	5.3	5.3	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	5.3	5.3	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	15.8	15.8	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	13.4	13.4	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	10:53-10:55							
Water Depth (m)	7.0							
Monitoring Depth (m)	1.0		3.5		6.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.2	27.9	27.8	27.6	27.7	27.90	-
Salinity (ppt)	23.0	22.9	25.2	25.2	26.9	26.9	24.98	-
pH	7.0	7.0	7.0	7.1	7.1	7.1	7.04	-
D.O. Saturation (%)	81.3	80.1	80.3	79.7	83.3	82.3	81.17	-
D.O. (mg/L)	5.6	5.5	5.5	5.4	5.7	5.6	5.54	5.62
Turbidity (NTU)	7.1	6.8	7.8	7.9	8.3	8.5	7.73	-
SS (mg/L)	6.0	7.0	6.0	6.0	7.0	8.0	6.67	-
Remarks	Dredging works was observed.							

Station	MPB2							
Time (hh:mm)	11:02-11:04							
Water Depth (m)	8.2							
Monitoring Depth (m)	1.0		4.1		7.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.2	27.9	27.9	27.8	27.8	27.97	-
Salinity (ppt)	23.2	23.3	25.4	25.5	25.7	25.9	24.82	-
pH	7.0	7.0	7.1	7.1	7.1	7.1	7.06	-
D.O. Saturation (%)	81.3	81.1	81.9	82.2	82.9	83.9	82.22	-
D.O. (mg/L)	5.6	5.6	5.6	5.6	5.7	5.7	5.61	5.68
Turbidity (NTU)	6.0	6.1	6.5	6.4	7.2	6.9	6.52	-
SS (mg/L)	6.0	7.0	8.0	8.0	8.0	7.0	7.33	-
Remarks	Dredging works was observed.							

Station	MP							
Time (hh:mm)	10:37-10:39							
Water Depth (m)	5.5							
Monitoring Depth (m)	1.0		2.8		4.5			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	28.2	28.2	-	-	27.8	27.8	27.99	-
Salinity (ppt)	24.3	24.5	-	-	25.4	25.5	24.90	-
pH	7.0	7.1	-	-	7.1	7.1	7.06	-
D.O. Saturation (%)	87.7	86.8	-	-	89.5	89.0	88.25	-
D.O. (mg/L)	6.0	6.0	-	-	6.1	6.0	6.02	6.07
Turbidity (NTU)	15.8	16.1	-	-	17.9	18.0	16.95	-
SS (mg/L)	5.3	5.4	-	-	20.0	18.0	12.17	-
Remarks	Dredging works was observed.							





Sampling Date	09/29/08
Weather & Ambient Temperature	Cloudy, 32C

Station	C2 (NM5)								
Time (hh:mm)	13:25-13:27								
Water Depth (m)	19.4								
Monitoring Depth (m)	1.0		9.7		18.4				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	29.9	29.9	29.7	29.6	28.7	28.6	29.39	-	
Salinity (ppt)	29.0	28.9	29.2	29.1	31.2	31.5	29.82	-	
pH	8.2	8.2	8.2	8.1	8.1	8.1	8.14	-	
D.O. Saturation (%)	88.0	86.2	81.5	78.1	71.2	74.4	79.90	-	
D.O. (mg/L)	5.9	5.8	5.5	5.3	4.8	5.0	5.37	4.92	
Turbidity (NTU)	4.3	4.2	5.3	5.2	8.7	8.9	6.10	-	
SS (mg/L)	6.0	5.0	6.0	6.0	5.0	6.0	5.67	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	12:14-12:16						Northing	Easting
Water Depth (m)	16.2						22.21.888	113.55.213
Monitoring Depth (m)	1.0		8.1		15.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.9	29.9	29.5	29.3	29.3	29.1	29.49	-
Salinity (ppt)	28.3	28.2	29.7	29.9	30.0	30.4	29.40	-
pH	8.1	8.1	8.1	8.1	8.1	8.0	8.07	-
D.O. Saturation (%)	84.5	85.4	81.7	79.6	79.6	76.5	81.22	-
D.O. (mg/L)	5.7	5.7	5.5	5.4	5.4	5.15	5.46	5.25
Turbidity (NTU)	4.7	4.7	5.3	5.2	5.9	6.2	5.33	-
SS (mg/L)	6.0	5.0	7.0	6.0	5.0	5.0	5.67	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	12:03-12:06						Northing	Easting
Water Depth (m)	14.2						22.21.651	113.55.900
Monitoring Depth (m)	1.0		7.1		13.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.2	29.2	28.7	29.1	28.6	28.6	28.89	-
Salinity (ppt)	30.2	30.3	31.3	30.5	31.6	31.6	30.90	-
pH	8.1	8.2	8.1	8.1	8.1	8.1	8.13	-
D.O. Saturation (%)	75.9	76.7	69.3	73.6	68.7	68.2	72.07	-
D.O. (mg/L)	5.1	5.2	4.7	5.0	4.6	4.60	4.85	4.62
Turbidity (NTU)	7.6	7.6	8.6	8.3	9.1	9.0	8.37	-
SS (mg/L)	6.0	5.0	7.0	6.0	6.0	5.0	5.83	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.9	4.9	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	5.4	5.4	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	7.9	7.9	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	7.4	7.4	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	12:54-12:58							
Water Depth (m)	8.4							
Monitoring Depth (m)	1.0		4.2		7.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.6	30.4	29.8	29.8	29.4	29.4	29.87	-
Salinity (ppt)	20.6	21.4	24.9	24.9	27.8	27.7	24.55	-
pH	7.8	7.8	7.9	7.9	8.0	7.9	7.89	-
D.O. Saturation (%)	79.9	77.5	74.0	73.8	71.9	73.2	75.05	-
D.O. (mg/L)	5.5	5.3	5.1	5.0	4.9	5.0	5.13	4.92
Turbidity (NTU)	7.2	6.8	8.5	8.4	9.2	9.1	8.20	-
SS (mg/L)	5.0	6.0	5.0	7.0	6.0	6.0	5.83	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	12:45-12:47							
Water Depth (m)	9.4							
Monitoring Depth (m)	1.0		4.7		8.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.3	30.5	29.7	29.7	29.5	29.6	29.89	-
Salinity (ppt)	20.9	20.5	26.3	25.2	27.2	26.7	24.45	-
pH	7.9	7.9	8.0	7.9	7.9	7.9	7.91	-
D.O. Saturation (%)	79.8	79.4	74.4	74.5	74.9	75.9	76.48	-
D.O. (mg/L)	5.5	5.5	5.1	5.1	5.1	5.2	5.23	5.12
Turbidity (NTU)	6.3	6.5	6.1	6.0	5.9	5.8	6.10	-
SS (mg/L)	6.0	6.0	6.0	7.0	6.0	7.0	6.33	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	13:12-13:13							
Water Depth (m)	5.7							
Monitoring Depth (m)	1.0		2.9		4.7			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.4	30.3	-	-	29.6	29.7	30.01	-
Salinity (ppt)	22.1	20.6	-	-	26.0	26.3	23.76	-
pH	7.8	7.8	-	-	7.9	7.8	7.80	-
D.O. Saturation (%)	79.8	79.4	-	-	76.2	80.6	79.00	-
D.O. (mg/L)	5.5	5.5	-	-	5.2	5.5	5.40	5.33
Turbidity (NTU)	6.5	6.4	-	-	7.3	7.6	6.95	-
SS (mg/L)	4.8	5.0	-	-	5.0	6.0	5.21	-
Remarks	No dredging works was observed.							



Sampling Date	09/30/08
Weather & Ambient Temperature	Sunny, 31C

Station	C2 (NM5)								
Time (hh:mm)	14:07-14:09								
Water Depth (m)	19.0								
Monitoring Depth (m)	1.0		9.5		18.0				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom	
Water Temperature (°C)	29.6	29.7	29.4	29.3	28.4	28.3	29.12	-	
Salinity (ppt)	27.7	27.6	27.8	27.8	29.9	30.1	28.49	-	
pH	8.0	7.9	7.9	7.9	7.8	7.8	7.88	-	
D.O. Saturation (%)	85.6	83.8	79.1	75.7	68.8	72.0	77.50	-	
D.O. (mg/L)	5.7	5.6	5.3	5.1	4.6	4.8	5.18	4.73	
Turbidity (NTU)	6.5	6.5	7.3	7.2	10.3	10.5	8.05	-	
SS (mg/L)	12.0	11.0	12.0	12.0	11.0	12.0	11.67	-	
Remarks	No dredging works was observed.								

Station	IMO1						Co-ordinates	
Time (hh:mm)	12:56-12:58						Northing	Easting
Water Depth (m)	16.4						22.21.892	113.55.213
Monitoring Depth (m)	1.0		8.2		15.4			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.6	29.6	29.1	29.2	29.1	28.8	29.22	-
Salinity (ppt)	26.9	27.0	28.5	28.4	28.6	29.0	28.07	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81	-
D.O. Saturation (%)	83.0	82.1	77.2	79.3	77.2	74.1	78.82	-
D.O. (mg/L)	5.6	5.5	5.2	5.3	5.2	4.96	5.27	5.06
Turbidity (NTU)	6.8	6.9	7.2	7.3	7.8	8.0	7.33	-
SS (mg/L)	17.0	16.0	14.0	16.0	17.0	17.0	16.17	-
Remarks	No dredging works was observed.							

Station	IMO2						Co-ordinates	
Time (hh:mm)	12:45-12:48						Northing	Easting
Water Depth (m)	14.0						22.21.651	113.55.899
Monitoring Depth (m)	1.0		7.0		13.0			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	29.0	29.0	28.8	28.4	28.3	28.3	28.62	-
Salinity (ppt)	28.9	28.9	29.2	29.9	30.2	30.2	29.57	-
pH	7.9	7.9	7.9	7.9	7.9	7.8	7.87	-
D.O. Saturation (%)	73.5	74.3	71.2	66.9	66.3	65.8	69.67	-
D.O. (mg/L)	4.9	5.0	4.8	4.5	4.5	4.41	4.66	4.43
Turbidity (NTU)	9.0	9.0	10.8	11.0	13.9	13.8	11.25	-
SS (mg/L)	14.0	13.0	10.0	10.0	13.0	13.0	12.17	-
Remarks	No dredging works was observed.							

Compliance with Action and Limit Level

Parameter	As in EM&A		C2*130%		IMO1		IMO2		MPB1		MPB2		MP	
	Action Level	Limit Level	Action Level	Limit Level	Exceedance of Action	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level	Exceedance of Action Level	Exceedance of Limit Level
DO (Bottom)	3.3	2.5	4.7	4.7	N	N	N	N	N	N	N	N	N	N
DO (Depth-averaged)	4.2	4.0	5.2	5.2	N	N	N	N	N	N	N	N	N	N
Turbidity (Depth-averaged)	29.0	49.0	10.5	10.5	N	N	N	N	N	N	N	N	N	N
SS (Depth-averaged)	24.0	37.0	15.2	15.2	N	N	N	N	N	N	N	N	N	N

Mid-Ebb

Station	MPB1							
Time (hh:mm)	13:37-13:40							
Water Depth (m)	8.8							
Monitoring Depth (m)	1.0		4.4		7.8			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.3	30.1	29.5	29.5	29.1	29.1	29.60	-
Salinity (ppt)	19.3	20.0	23.6	23.5	26.5	26.4	23.22	-
pH	7.6	7.6	7.7	7.7	7.7	7.7	7.63	-
D.O. Saturation (%)	77.5	75.1	71.6	71.4	69.5	70.8	72.65	-
D.O. (mg/L)	5.3	5.1	4.9	4.9	4.7	4.8	4.94	4.73
Turbidity (NTU)	8.7	8.4	9.7	9.6	10.5	10.4	9.55	-
SS (mg/L)	21.0	20.0	21.0	24.0	17.0	19.0	20.33	-
Remarks	No dredging works was observed.							

Station	MPB2							
Time (hh:mm)	13:27-13:29							
Water Depth (m)	9.2							
Monitoring Depth (m)	1.0		4.6		8.2			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.0	30.3	29.4	29.5	29.3	29.3	29.62	-
Salinity (ppt)	19.6	19.1	24.9	23.9	25.9	25.4	23.12	-
pH	7.6	7.6	7.7	7.7	7.7	7.7	7.65	-
D.O. Saturation (%)	77.4	77.0	72.0	72.1	72.5	73.5	74.08	-
D.O. (mg/L)	5.3	5.3	4.9	4.9	4.9	5.0	5.04	4.93
Turbidity (NTU)	8.1	8.2	7.9	7.8	7.7	7.7	7.90	-
SS (mg/L)	17.0	16.0	18.0	18.0	21.0	18.0	18.00	-
Remarks	No dredging works was observed.							

Station	MP							
Time (hh:mm)	13:54-13:56							
Water Depth (m)	5.7							
Monitoring Depth (m)	1.0		2.9		4.7			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	30.1	30.0	-	-	29.3	29.5	29.74	-
Salinity (ppt)	20.8	19.3	-	-	24.6	25.0	22.43	-
pH	7.5	7.5	-	-	7.6	7.5	7.54	-
D.O. Saturation (%)	77.4	77.0	-	-	73.8	78.2	76.60	-
D.O. (mg/L)	5.3	5.3	-	-	5.0	5.3	5.21	5.14
Turbidity (NTU)	8.2	8.1	-	-	8.8	9.0	8.53	-
SS (mg/L)	4.6	4.8	-	-	15.0	18.0	10.61	-
Remarks	No dredging works was observed.							



Annex H

Monitoring Results and  
QA/QC Reports of  
Laboratory Testing for  
POPs



## CERTIFICATE OF ANALYSIS

Client	: ERM HONG KONG	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 7
Contact	: MS KAREN LUI	Contact	: Wong Wai Man, Alice	Work Order	: HK0813891
Address	: 21/F, LINCOLN HOUSE, 979 KING`S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Karen.Lui@erm.com	E-mail	: Alice.Wong@alsenviro.com		
Telephone	: +852 2271 3000	Telephone	: +852 2610 1044		
Facsimile	: +852 2723 5660	Facsimile	: +852 2610 2021		
Project	: EM&A FOR THE PERMANENT AVIATION FUEL FACILITY	Quote number	: ----	Date Samples Received	: 03-SEP-2008
Order number	: ----			Issue Date	: 25-SEP-2008
C-O-C number	: ----			No. of samples received	: 18
Site	: ----			No. of samples analysed	: 18

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the 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 processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 10-SEP-2008

Key: LOR = Limit of reporting; CAS Number = Chemistry Abstract Services number

Specific comments for Work Order: **HK0813891**

**Sample(s) were collected by ALS Technichem (HK) staff on 03 September, 2008.**

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

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

*Signatories*

Anh Ngoc Huynh

*Position*

Senior Chemist

*Authorised results for*

Organics

**ALS Laboratory Group**

Trading Name: **ALS Technichem (HK) Pty Ltd**

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A Campbell Brothers Limited Company



### Analytical Results

Sub-Matrix: MARINE WATER

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	MPB1 ME	MPB1 ME DUP	MPB2 ME	MPB2 ME DUP	MP ME
				[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]
				HK0813891-001	HK0813891-002	HK0813891-003	HK0813891-004	HK0813891-005
<b>EP-065A: PCB Single Congeners</b>								
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
<b>EP-065B: Organochlorine Pesticides</b>								
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>						Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	71.4	84.0	63.6	80.3	76.0





Sub-Matrix: MARINE WATER				Client sample ID	MP ME DUP	C2 (NM5) ME	C2 (NM5) ME DUP	MPB1 MF	MPB1 MF DUP
Client sampling date / time				[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]	
Compound	CAS Number	LOR	Unit	HK0813891-006	HK0813891-007	HK0813891-008	HK0813891-009	HK0813891-010	
<b>EP-065A: PCB Single Congeners</b>									
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EP-065B: Organochlorine Pesticides</b>									
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	74.1	72.2	69.8	102	57.5	



Sub-Matrix: MARINE WATER				Client sample ID	MPB2 MF	MPB2 MF DUP	MP MF	MP MF DUP	C1 (NM3) MF
				Client sampling date / time	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]
Compound	CAS Number	LOR	Unit	HK0813891-011	HK0813891-012	HK0813891-013	HK0813891-014	HK0813891-015	
<b>EP-065A: PCB Single Congeners</b>									
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>EP-065B: Organochlorine Pesticides</b>									
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>								Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	63.2	59.0	73.4	64.4	60.1	



Sub-Matrix: MARINE WATER				Client sample ID	C1 (NM3) MF DUP	C3 (NM6) MF	C3 (NM6) MF DUP		
				Client sampling date / time	[03-SEP-2008]	[03-SEP-2008]	[03-SEP-2008]		
Compound	CAS Number	LOR	Unit	HK0813891-016	HK0813891-017	HK0813891-018			
<b>EP-065A: PCB Single Congeners</b>									
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01			
<b>EP-065B: Organochlorine Pesticides</b>									
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01			
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01			
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01			
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	57.1	51.5	60.1			



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EP-065A: PCB Single Congeners (QC Lot: 749667)</b>								
HK0813891-001	MPB1 ME	PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	0.0
		PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	0.0
		PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	0.0
		PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	0.0
		PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	0.0
		PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	0.0
		PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	0.0
		PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	0.0
		PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	0.0
		PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	0.0
		PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	0.0
		PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	0.0
		PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	0.0
		PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	0.0
		PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	0.0
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	0.0		
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	0.0		
<b>EP-065B: Organochlorine Pesticides (QC Lot: 749667)</b>								
HK0813891-001	MPB1 ME	4.4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	0.0
		4.4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	0.0
		4.4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentratio	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EP-065A: PCB Single Congeners (QC Lot: 749667)</b>											
PCB 8	34883-43-7	0.01	µg/L	<0.01	100 µg/L	77.5	----	50	130	----	----
PCB 18	37680-65-2	0.01	µg/L	<0.01	100 µg/L	88.4	----	50	130	----	----
PCB 28	7012-37-5	0.01	µg/L	<0.01	100 µg/L	104	----	50	130	----	----
PCB 52	35693-99-3	0.01	µg/L	<0.01	100 µg/L	110	----	50	130	----	----
PCB 44	41464-39-5	0.01	µg/L	<0.01	100 µg/L	110	----	50	130	----	----
PCB 66	32598-10-0	0.01	µg/L	<0.01	100 µg/L	109	----	50	130	----	----
PCB 101	37680-73-2	0.01	µg/L	<0.01	100 µg/L	109	----	50	130	----	----



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EP-065A: PCB Single Congeners (QC Lot: 749667) - Continued</b>											
PCB 77	32598-13-3	0.01	µg/L	<0.01	100 µg/L	97.4	----	50	130	----	----
PCB 149	38380-04-0	0.01	µg/L	<0.01	100 µg/L	97.5	----	50	130	----	----
PCB 118	31508-00-6	0.01	µg/L	<0.01	100 µg/L	99.6	----	50	130	----	----
PCB 153	35065-27-1	0.01	µg/L	<0.01	100 µg/L	110	----	50	130	----	----
PCB 105	32598-14-4	0.01	µg/L	<0.01	100 µg/L	96.9	----	50	130	----	----
PCB 138	35065-28-2	0.01	µg/L	<0.01	100 µg/L	# 154	----	50	130	----	----
PCB 126	57465-28-8	0.01	µg/L	<0.01	100 µg/L	112	----	50	130	----	----
PCB 187	52663-68-0	0.01	µg/L	<0.01	100 µg/L	84.3	----	50	130	----	----
PCB 128	38380-07-3	0.01	µg/L	<0.01	100 µg/L	98.4	----	50	130	----	----
PCB 156	38380-08-4	0.01	µg/L	<0.01	100 µg/L	94.1	----	50	130	----	----
PCB 180	35065-29-3	0.01	µg/L	<0.01	100 µg/L	93.8	----	50	130	----	----
PCB 169	60044-26-0	0.01	µg/L	<0.01	100 µg/L	96.6	----	50	130	----	----
PCB 170	35065-30-6	0.01	µg/L	<0.01	100 µg/L	96.8	----	50	130	----	----
PCB 195	52663-78-2	0.01	µg/L	<0.01	100 µg/L	96.3	----	50	130	----	----
<b>EP-065B: Organochlorine Pesticides (QC Lot: 749667)</b>											
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	100 µg/L	# Not Determined	----	50	130	----	----
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	100 µg/L	# Not Determined	----	50	130	----	----
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	100 µg/L	# Not Determined	----	50	130	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

**Surrogate Control Limits**

Sub-Matrix: MARINE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>			
Decachlorobiphenyl	2051-24-3	50	130

**CERTIFICATE OF ANALYSIS**

**CONTACT:** MS KAREN LUI  
**CLIENT:** ERM HONG KONG  
**ADDRESS:** 21/F, LINCOLN HOUSE, 979 KING'S ROAD,  
 TAIKOO PLACE, ISLAND EAST,  
 QUARRY BAY, HONG KONG.  
**PROJECT:** EM&A FOR THE PERMANENT AVIATION FUEL FACILITY

**Batch:** HK0813891  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 03/09/2008  
**DATE OF ISSUE:** 25/09/2008  
**SAMPLE TYPE:** WATER  
**No. of SAMPLES:** 18

**COMMENTS**

Sample(s) were collected by ALS Technichem (HK) staff on 03 September, 2008.  
 Water sample(s) analysed and reported on an as received basis.  
 PAHs were subcontracted and tested by ALS Sydney.  
 ALS Sydney details report was attached. The attached report contains a total of 16 pages.


**Sample Details**

<b>ALS Lab ID</b>	<b>Sample ID</b>	<b>Date of Sampling</b>
HK0813891 - 1	MPB1-ME	03/09/2008
HK0813891 - 2	MPB1-ME DUP	03/09/2008
HK0813891 - 3	MPB2-ME	03/09/2008
HK0813891 - 4	MPB2-ME DUP	03/09/2008
HK0813891 - 5	MP-ME	03/09/2008
HK0813891 - 6	MP-ME DUP	03/09/2008
HK0813891 - 7	C2 (NM5)-ME	03/09/2008
HK0813891 - 8	C2 (NM5)-ME DUP	03/09/2008
HK0813891 - 9	MPB1-MF	03/09/2008
HK0813891 - 10	MPB1-MF DUP	03/09/2008
HK0813891 - 11	MPB2-MF	03/09/2008
HK0813891 - 12	MPB2-MF DUP	03/09/2008
HK0813891 - 13	MP-MF	03/09/2008
HK0813891 - 14	MP-MF DUP	03/09/2008
HK0813891 - 15	C1 (NM3)-MF	03/09/2008
HK0813891 - 16	C1 (NM3)-MF DUP	03/09/2008
HK0813891 - 17	C3 (NM6)-MF	03/09/2008
HK0813891 - 18	C3 (NM6)-MF DUP	03/09/2008

**ISSUING LABORATORY: HONG KONG****Address**

ALS Technichem (HK) Pty Ltd  
 11/F Chung Shun Knitting Centre  
 1-3 Wing Yip Street  
 Kwai Chung  
 HONG KONG

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 Ms Wong Wai Man, Alice  
 Laboratory Manager - Hong Kong

**Other ALS Environmental Laboratories**

**AUSTRALIA**  
 Brisbane Hong Kong  
 Melbourne Singapore  
 Sydney Kuala Lumpur  
 Newcastle Bogor

**AMERICAS**  
 Vancouver  
 Santiago  
 Amtofagasta  
 Lima

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Abbreviations: % SPK REC denotes percentage spike recovery  
 CHK denotes duplicate check sample  
 LOR denotes limit of reporting  
 LCS % REC denotes Laboratory Control Sample percentage recovery

**ALS Technichem (HK) Pty Ltd**  
 Part of the **ALS Laboratory Group**

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 A Campbell Brothers Limited Company



Environmental Division

**CERTIFICATE OF ANALYSIS**

Work Order	: <b>ES0813042</b>	Page	: 1 of 8
Amendment	: <b>1</b>		
Client	: <b>ALS TECHNICHEM (HK)</b>	Laboratory	: Environmental Division Sydney
Contact	: <b>MS ALICE WONG</b>	Contact	: Charlie Pierce
Address	: <b>11/F CHUNG SHUN KNITTING CNTR 1-3 WING YIP STREET KWAI CHUNG, N.T HONG KONG HONG KONG</b>	Address	: <b>277-289 Woodpark Road Smithfield NSW Australia 2164</b>
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Telephone	: <b>+852 001185226101044</b>	Telephone	: <b>+61-2-8784 8555</b>
Facsimile	: <b>+852 26102021</b>	Facsimile	: <b>+61-2-8784 8500</b>
Project	: <b>----</b>	QC Level	: <b>NEPM 1999 Schedule B(3) and ALS QCS3 requirement</b>
Order number	: <b>----</b>		
C-O-C number	: <b>----</b>	Date Samples Received	: <b>08-SEP-2008</b>
Sampler	: <b>----</b>	Issue Date	: <b>24-SEP-2008</b>
Site	: <b>----</b>		
Quote number	: <b>SY/241/07</b>	No. of samples received	: <b>18</b>
		No. of samples analysed	: <b>18</b>

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



WORLD RECOGNISED  
**ACCREDITATION**

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

*Signatories*

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

*Signatories*

*Position*

*Accreditation Category*

Alex Rossi

Organic Chemist

Organics

Page : 3 of 8  
Work Order : ES0813042 Amendment 1  
Client : ALS TECHNICHEM (HK)  
Project : ----



### **General Comments**

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting





**Analytical Results**

Sub-Matrix: WATER	Client Sample ID	Client Sampling date / time	HK0813891-1 MPB1-ME 03-SEP-2008 15:00 ES0813042-001	HK0813891-2 MPB1-ME DUP 03-SEP-2008 15:00 ES0813042-002	HK0813891-3 MPB2-ME 03-SEP-2008 15:00 ES0813042-003	HK0813891-4 MPB2-ME DUP 03-SEP-2008 15:00 ES0813042-004	HK0813891-5 MP-ME 03-SEP-2008 15:00 ES0813042-005	
Compound	CAS Number	LDR	Unit					
<b>EP132B: Polynuclear Aromatic Hydrocarbons</b>								
3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perylene	193-59-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP132T: Base/Neutral Extractable Surrogates</b>								
2-Fluorobiphenyl	321-80-8	0.1	%	86.5	84.3	86.5	85.9	94.7
Anthracene-d10	1719-08-8	0.1	%	96.3	93.6	95.8	98.6	106
4-Terphenyl-d14	1718-51-0	0.1	%	97.5	92.9	94.4	96.7	106



**Analytical Results**

Sub-Matrix: WATER

Compound	CAS Number	LDR	Unit	Client sample ID:	Client sampling date / time:	Client sample ID:	Client sampling date / time:	Client sample ID:	Client sampling date / time:	Client sample ID:	Client sampling date / time:
				HK0813891-6	HK0813891-7	HK0813891-8	HK0813891-9	HK0813891-10			
				MP-ME DUP	C2(NM5)-ME	C2(NM5)-ME DUP	MPB1-MF	MPB1-MF DUP			
				03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00	
				ES0813042-006	ES0813042-007	ES0813042-008	ES0813042-009	ES0813042-010			
<b>EP132B: Polynuclear Aromatic Hydrocarbons</b>											
3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
<b>EP132T: Base/Neutral Extractable Surrogates</b>											
2-Fluorobiphenyl	321-60-8	0.1	%	93.0	88.0	89.6	95.8	105			
Anthracene-d10	1719-06-8	0.1	%	103	97.9	98.0	106	107			
4-Terphenyl-d14	1718-51-0	0.1	%	103	96.2	98.9	108	109			



**Analytical Results**

Sub-Matrix: WATER	Client Sample ID:	HK0813891-11	HK0813891-12	HK0813891-13	HK0813891-15	HK0813891-16		
	Client sampling date / time:	MPB2-MF	MPB2-MF DUP	MP-MF	C1(NM3)-MF	C1(NM3)-MF DUP		
		03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00	03-SEP-2008 15:00		
Component	CAS Number	LOR	Unit	ES0813042-011	ES0813042-012	ES0813042-013	ES0813042-014	ES0813042-015
<b>EP132B: Polynuclear Aromatic Hydrocarbons</b>								
3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP132T: Base/Neutral Extractable Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	98.6	88.2	87.5	92.8	96.4
Anthracene-d10	1719-06-8	0.1	%	112	97.6	96.6	105	106
4-Terphenyl-d14	1718-51-0	0.1	%	113	96.8	95.6	104	106



**Analytical Results**

Sub-Matrix: WATER	Client Sample ID	HK0813891-17	HK0813891-18	HK0813891-14		
	Client sampling date / time	C1(NM6)-MF	C1(NM6)-MF DUP	MP-MF DUP		
Compound	CAS Number	LQR	Unit	ES0813042-016	ES0813042-017	ES0813042-018
<b>EP132B: Polynuclear Aromatic Hydrocarbons</b>						
3-Methylcholanthrene	56-48-5	0.1	µg/L	<0.1	<0.1	<0.1
2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	<0.1
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	<0.1
Acenaphthene	83-32-8	0.1	µg/L	<0.1	<0.1	<0.1
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	<0.1
Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	<0.1
Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	<0.1
Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	<0.1
Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	<0.1
Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	<0.1
N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	<0.1	<0.1
Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	<0.1
Perylene	196-55-0	0.1	µg/L	<0.1	<0.1	<0.1
Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	<0.1
Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	<0.1
<b>EP132T: Base/Neutral Extractable Surrogates</b>						
2-Fluorobiphenyl	321-60-8	0.1	%	92.8	87.3	83.2
Anthracene-d10	1719-06-8	0.1	%	101	99.1	98.4
4-Terphenyl-d14	1718-51-0	0.1	%	101	97.3	95.9



### Surrogate Control Limits

Compound	CAS Number	Recovery Limits (%)	
		Low	High
<b>EP132T: Basic/Neutral Extractable Surrogates</b>			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141



Environmental Division

**QUALITY CONTROL REPORT**

Work Order	: ES0813042	Page	: 1 of 7
Amendment	: 1		
Client	: ALS TECHNICHEM (HK)	Laboratory	: Environmental Division Sydney
Contact	: MS ALICE WONG	Contact	: Charlie Pierce
Address	: 11/F CHUNG SHUN KNITTING CNTR 1-3 WING YIP STREET KWAI CHUNG, N.T HONG KONG HONG KONG	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Facsimile	: +852 26102021	Facsimile	: +61-2-8784 8500
Project	: ---	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ---		
C-O-C number	: ---	Date Samples Received	: 08-SEP-2008
Sampler	: ---	Issue Date	: 24-SEP-2008
Order number	: ---		
Quote number	: SY/241/07	No. of samples received	: 18
		No. of samples analysed	: 18

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



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This document is issued in accordance with NATA accreditation requirements.

WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

**Signatories**

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Organics



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :            Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
                  CAS Number = Chemistry Abstract Services number  
                  LOR = Limit of reporting  
                  RPD = Relative Percentage Difference  
                  # = Indicates failed QC



### **Laboratory Duplicate (DUP) Report**

The quality control term Laboratory Duplicate refers to a randomly selected in-laboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

No Limit

- **No Laboratory Duplicate (DUP) Results are required to be reported.**





### Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method Blank (MB) refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER

Method/Compound	CAS Number	LOD	Unit	Method Blank (MB)	Spike Concentration	Laboratory Control Spike (LCS) Report	
				Result		Spike Recovery (%)	Recovery Limits (%)
						Low	High
<b>EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 752483)</b>							
EP132: 3-Methylanthracene	55-16-5	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	82.6	65.8 121
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	87.4	67.7 112
EP132: 7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	77.9	11.6 146
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	87.2	73.2 111
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	89.0	72.4 112
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	86.7	73.4 113
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	88.3	73.6 114
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	85.0	75.2 117
EP132: Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	88.2	71.4 119
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	84.2	75.3 118
EP132: Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	82.9	66.6 121
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	92.6	74.8 118
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	84.6	69.6 120
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	76.2	47.4 131
EP132: Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	83.6	71.5 117
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	89.4	74.8 117
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	88.3	72.9 114
EP132: Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	---	---	---
		0.10	µg/L	---	2 µg/L	83.4	67.8 119



Substrate: WATER

Method	Compound	CAS Number	LOD	Unit	Method Blank (MB)	Spike	Laboratory Control Spikes (LCS) Report		Recovery Limits (%)
					Report		Concentration	Spikes Recovery (%)	
					Result		LCS	Low	High
<b>EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 752483) - continued</b>									
EP132:	N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	20 µg/L	71.0	53.6	131
EP132:	Naphthalene	91-20-3	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	94.5	68.3	116
EP132:	Perylene	198-55-0	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	83.3	68	122
EP132:	Phenanthrene	85-01-8	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	88.4	74.8	112
EP132:	Pyrene	129-00-0	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	90.7	75.1	117
<b>EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 759512)</b>									
EP132:	3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	83.4	65.8	121
EP132:	2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	90.0	67.7	112
EP132:	7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	82.5	11.6	146
EP132:	Acenaphthene	83-32-9	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	88.1	73.2	111
EP132:	Acenaphthylene	208-96-8	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	92.5	72.4	112
EP132:	Anthracene	120-12-7	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	91.3	73.4	113
EP132:	Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	91.7	73.6	114
EP132:	Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	91.0	75.2	117
EP132:	Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	90.9	71.4	119
EP132:	Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	91.3	75.3	118
EP132:	Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	92.6	66.6	121
EP132:	Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	91.1	74.8	118
EP132:	Chrysene	218-01-9	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	92.2	69.6	120
EP132:	Coronene	191-07-1	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	95.2	47.4	131
EP132:	Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	95.8	71.5	117



Sub-Matrix: WATER

Method/Compound	CAS Number	LDR	Unit	Method Blank (MB)	Spike Concentration	Laboratory Control Spike (LCS) Report		
				Report Result		Spike Recovery (%)	Recovery Limits (%)	
						LCs	Low	High
<b>EP132B: Polynuclear Aromatic Hydrocarbons (OCLoc: 759512) - continued</b>								
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	92.4	74.8	117
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	90.5	72.9	114
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	94.6	67.8	119
EP132: N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	97.0	53.6	131
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	93.7	68.3	116
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	90.9	68	122
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	93.7	74.8	112
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	----	----	----	----
		0.10	µg/L	----	2 µg/L	92.8	75.1	117



### ***Matrix Spike (MS) Report***

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) Results are required to be reported.**



## CERTIFICATE OF ANALYSIS

Client	: ERM HONG KONG	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 7
Contact	: MS KAREN LUI	Contact	: Wong Wai Man, Alice	Work Order	: HK0814214
Address	: 21/F, LINCOLN HOUSE, 979 KING`S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Karen.Lui@erm.com	E-mail	: Alice.Wong@alsenviro.com		
Telephone	: +852 2271 3000	Telephone	: +852 2610 1044		
Facsimile	: +852 2723 5660	Facsimile	: +852 2610 2021		
Project	: EM&A FOR THE PERMANENT AVIATION FUEL FACILITY	Quote number	: ----	Date Samples Received	: 17-SEP-2008
Order number	: ----			Issue Date	: 09-OCT-2008
C-O-C number	: ----			No. of samples received	: 18
Site	: ----			No. of samples analysed	: 18

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the 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 processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 23-SEP-2008

Key: LOR = Limit of reporting; CAS Number = Chemistry Abstract Services number

Specific comments for Work Order: **HK0814214**

**Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**

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

**This report may not be reproduced except with prior written approval from the testing laboratory.**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

*Signatories*

Anh Ngoc Huynh

*Position*

Senior Chemist

*Authorised results for*

Organics

**ALS Laboratory Group**

Trading Name: **ALS Technichem (HK) Pty Ltd**

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A Campbell Brothers Limited Company



### Analytical Results

Sub-Matrix: MARINE WATER

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	MPB1 ME	MPB1 ME DUP	MPB2 ME	MPB2 ME DUP	MP ME
				[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]
				HK0814214-001	HK0814214-002	HK0814214-003	HK0814214-004	HK0814214-005
<b>EP-065A: PCB Single Congeners</b>								
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
<b>EP-065B: Organochlorine Pesticides</b>								
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>						Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	98.6	98.6	99.3	94.8	80.3



Sub-Matrix: MARINE WATER				Client sample ID	MP ME DUP	C2 (NM5) ME	C2 (NM5) ME DUP	MPB1 MF	MPB1 MF DUP
				Client sampling date / time	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]
Compound	CAS Number	LOR	Unit	HK0814214-006	HK0814214-007	HK0814214-008	HK0814214-009	HK0814214-010	
<b>EP-065A: PCB Single Congeners</b>									
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EP-065B: Organochlorine Pesticides</b>									
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	93.1	96.6	95.4	102	105	



Sub-Matrix: MARINE WATER				Client sample ID	MPB2 MF	MPB2 MF DUP	MP MF	MP MF DUP	C1 (NM3) MF
				Client sampling date / time	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]
Compound	CAS Number	LOR	Unit	HK0814214-011	HK0814214-012	HK0814214-013	HK0814214-014	HK0814214-015	
<b>EP-065A: PCB Single Congeners</b>									
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EP-065B: Organochlorine Pesticides</b>									
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	92.5	101	92.6	89.0	93.9	





Sub-Matrix: MARINE WATER				Client sample ID	C1 (NM3) MF DUP	C3 (NM6) MF	C3 (NM6) MF DUP		
				Client sampling date / time	[17-SEP-2008]	[17-SEP-2008]	[17-SEP-2008]		
Compound	CAS Number	LOR	Unit	HK0814214-016	HK0814214-017	HK0814214-018			
<b>EP-065A: PCB Single Congeners</b>									
PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	<0.01			
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	<0.01			
<b>EP-065B: Organochlorine Pesticides</b>									
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	<0.01			
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	<0.01			
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	<0.01			
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>								Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	102	103	99.0			



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EP-065A: PCB Single Congeners (QC Lot: 763840)</b>								
HK0814214-001	MPB1 ME	PCB 8	34883-43-7	0.01	µg/L	<0.01	<0.01	0.0
		PCB 18	37680-65-2	0.01	µg/L	<0.01	<0.01	0.0
		PCB 28	7012-37-5	0.01	µg/L	<0.01	<0.01	0.0
		PCB 52	35693-99-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 44	41464-39-5	0.01	µg/L	<0.01	<0.01	0.0
		PCB 66	32598-10-0	0.01	µg/L	<0.01	<0.01	0.0
		PCB 101	37680-73-2	0.01	µg/L	<0.01	<0.01	0.0
		PCB 77	32598-13-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 149	38380-04-0	0.01	µg/L	<0.01	<0.01	0.0
		PCB 118	31508-00-6	0.01	µg/L	<0.01	<0.01	0.0
		PCB 153	35065-27-1	0.01	µg/L	<0.01	<0.01	0.0
		PCB 105	32598-14-4	0.01	µg/L	<0.01	<0.01	0.0
		PCB 138	35065-28-2	0.01	µg/L	<0.01	<0.01	0.0
		PCB 126	57465-28-8	0.01	µg/L	<0.01	<0.01	0.0
		PCB 187	52663-68-0	0.01	µg/L	<0.01	<0.01	0.0
		PCB 128	38380-07-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 156	38380-08-4	0.01	µg/L	<0.01	<0.01	0.0
		PCB 180	35065-29-3	0.01	µg/L	<0.01	<0.01	0.0
		PCB 169	60044-26-0	0.01	µg/L	<0.01	<0.01	0.0
PCB 170	35065-30-6	0.01	µg/L	<0.01	<0.01	0.0		
PCB 195	52663-78-2	0.01	µg/L	<0.01	<0.01	0.0		
<b>EP-065B: Organochlorine Pesticides (QC Lot: 763840)</b>								
HK0814214-001	MPB1 ME	4.4'-DDT	50-29-3	0.01	µg/L	<0.01	<0.01	0.0
		4.4'-DDE	72-55-9	0.01	µg/L	<0.01	<0.01	0.0
		4.4'-DDD	72-54-8	0.01	µg/L	<0.01	<0.01	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentratio	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EP-065A: PCB Single Congeners (QC Lot: 763840)</b>											
PCB 8	34883-43-7	0.01	µg/L	<0.01	100 µg/L	85.9	----	50	130	----	----
PCB 18	37680-65-2	0.01	µg/L	<0.01	100 µg/L	76.4	----	50	130	----	----
PCB 28	7012-37-5	0.01	µg/L	<0.01	100 µg/L	63.6	----	50	130	----	----
PCB 52	35693-99-3	0.01	µg/L	<0.01	100 µg/L	57.9	----	50	130	----	----
PCB 44	41464-39-5	0.01	µg/L	<0.01	100 µg/L	56.9	----	50	130	----	----
PCB 66	32598-10-0	0.01	µg/L	<0.01	100 µg/L	59.5	----	50	130	----	----
PCB 101	37680-73-2	0.01	µg/L	<0.01	100 µg/L	58.2	----	50	130	----	----



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EP-065A: PCB Single Congeners (QC Lot: 763840) - Continued</b>											
PCB 77	32598-13-3	0.01	µg/L	<0.01	100 µg/L	66.4	----	50	130	----	----
PCB 149	38380-04-0	0.01	µg/L	<0.01	100 µg/L	62.0	----	50	130	----	----
PCB 118	31508-00-6	0.01	µg/L	<0.01	100 µg/L	66.4	----	50	130	----	----
PCB 153	35065-27-1	0.01	µg/L	<0.01	100 µg/L	67.3	----	50	130	----	----
PCB 105	32598-14-4	0.01	µg/L	<0.01	100 µg/L	70.6	----	50	130	----	----
PCB 138	35065-28-2	0.01	µg/L	<0.01	100 µg/L	70.6	----	50	130	----	----
PCB 126	57465-28-8	0.01	µg/L	<0.01	100 µg/L	73.1	----	50	130	----	----
PCB 187	52663-68-0	0.01	µg/L	<0.01	100 µg/L	67.1	----	50	130	----	----
PCB 128	38380-07-3	0.01	µg/L	<0.01	100 µg/L	72.3	----	50	130	----	----
PCB 156	38380-08-4	0.01	µg/L	<0.01	100 µg/L	74.8	----	50	130	----	----
PCB 180	35065-29-3	0.01	µg/L	<0.01	100 µg/L	74.6	----	50	130	----	----
PCB 169	60044-26-0	0.01	µg/L	<0.01	100 µg/L	79.0	----	50	130	----	----
PCB 170	35065-30-6	0.01	µg/L	<0.01	100 µg/L	77.7	----	50	130	----	----
PCB 195	52663-78-2	0.01	µg/L	<0.01	100 µg/L	80.0	----	50	130	----	----
<b>EP-065B: Organochlorine Pesticides (QC Lot: 763840)</b>											
4,4'-DDT	50-29-3	0.01	µg/L	<0.01	100 µg/L	# Not Determined	----	50	130	----	----
4,4'-DDE	72-55-9	0.01	µg/L	<0.01	100 µg/L	# Not Determined	----	50	130	----	----
4,4'-DDD	72-54-8	0.01	µg/L	<0.01	100 µg/L	# Not Determined	----	50	130	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

**Surrogate Control Limits**

Sub-Matrix: MARINE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate</b>			
Decachlorobiphenyl	2051-24-3	50	130



Environmental Division

**CERTIFICATE OF ANALYSIS**

**CONTACT:** MS KAREN LUI  
**CLIENT:** ERM HONG KONG  
**ADDRESS:** 21/F, LINCOLN HOUSE, 979 KING'S ROAD,  
TAIKOO PLACE, ISLAND EAST,  
QUARRY BAY, HONG KONG.  
**PROJECT:** EM&A FOR THE PERMANENT AVIATION FUEL FACILITY

**Batch:** HK0814214  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 17/09/2008  
**DATE OF ISSUE:** 06/10/2008  
**SAMPLE TYPE:** WATER  
**No. of SAMPLES:** 18

**COMMENTS**

Sample(s) were collected by ALS Technichem (HK) staff on 17 September, 2008.  
Water sample(s) analysed and reported on an as received basis.  
PAHs were subcontracted and tested by ALS Sydney.  
ALS Sydney details report was attached. The attached report contains a total of 15 pages.

**Sample Details**

<b>ALS Lab ID</b>	<b>Sample ID</b>	<b>Date of Sampling</b>
HK0814214 - 1	MPB1_ME	17/09/2008
HK0814214 - 2	MPB1_ME DUP	17/09/2008
HK0814214 - 3	MPB2_ME	17/09/2008
HK0814214 - 4	MPB2_ME DUP	17/09/2008
HK0814214 - 5	MP_ME	17/09/2008
HK0814214 - 6	MP_ME DUP	17/09/2008
HK0814214 - 7	C2 (NM5)_ME	17/09/2008
HK0814214 - 8	C2 (NM5)_ME DUP	17/09/2008
HK0814214 - 9	MPB1_MF	17/09/2008
HK0814214 - 10	MPB1_MF DUP	17/09/2008
HK0814214 - 11	MPB2_MF	17/09/2008
HK0814214 - 12	MPB2_MF DUP	17/09/2008
HK0814214 - 13	MP_MF	17/09/2008
HK0814214 - 14	MP_MF DUP	17/09/2008
HK0814214 - 15	C1 (NM3)_MF	17/09/2008
HK0814214 - 16	C1 (NM3)_MF DUP	17/09/2008
HK0814214 - 17	C3 (NM6)_MF	17/09/2008
HK0814214 - 18	C3 (NM6)_MF DUP	17/09/2008

**ISSUING LABORATORY: HONG KONG**

**Address**  
ALS Technichem (HK) Pty Ltd  
11/F Chung Shun Knitting Centre  
1-3 Wing Yip Street  
Kwai Chung  
HONG KONG

**Phone:** 852-2610 1044  
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Ms Wong Wai Mai, Alice  
Laboratory Manager - Hong Kong

**Other ALS Environmental Laboratories**

**AUSTRALIA**  
Brisbane  
Melbourne  
Sydney  
Newcastle

**AMERICAS**  
Vancouver  
Santiago  
Artofagasta  
Lima

Abbreviations: % SPK REC denotes percentage spike recovery  
CHK denotes duplicate check sample  
LOR denotes limit of reporting  
LCS % REC denotes Laboratory Control Sample percentage recovery



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES0813842	Page	: 1 of 8
Client	: ALS TECHNICHEM (HK)	Laboratory	: Environmental Division Sydney
Contact	: MS ALICE WONG	Contact	: Charlie Pierce
Address	: 11/F CHUNG SHUN KNITTING CNTR 1-3 WING YIP STREET KWAI CHUNG, N.T HONG KONG HONG KONG	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: alice.wong@alsenviro.com	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +852 001185226101044	Telephone	: +61-2-8784 8555
Facsimile	: +852 26102021	Facsimile	: +61-2-8784 8500
Project	: ----	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 22-SEP-2008
C-O-C number	: ----	Issue Date	: 02-OCT-2008
Sampler	: AW	No. of samples received	: 18
Site	: ----	No. of samples analysed	: 18
Quote number	: SY/241/07		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

*Signatories*

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

*Signatories*

Alex Rossi

*Position*

Organic Chemist

*Accreditation Category*

Organics



### **General Comments**

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting



**Analytical Results**

Sub-Matrix: WATER	Client sample ID	HK0814214_1	HK0814214_2	HK0814214_3	HK0814214_5	HK0814214_6		
		MPB1_ME	MPB1_ME DUP	MPB2_ME	MP_ME	MP_ME DUP		
	Client sampling date / time	17-SEP-2008 15:00	17-SEP-2008 15:00	17-SEP-2008 15:00	17-SEP-2008 15:00	17-SEP-2008 15:00		
Compound	CAS Number	LOR	Unit	ES0813842-001	ES0813842-002	ES0813842-003	ES0813842-004	ES0813842-005

EP132B: Polynuclear Aromatic Hydrocarbons								
3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1

EP132T: Base/Neutral Extractable Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	89.9	72.4	70.8	87.7	92.3
Anthracene-d10	1719-06-8	0.1	%	90.6	79.5	76.6	86.1	92.1
4-Terphenyl-d14	1718-51-0	0.1	%	89.6	77.3	74.7	85.0	89.4





**Analytical Results**

Sub-Matrix: WATER

Client sample ID

HK0814214\_7

HK0814214\_8

HK0814214\_9

HK0814214\_10

HK0814214\_11

Client sampling date / time

17-SEP-2008 15:00

17-SEP-2008 15:00

17-SEP-2008 15:00

17-SEP-2008 15:00

17-SEP-2008 15:00

Compound	CAS Number	Unit	ES0813842-006	ES0813842-007	ES0813842-008	ES0813842-009	ES0813842-010	
<b>EP132B: Polynuclear Aromatic Hydrocarbons</b>								
3-Methylcholanthrene	56-49-5	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
2-Methylnaphthalene	91-57-6	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthene	83-32-9	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthylene	208-96-8	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Anthracene	120-12-7	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Benz(a)anthracene	56-55-3	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(a)pyrene	50-32-8	0.05 µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
Benzo(b)fluoranthene	205-99-2	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(e)pyrene	192-97-2	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(g,h,i)perylene	191-24-2	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(k)fluoranthene	207-08-9	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Chrysene	218-01-9	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Coronene	191-07-1	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Dibenz(a,h)anthracene	53-70-3	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Fluoranthene	206-44-0	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Fluorene	86-73-7	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Indeno(1,2,3-cd)pyrene	193-39-5	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
N-2-Fluorenyl Acetamide	53-96-3	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Naphthalene	91-20-3	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Perylene	198-55-0	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Phenanthrene	85-01-8	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Pyrene	129-00-0	0.1 µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
<b>EP132T: Base/Neutral Extractable Sumgates</b>								
2-Fluorobiphenyl	321-60-8	0.1 %	93.9	86.7	87.3	90.2	96.1	
Anthracene-d10	1719-06-8	0.1 %	92.5	87.0	85.6	90.6	97.3	
4-Terphenyl-d14	1718-51-0	0.1 %	92.7	88.3	88.1	93.0	100	





**Analytical Results**

Sub-Matrix: WATER

Compound	CAS Number	LOD	Unit	Client sample ID	Client sample ID	Client sample ID	Client sample ID	Client sample ID
				HK0814214_12	HK0814214_13	HK0814214_14	HK0814214_15	HK0814214_16
				MPB2_MF DUP	MP_MF	MP_MF DUP	C1(NM3)_MF	C1(NM3)_MF DUP
Client sampling date / time				17-SEP-2008 15:00	17-SEP-2008 15:00	17-SEP-2008 15:00	17-SEP-2008 15:00	17-SEP-2008 15:00
				ES0813842-011	ES0813842-012	ES0813842-013	ES0813842-014	ES0813842-015
<b>EP132B: Polynuclear Aromatic Hydrocarbons</b>								
3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP132T: Base/Neutral Extractable Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	54.7	99.7	83.9	86.0	84.8
Anthracene-d10	1719-06-8	0.1	%	56.7	100	83.7	86.5	86.0
4-Terphenyl-d14	1718-51-0	0.1	%	58.5	102	85.9	89.5	88.3



**Analytical Results**

Sub-Matrix: WATER	Client sample ID	HK0814214_17	HK0814214_18	HK0814214_4	---	---
		C3(NM6)_MF	C3(NM6)_MF DUP	MPB2-ME DUP		
	Client sampling date / time	17-SEP-2008 15:00	17-SEP-2008 15:00	29/09/2008		
		ES0813842-016	ES0813842-017	ES0813842-018		
Compound	CAS Number	LOD	Unit			
<b>EP132B: Polynuclear Aromatic Hydrocarbons</b>						
3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	<0.1
2-Methylnaphthalene	81-57-6	0.1	µg/L	<0.1	<0.1	<0.1
7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	<0.1
Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	<0.1
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	<0.1
Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	<0.1
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	<0.1
Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	<0.1
Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	<0.1
Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	<0.1
Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	<0.1
N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	<0.1	<0.1
Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	<0.1
Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	<0.1
Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	<0.1
Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	<0.1
<b>EP132T: Base/Neutral Extractable Surrogates</b>						
2-Fluorobiphenyl	321-60-8	0.1	%	86.2	91.9	82.4
Anthracene-d10	1719-06-8	0.1	%	87.2	92.6	86.9
4-Terphenyl-d14	1718-51-0	0.1	%	88.8	95.6	87.6



### Surrogate Control Limits

Substrate: WATER

Recovery Limits (%)

Compound	CAS Number	Low	High
<b>EP132T - Base/Neutral Extractable Surrogates</b>			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0813842	Page	: 1 of 7
Client	: ALS TECHNICHEM (HK)	Laboratory	: Environmental Division Sydney
Contact	: MS ALICE WONG	Contact	: Charlie Pierce
Address	: 11/F CHUNG SHUN KNITTING CNTR 1-3 WING YIP STREET KWAI CHUNG, N.T HONG KONG HONG KONG	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: alice.wong@alsenviro.com	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +852 001185226101044	Telephone	: +61-2-8784 8555
Facsimile	: +852 26102021	Facsimile	: +61-2-8784 8500
Project	: ---	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ---	Date Samples Received	: 22-SEP-2008
C-O-C number	: ---	Issue Date	: 02-OCT-2008
Sampler	: AW	No. of samples received	: 18
Order number	: ---	No. of samples analysed	: 18
Quote number	: SY/241/07		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



WORLD RECOGNISED  
ACCREDITATION

NATA Accredited Laboratory 825

This document is issued in  
accordance with NATA  
accreditation requirements.

Accredited for compliance with  
ISO/IEC 17025.

*Signatories*

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Organics

Page 2 of 7  
Work Order: ES0813842  
Client : ALS TECHNICHEM (HK)  
Project : ----



### **General Comments**

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :            Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
                  CAS Number = Chemistry Abstract Services number  
                  LOR = Limit of reporting  
                  RPD = Relative Percentage Difference  
                  # = Indicates failed QC



### **Laboratory Duplicate (DUP) Report**

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

No Limit

- **No Laboratory Duplicate (DUP) Results are required to be reported.**



**Method Blank (MB) and Laboratory Control Spike (LCS) Report**

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB)	Spike Concentration	Laboratory Control Spike (LCS) Report		
				Report Result		Spike Recovery (%) LCS	Recovery Limits (%) Low High	
<b>EP132B: Polynuclear Aromatic Hydrocarbons (OCLot: 784833)</b>								
EP132: 3-Methylcholanthrene	56-49-5	0.1 0.10	µg/L	<0.1 ---	---	---	---	---
EP132: 2-Methylnaphthalene	91-57-6	0.1 0.10	µg/L	<0.1 ---	2 µg/L	85.6	65.8	121
EP132: 7,12-Dimethylbenz(a)anthracene	57-97-6	0.1 0.10	µg/L	<0.1 ---	2 µg/L	85.1	67.7	112
EP132: Acenaphthene	83-32-9	0.1 0.10	µg/L	<0.1 ---	2 µg/L	83.5	11.6	146
EP132: Acenaphthylene	208-96-8	0.1 0.10	µg/L	<0.1 ---	2 µg/L	84.8	73.2	111
EP132: Anthracene	120-12-7	0.1 0.10	µg/L	<0.1 ---	2 µg/L	87.9	72.4	112
EP132: Benz(a)anthracene	56-55-3	0.1 0.10	µg/L	<0.1 ---	2 µg/L	90.3	73.4	113
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	84.9	73.6	114
EP132: Benzo(b)fluoranthene	205-99-2	0.1 0.10	µg/L	<0.1 ---	2 µg/L	83.6	75.2	117
EP132: Benzo(e)pyrene	192-97-2	0.1 0.10	µg/L	<0.1 ---	2 µg/L	91.0	71.4	119
EP132: Benzo(g,h,i)perylene	191-24-2	0.1 0.10	µg/L	<0.1 ---	2 µg/L	84.6	75.3	118
EP132: Benzo(k)fluoranthene	207-08-9	0.1 0.10	µg/L	<0.1 ---	2 µg/L	88.5	66.6	121
EP132: Chrysene	218-01-9	0.1 0.10	µg/L	<0.1 ---	2 µg/L	89.6	74.8	118
EP132: Coronene	191-07-1	0.1 0.10	µg/L	<0.1 ---	2 µg/L	85.1	69.6	120
EP132: Dibenz(a,h)anthracene	53-70-3	0.1 0.10	µg/L	<0.1 ---	2 µg/L	92.1	47.4	131
EP132: Fluoranthene	206-44-0	0.1 0.10	µg/L	<0.1 ---	2 µg/L	84.9	71.5	117
EP132: Fluorene	86-73-7	0.1 0.10	µg/L	<0.1 ---	2 µg/L	85.3	74.8	117
EP132: Indeno(1,2,3-cd)pyrene	193-39-5	0.1 0.10	µg/L	<0.1 ---	2 µg/L	86.5	72.9	114
					2 µg/L	80.5	67.8	119



Substrate: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB)	Spike	Laboratory Control Spike (LCS) Range		Recovery Limits (%)	
				Report		Concentration	Spike Recovery (%)	Low	High
<b>EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 764933) - continued</b>									
EP132: N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	20 µg/L	69.6	53.6	131	
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	85.2	68.3	116	
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	86.6	68	122	
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	94.6	74.8	112	
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	85.8	75.1	117	
<b>EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 770710)</b>									
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	81.0	65.8	121	
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	83.9	67.7	112	
EP132: 7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	87.8	11.6	146	
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	84.2	73.2	111	
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	85.7	72.4	112	
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	86.4	73.4	113	
EP132: Benz(a)anthracene	56-53-3	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	92.3	73.6	114	
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	90.7	75.2	117	
EP132: Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	102	71.4	119	
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	91.9	75.3	118	
EP132: Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	94.1	66.6	121	
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	87.2	74.8	118	
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	90.3	69.6	120	
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	105	47.4	131	
EP132: Dibenzo(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	---	---	---	---	---
		0.10	µg/L	---	2 µg/L	88.9	71.5	117	





Sub-Matrix: WATER

Method	Compound	CAS Number	LOD	Unit	Method Blank (MS)	Spike	Laboratory Control Spine (LCS) Report		
					Report		Concentration	Spike Recovery (%)	Recovery Limits (%)
					Result		LCS	Low	High
<b>EP132B Polynuclear Aromatic Hydrocarbons (QCLo# 770718) - continued</b>									
EP132:	Fluoranthene	206-44-0	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	83.7	74.8	117
EP132:	Fluorene	86-73-7	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	83.9	72.9	114
EP132:	Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	89.0	67.8	119
EP132:	N-2-Fluorenyl Acetamide	53-96-3	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	20 µg/L	70.9	53.6	131
EP132:	Naphthalene	91-20-3	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	89.3	68.3	116
EP132:	Perylene	198-55-0	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	90.8	68	122
EP132:	Phenanthrene	85-01-8	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	94.9	74.8	112
EP132:	Pyrene	129-00-0	0.1	µg/L	<0.1	---	---	---	---
			0.10	µg/L	---	2 µg/L	92.4	75.1	117



---

### ***Matrix Spike (MS) Report***

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) Results are required to be reported.**

Annex I

## Dolphin Sighting Records

**Project name: EM&A for Permanent Aviation Fuel Facility (PAFF)**

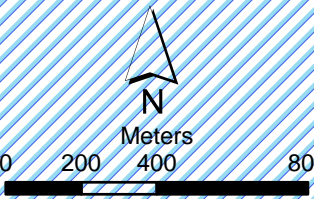
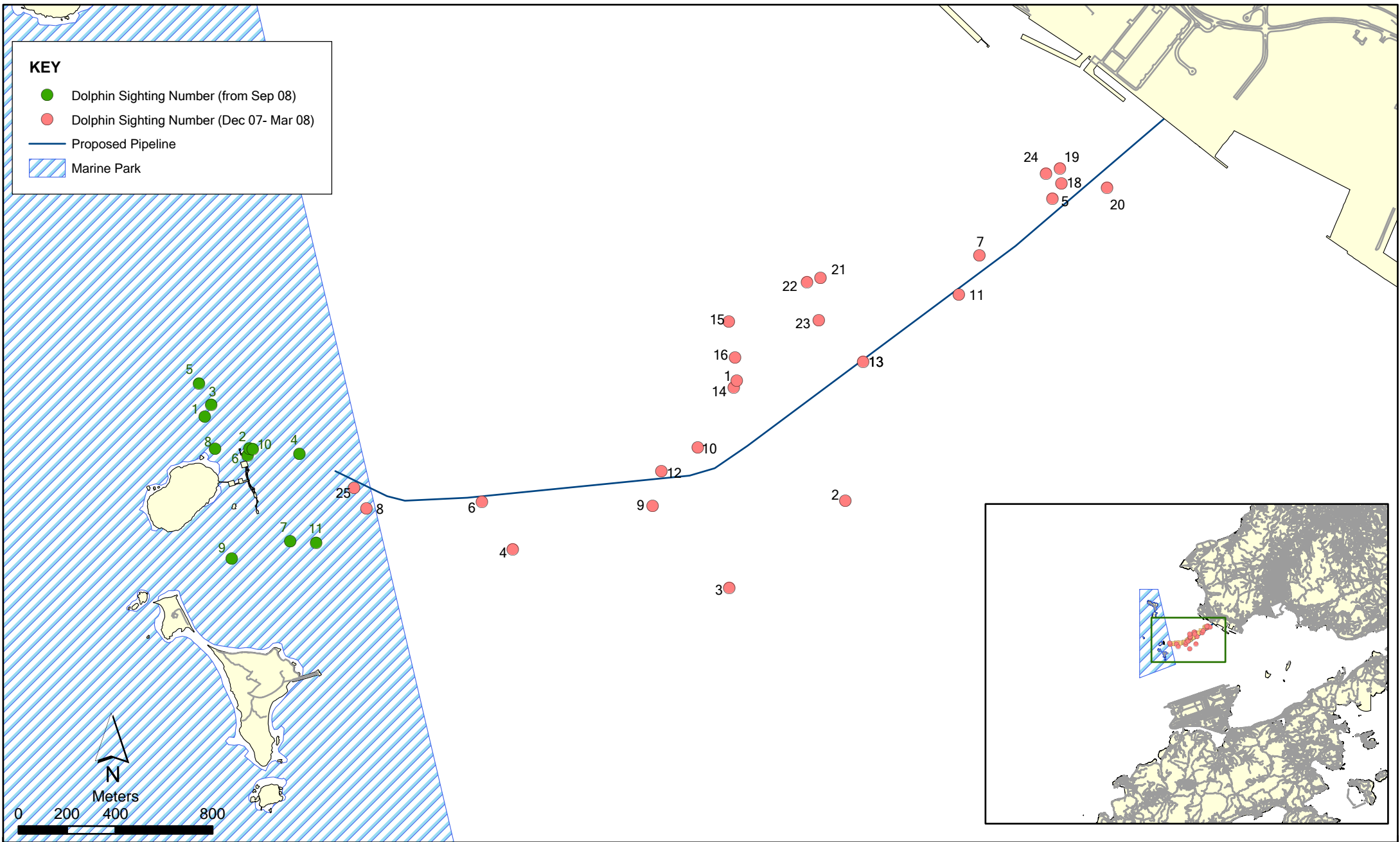
**Activity: Dolphin Impact Monitoring - Field Log Sheet**

\*Remark: Record the number of dolphin occurrence within the 250m exclusion (A) prior to dredging and (B) during dredging

Week	Date		Dredger 1		Observers' Names	
			No. of Dolphin Occurrence*	Sighting No.		
1	Mon	01-Sep	No Dredging	-	Richard Huang	
	Tue	02-Sep	15	1-7	Anton Tsang	
	Wed	03-Sep	2	8	Anton Tsang	
	Thu	04-Sep	1	9	Richard Huang	
	Fri	05-Sep	1	10	Anton Tsang	
	Sat	06-Sep	No Dredging			
	Sun	07-Sep	No Dredging			
2	Mon	08-Sep	No Dredging		Richard Huang	
	Tue	09-Sep	0	-	Anton Tsang	
	Wed	10-Sep	0	-	Anton Tsang	
	Thu	11-Sep	0	-	Richard Huang	
	Fri	12-Sep	0	-	Anton Tsang	
	Sat	13-Sep	No Dredging			
	Sun	14-Sep	No Dredging			
3	Mon	15-Sep	No Dredging			
	Tue	16-Sep	0	-	Richard Huang	
	Wed	17-Sep	0	-	Anton Tsang	
	Thu	18-Sep	0	-	Richard Huang	
	Fri	19-Sep	0	-	Anton Tsang	
	Sat	20-Sep	No Dredging			
	Sun	21-Sep	No Dredging			
4	Mon	22-Sep	No Dredging	-	Ivy So	
	Tue	23-Sep	No Dredging	-	Anton Tsang	
	Wed	24-Sep	No Dredging due to typhoon			-
	Thu	25-Sep	0	-	Richard Huang	
	Fri	26-Sep	0	-	Ivy So	
	Sat	27-Sep	No Dredging			
	Sun	28-Sep	No Dredging			

**KEY**

- Dolphin Sighting Number (from Sep 08)
- Dolphin Sighting Number (Dec 07- Mar 08)
- Proposed Pipeline
- Marine Park



Dolphin Sighting Locations (as of 30 September 2008)

File: 0018105\_Dolphin\_SEPT08.mxd  
Date: 13/10/2008

**Environmental Resources Management**

Permanent Aviation Fuel Facility (PAFF) - Dolphin Sighting Records

Sighting No.	Date	Time	Sighting Distance	#Sighting Angle from Dredging Machine (o)	Group size	Group Composition*	Beaufort	Boat Association	Behaviour	Other comments
1	2/9/2008	1000	275	320	4	2UA, 1 SA, 1 SJ	1	None	Feeding, Travelling	Before Dredging
2	2/9/2008	1024	80	5	2	2UA	1	None	Breaching, Spy-hopping	Before Dredging
3	2/9/2008	1035	300	330	2	1UA, 1SA	1	None	Travelling	Before Dredging
4	2/9/2008	1045	220	75	3	1UA, 1SA, 1UJ	1	None	Travelling	Before Dredging
5	2/9/2008	1108	400	330	1	1SA	1	None	Travelling	Before Dredging
6	2/9/2008	1411	50	0	1	1UA	2	None	Travelling	During Dredging
7	2/9/2008	1530	350	150	2	2UA	2	None	Travelling	During Dredging
8	3/9/2008	1535	155	300	2	2UA	1	None	Travelling	During Dredging
9	04/09/2008	1336	380	190	2	2UA	2	None	Travelling	During Dredging
10	5/9/2008	1711	80	15	1	1UA	2	None	Travelling	Dredging Stopped
11	30-Sep-08	1050	250	350	4	4UA	2	None	Travelling	Before Dredging
*Key:				# Compass bearing is used (North = 0 degree )						
UC = Unspotted Calf										
UJ = Unspotted Juvenile										
SJ = Spotted Juvenile										
SS = Spotted Sub-adult										
SA = Spotted Adult										
UA = Unspotted Adult										



19	07/03/2008	1018	ST20	Urmston Road	450	810019.75	825074.94	11	200	1	1UA	2	None	Traveling	
					460	810011.71	825068.99								
20	07/03/2008	1117	ST20	Urmston Road	450	810019.75	825074.94	180-220	70-220	1	1UA	2	None	Spy-hopping, traveling, breaching, porpoising	
					460	810011.71	825068.99								
21	10/03/2008	1147	ST20	Urmston Road	1605	809091.025	824388.279	240	90	2	1UA, 1SJ	2	None	Travelling	No dredging
					1540	809143.291	824426.922								
22	12/03/2008	1150	GD654	Urmston Road	1600	809095.045	824391.252	240	75	2	2UA	3	None	Travelling	Dolphin-watching vessel passed by; Travelling away from dredger; During dredging
					1555	809131.229	824418.005								
23	12/03/2008	1220	GD654	Urmston Road	1600	809095.045	824391.252	80	60	2	1UA, 1SJ	3	None	Feeding	Wandering around between distance of 80-300m from dredger and stayed for ~6mins; No dredging
					1555	809131.229	824418.005								
24	21/03/2008	1620	GD31	Urmston Road	550	809939.34	825015.48	51	150	2	2UA	2	None	Travelling	-
					560	809931.29	825009.54								
25	25/03/2008	1110	GD31	Urmston Road	750	807161.08	823724.02	50	30	1	1UA	2	None	Travelling	-
					760	807111.18	823720.96								
*Key:															
UC = Unspotted Calf															
UJ = Unspotted Juvenile															
SJ = Spotted Juvenile															
SS = Spotted Sub-adult															
SA = Spotted Adult															
UA = Unspotted Adult															



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