
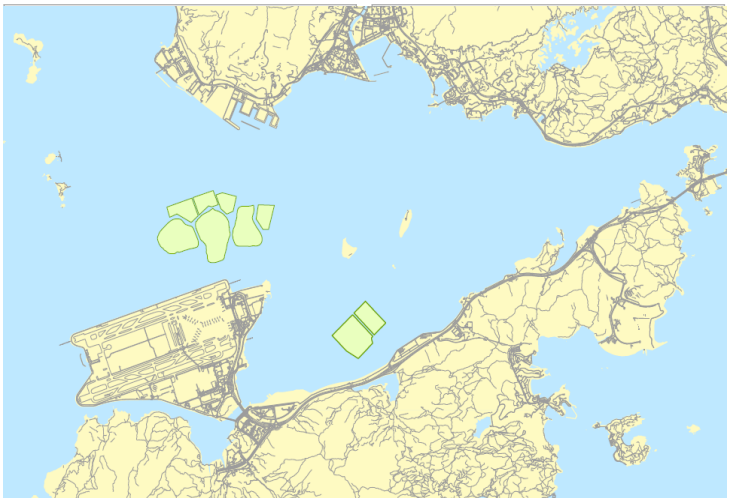




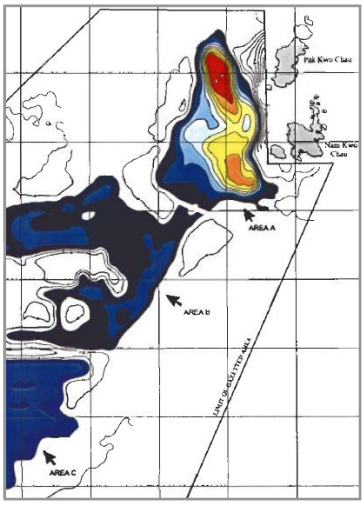





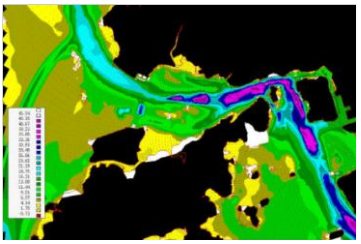

Environmental Monitoring and Audit for Contaminated Mud Pits to the South of The Brothers and at East Sha Chau (2012-2017) – Investigation

Agreement No. CE 23/2012(EP)

17th Monthly Progress Report for Contaminated Mud Pits to the South of The Brothers and at East Sha Chau – January 2014

Revision 0

25 February 2014

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Civil Engineering and Development Department (CEDD)	0175086
Summary: This document presents the 17th monthly progress report for Contaminated Mud Pits at the South of The Brothers and at East Sha Chau.	Date: 25 February 2014 Approved by:  Craig A. Reid *Partner*

Revision	Description	By	Checked	Approved	Date
v0	17th Monthly Progress Report for CMP V and SB CMPs	YL	JT	CAR	25/2/14

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CEDD Civil Engineering and Development Department

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Dredging, Management and Capping of Contaminated Sediment Disposal Facility to the South of The Brothers

Environmental Certification Sheet
EP-427/2011/A

Reference Document/Plan

Document/~~Plan~~ to be ~~Certified~~/ Verified:	17th Monthly Progress Report for Contaminated Mud Pits to the South of The Brothers and at East Sha Chau – January 2014
Date of Report:	25 February 2014
Date prepared by ET:	25 February 2014
Date received by IA:	25 February 2014

Reference EP Condition

Environmental Permit Condition: Condition No.: 4.4

4 hard copies and 1 electronic copy of monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be certified by the ET Leader and verified by the Independent Auditor. Additional copies of the submission shall be provided to the Director upon request by the Director.

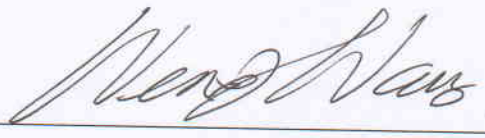
ET Certification

I hereby certify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-427/2011/A

Craig A. Reid,
Environmental Team Leader:  Date: 25/2/2014

IA Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-427/2011/A

Dr Wang Wen Xiong,
Independent Auditor:  Date: 25/2/2014

CONTENTS

ANNEXES

Agreement No. CE 23/2012 (EP)
Environmental Monitoring and Audit
for Contaminated Mud Pits at the South of The Brothers and at East Sha Chau (2012-2017) - Investigation

17TH MONTHLY PROGRESS REPORT FOR JANUARY 2014

1.1 BACKGROUND

1.1.1 Since early 1990s, contaminated sediment (1) arising from various construction works (e.g. dredging and reclamation projects) in Hong Kong has been disposed of at a series of seabed pits at East of Sha Chau (ESC). In late 2008, a review indicated that the existing and planned facilities at ESC would not be able to meet the disposal demand after 2012. In order to meet this demand, the Hong Kong Special Administrative Region Government (HKSARG) decided to implement a new contained aquatic disposal (CAD) (2) facility at the South of The Brothers (SB CMPs) which had been under consideration for a number of years.

1.1.2 The environmental acceptability of the construction and operation of the Project had been confirmed by findings of the associated Environmental Impact Assessment (EIA) study completed in 2005 under *Agreement No. CE 12/2002(EP)* (3). The Director of Environmental Protection (DEP) approved this EIA report under the *Environmental Impact Assessment Ordinance* (*Cap. 499*) (*EIAO*) in September 2005 (*EIA Register No.: AEIAR-089/2005*).

1.1.3 In accordance with the EIA recommendation, prior to commencement of construction works for the SB CMPs, the Civil Engineering and Development Department (CEDD) undertook a detailed review and update of the EIA findings for the SB site (4). Findings of the EIA review undertaken in 2009/ 2010 confirmed that the construction and operation of the SB site had been predicted to be environmentally acceptable.

(1) According to the Management Framework of Dredged/ Excavated Sediment of ETWB TC(W) No. 34/2002, contaminated sediment in general shall mean those sediment requiring Type 2 – Confined Marine Disposal as determined according to this TC(W).

(2) CAD options may involve use of excavated borrow pits, or may involve purpose-built excavated pits. CAD sites are those which involve filling a seabed pit with contaminated mud and capping it with uncontaminated material such that the original seabed level is restored and the contaminated material is isolated from the surrounding marine environment.

(3) Detailed Site Selection Study for a Proposed Contaminated Mud Disposal Facility within the Airport East/ East of Sha Chau Area (Agreement No. CE 12/2002(EP))

(4) Under the CEDD study *Contaminated Sediment Disposal Facility to the South of The Brothers (Agreement No. FM 2/2009)*

1.1.4 *Environmental Permits (EPs)* (*EP-312/2008/A* and *EP-427/2011A*) were issued by the Environmental Protection Department (EPD) to the CEDD, the Permit Holder, on 28 November 2008 for East of Sha Chau (ESC) CMP V and on 23 December 2011 for SB CMPs, respectively. Under the requirements of the *EPs*, an Environmental Monitoring and Audit (EM&A) programme as set out in the EM&A Manuals (1) (2) is required to be implemented for the CMPs.

1.1.5 The present EM&A programme undertaken under *Agreement No. CE 23/2012 (EP)* covers the dredging, disposal and capping operations of the SB CMPs as well as CMPs at East of Sha Chau (ESC). In January 2014, the following works were being undertaken at the CMPs:

- Capping was being undertaken at CMP IVc and CMP Va;
- Disposal of contaminated mud was taking place at SB CMP 1; and
- Dredging operations were taking place at SB CMP 2.

1.2 REPORTING PERIOD

1.2.1 This Monthly Progress Report covers the EM&A activities for the reporting month of January 2014.

1.3 DETAILS OF SAMPLING AND LABORATORY TESTING ACTIVITIES

1.3.1 No monitoring activities have been undertaken for CMP IV and V in the reporting month of January 2014.

1.3.2 The following monitoring activities have been undertaken for SB CMPs in January 2014:

- *Impact Water Quality Monitoring during Dredging Operations* was undertaken for CMP 2 three times per week on 2, 4, 6, 8, 10, 13, 15, 17, 20, 22, 24, and 28 January 2014;
- *Routine Water Quality Monitoring* was undertaken for CMP 1 on 3, 7, 9, 11, 14, 16, 18, 21, 23, 25, 27, and 29 January 2014;
- *Demersal Trawling* for CMP 1 was carried out on 7 and 8 January 2014;
- *Water Column Profiling* for CMP 1 was undertaken on 9 January 2014; and

(1) ERM (2012) Environmental Monitoring and Audit (EM&A) Manual. Final First Review. Environmental Monitoring and Audit for Contaminated Mud Pits to the South of the Brothers and at East Sha Chau (2012-2017) – Investigation. Agreement No. CE 23/2012(EP). Submitted to EPD in November 2012.

(2) ERM (2010) Environmental Monitoring and Audit (EM&A) Manual. Final Second Review. Environmental Monitoring and Audit for Contaminated Mud Pit at Sha Chau (2009-2013) – Investigation. Agreement No. CE 4/2009(EP). Submitted to EPD in November 2010.

- *Pit Specific Sediment Chemistry* was conducted for CMP 1 on 21 January 2014.

1.4 DETAILS OF OUTSTANDING SAMPLING AND/OR ANALYSIS

1.4.1 No outstanding sampling remained for January 2014. The following laboratory analyses were still in progress during the preparation of this monthly report and hence were not presented in this monthly report:

- Laboratory analyses of sediment samples collected for *Pit Specific Sediment Chemistry of CMP 1* in December 2013 and January 2014;
- Laboratory analyses of sediment samples collected for *Cumulative Impact Sediment Chemistry of CMP 1* in December 2013;
- Laboratory analyses of water samples collected for *Routine Water Quality Monitoring for CMP 1* from 18 to 29 January 2014; and
- Laboratory analyses of Suspended Solids (SS) samples collected for *Water Quality Monitoring during Dredging Operations of CMP 2* from 10 to 28 January 2014.

1.4.2 A summary of field activities conducted are presented in *Annex A*.

1.5 BRIEF DISCUSSION OF THE MONITORING RESULTS FOR SB CMPS

1.5.1 Brief discussion of the monitoring results of the following activities is presented in this *17th Monthly Report*:

- *Impact Water Quality Monitoring during Dredging Operations of CMP 2* conducted from 11 December 2013 to 8 January 2014;
- *Water Column Profiling of CMP 1* conducted in January 2014;
- *Routine Water Quality Monitoring of CMP 1* undertaken from 3 to 16 January 2014; and
- *Pit Specific Sediment Chemistry of CMP 1* conducted in November 2013.

1.5.2 Impact Water Quality Monitoring during Dredging Operations of CMP 2 – 11 December 2013 to 8 January 2014

1.5.3 Monitoring data collected for CMP 2 from 11 December 2013 to 8 January 2014 are presented in this monthly report. Detailed discussion will be presented in the corresponding *Quarterly Report*.

1.5.4 *Impact Water Quality Monitoring during Dredging Operations of CMP 2* was conducted three times per week from 11 December 2013 to 8 January 2014. On each survey day, sampling was conducted during both mid-ebb and mid-flood tides at two Reference (Upstream) stations upstream and five Impact (Downstream) stations downstream of the dredging operations at CMP 2. Monitoring was also conducted at five Sensitive Receiver Stations situated in Ma Wan, Shum Shui Kok, Tai Mo To and Tai Ho Bay. A total of twelve stations were monitored and locations of the sampling stations are shown in *Figure 1.1*.

1.5.5 Monitoring results from 11 December 2013 to 8 January 2014 are presented in *Table C1* of *Annex C*. Daily dredging volume in December 2013 is reported in *Annex D*. Levels of Dissolved Oxygen (DO), Turbidity and SS generally complied with the Action and Limit Levels (see *Table C2* of *Annex C* for details) set in the Baseline Monitoring Report (1), except for the following occasions of exceedances shown in *Table 1.1* below.

Table 1.1 Details of Exceedances Recorded at CMP 2 in December 2013/ January 2014

Date	Tide	Parameter	Station	Type
11 December 2013	Mid-Flood	Turbidity	DS1	Limit
		SS	DS1	Limit
16 December 2013	Mid-Flood	SS	DS1	Action
20 December 2013	Mid-Flood	Turbidity	DS4	Action
		SS	DS4	Action
23 December 2013	Mid-Flood	SS	DS2	Action
27 December 2013	Mid-Flood	SS	DS1	Action
4 January 2014	Mid-Flood	SS	DS1	Action
		SS	DS2	Action
		SS	WSR45C	Action
6 January 2014	Mid-Flood	Turbidity	DS2	Action
		SS	DS2	Action

1.5.6 Regarding the exceedances observed, most of them were recorded at one station only during the sampling event. The exceedances on 4 January 2014 were recorded at three monitoring stations, however, these exceedances did not show any trend of increasing SS or Turbidity levels toward the dredging operations . As such, it is considered that these exceedances were not indicating any unacceptable water quality impacts as a result of the dredging operations at the CMP 2.

(1) ERM (2012) Baseline Monitoring Report. Environmental Monitoring and Audit for Contaminated Mud Pits to the South of the Brothers and at East Sha Chau (2012-2017) – Investigation. Agreement No. CE 23/2012(EP). Submitted to EPD in October 2012.

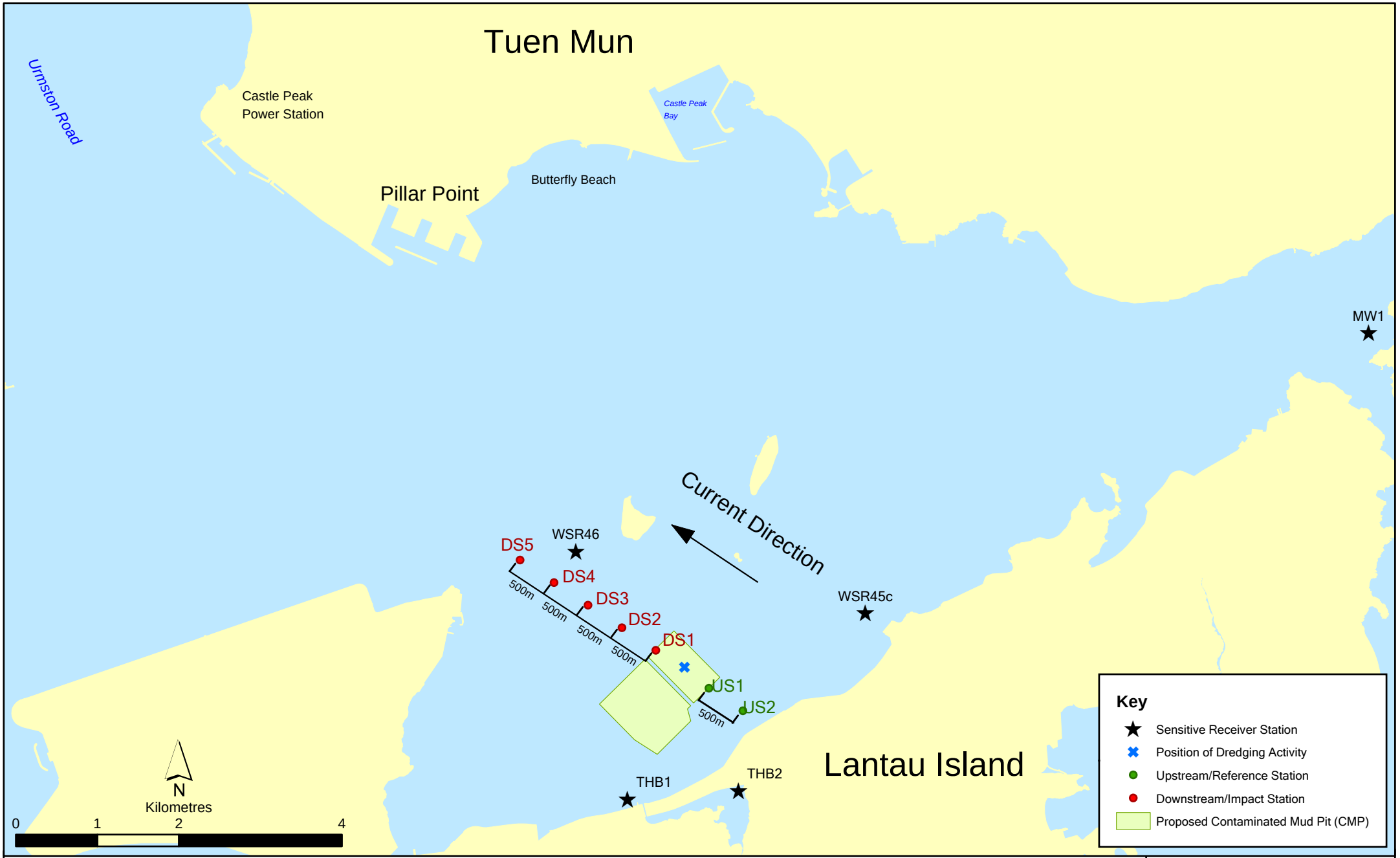


Figure 1.1

Indicative Dredging Impact Sampling Stations for South Brothers Facility

Note: The locations of sampling stations will be determined on site based on current direction and position of dredging activities

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Date: 4/10/2013

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1.5.7 In addition to the above, high levels of Turbidity and SS were occasionally recorded during baseline monitoring which are considered to be sporadic events and characteristic of water quality in this area of Hong Kong. Therefore, the Action and Limit Level exceedances may be caused by natural background variation in water quality of the area.

1.5.8 Overall, the results indicated that the dredging operations at CMP 2 did not appear to cause any unacceptable deterioration in water quality during this reporting period. Therefore, no further mitigation measures, except for those recommended in the Environmental Permit (*EP-427/2011/A*), are considered necessary for the dredging operations.

1.5.9 Water Column Profiling of CMP 1 – January 2014

1.5.10 *Water Column Profiling* was undertaken at a total of two sampling stations (Upstream and Downstream stations) on 9 January 2014. The water quality monitoring results have been assessed for compliance with the Water Quality Objectives (WQOs) set by EPD. This consists of a review of the EPD routine water quality monitoring data for the dry season period (November to March) of 2003-2012 from stations in the Northwestern Water Control Zone, where the CMPs are located. For Salinity, the average value obtained from the Upstream station was used for the basis as the WQO. The monitoring results were also compared with the Action and Limit Levels set in the *EM&A Manual* (1). Graphical presentations of the monitoring results are provided in *Annex B*.

In-situ Measurements

1.5.11 Analyses of results for 9 January 2014 indicated that levels of Salinity, pH and DO complied with the WQOs at both Upstream and Downstream stations (*Figures 1-3 of Annex B*). DO and Turbidity complied with the Action and Limit Levels set in the *EM&A Manual*.

Laboratory Measurements for Suspended Solids (SS)

1.5.12 Analyses of data obtained on 9 January 2014 indicated that the SS levels at Downstream and Upstream stations complied with the WQO (*Figure 4 of Annex B*). In addition, SS levels at all the stations complied with the Action and Limit Levels set in the *EM&A Manual*.

1.5.13 Overall, *in-situ* measurement and laboratory analyses results indicated that the mud disposal operation at CMP 1 did not appear to cause any deterioration in water quality during this reporting period.

(1) ERM (2009). Draft Second Review of the EM&A Manual. Prepared for CEDD for EM&A for Contaminated Mud Pit at Sha Chau (2009-2013) – Investigation Agreement No. CE 4/2009 (EP).

1.5.14 Routine Water Quality Monitoring of SB CMP 1 – January 2014

1.5.15 The monitoring results for the *Routine Water Quality Monitoring* conducted on 3, 7, 9, 11, 14 and 16 January 2014 in the dry season have been assessed for compliance with the WQOs set by EPD. This consists of a review of the EPD routine water quality monitoring data for the dry season period (November to March) of 2003-2012 from stations in the Northwestern Water Control Zone, where the CMPs are located. For Salinity, the averaged value obtained from the Reference stations was used for the basis as the WQO.

1.5.16 Daily *in-situ* monitoring and daily laboratory results are shown in *Tables C3* and *C4* of *Annex C*. Monthly averaged *in-situ* measurement and laboratory analyses results for January 2014 will be presented with graphical presentation in the next monthly report when all the laboratory analyses are completed. Locations of monitoring stations were presented in *Figure 1.2 and 1.3*.

In-situ Measurements

1.5.17 Analyses of results indicated that for all the stations (Impact, Intermediate, Reference and Water Sensitive Receiver stations), daily levels of pH, DO and Salinity complied with the WQOs (*Table C3* of *Annex C*).

1.5.18 Levels of Temperature, Salinity and pH showed similar magnitude from 3 to 16 January 2014 (*Figure 5, 6 and 10* of *Annex B*) at all the stations. Levels of DO were detected to fluctuate over time from 3 to 16 January 2014 and also showed relative variations amongst the stations (*Figure 9* of *Annex B*).

1.5.19 Daily levels of Turbidity from 3 to 16 January 2014 all complied with the Action and Limit Levels set in the *EM&A Manual* (*Tables C3* of *Annex C*), except Turbidity levels at Intermediate Station and Ma Wan Station on 3 January 2014. Fluctuation of Turbidity levels over time from 3 to 16 January 2014 was also recorded (*Figure 7* of *Annex B*). Levels of Turbidity also showed relative variations amongst the stations.

Laboratory Measurements

1.5.20 Laboratory analyses results of metals and nutrients are presented in *Table C4* of *Annex C*. Graphical presentations of monitoring results on individual monitoring days are presented in *Figure 11-23* of *Annex B*.

1.5.21 Analyses of 3 to 16 January 2014 results indicated that concentrations of Silver, Cadmium and Mercury were below their limit of reporting at all the stations (*Figure 11, 13* and *17* of *Annex B*). Recorded concentrations of Arsenic, Chromium, Copper, Lead, Nickel and Zinc indicated variations over time at all the stations from 3 to 16 January 2014 without any trend of increasing contaminant concentrations towards the pit (*Figure 12, 14, 15, 16, 18* and *19* of *Annex B*).

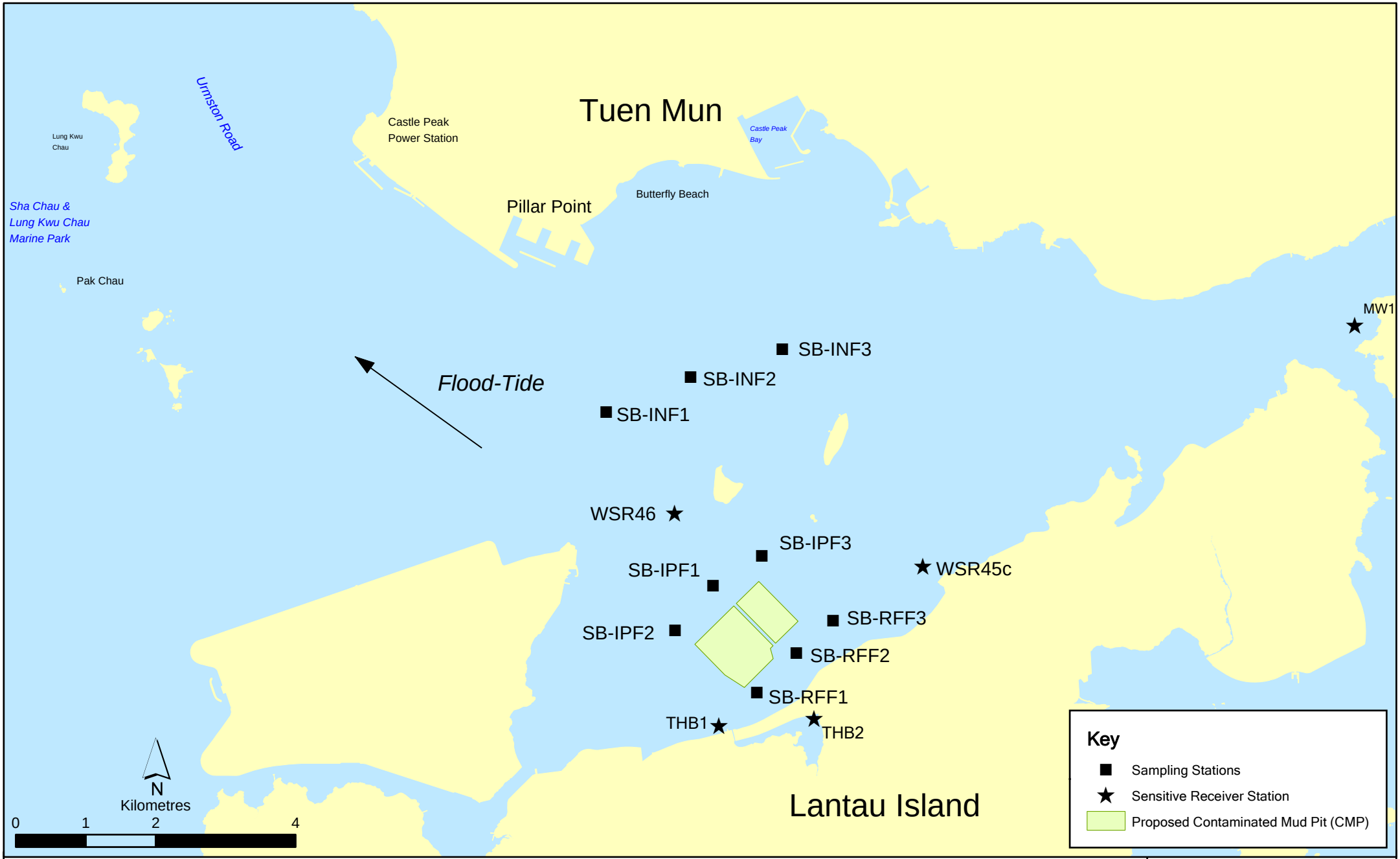

Figure 1.2

Routine Water Quality Sampling Stations (Flood-Tide) for South Brothers Facility

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Date: 15/1/2014

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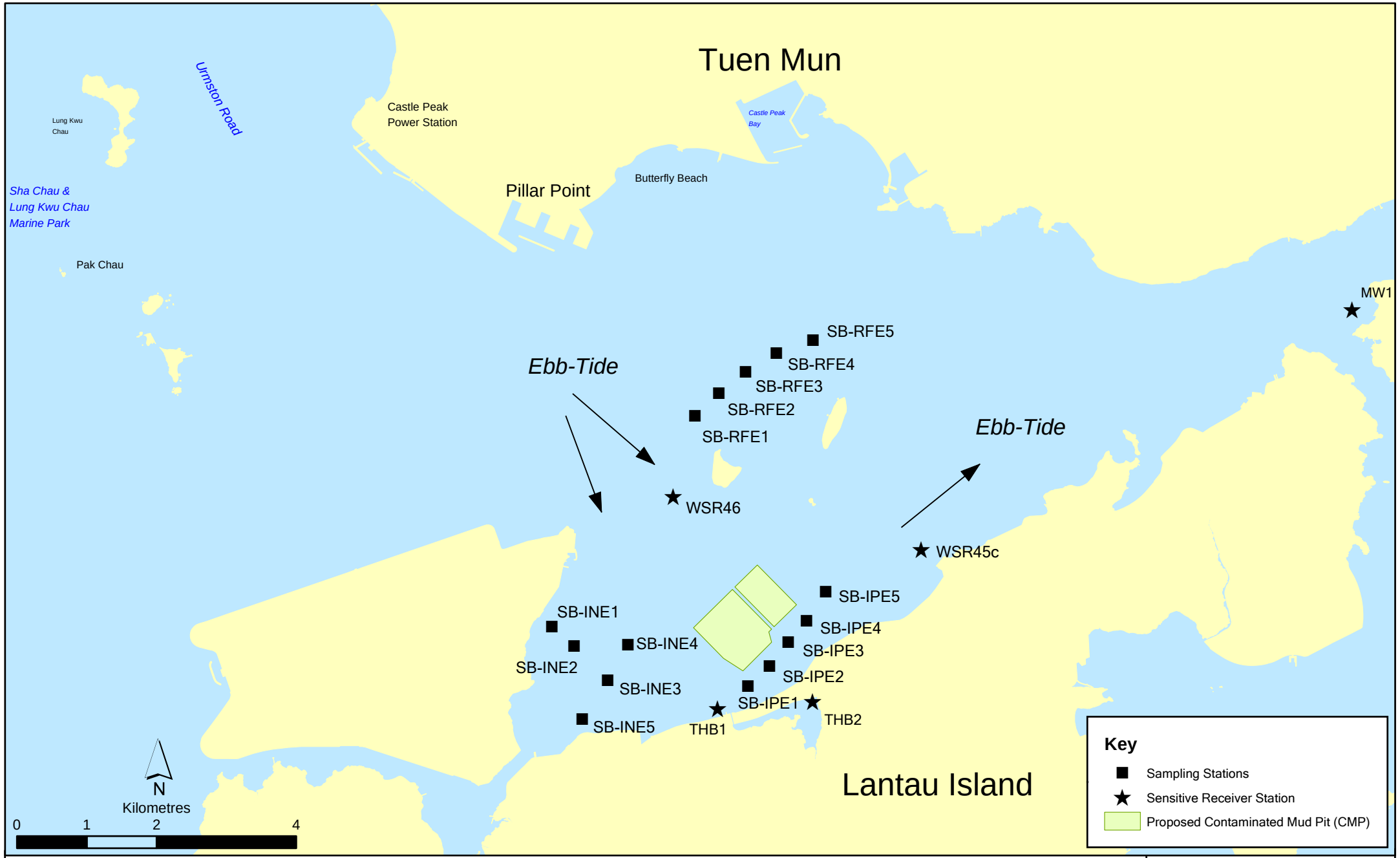

Figure 1.3

Routine Water Quality Sampling Stations (Ebb-Tide) for South Brothers Facility

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Date: 13/11/2013

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1.5.22 Daily recorded levels of TIN, BOD_5 and NH_3-N were observed to fluctuate over time through 3 to 16 January 2014 (*Figure 20-22 of Annex B*). Compliance with TIN WQO (0.50 mg/L) was recorded at all the stations in the monitoring period except the measurement at Water Sensitive Receiver station THB1 on 9 January 2014. The only exceedance of TIN WQO at Water Sensitive Receiver station THB1 on one day did not provide any evidence of unacceptable water quality impacts due to the mud disposal activities.

1.5.23 Daily levels of SS from 3 to 16 January 2014 all complied with the Action and Limit Levels set in the *EM&A Manual* (*Tables C4* of *Annex C*). Exceedances of SS WQO (14.4 mg/L for dry season) were recorded (*Figure 23 of Annex B*) from 3 to 16 January 2014. The exceedances of WQO were recorded at Reference stations, Impact stations and other Water Sensitive Receiver stations on the same monitoring day (3 January 2014). The reference stations are located upstream from the mud pits and considered unlikely to be affected by mud disposal works. In addition, the SS levels at Impact stations were recorded lower than those at Reference or Intermediate stations. Given the information above, it is considered that the exceedances of SS WQO are unlikely to be caused by mud disposal operations. Instead, high levels of SS were occasionally recorded during baseline monitoring which are considered to be sporadic events and characteristic of water quality in this area of Hong Kong.

1.5.24 The exceedances of SS WQO on 7, 11, 14, and 16 January 2014 were also recorded at stations which are located further away from the works area when compared to Impact stations at which the levels of SS did not exceed WQO on the same day. Hence, these exceedances of WQO are not considered to be caused by mud disposal works.

1.5.25 Overall, *in-situ* measurement and laboratory analyses results indicated that the disposal operation at CMP 1 did not appear to cause any unacceptable deterioration in water quality during monitoring period of 3 to 16 January 2014.

1.5.26 Pit Specific Sediment Chemistry of CMP 1 – November 2013

1.5.27 Monitoring locations for *Pit Specific Sediment Chemistry for CMP 1* are shown in *Figure 1.4*. A total of six monitoring stations were sampled in November 2013.

1.5.28 The concentrations of all the metals except Arsenic, Copper, Lead, Silver and Zinc complied with the Lower Chemical Exceedance Level (LCEL) at most stations in November 2013 (*Figures 24 and 25* of *Annex B*). Concentrations of Arsenic exceeded the LCEL at all stations except Active Pit station SB-NPAB. Levels of Copper, Lead, Silver and Zinc exceeded the LCEL at Active Pit station SB-NPAB only.

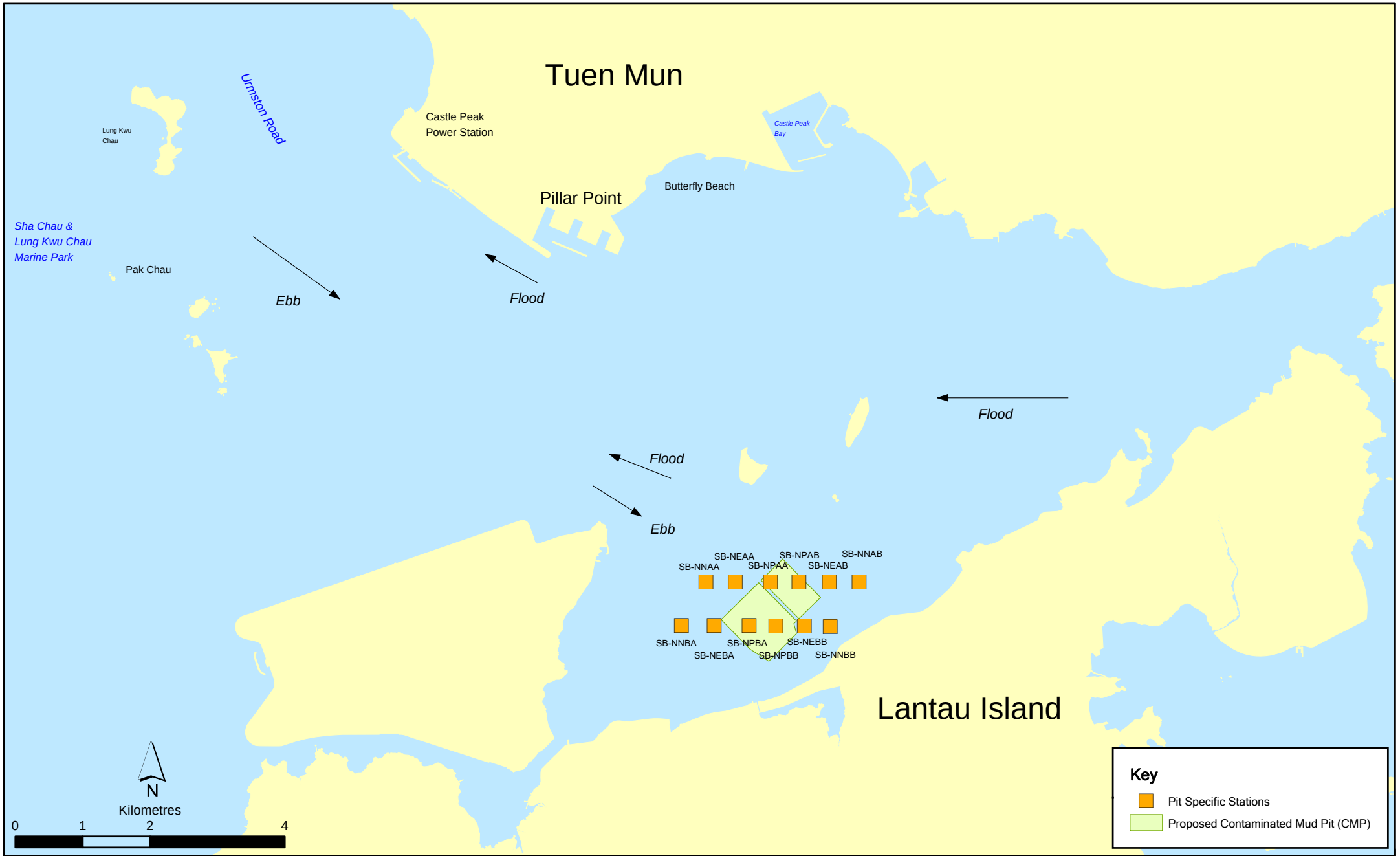

Figure 1.4

Pit Specific Sediment Quality Monitoring Stations for South Brothers Facility

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Date: 15/1/2014

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1.5.29 Whilst the average concentration of Arsenic in the Earth's crust is generally ~2mg/kg, significantly higher Arsenic concentrations (median = 14 mg/kg) have been recorded in Hong Kong's onshore sediments [1]. It is presumed that the natural concentrations of Arsenic are similar in onshore and offshore sediments [2], and relatively high Arsenic levels may thus occur throughout Hong Kong. Therefore, the LECL exceedances of Arsenic are unlikely to be caused by the disposal operations at CMP 1 but rather as a result of naturally occurring deposits.

1.5.1 The concentration of Total Organic Carbon (TOC) concentration showed variations amongst the stations in November 2013 (*Figure 26* of *Annex B*). Tributyltin (TBTs) concentrations were found to be higher at Active Pit station SB-NPAB (*Figure 27* of *Annex B*) in November 2013.

1.5.2 Low Molecular Weight Polycyclic Aromatic Hydrocarbons (MW PAHs) concentrations were recorded below the limit of reporting at all stations except Active Pit station SB-NPAB in November 2013 (*Figure 28 of Annex B*). The concentrations of Low MW PAHs at Active Pit station SB-NPAB are recorded below LCEL. High MW PAHs concentrations were recorded below the limit of reporting at all stations except Active Pit stations SB-NPAA and SB-NPAB in November 2013 (*Figure 28 of Annex B*). High MW PAHs concentrations at Active Pit station SB-NPAB exceeded LCEL in November 2013.

1.5.3 Total Dichloro-Diphenyl-Trichloroethane (DDT), 4,4'-Dichloro-Diphenyl-Dichloroethylene (4,4'-DDE) and Total Polychlorinated Biphenyls (PCBs) were recorded below the limit of reporting at all the stations except Active Pit station SB-NPAB in October 2013. Total PCBs concentrations at Active Pit station SB-NPAB exceeded LCEL in November 2013.

1.5.4 Active Pit stations SB-NPAA and SB-NPAB are located within CMP 1 which was receiving contaminated mud during the reporting period. Therefore, the higher concentrations of contaminants (including metals and organic contaminants) recorded at the Active Pit stations only are not considered as indicating any dispersal of contaminated mud from CMP 1. Nevertheless, detailed analyses will be presented in the *Quarterly Report* to reveal any trend of increasing sediment contaminant concentrations towards CMP 1.

1.5.5 Overall, there is no evidence indicating any unacceptable environmental impacts to sediment quality as a result of the contaminated mud disposal operations at CMP 1 during this monthly period.

1.6 ACTIVITIES SCHEDULED FOR THE NEXT MONTH

(1) Sewell RJ (1999) Geochemical Atlas of Hong Kong. Geotechnical Engineering Office, Government of the Hong Kong Special Administrative Region

(2) Whiteside PGD (2000) Natural geochemistry and contamination of marine sediments in Hong Kong. In: The Urban Geology of Hong Kong (ed Page A & Reels SJ). Geological Society of Hong Kong Bulletin No. 6, p109-121

1.6.1 The following monitoring activities will be conducted in the next monthly period of February 2014 for SB CMPs:

- *Impact Water Quality Monitoring during Dredging Operations of CMP 2;*
- *Pit Specific Sediment Chemistry of CMP 1;*
- *Cumulative Impact Sediment Chemistry of CMP 1;*
- *Sediment Toxicity Test of CMP 1;*
- *Tissue/Whole Body Sampling of CMP 1;*
- *Demersal Trawling of CMP 1;*
- *Routine Water Quality Monitoring of CMP 1;* and
- *Water Column Profiling of CMP 1.*

1.6.2 *Water Quality Monitoring during Capping of CMP V* will be conducted in the next monthly period of February 2014.

1.6.3 The sampling schedule is presented in *Annex A*.

1.7 STUDY PROGRAMME

1.7.1 A summary of the Study programme is presented in *Annex E*.

Annex A

Sampling Schedule

Annex A1 - East of Sha Chau Environmental Monitoring and Audit Sampling Schedule for CMP IV (January 2012 - December 2013)

		2012												2013											
Tissue/ Whole Body Sampling		**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Near-Pit Stations																									
	INA		*																						
	INB		*																						
Reference North																									
	TNA		*																						
	TNB		*																						
Reference South																									
	TSA		*																						
	TSB		*																						
Demersal Trawling		**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Near Pit Stations																									
	INA 1-5	*	*																						
	INB 1-5	*	*																						
Reference North																									
	TNA 1-5	*	*																						
	TNB 1-5	*	*																						
Reference South																									
	TSA 1-5	*	*																						
	TSB 1-5	*	*																						
Capping		**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Ebb Tide																									
Impact Station Downcurrent																									
	IPE1		*				*		*				*		*				*		*				*
	IPE2		*				*		*				*		*				*		*				*
	IPE3		*				*		*				*		*				*		*				*
	IPE4		*				*		*				*		*				*		*				*
	PFC1		*				*		*				*		*				*		*				*
Intermediate Station Downcurrent																									
	INE1		*				*		*				*		*				*		*				*
	INE2		*				*		*				*		*				*		*				*
	INE3		*				*		*				*		*				*		*				*
	INE4		*				*		*				*		*				*		*				*
	INE5		*				*		*				*		*				*		*				*
Reference Station Upcurrent																									
	RFE1		*				*		*				*		*				*		*				*
	RFE2		*				*		*				*		*				*		*				*
	RFE3		*				*		*				*		*				*		*				*
	RFE4		*				*		*				*		*				*		*				*
	RFE5		*				*		*				*		*				*		*				*
Flood Tide																									
Impact Station Downcurrent																									
	INF1		*				*		*				*		*				*		*				*
	PFC2		*				*		*				*		*				*		*				*
	INF3		*				*		*				*		*				*		*				*
Intermediate Station Downcurrent																									
	IPF1		*				*		*				*		*				*		*				*
	IPF2		*				*		*				*		*				*		*				*
	IPF3		*				*		*				*		*				*		*				*
Reference Station Upcurrent																									
	RFF1		*				*		*				*		*				*		*				*
	RFF2		*				*		*				*		*				*		*				*
	RFF3		*				*		*				*		*				*		*				*
Water Column Profiling		**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Plume Stations	WCP1	*																							
	WCP2	*																							
Benthic Recolonisation Studies		**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Capped Contaminated Mud Pits III																									
CPA	1 grab per station								*																
CPB	1 grab per station								*																
CPC	1 grab per station								*																
Reference Stations																									
RBA	1 grab per station								*																
RBB	1 grab per station								*																
RBC	1 grab per station								*																

"*" = Number of replicates depends on field catch or parameters

Sampling completed

Sampling to be completed

Annex A2 - East of Sha Chau Environmental Monitoring and Audit Sampling Schedule for CMP V (January 2012 - February 2014)

Pit Specific Sediment Chemistry	Code	2012 J	F	M	A	M	J	J	A	S	O	N	D	2013 J	F	M	A	M	J	J	A	S	O	N	D	2014 J	F
Active-Pit																											
	ESC-NPDA		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
	ESC-NPDB		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
Pit-Edge																											
	ESC-NEDA		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
	ESC-NEDB		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
Near-Pit																											
	ESC-NNDA		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
	ESC-NNDB		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						

Cumulative Impact Sediment Chemistry	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
Near-field Stations																										
ESC-RNA		*				*		*				*		*				*		*						
ESC-RNB		*				*		*				*		*				*		*						
Mid-field Stations																										
ESC-RMA		*				*		*				*		*				*		*						
ESC-RMB		*				*		*				*		*				*		*						
Capped Pit Stations																										
ESC-RCA		*				*		*				*		*				*		*						
ESC-RCB		*				*		*				*		*				*		*						
Far-Field Stations																										
ESC-RFA		*				*		*				*		*				*		*						
ESC-RFB		*				*		*				*		*				*		*						
Ma Wan Station																										
MW1		*				*		*				*		*				*		*						

Sediment Toxicity Tests	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
Near-Field Stations																										
ESC-TDA		*						*						*						*						
ESC-TDB		*						*						*						*						
Reference Stations																										
ESC-TRA		*						*						*						*						
ESC-TRB		*						*						*						*						
Ma Wan Station																										
MW1		*						*						*						*						

Tissue/ Whole Body Sampling	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
Impact Stations																										
ESC-INA								*						*						*						
ESC-INB								*						*						*						
Reference																										
ESC-TNA								*						*						*						
ESC-TNB								*						*						*						
ESC-TSA								*						*						*						
ESC-TSB								*						*						*						

Demersal Trawling	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
Impact Stations																										
ESC-INA							*	*					*	*					*	*						
ESC-INB							*	*					*	*					*	*						
Reference Stations																										
ESC-TNA							*	*					*	*					*	*						
ESC-TNB							*	*					*	*					*	*						
ESC-TSA							*	*					*	*					*	*						
ESC-TSB							*	*					*	*					*	*						

Capping	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
Ebb Tide																										
Impact Station																										
ESC-IPE1																								*		*
ESC-IPE2																								*		*
ESC-IPE3																								*		*
ESC-IPE4																								*		*
ESC-IPE5																								*		*
Intermediate Station																										
ESC-INE1																								*		*
ESC-INE2																								*		*
ESC-INE3																								*		*
ESC-INE4																								*		*
ESC-INE5																								*		*
Reference Station																										
ESC-RFE1																								*		*
ESC-RFE2																								*		*
ESC-RFE3																								*		*
ESC-RFE4																								*		*
ESC-RFE5																								*		*
Ma Wan Station																										
MW1																								*		*
Flood Tide																										
Impact Station																										
ESC-IPF1																								*		*
ESC-IPF2																								*		*
ESC-IPF3																								*		*
Intermediate Station																										
ESC-INF1																								*		*
ESC-INF2																								*		*
ESC-INF3																								*		*
Reference Station																										
ESC-RFF1																								*		*
ESC-RFF2																								*		*
ESC-RFF3																								*		*
Ma Wan Station																										
MW1																								*		*

	2012												2013												2014	
Routine Water Quality Monitoring	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**
Ebb Tide																										
Impact Station																										
ESC-IPE1		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-IPE2		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-IPE3		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-IPE4		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-IPE5		*		*	*		*	*		*	*		*	*		*	*		*	*						
Intermediate Station																										
ESC-INE1		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-INE2		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-INE3		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-INE4		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-INE5		*		*	*		*	*		*	*		*	*		*	*		*	*						
Reference Station																										
ESC-RFE1		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-RFE2		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-RFE3		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-RFE4		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-RFE5		*		*	*		*	*		*	*		*	*		*	*		*	*						
Ma Wan Station																										
MW1		*		*	*		*	*		*	*		*	*		*	*		*	*						
Flood Tide																										
Impact Station																										
ESC-IPF1		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-IPF2		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-IPF3		*		*	*		*	*		*	*		*	*		*	*		*	*						
Intermediate Station																										
ESC-INF1		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-INF2		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-INF3		*		*	*		*	*		*	*		*	*		*	*		*	*						
Reference Station																										
ESC-RFF1		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-RFF2		*		*	*		*	*		*	*		*	*		*	*		*	*						
ESC-RFF3		*		*	*		*	*		*	*		*	*		*	*		*	*						
Ma Wan Station																										
MW1		*		*	*		*	*		*	*		*	*		*	*		*	*						

Water Column Profiling	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**
Plume Stations WCP1		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
WCP2		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						

Benthic Recolonisation Studies	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**
Capped Contaminated Mud Pits IVa-c																										
ESC-CPA								*				*								*				*		
ESC-CPB								*				*								*				*		
ESC-CPC								*				*								*				*		
Reference Stations																										
ESC-RBA								*				*								*				*		
ESC-RBB								*				*								*				*		
ESC-RBC								*				*								*				*		

Impact Monitoring for Dredging	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**
Upstream/Reference Stations																										
US1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
US2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
Downstream/Impact Stations																										
DS1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
DS2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
DS3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
DS4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
DS5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
Ma Wan Station																										
MW1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									

Sampling completed

Sampling to be completed

Annex A3 - Environmental Monitoring and Audit Sampling Schedule for South of The Brothers (July 2012 - December 2017)

			2012						2013												2014												2015												2016												2017											
Baseline Monitoring Prior to Dredging	**Code**	**Frequency**	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Far Field Stations																																																																	
	SB-WFA	3 days per week for 4 weeks	*	*																																																														
	SB-WFB	3 days per week for 4 weeks	*	*																																																														
Mid Field Stations																																																																	
	SB-WMA	3 days per week for 4 weeks	*	*																																																														
	SB-WMB	3 days per week for 4 weeks	*	*																																																														
Near Field Stations																																																																	
	SB-WNAA	3 days per week for 4 weeks	*	*																																																														
	SB-WNAB	3 days per week for 4 weeks	*	*																																																														
	SB-WNBA	3 days per week for 4 weeks	*	*																																																														
	SB-WNBB	3 days per week for 4 weeks	*	*																																																														
Reference Stations																																																																	
	NM1	3 days per week for 4 weeks	*	*																																																														
	NM2	3 days per week for 4 weeks	*	*																																																														
	NM3	3 days per week for 4 weeks	*	*																																																														
	NM5	3 days per week for 4 weeks	*	*																																																														
	NM6	3 days per week for 4 weeks	*	*																																																														
Sensitive Receiver Stations																																																																		
	MW1	3 days per week for 4 weeks	*	*																																																															
	THB1	3 days per week for 4 weeks	*	*																																																															
	THB2	3 days per week for 4 weeks	*	*																																																															
	WSR45C	3 days per week for 4 weeks	*	*																																																															
	WSR46	3 days per week for 4 weeks	*	*																																																															

Impact Monitoring for Dredging			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Upstream Stations																																																																	
	US1	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	US2	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
Downstream Stations																																																																	
	DS1	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	DS2	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	DS3	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	DS4	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	DS5	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
Sensitive Receiver Stations																																																																		
	MW1	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	THB1	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	THB2	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	WSR45C	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									
	WSR46	3 days per week					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																																									

Pit Specific Sediment Chemistry			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
SB CMP 1 Active																																																																	
Near-Pit																																																																	
	SB-NNAA	Monthly														12	12	12	12	12	12	12	12	12	12	12	12	12	12																																									
	SB-NNAB	Monthly														12	12	12	12	12	12	12	12	12	12	12	12	12	12																																									
Pit-Edge																																																																		
	SB-NEAA	Monthly														12	12	12	12	12	12	12	12	12	12	12	12	12	12																																									
	SB-NEAB	Monthly														12	12	12	12	12	12	12	12	12	12	12	12	12	12																																									
Active-Pit																																																																		
	SB-NPAA	Monthly														12	12	12	12	12	12	12	12	12	12	12	12	12	12																																									
	SB-NPAB	Monthly														12	12	12	12	12	12	12	12	12	12	12	12	12	12																																									
SB CMP 2 Active																																																																		
Near-Pit																																																																	
	SB-NNBA	Monthly																												12	12	12	12	12	12	12	12	12	12	12	12	12	12	12																								
	SB-NNBB	Monthly																												12	12	12	12	12	12	12	12	12	12	12	12	12	12	12																								
Pit-Edge																																																																		
	SB-NEBA	Monthly																												12	12	12	12	12	12	12	12	12	12	12	12	12	12	12																								
	SB-NEBB	Monthly																												12	12	12	12	12	12	12	12	12	12	12	12	12	12	12																								
Active-Pit																																																																		
	SB-NPBA	Monthly																												12	12	12	12	12	12	12	12	12	12	12	12	12	12	12																								
	SB-NPBB	Monthly																												12	12	12	12	12	12	12	12	12	12	12	12	12	12	12																								

Annex A3 - Environmental Monitoring and Audit Sampling Schedule for South of The Brothers (July 2012 - December 2017)

			2012						2013												2014												2015												2016												2017											
Cumulative Impact Sediment Chemistry			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Near-field Stations																																																																								
	SB-RNA	4 times per year														12				12		12				12		12				12		12				12		12				12																											
	SB-RNB	4 times per year														12				12		12				12		12				12		12				12		12				12																											
Mid-field Stations																																																																					
	SB-RMA	4 times per year														12				12		12				12		12				12		12				12		12				12																											
	SB-RMB	4 times per year														12				12		12				12		12				12		12				12		12				12																											
Far-Field Stations																																																																			
	SB-RFA	4 times per year														12				12		12				12		12				12		12				12		12				12																											
	SB-RFB	4 times per year														12				12		12				12		12				12		12				12		12				12																											
Capped Pit Stations																																																																			
	SB-RCA	4 times per year														12				12		12				12		12				12		12				12		12				12																											
	SB-RCB	4 times per year														12				12		12				12		12				12		12				12		12				12																											
Sensitive Receiver Stations																																																																			
	MW1	4 times per year														12				12		12				12		12				12		12				12		12				12																											
	THB1	4 times per year														12				12		12				12		12				12		12				12		12				12																											
	THB2	4 times per year														12				12		12				12		12				12		12				12		12				12																											

			2012						2013												2014												2015												2016												2017											
Sediment Toxicity Tests			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
SB CMP 1 Active																																																																								
Reference																																																																			
	SB-TRA	2 times per year														5						5																																																
	SB-TRB	2 times per year														5						5																																														
Near-Field																																																																		
	SB-TAA	2 times per year														5						5																																															
	SB-TAB	2 times per year														5						5																																														
Sensitive Receiver Stations																																																																	
	MW1	2 times per year														5						5																																														
	THB1	2 times per year														5						5																																													
	THB2	2 times per year														5						5																																													
SB CMP 2 Active																																																																		
Reference																																																																		
	SB-TRA	2 times per year																										5												5						5																				
	SB-TRB	2 times per year																										5												5						5																				
Near-Field																																																														
	SB-TBA	2 times per year																										5												5						5																				
	SB-TBB	2 times per year																										5												5						5																				
Sensitive Receiver Stations																																																														
	MW1	2 times per year																										5												5						5																				
	THB1	2 times per year																										5												5						5																				
	THB2	2 times per year																										5												5						5																				

			2012						2013												2014												2015												2016												2017											
Tissue/ Whole Body Sampling			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Near-Pit Stations																																																																							
	SB-INA	2 times per year																			*							*												*						*																				
	SB-INB	2 times per year																			*							*												*						*																				
Reference North																																																																			
	TNA	2 times per year																			*							*												*						*																				
	TNB	2 times per year																			*							*												*						*																				
Reference South																																																																		
	TSA	2 times per year																			*							*												*						*																				
	TSB	2 times per year																			*							*												*						*																				

			2012						2013												2014												2015												2016												2017											
Demersal Trawling			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Impact																																																																						
	SB-INA 1-5	4 times per year														5					5	5					5	5					5	5					5	5					5	5																				
	SB-INB 1-5	4 times per year														5					5	5					5	5					5	5					5	5					5	5																				
Reference North																																																																	
	TNA 1-5	4 times per year														5					5	5					5	5					5	5					5	5					5	5																				
	TNB 1-5	4 times per year														5					5	5					5	5					5	5					5	5					5	5																				
Reference South																																																																	
	TSA 1-5	4 times per year														5					5	5					5	5					5	5					5	5					5	5																				
	TSB 1-5	4 times per year														5					5	5					5	5					5	5					5	5					5	5																				

Annex A3 - Environmental Monitoring and Audit Sampling Schedule for South of The Brothers (July 2012 - December 2017)

			2012						2013												2014												2015												2016												2017											
Routine Water Quality Monitoring			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Ebb Tide																																																																		
Impact Stations Downcurrent																																																																		
	SB-IPE1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-IPE2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-IPE3	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-IPE4	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-IPE5	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
Intermediate Stations Downcurrent																																																																		
	SB-INE1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-INE2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-INE3	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-INE4	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-INE5	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
Reference Stations Upcurrent																																																																		
	SB-RFE1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-RFE2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-RFE3	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-RFE4	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-RFE5	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
Sensitive Receiver Stations																																																																		
	MW1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	THB1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	THB2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	WSR45C	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	WSR46	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
Flood Tide																																																																		
Impact Stations Downcurrent																																																																		
	SB-IPF1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-IPF2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-IPF3	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
Intermediate Stations Downcurrent																																																																		
	SB-INF1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-INF2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-INF3	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
Reference Stations Upcurrent																																																																		
	SB-RFF1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-RFF2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	SB-RFF3	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
Sensitive Receiver Stations																																																																		
	MW1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	THB1	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	THB2	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	WSR45C	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									
	WSR46	8 times per year														8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8		8	8																									

Water Column Profiling			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Plume Stations	WCP1	Monthly														4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4																								
	WCP2	Monthly														4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4																								

Annex A3 - Environmental Monitoring and Audit Sampling Schedule for South of The Brothers (July 2012 - December 2017)

			2012						2013												2014												2015												2016												2017											
Capping Water Quality Monitoring			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Ebb Tide																																																																				
Impact Stations Downcurrent																																																																				
	SB-IPE1	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-IPE2	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-IPE3	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-IPE4	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-IPE5	8 times per year																																									3	3		3	3		3	3		3	3													
Intermediate Stations Downcurrent																																																																				
	SB-INE1	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-INE2	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-INE3	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-INE4	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-INE5	8 times per year																																									3	3		3	3		3	3		3	3													
Reference Stations Upcurrent																																																																				
	SB-RFE1	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-RFE2	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-RFE3	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-RFE4	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-RFE5	8 times per year																																									3	3		3	3		3	3		3	3													
Sensitive Receiver Stations																																																																				
	MW1	8 times per year																																									3	3		3	3		3	3		3	3													
	THB1	8 times per year																																																																		
	THB2	8 times per year																																																																		
	WSR45C	8 times per year																																									3	3		3	3		3	3		3	3													
	WSR46	8 times per year																																									3	3		3	3		3	3		3	3													
Flood Tide																																																																				
Impact Stations Downcurrent																																																																				
	SB-IPF1	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-IPF2	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-IPF3	8 times per year																																									3	3		3	3		3	3		3	3													
Intermediate Stations Downcurrent																																																																				
	SB-INF1	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-INF2	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-INF3	8 times per year																																									3	3		3	3		3	3		3	3													
Reference Stations Upcurrent																																																																				
	SB-RFF1	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-RFF2	8 times per year																																									3	3		3	3		3	3		3	3													
	SB-RFF3	8 times per year																																									3	3		3	3		3	3		3	3													
Sensitive Receiver Stations																																																																				
	MW1	8 times per year																																									3	3		3	3		3	3		3	3													
	THB1	8 times per year																																																																		
	THB2	8 times per year																																																																		
	WSR45C	8 times per year																																									3	3		3	3		3	3		3	3													
	WSR46	8 times per year																																									3	3		3	3		3	3		3	3													

Benthic Recolonisation Studies			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Capped Contaminated Mud Pits																																																																				
	SB-CPA	2 times per year																																																12				12								12				12
	SB-CPB	2 times per year																																																12				12								12				12
																																																		12				12								12				12
Reference Stations																																																																				
	RBA	2 times per year																																																12				12								12				12
	RBB	2 times per year																																																12				12								12				12
	RBC	2 times per year																																																12				12								12				12

Notes:
"*" = Number of replicates depends on parameters
Naming of stations are tentative only and will be subjected to changes

Annex B

Graphs of Monitoring Results

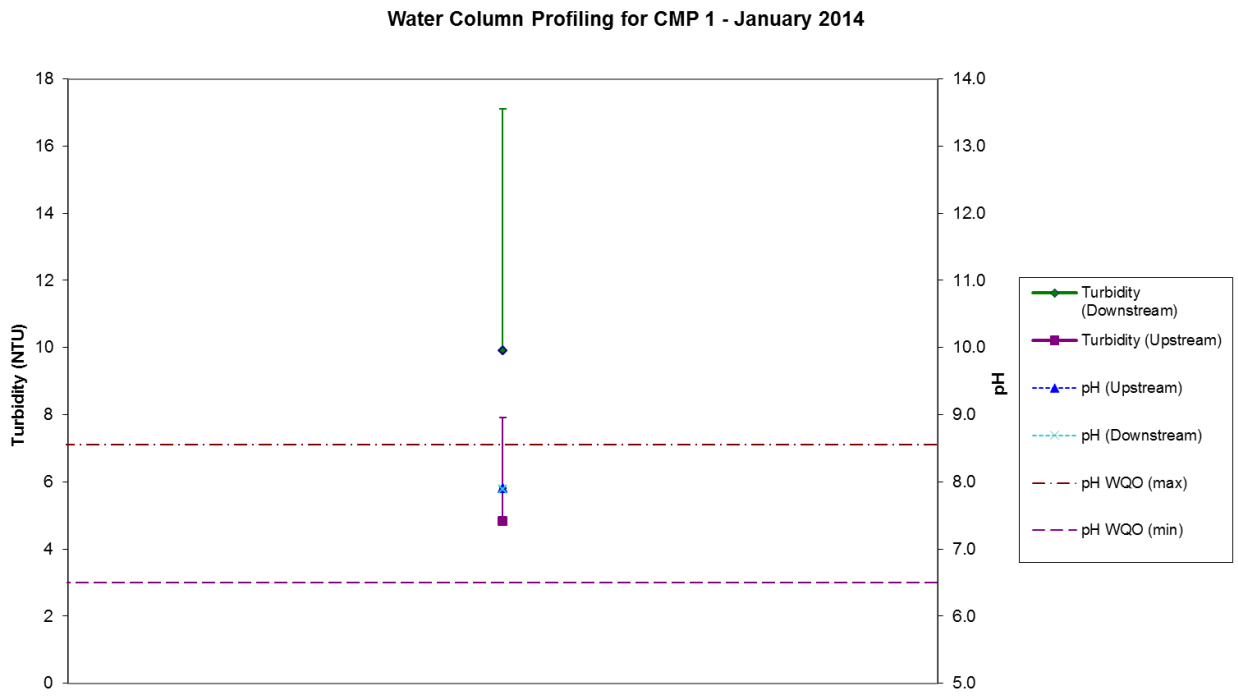


Figure 1: Turbidity and pH (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in January 2014.

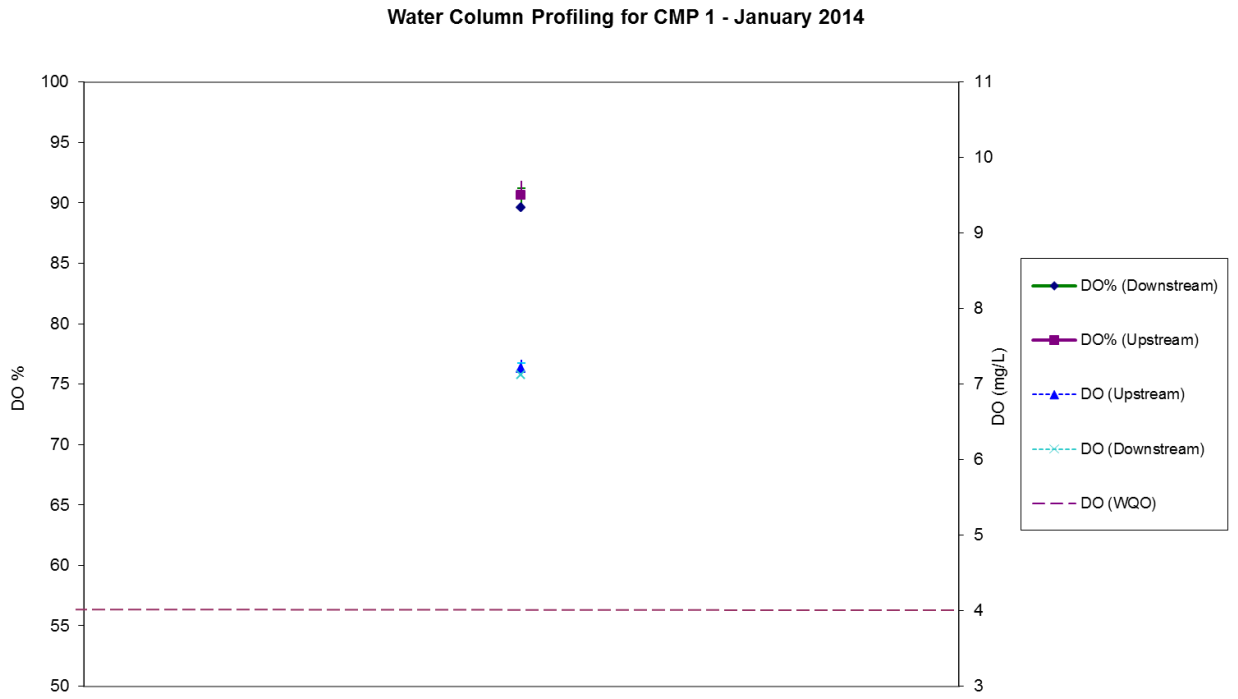


Figure 2: Dissolved Oxygen (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in January 2014.

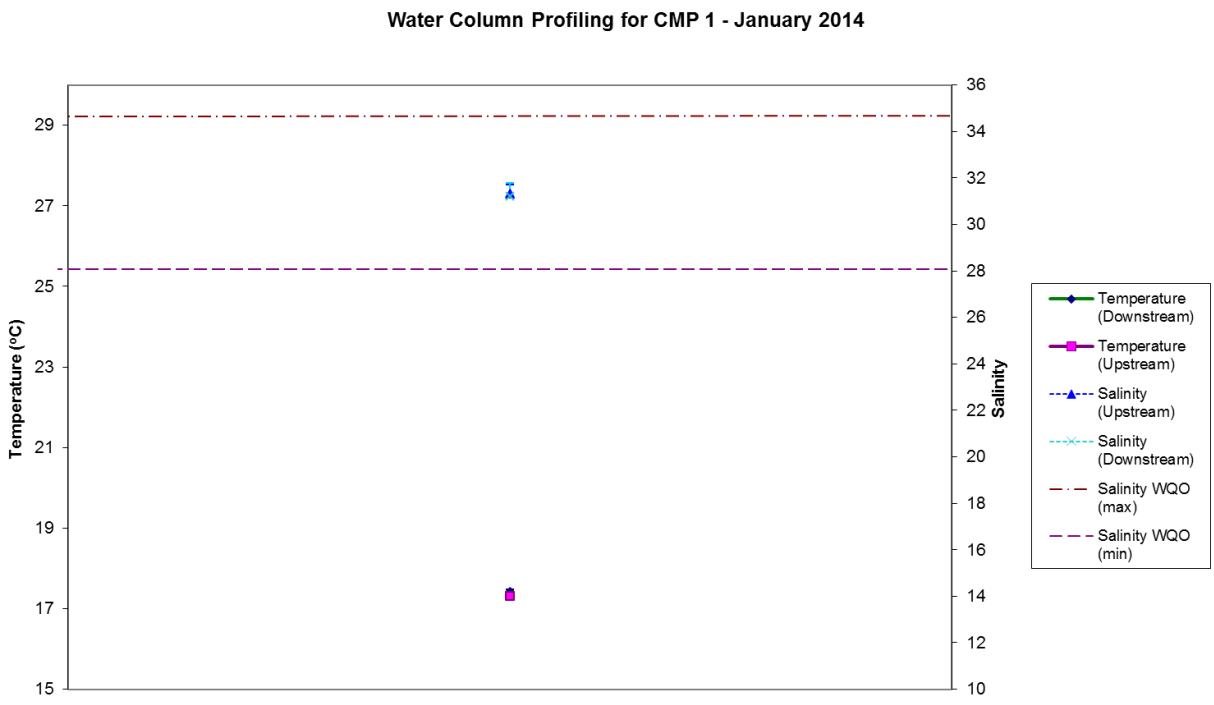


Figure 3: Salinity and Temperature (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in January 2014.

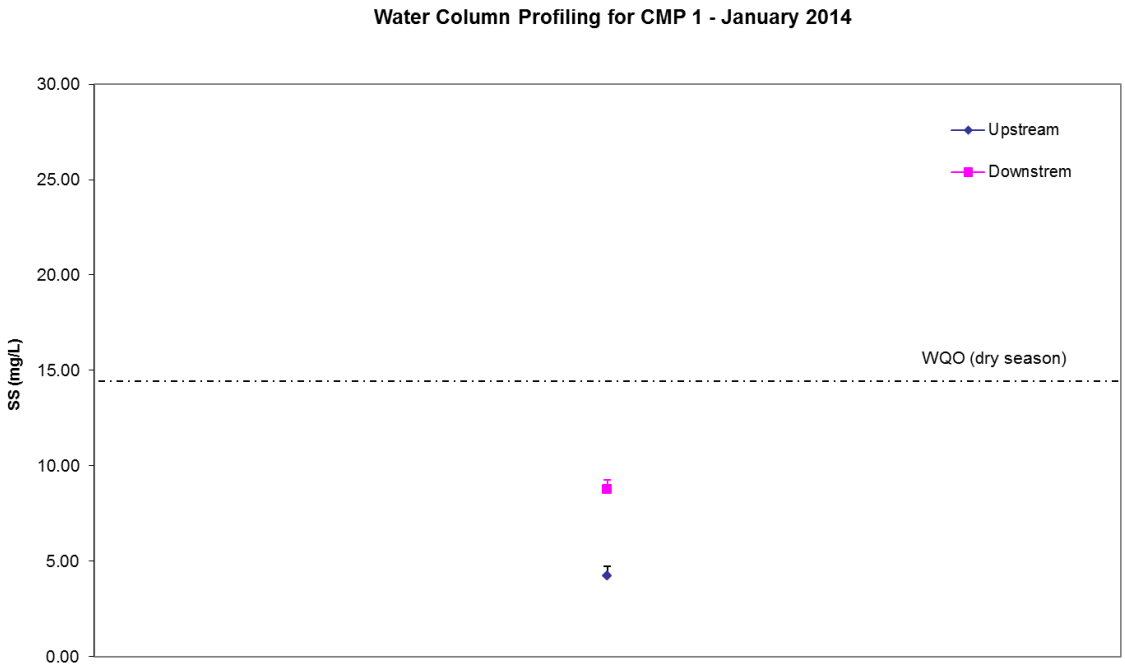


Figure 4: Suspended Solids (mean + SD) recorded during *Water Column Profiling* for disposal operations at CMP 1 in January 2014.

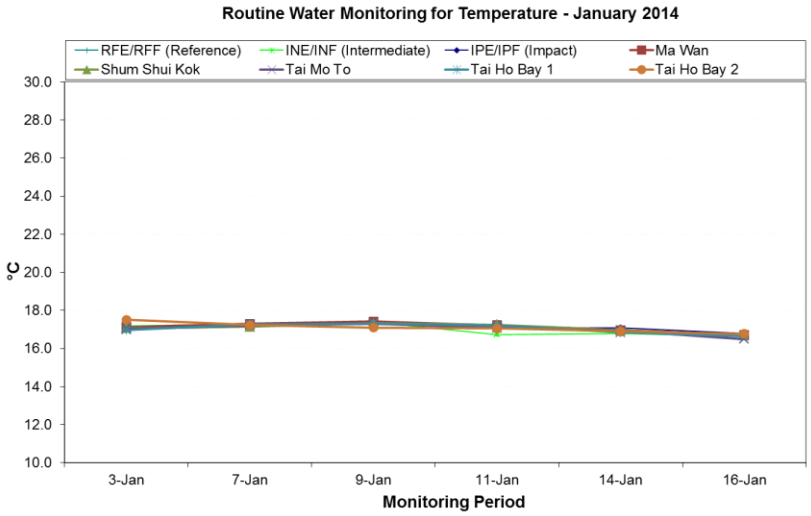


Figure 5: Daily levels of Temperature during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

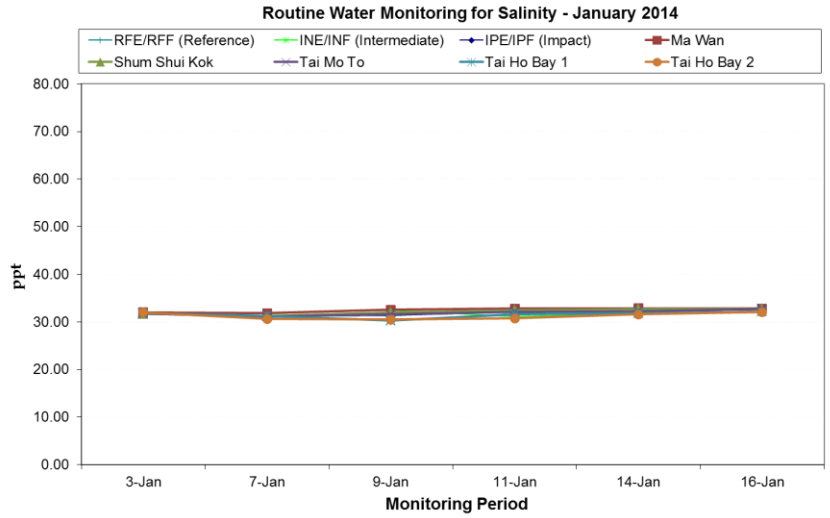


Figure 6: Daily levels of Salinity during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

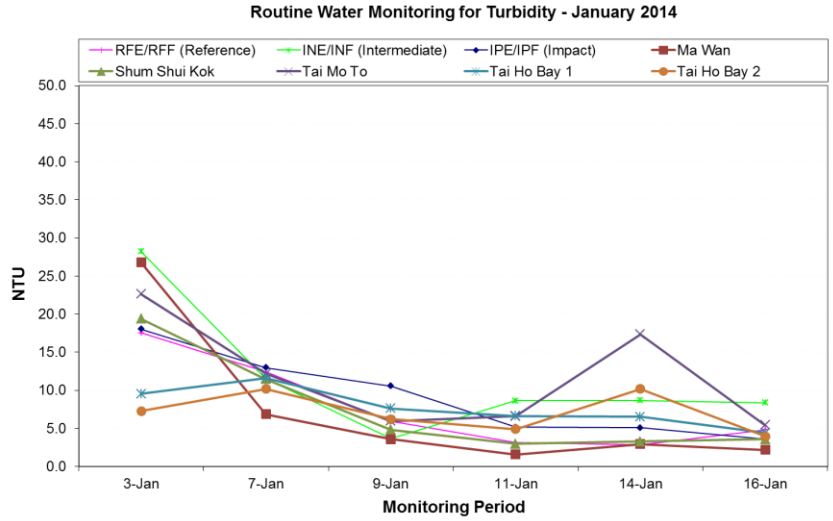


Figure 7: Daily levels of Turbidity during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

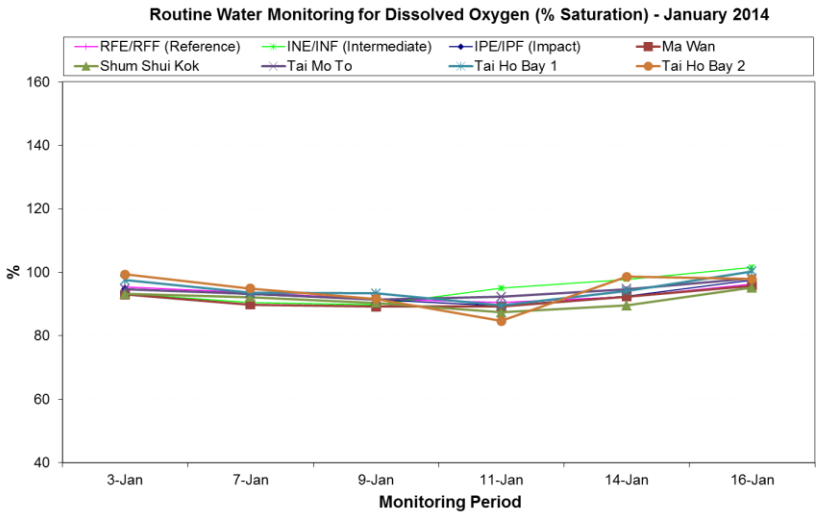


Figure 8: Daily levels of Dissolved Oxygen (%) during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

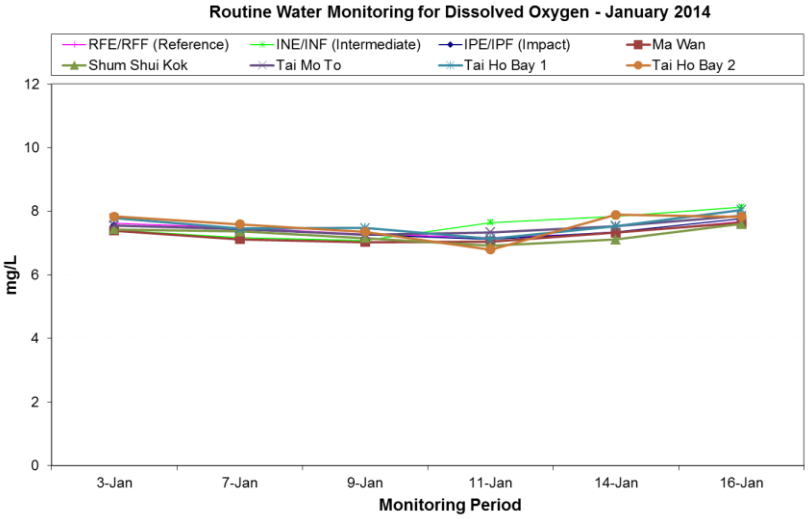


Figure 9: Daily levels of Dissolved Oxygen (mg/L) during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

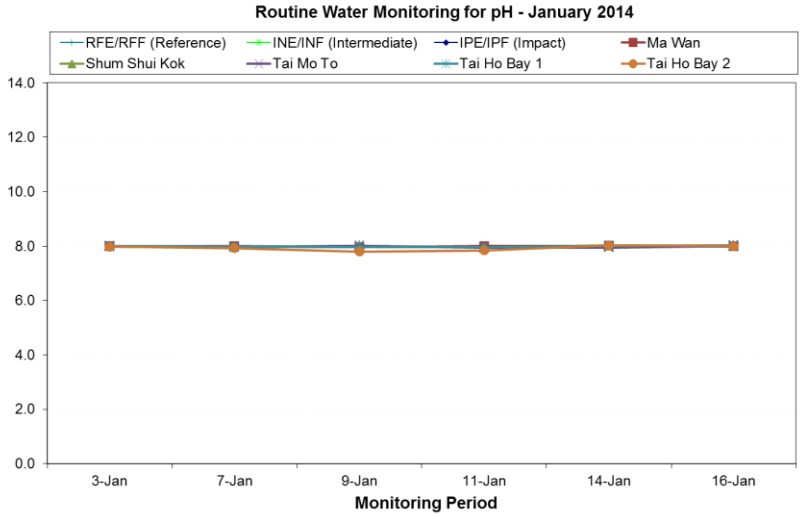


Figure 10: Daily levels of pH during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

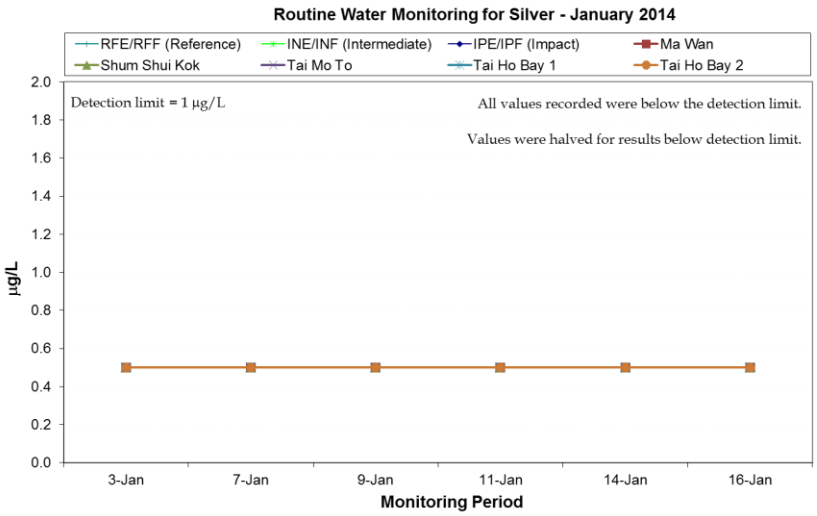


Figure 11: Daily levels of Silver during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

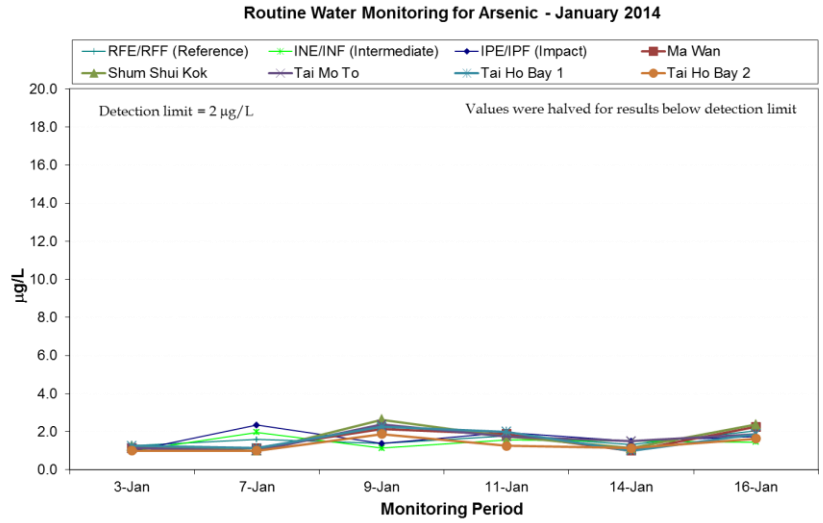


Figure 12: Daily levels of Arsenic during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

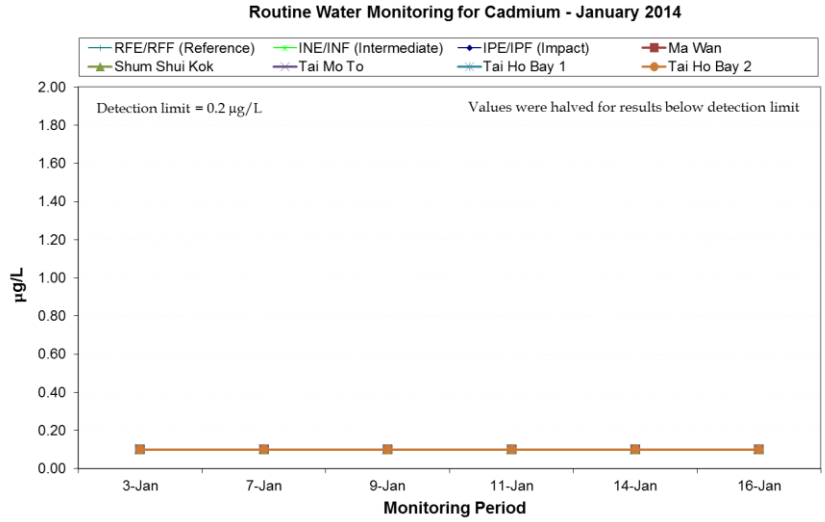


Figure 13: Daily levels of Cadmium during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

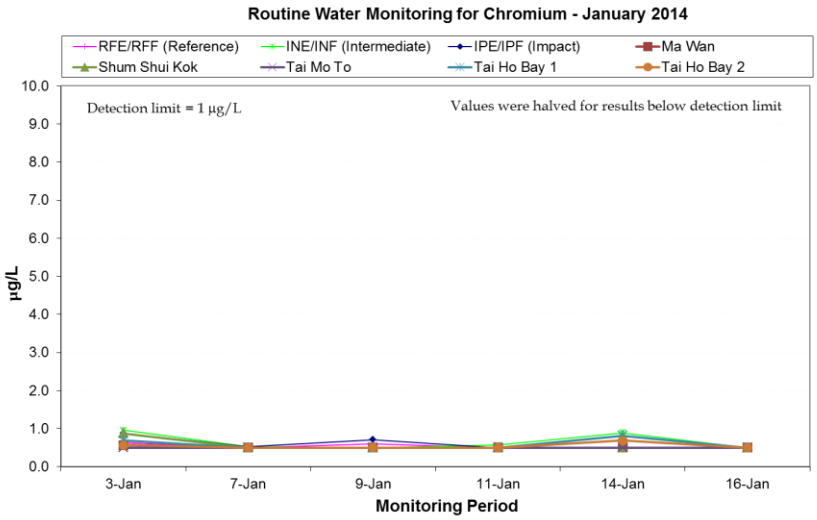


Figure 14: Daily levels of Chromium during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

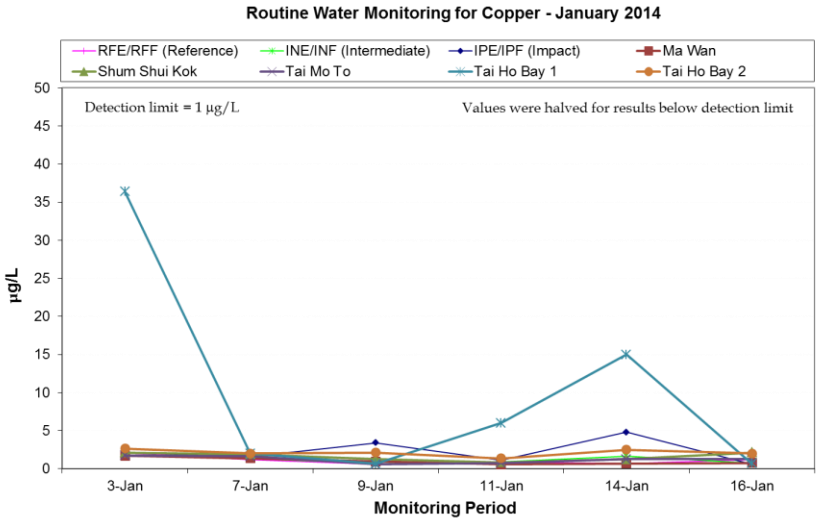


Figure 15: Daily levels of Copper during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

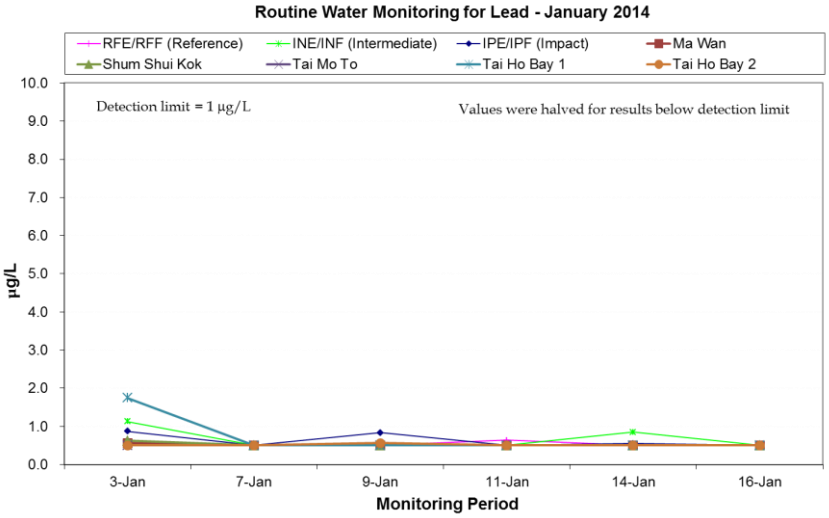


Figure 16: Daily levels of Lead during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

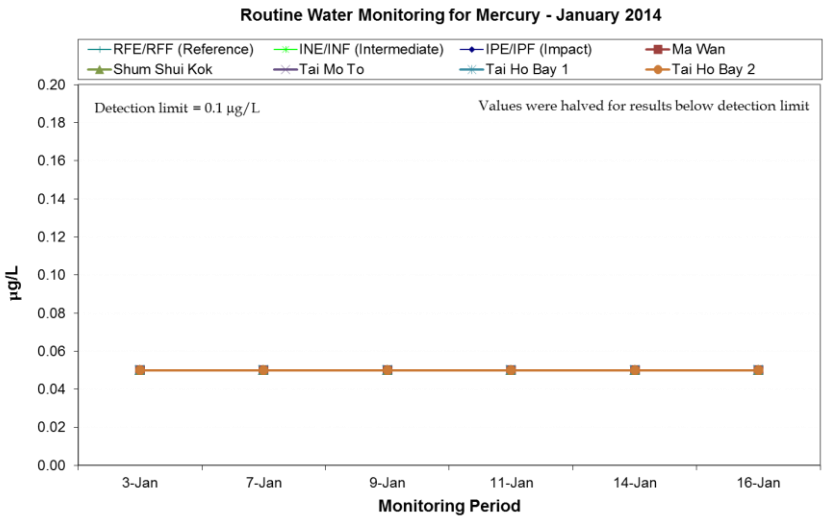


Figure 17: Daily levels of Mercury during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

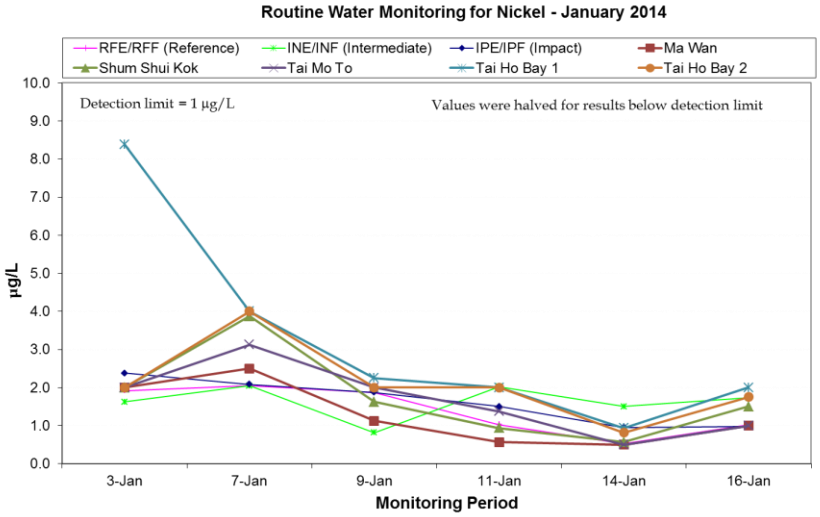


Figure 18: Daily levels of Nickel during *Routine Water Monitoring* for disposal operations at CMP 1 in January 2014.

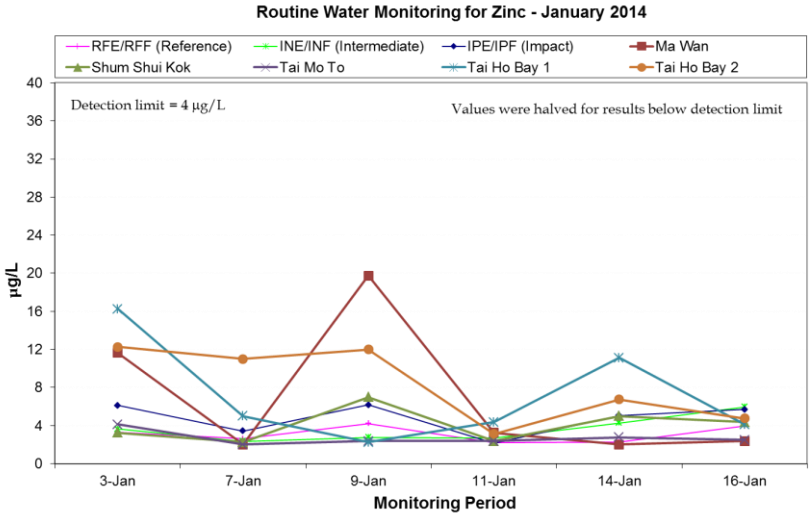


Figure 19: Daily levels of Zinc during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

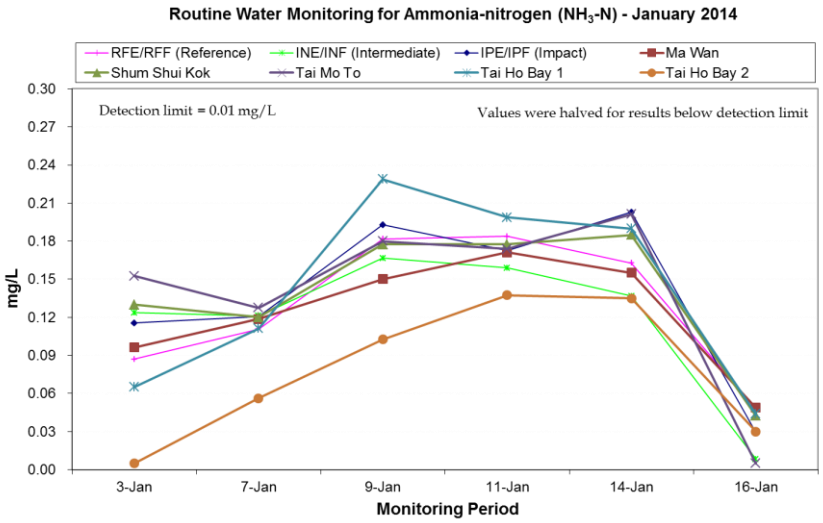


Figure 20: Daily levels of Ammonia-Nitrogen during *Routine Water Quality Monitoring* for for disposal operations at CMP 1 in January 2014.

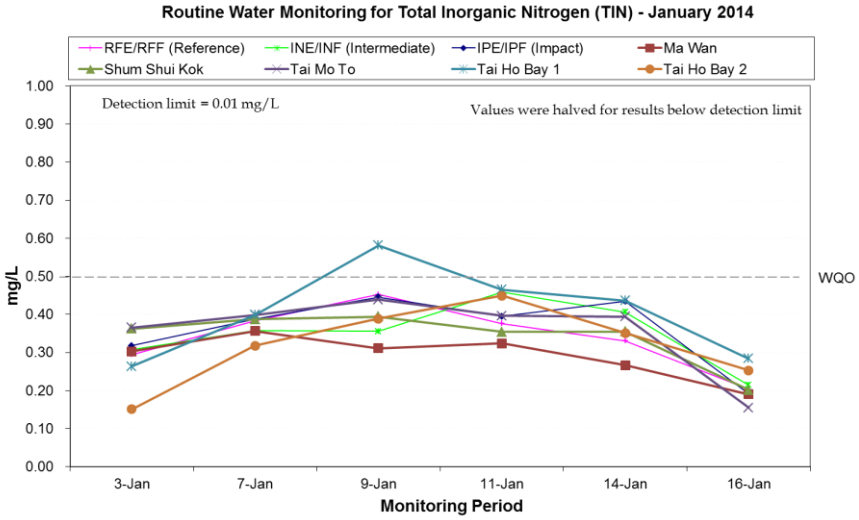


Figure 21: Daily levels of Total Inorganic Nitrogen during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

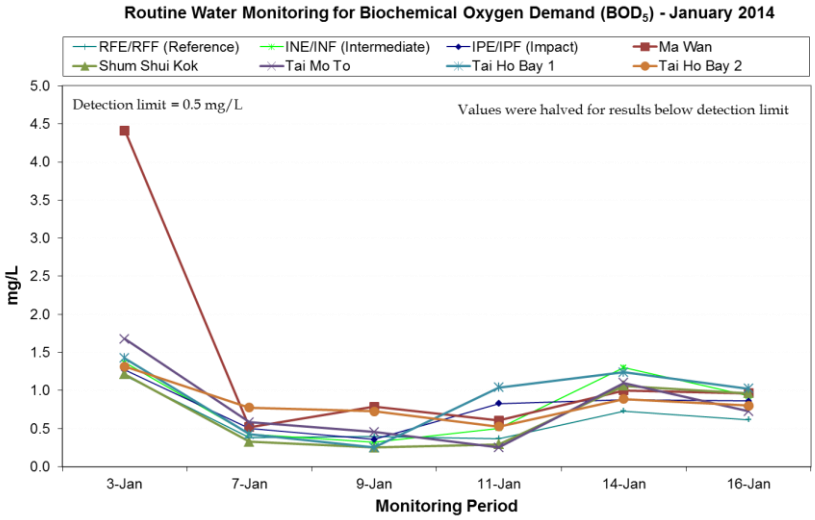


Figure 22: Daily levels of Biochemical Oxygen Demand during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

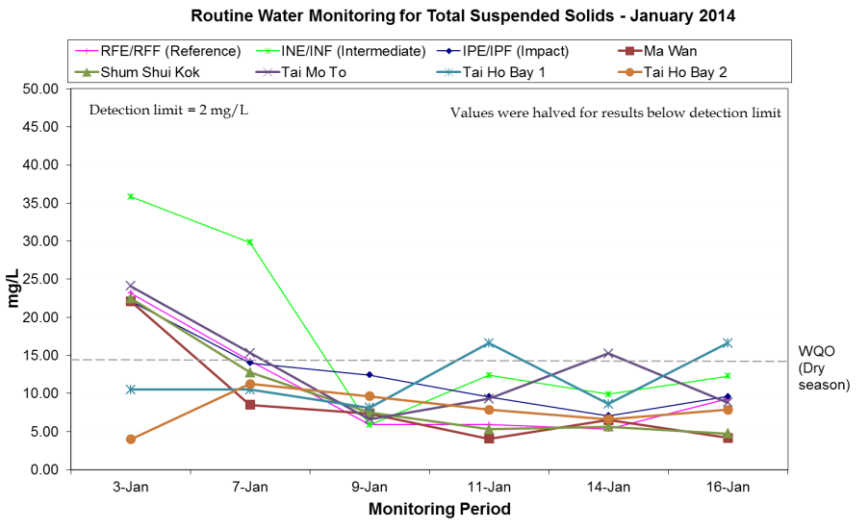


Figure 23: Daily levels of Total Suspended Solids during *Routine Water Quality Monitoring* for disposal operations at CMP 1 in January 2014.

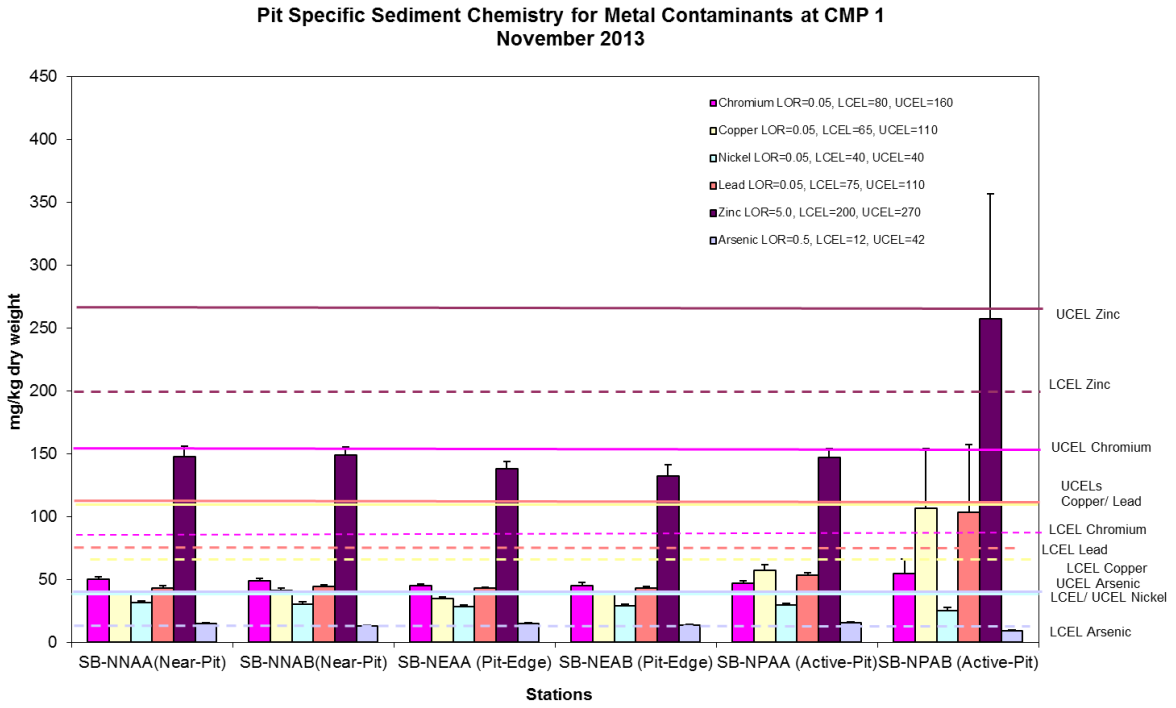


Figure 24: Concentration of Metals (Cr, Cu, Ni, Pb, Zn, As; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* for CMP 1 in November 2013.

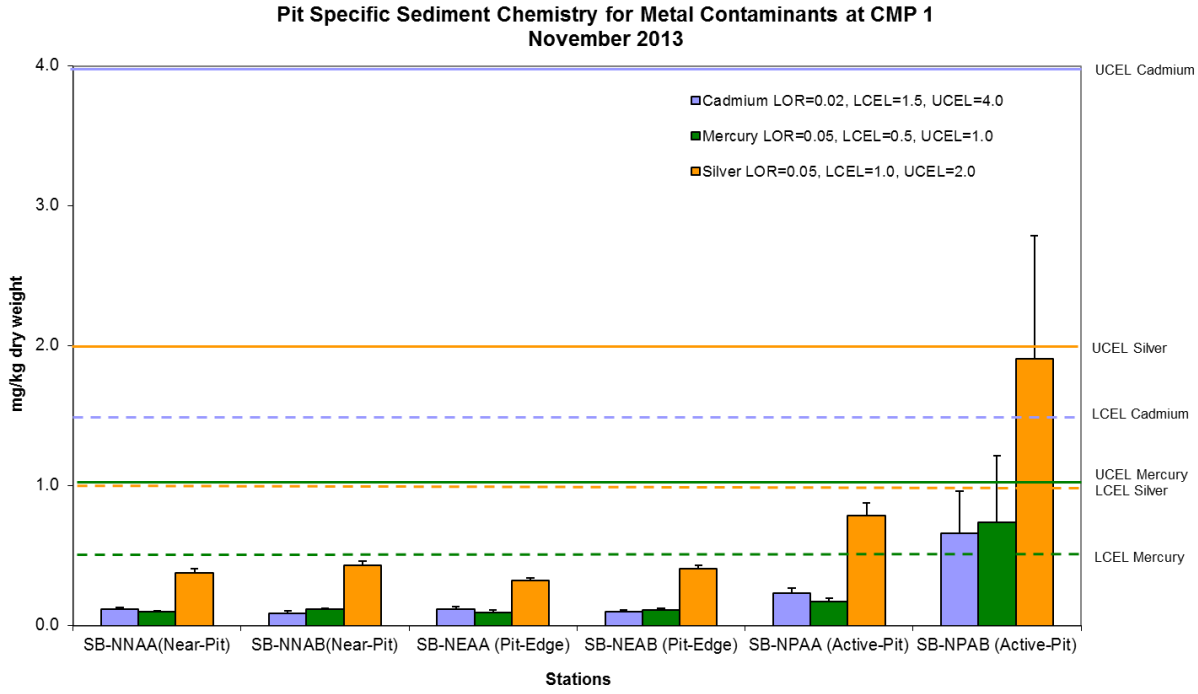


Figure 25: Concentration of Metals (Cd, Hg, Ag; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* for CMP 1 in November 2013.

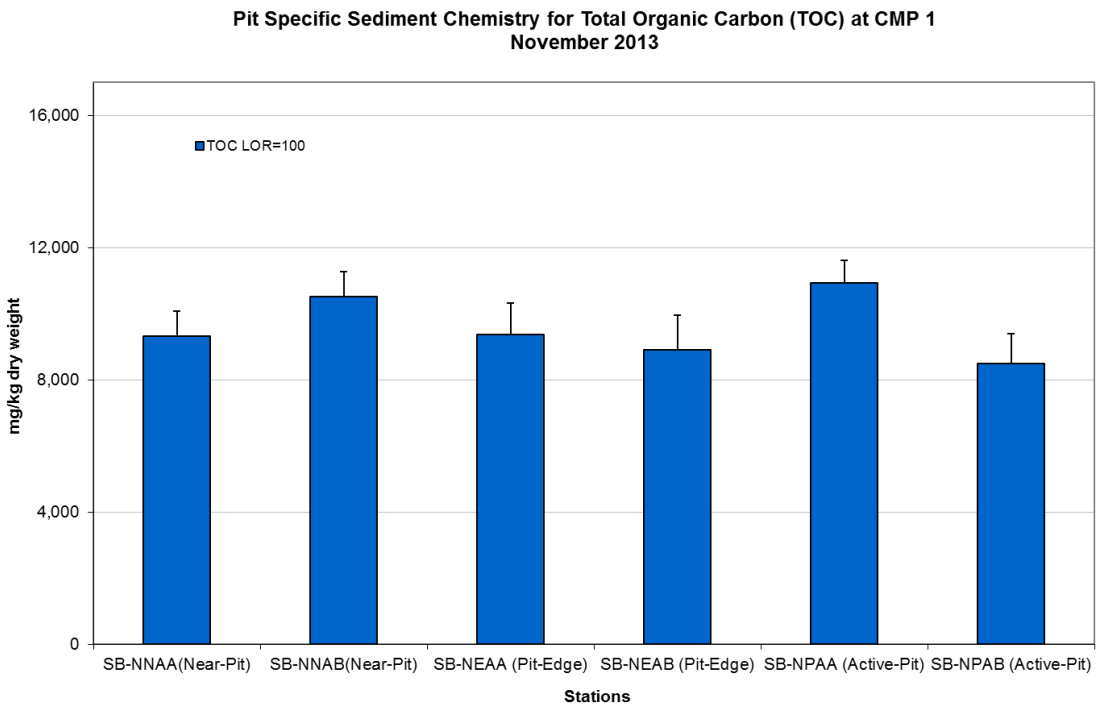


Figure 26: Concentration of Total Organic Carbon (mg/kg dry weight; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* for CMP 1 in November 2013.

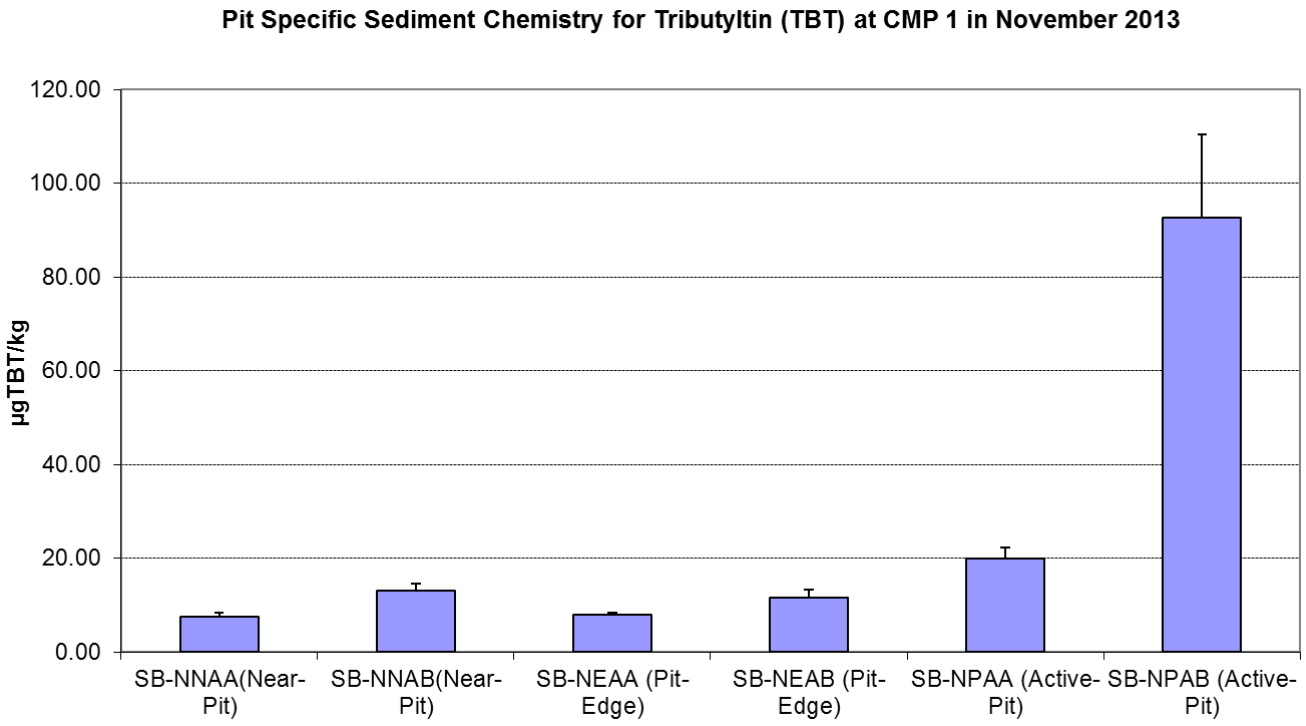


Figure 27: Concentration of Tributyltin (µg TBT/kg; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* of CMP 1 in November 2013.

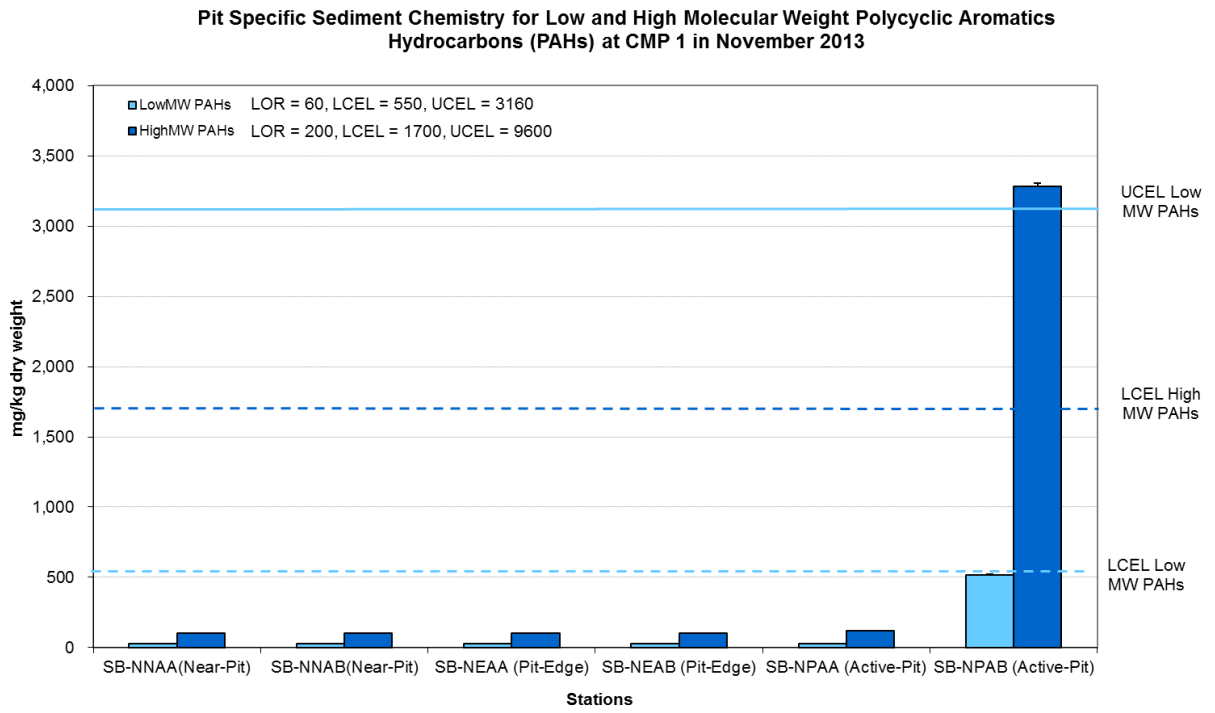


Figure 28: Concentration of Low and High Molecular Weight Polycyclic Aromatics Hydrocarbons (mg/kg dry weight; mean +SD) in sediment samples collected from *Pit Specific Sediment Chemistry Monitoring* for CMP 1 in November 2013.

Annex C

Results of Impact Monitoring during Dredging Operations of CMP 2 in December 2013/ January 2014 and Routine Water Quality Monitoring for CMP 1 in January 2014

Table C1 *Summary Table of DO, Turbidity and SS Levels Recorded in December 2013/ January 2014*

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average SS Level (mg/L)
			Bottom	Surface and Mid Depth		
2013/12/9	Mid-Ebb	DS1	6.72	6.67	15.51	16.17
		DS2	6.42	6.47	6.66	6.44
		DS3	6.45	6.53	5.35	5.22
		DS4	6.27	6.43	5.96	5.11
		DS5	6.20	6.40	6.17	5.44
		US1	6.74	6.81	5.88	4.67
		US2	6.81	6.80	5.46	4.17
		MW1	6.74	6.74	3.75	3.22
		THB1	7.25	7.26	3.73	3.33
		THB2	-	7.40	7.59	6.00
		WSR45C	6.68	6.94	5.79	5.33
		WSR46	6.94	7.00	7.34	8.00
	Mid-Flood	DS1	6.58	6.62	6.91	6.67
		DS2	6.54	6.61	7.86	13.00
		DS3	6.59	6.53	23.11	21.33
		DS4	6.58	6.58	13.88	12.83
		DS5	6.71	6.64	8.68	8.00
		US1	6.59	6.74	5.46	6.83
		US2	6.69	6.62	5.23	5.67
		MW1	7.03	6.70	6.50	6.56
		THB1	6.68	7.11	5.91	4.83
		THB2	-	7.68	7.18	6.67
		WSR45C	6.83	6.95	7.26	6.33
		WSR46	6.90	6.96	10.87	9.00
2013/12/11	Mid-Ebb	DS1	6.86	6.80	19.05	20.50
		DS2	6.80	6.79	5.71	6.83
		DS3	6.84	6.78	4.27	4.67
		DS4	6.81	6.79	3.50	3.78
		DS5	6.63	6.75	4.09	4.78
		US1	6.95	6.90	7.66	8.67
		US2	7.12	6.94	7.60	8.17
		MW1	6.53	6.61	2.46	3.89
		THB1	6.77	6.77	3.78	4.50
		THB2	-	-	-	-
		WSR45C	6.52	6.67	3.82	4.67
		WSR46	6.97	7.01	4.87	5.00
	Mid-Flood	DS1	7.07	6.97	45.65	50.50
		DS2	7.04	6.99	6.78	6.33
		DS3	7.11	6.99	8.20	9.00
		DS4	7.11	7.07	8.33	8.83
		DS5	7.14	7.03	4.81	4.83
		US1	6.91	6.86	5.03	4.83
		US2	6.77	6.79	5.13	4.50
		MW1	6.53	6.56	2.87	4.00
		THB1	6.95	6.82	4.75	5.00
		THB2	-	-	-	-
		WSR45C	6.68	6.72	3.62	4.22

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average SS Level (mg/L)
			Bottom	Surface and Mid Depth		
		WSR46	7.12	7.06	5.29	6.33
2013/12/13	Mid-Ebb	DS1	6.86	6.88	6.86	10.17
		DS2	6.81	6.81	5.10	11.33
		DS3	6.73	6.80	3.79	4.78
		DS4	6.69	6.72	4.14	5.33
		DS5	6.72	6.72	4.74	5.56
		US1	6.95	7.00	5.65	8.67
		US2	7.04	7.15	17.36	4.67
		MW1	6.54	6.59	4.27	6.44
		THB1	6.92	6.89	5.68	6.17
		THB2	-	-	-	-
		WSR45C	6.66	6.72	4.64	5.89
		WSR46	7.08	7.11	5.96	7.00
	Mid-Flood	DS1	6.77	6.84	9.50	10.33
		DS2	6.97	7.07	6.71	6.67
		DS3	7.08	7.21	7.25	8.17
		DS4	7.25	7.35	8.08	9.17
		DS5	7.25	7.41	6.85	7.56
		US1	6.81	6.96	5.91	6.17
		US2	6.91	6.95	4.37	5.11
		MW1	6.70	6.75	3.57	6.00
		THB1	6.97	7.03	5.06	5.50
		THB2	-	-	-	-
		WSR45C	6.68	6.87	6.21	8.22
		WSR46	6.80	6.80	6.88	9.22
2013/12/16	Mid-Ebb	DS1	7.01	6.97	14.81	16.50
		DS2	6.92	6.92	12.05	13.89
		DS3	6.90	6.92	10.18	14.44
		DS4	6.83	6.83	7.78	10.78
		DS5	6.80	6.83	7.50	8.89
		US1	7.11	7.10	8.14	8.83
		US2	7.20	7.19	7.87	8.67
		MW1	6.61	6.61	7.08	9.22
		THB1	7.06	7.08	9.05	9.17
		THB2	-	-	-	-
		WSR45C	6.71	6.80	6.39	8.00
		WSR46	7.05	7.05	7.47	8.67
	Mid-Flood	DS1	7.02	7.02	12.15	24.17
		DS2	6.99	7.01	15.70	18.33
		DS3	7.15	7.15	11.75	13.17
		DS4	7.18	7.18	10.32	13.33
		DS5	7.21	7.20	7.43	8.78
		US1	6.85	6.87	11.12	14.50
		US2	6.77	6.78	10.54	13.22
		MW1	6.65	6.64	6.41	8.67
		THB1	7.08	7.08	12.19	14.67
		THB2	-	-	-	-
		WSR45C	6.62	6.63	10.10	11.78
		WSR46	6.95	6.94	10.92	13.56
2013/12/18	Mid-Ebb	DS1	6.93	6.92	7.95	9.33
		DS2	6.93	6.94	6.90	8.00

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average SS Level (mg/L)
			Bottom	Surface and Mid Depth		
		DS3	6.90	6.89	7.05	8.00
		DS4	6.88	6.84	7.07	8.11
		DS5	6.90	6.82	5.57	8.33
		US1	7.21	7.19	12.87	12.67
		US2	7.37	7.34	8.82	9.50
		MW1	6.75	6.76	6.86	10.11
		THB1	7.33	7.40	9.69	10.83
		THB2	-	7.22	12.39	24.67
		WSR45C	6.77	6.85	5.46	7.44
		WSR46	6.98	6.98	9.98	12.00
	Mid-Flood	DS1	7.18	7.13	7.87	14.83
		DS2	7.18	7.15	9.11	10.00
		DS3	7.14	7.14	11.27	11.33
		DS4	7.17	7.15	17.50	15.17
		DS5	7.18	7.13	10.52	11.00
		US1	7.16	7.14	15.53	16.83
		US2	6.95	6.90	13.52	14.50
		MW1	6.72	6.71	8.64	11.44
		THB1	7.23	7.25	9.69	11.67
		THB2	-	6.26	7.38	13.33
		WSR45C	6.87	6.87	15.30	18.56
		WSR46	7.16	7.10	14.78	16.56
2013/12/20	Mid-Ebb	DS1	7.35	7.27	5.57	8.00
		DS2	7.26	7.19	6.87	7.33
		DS3	7.16	7.16	4.53	5.33
		DS4	6.98	7.13	5.44	7.11
		DS5	7.02	7.07	5.31	7.33
		US1	7.40	7.45	10.98	12.33
		US2	7.64	7.57	9.28	9.50
		MW1	6.92	6.93	5.34	6.33
		THB1	7.34	7.41	6.79	7.83
		THB2	-	7.90	10.99	6.67
		WSR45C	6.95	7.07	4.73	5.89
		WSR46	7.23	7.26	9.39	11.44
	Mid-Flood	DS1	7.39	7.33	8.87	13.33
		DS2	7.39	7.34	13.35	12.83
		DS3	-	7.34	17.35	16.33
		DS4	7.31	7.32	31.73	39.00
		DS5	7.42	7.32	13.42	13.89
		US1	7.34	7.30	7.92	8.00
		US2	7.18	7.18	10.20	11.83
		MW1	6.85	6.85	7.03	9.44
		THB1	7.20	7.20	8.32	9.83
		THB2	-	6.85	5.08	5.33
		WSR45C	7.19	7.20	7.59	9.22
		WSR46	7.29	7.29	10.55	10.44
2013/12/23	Mid-Ebb	DS1	7.39	7.41	11.18	14.50
		DS2	7.50	7.45	5.70	7.33
		DS3	7.37	7.40	4.89	6.56
		DS4	6.97	7.29	5.28	7.33
		DS5	6.97	7.22	5.88	7.00

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average SS Level (mg/L)
			Bottom	Surface and Mid Depth		
		US1	7.59	7.63	8.57	15.83
		US2	7.78	7.79	6.30	16.00
		MW1	6.91	6.92	4.94	6.22
		THB1	7.69	7.73	5.20	5.67
		THB2	-	8.01	8.02	4.67
		WSR45C	6.96	7.19	4.34	5.11
		WSR46	7.23	7.36	11.61	14.00
	Mid-Flood	DS1	7.48	7.45	13.47	18.33
		DS2	7.55	7.55	8.50	26.67
		DS3	-	7.68	9.62	9.33
		DS4	7.53	7.53	15.18	21.00
		DS5	7.64	7.61	8.07	9.67
		US1	7.55	7.49	6.85	8.33
		US2	7.47	7.43	6.15	7.17
		MW1	6.98	7.04	4.13	5.56
		THB1	7.49	7.52	7.74	9.00
		THB2	-	7.65	4.48	4.33
		WSR45C	7.09	7.39	7.64	9.33
		WSR46	7.39	7.42	10.29	11.56
2013/12/27	Mid-Ebb	DS1	7.26	7.21	4.42	5.33
		DS2	7.20	7.16	3.12	4.67
		DS3	6.97	6.98	2.91	4.33
		DS4	7.01	6.98	3.05	7.44
		DS5	7.05	6.98	2.91	3.89
		US1	7.34	7.33	18.33	20.17
		US2	7.31	7.31	7.48	9.33
		MW1	6.99	6.99	2.31	3.33
		THB1	7.59	7.54	5.39	6.67
		THB2	-	7.38	5.18	3.33
		WSR45C	7.08	7.06	2.65	2.22
		WSR46	7.20	7.36	5.20	3.11
	Mid-Flood	DS1	7.33	7.30	19.30	24.33
		DS2	7.51	7.45	8.58	7.33
		DS3	7.67	7.62	6.05	5.50
		DS4	7.73	7.70	7.05	6.50
		DS5	7.85	7.85	9.27	8.89
		US1	7.15	7.06	3.28	1.67
		US2	7.09	7.10	3.42	1.33
		MW1	7.08	7.08	2.89	2.89
		THB1	7.65	7.64	6.19	5.50
		THB2	-	8.23	8.72	3.67
		WSR45C	7.13	7.11	3.35	3.78
		WSR46	7.08	7.07	4.07	4.67
2013/12/29	Mid-Ebb	DS1	7.15	7.14	5.28	8.00
		DS2	7.17	7.12	3.73	7.33
		DS3	7.11	7.10	3.02	6.17
		DS4	7.12	7.10	2.94	5.22
		DS5	7.09	7.11	2.64	4.44
		US1	7.89	7.94	3.03	4.67
		US2	8.00	7.94	4.97	7.83
		MW1	7.12	7.13	2.85	6.11

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average SS Level (mg/L)
			Bottom	Surface and Mid Depth		
		THB1	7.64	7.70	4.71	5.83
		THB2	-	8.07	3.35	5.00
		WSR45C	7.21	7.19	2.73	5.56
		WSR46	7.52	7.33	4.00	6.56
	Mid-Flood	DS1	7.61	7.82	6.58	10.17
		DS2	7.87	8.21	7.18	11.00
		DS3	8.23	8.27	4.83	7.67
		DS4	8.30	8.27	3.87	5.50
		DS5	8.14	8.16	4.04	7.56
		US1	7.48	7.46	3.85	7.33
		US2	7.42	7.35	3.67	10.00
		MW1	7.20	7.20	3.36	5.67
		THB1	8.06	8.39	3.78	5.50
		THB2	-	8.42	4.82	5.33
		WSR45C	7.30	7.33	3.19	5.11
		WSR46	7.38	7.41	4.34	7.00
2013/12/31	Mid-Ebb	DS1	7.75	7.63	6.18	5.17
		DS2	7.51	7.51	4.47	3.33
		DS3	7.45	7.42	5.17	4.89
		DS4	7.47	7.37	4.54	3.78
		DS5	7.44	7.37	3.32	2.00
		US1	7.95	8.04	7.60	6.33
		US2	8.25	8.29	5.08	4.83
		MW1	7.09	7.07	4.26	4.56
		THB1	8.06	8.16	4.80	4.83
		THB2	-	7.86	4.10	2.00
		WSR45C	7.30	7.29	3.50	2.89
		WSR46	7.60	7.66	8.93	9.33
	Mid-Flood	DS1	7.64	7.72	15.12	15.50
		DS2	7.97	7.99	9.00	9.83
		DS3	8.22	8.24	7.77	7.17
		DS4	8.08	8.12	22.30	12.50
		DS5	7.99	8.03	9.58	10.00
		US1	7.47	7.42	6.97	7.00
		US2	7.45	7.43	5.76	5.56
		MW1	7.10	7.13	5.36	5.11
		THB1	8.39	8.47	7.13	6.83
		THB2	-	8.44	4.53	4.00
		WSR45C	7.44	7.45	5.69	6.00
		WSR46	7.82	7.84	6.00	5.44
2014/01/02	Mid-Ebb	DS1	7.66	7.67	7.43	7.33
		DS2	7.68	7.69	4.65	5.17
		DS3	7.73	7.71	4.39	5.67
		DS4	7.41	7.57	5.29	5.33
		DS5	7.31	7.50	5.41	6.11
		US1	8.04	8.08	7.15	7.17
		US2	8.36	8.38	5.98	12.00
		MW1	6.95	7.04	4.78	5.56
		THB1	7.92	7.96	4.76	4.67
		THB2	-	8.19	6.48	4.33
		WSR45C	7.09	7.26	4.93	6.00

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average SS Level (mg/L)
			Bottom	Surface and Mid Depth		
		WSR46	7.38	7.44	7.78	7.89
	Mid-Flood	DS1	8.05	8.01	6.57	7.33
		DS2	-	8.07	8.12	7.67
		DS3	-	8.09	13.32	17.33
		DS4	7.95	7.96	6.77	20.67
		DS5	7.93	7.93	5.88	5.78
		US1	7.64	7.65	10.67	13.50
		US2	7.64	7.65	9.42	10.00
		MW1	7.44	7.51	13.78	14.00
		THB1	7.91	7.89	7.53	7.50
		THB2	-	7.61	4.25	5.00
		WSR45C	7.65	7.68	13.39	14.00
		WSR46	7.75	7.77	12.54	12.22
2014/01/04	Mid-Ebb	DS1	7.37	7.42	14.42	20.00
		DS2	7.47	7.45	13.52	18.17
		DS3	7.41	7.42	10.94	13.56
		DS4	7.46	7.45	10.51	14.67
		DS5	7.47	7.47	10.08	12.44
		US1	7.86	7.87	25.10	37.00
		US2	7.82	7.83	9.93	14.33
		MW1	7.24	7.30	5.77	9.44
		THB1	7.65	7.67	7.57	9.00
		THB2	-	7.68	9.95	8.33
		WSR45C	7.32	7.37	10.19	10.33
		WSR46	7.33	7.37	10.93	11.89
	Mid-Flood	DS1	7.29	7.29	21.76	28.50
		DS2	7.44	7.39	18.29	28.83
		DS3	7.61	7.60	15.20	16.33
		DS4	7.59	7.56	9.55	13.67
		DS5	7.49	7.50	11.11	10.67
		US1	7.35	7.34	9.03	10.67
		US2	7.27	7.26	11.91	16.11
		MW1	7.10	7.16	20.49	17.56
		THB1	7.48	7.46	10.60	15.67
		THB2	-	6.89	6.32	8.00
		WSR45C	7.29	7.25	22.18	25.11
		WSR46	7.28	7.29	15.70	20.22
2014/01/06	Mid-Ebb	DS1	7.64	7.50	13.32	12.33
		DS2	7.43	7.46	8.82	8.67
		DS3	7.37	7.40	9.92	9.78
		DS4	7.34	7.42	8.12	8.78
		DS5	7.21	7.39	8.40	7.78
		US1	7.61	7.58	12.92	13.17
		US2	7.68	7.69	34.10	36.17
		MW1	7.18	7.24	4.40	4.22
		THB1	7.60	7.57	8.05	8.00
		THB2	-	7.79	8.87	6.33
		WSR45C	7.20	7.38	9.29	8.78
		WSR46	7.55	7.56	16.21	14.78
	Mid-Flood	DS1	7.16	7.15	16.73	12.50
		DS2	7.14	7.16	27.02	33.17

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average SS Level (mg/L)
			Bottom	Surface and Mid Depth		
		DS3	7.31	7.29	13.88	18.00
		DS4	7.53	7.43	11.22	12.22
		DS5	7.40	7.37	12.51	13.33
		US1	7.21	7.20	10.07	10.67
		US2	7.19	7.18	12.58	13.00
		MW1	6.85	6.92	10.42	9.89
		THB1	7.15	7.12	7.17	6.33
		THB2	-	7.82	7.50	9.33
		WSR45C	7.09	7.11	12.98	12.11
		WSR46	7.26	7.23	13.10	12.67
2014/01/08	Mid-Ebb	DS1	7.48	7.47	12.13	13.50
		DS2	7.46	7.44	8.27	7.67
		DS3	7.40	7.43	8.42	8.56
		DS4	7.43	7.45	7.73	6.22
		DS5	7.41	7.45	7.02	5.22
		US1	7.61	7.60	22.43	22.67
		US2	7.61	7.60	11.25	11.17
		MW1	7.16	7.25	3.41	3.00
		THB1	7.57	7.60	5.25	4.67
		THB2	-	7.29	8.10	9.33
		WSR45C	7.36	7.43	7.48	6.78
		WSR46	7.44	7.47	7.02	5.00
	Mid-Flood	DS1	7.41	7.41	8.37	8.67
		DS2	7.46	7.45	6.52	5.17
		DS3	7.57	7.56	8.82	7.67
		DS4	7.59	7.58	12.05	14.67
		DS5	7.55	7.56	10.70	9.56
		US1	7.35	7.38	6.92	5.17
		US2	7.28	7.34	11.32	11.89
		MW1	7.02	7.09	4.82	3.44
		THB1	7.40	7.41	6.30	5.00
		THB2	-	7.35	7.00	3.67
		WSR45C	7.15	7.27	8.67	8.44
		WSR46	7.27	7.31	12.47	12.33

Notes:

1. Please refer to Table C2 below for the Action and Limit Levels for dredging activities.
2. Cell shaded yellow indicated value exceeding the Action Level criteria.
3. Cell shaded red indicated value exceeding the Limit Level criteria.
4. Only mid-depth water was sampled at Station THB2 because water depth was less than 3m.
5. Sampling at THB2 was cancelled on 11, 13, and 16 December 2013 due to adverse weather condition.
6. On 20, 23 December 2013, and 2 January 2014, only mid-depth water was sampled at Station DS2/DS3 during mid-flood tide because water depth was less than 3m.

Table C2 ***Action and Limit Levels of Water Quality for Dredging, Backfilling and Capping Activities***

Parameter	Action Level	Limit Level
Dissolved Oxygen (DO) (1)	Surface and Mid-depth (2) The average of the impact, WSR 45C and WSR 46 station readings are < 5%-ile of baseline data for surface and middle layer = **4.32 mg L^{-1}** and Significantly less than the reference stations mean DO (at the same tide of the same day)	Surface and Mid-depth (2) The average of the impact, WSR 45C and WSR 46 station readings are **< 4 mg L^{-1}** and Significantly less than the reference stations mean DO (at the same tide of the same day)
	Bottom The average of the impact, WSR 45C and WSR 46 station readings are < 5%-ile of baseline data for bottom layers = **3.12 mg L^{-1}** and Significantly less than the reference stations mean DO (at the same tide of the same day)	Bottom The average of the impact station, WSR 45C and WSR 46 readings are **< 2 mg L^{-1}** and Significantly less than the reference stations mean DO (at the same tide of the same day)
Depth-averaged Suspended Solids (SS) (3) (4)	The average of the impact, WSR 45C and WSR 46 station readings are > 95%-ile of baseline data for depth average = **21.60 mg L^{-1}** and 120% of control station's SS at the same tide of the same day	The average of the impact, WSR 45C and WSR 46 station readings are > 99%-ile of baseline data for depth average = **40.10 mg L^{-1}** and 130% of control station's SS at the same tide of the same day
Depth-averaged Turbidity (Tby) (3) (4)	The average of the impact, WSR 45C and WSR 46 station readings are > 95%-ile of baseline data = **25.04 NTU** and 120% of control station's Tby at the same tide of the same day	The average of the impact, WSR 45C and WSR 46 station readings are > 99%-ile of baseline data = **32.68 NTU** and 130% of control station's Tby at the same tide of the same day

Notes:

(1) For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

(2) The Action and Limit Levels for DO for Surface & Middle layers were calculated from the combined pool of baseline surface layer data and baseline middle layer data.

(3) "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.

(4) For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table C3 *In-situ Monitoring Results for Routine Water Quality Monitoring of CMP 1 in January 2014*

Sampling Date	Stations	Temp	Salinity	Turbidity	Dissolved Oxygen		pH
		(°C)	(ppt)	(NTU)	(%)	(mg L^{-1})	(mg L^{-1})
2014/1/3	RFF (Reference)	16.99	31.72	17.55	95.45	7.62	8.00
	IPF (Impact)	17.03	31.76	18.04	94.78	7.56	7.99
	INF (Intermediate)	17.18	32.05	28.21	93.21	7.40	7.98
	Ma Wan Station	17.12	32.00	26.77	93.02	7.39	7.98
	Shum Shui Kok Station	17.07	31.71	19.38	93.20	7.43	7.99
	Tai Mo To Station	17.03	31.72	22.63	94.71	7.55	7.99
	Tai Ho Bay Station 1	16.98	31.88	9.54	97.54	7.78	8.01
	Tai Ho Bay Station 2	17.51	31.97	7.29	99.30	7.84	7.98
	WQO	N/A	28.55-34.90 (Note 1)	N/A	N/A	>4	6.5-8.5
2014/1/7	RFF (Reference)	17.14	31.20	12.40	93.56	7.47	7.98
	IPF (Impact)	17.18	31.21	12.96	92.95	7.41	7.97
	INF (Intermediate)	17.30	31.74	11.52	90.43	7.18	7.95
	Ma Wan Station	17.29	31.82	6.87	89.77	7.12	8.00
	Shum Shui Kok Station	17.14	31.19	11.48	92.21	7.36	7.98
	Tai Mo To Station	17.21	31.17	12.18	93.25	7.44	7.96
	Tai Ho Bay Station 1	17.27	31.28	11.60	93.63	7.45	7.98
	Tai Ho Bay Station 2	17.23	30.60	10.18	94.86	7.59	7.93
	WQO	N/A	28.08-34.32 (Note 1)	N/A	N/A	>4	6.5-8.5
2014/1/9	RFF (Reference)	17.32	31.38	5.94	91.65	7.28	7.99
	IPF (Impact)	17.32	31.41	10.55	91.38	7.26	8.00
	INF (Intermediate)	17.40	32.41	3.67	89.77	7.08	8.02
	Ma Wan Station	17.41	32.55	3.58	89.22	7.03	7.96
	Shum Shui Kok Station	17.32	32.00	4.83	90.40	7.16	8.01
	Tai Mo To Station	17.29	31.60	5.95	91.46	7.26	8.01
	Tai Ho Bay Station 1	17.31	30.23	7.61	93.33	7.47	7.96
	Tai Ho Bay Station 2	17.09	30.50	6.24	91.61	7.35	7.80
	WQO	N/A	28.24-34.52 (Note 1)	N/A	N/A	>4	6.5-8.5
2014/1/11	RFF (Reference)	17.23	32.46	3.11	90.58	7.16	7.96
	IPF (Impact)	17.06	32.03	5.15	89.37	7.11	7.97
	INF (Intermediate)	16.73	31.14	8.65	94.94	7.64	7.96
	Ma Wan Station	17.22	32.80	1.58	89.22	7.05	8.00
	Shum Shui Kok Station	17.24	32.48	2.98	87.40	6.91	7.95
	Tai Mo To Station	17.08	32.09	6.60	92.29	7.34	7.94
	Tai Ho Bay Station 1	17.19	31.59	6.63	89.53	7.12	7.96
	Tai Ho Bay Station 2	17.04	30.74	4.90	84.65	6.79	7.84
	WQO	N/A	29.21-35.71 (Note 1)	N/A	N/A	>4	6.5-8.5
2014/1/14	RFF (Reference)	16.99	32.83	2.83	92.29	7.32	7.97
	IPF (Impact)	17.08	32.27	5.10	92.49	7.35	8.01
	INF (Intermediate)	16.79	31.73	8.68	97.81	7.84	8.01
	Ma Wan Station	16.95	32.83	2.92	92.37	7.33	8.00
	Shum Shui Kok Station	16.96	32.72	3.27	89.51	7.11	8.02
	Tai Mo To Station	16.95	32.25	17.37	94.66	7.54	7.94
	Tai Ho Bay Station 1	16.85	31.80	6.54	94.06	7.52	8.01

Sampling Date	Stations	Temp (°C)	Salinity (ppt)	Turbidity (NTU)	Dissolved Oxygen (%)	Dissolved Oxygen (mg L^{-1})	pH (mg L^{-1})
	Tai Ho Bay Station 2	16.89	31.60	10.19	98.59	7.89	8.02
	WQO	N/A	29.55-36.12 (Note 1)	N/A	N/A	>4	6.5-8.5
2014/1/16	RFF (Reference)	16.74	32.77	4.84	96.33	7.68	8.01
	IPF (Impact)	16.78	32.62	3.57	97.48	7.77	8.03
	INF (Intermediate)	16.65	32.16	8.39	101.52	8.14	8.04
	Ma Wan Station	16.72	32.76	2.17	95.75	7.63	7.99
	Shum Shui Kok Station	16.68	32.74	3.56	95.15	7.60	8.00
	Tai Mo To Station	16.49	32.74	5.43	98.02	7.85	8.01
	Tai Ho Bay Station 1	16.64	32.09	4.42	100.34	8.05	8.03
	Tai Ho Bay Station 2	16.77	32.08	3.94	97.84	7.83	8.00
	WQO	N/A	29.49-36.04 (Note 1)	N/A	N/A	>4	6.5-8.5

Note:

1 #Not exceeding 10% of natural ambient level which is the result obtained from the Reference Station.

2 Cell shaded yellow indicate value exceeding the Action Level/Limit Level.

Table C4 Laboratory Results for Routine Water Quality Monitoring of CMP 1 in January 2014

Date	Stations	As (µg/L)	Cd (µg/L)	Cr (µg/L)	Cu (µg/L)	Pb (µg/L)	Hg (µg/L)	Ni (µg/L)	Ag (µg/L)	Zn (µg/L)	NH_3 (mg/L)	TIN (mg/L)	BOD_5 (mg/L)	SS (mg/L)
1/3	RFF	1.25	<LOR	0.63	2.10	<LOR	<LOR	1.92	<LOR	3.29	0.09	0.29	1.20	23.21
	IPF	<LOR	<LOR	0.88	2.08	0.88	<LOR	2.38	<LOR	6.13	0.12	0.32	1.27	22.17
	INF	<LOR	<LOR	0.96	1.75	1.13	<LOR	1.63	<LOR	3.63	0.12	0.31	1.37	35.83
	Ma Wan Station	1.13	<LOR	0.56	1.69	0.56	<LOR	2.00	<LOR	11.63	0.10	0.30	4.41	22.13
	Shum Shui Kok Station	1.25	<LOR	0.88	2.13	0.63	<LOR	2.00	<LOR	3.25	0.13	0.36	1.21	22.50
	Tai Mo To Station	1.13	<LOR	<LOR	1.75	<LOR	<LOR	2.00	<LOR	4.13	0.15	0.37	1.68	24.13
	Tai Ho Bay Station 1	1.25	<LOR	0.69	36.38	1.75	<LOR	8.38	<LOR	16.25	0.07	0.26	1.43	10.50
	Tai Ho Bay Station 2	<LOR	<LOR	0.56	2.63	<LOR	<LOR	2.00	<LOR	12.25	0.01	0.15	1.31	4.00
1/7	RFF	1.58	<LOR	<LOR	1.21	<LOR	<LOR	2.04	<LOR	2.63	0.11	0.38	0.38	14.29
	IPF	2.33	<LOR	0.52	1.54	<LOR	<LOR	2.08	<LOR	3.42	0.12	0.39	0.50	14.00
	INF	1.96	<LOR	0.52	1.35	<LOR	<LOR	2.04	<LOR	2.33	0.12	0.36	0.43	29.83
	Ma Wan Station	1.13	<LOR	<LOR	1.38	<LOR	<LOR	2.50	<LOR	<LOR	0.12	0.36	0.52	8.50
	Shum Shui Kok Station	<LOR	<LOR	<LOR	1.88	<LOR	<LOR	3.88	<LOR	2.25	0.12	0.39	0.33	12.75
	Tai Mo To Station	<LOR	<LOR	<LOR	1.63	<LOR	<LOR	3.13	<LOR	<LOR	0.13	0.40	0.58	15.31
	Tai Ho Bay Station 1	1.13	<LOR	<LOR	2.00	<LOR	<LOR	4.00	<LOR	5.00	0.11	0.40	0.43	10.50
	Tai Ho Bay Station 2	<LOR	<LOR	<LOR	2.00	<LOR	<LOR	4.00	<LOR	11.00	0.06	0.32	0.78	11.25
1/9	RFF	1.38	<LOR	0.60	0.60	<LOR	<LOR	1.88	<LOR	4.21	0.18	0.45	0.40	5.94
	IPF	1.38	<LOR	0.71	3.40	0.83	<LOR	1.88	<LOR	6.17	0.19	0.45	0.36	12.42
	INF	1.13	<LOR	<LOR	0.63	<LOR	<LOR	0.81	<LOR	2.75	0.17	0.36	0.32	5.85
	Ma Wan Station	2.13	<LOR	<LOR	0.94	<LOR	<LOR	1.13	<LOR	19.75	0.15	0.31	0.79	7.38
	Shum Shui Kok Station	2.63	<LOR	<LOR	1.25	<LOR	<LOR	1.63	<LOR	7.00	0.18	0.39	0.25	7.50
	Tai Mo To Station	2.38	<LOR	<LOR	0.56	<LOR	<LOR	2.00	<LOR	2.38	0.18	0.44	0.46	6.63

Date	Stations	As (µg/L)	Cd (µg/L)	Cr (µg/L)	Cu (µg/L)	Pb (µg/L)	Hg (µg/L)	Ni (µg/L)	Ag (µg/L)	Zn (µg/L)	NH_3 (mg/L)	TIN (mg/L)	BOD_5 (mg/L)	SS (mg/L)
	Tai Ho Bay Station 1	2.25	<LOR	<LOR	0.63	<LOR	<LOR	2.25	<LOR	2.25	0.23	0.58	0.25	8.13
	Tai Ho Bay Station 2	1.88	<LOR	<LOR	2.13	0.56	<LOR	2.00	<LOR	12.00	0.10	0.39	0.73	9.63
1/11	RFF	1.78	<LOR	<LOR	0.86	0.64	<LOR	1.03	<LOR	2.20	0.18	0.38	0.37	5.89
	IPF	1.95	<LOR	<LOR	1.13	<LOR	<LOR	1.50	<LOR	2.18	0.17	0.40	0.83	9.58
	INF	1.58	<LOR	0.56	0.88	0.51	<LOR	2.03	<LOR	2.70	0.16	0.46	0.51	12.39
	Ma Wan Station	1.88	<LOR	<LOR	0.56	<LOR	<LOR	0.56	<LOR	3.25	0.17	0.32	0.61	4.06
	Shum Shui Kok Station	1.75	<LOR	<LOR	0.81	<LOR	<LOR	0.94	<LOR	2.38	0.18	0.35	0.29	5.31
	Tai Mo To Station	1.75	<LOR	<LOR	0.75	<LOR	<LOR	1.38	<LOR	2.38	0.17	0.40	0.25	9.31
	Tai Ho Bay Station 1	2.00	<LOR	<LOR	6.00	<LOR	<LOR	2.00	<LOR	4.38	0.20	0.47	1.04	16.63
	Tai Ho Bay Station 2	1.25	<LOR	<LOR	1.38	<LOR	<LOR	2.00	<LOR	3.13	0.14	0.45	0.53	7.88
1/14	RFF	1.33	<LOR	<LOR	0.68	<LOR	<LOR	0.53	<LOR	2.25	0.16	0.33	0.73	5.31
	IPF	1.50	<LOR	<LOR	4.80	0.55	<LOR	0.95	<LOR	5.05	0.20	0.43	0.88	7.06
	INF	1.50	<LOR	0.89	1.65	0.85	<LOR	1.50	<LOR	4.28	0.14	0.41	1.30	9.89
	Ma Wan Station	<LOR	<LOR	<LOR	0.69	<LOR	<LOR	<LOR	<LOR	<LOR	0.16	0.27	1.00	6.50
	Shum Shui Kok Station	1.13	<LOR	<LOR	1.25	<LOR	<LOR	0.56	<LOR	5.00	0.19	0.36	1.06	5.63
	Tai Mo To Station	1.50	<LOR	<LOR	1.25	<LOR	<LOR	<LOR	<LOR	2.75	0.20	0.39	1.10	15.25
	Tai Ho Bay Station 1	<LOR	<LOR	0.81	15.00	<LOR	<LOR	0.94	<LOR	11.13	0.19	0.44	1.24	8.63
	Tai Ho Bay Station 2	1.13	<LOR	0.69	2.50	<LOR	<LOR	0.81	<LOR	6.75	0.14	0.35	0.89	6.63
1/16	RFF	2.05	<LOR	<LOR	1.16	<LOR	<LOR	1.03	<LOR	3.93	0.05	0.20	0.62	9.30
	IPF	1.75	<LOR	<LOR	0.56	<LOR	<LOR	0.98	<LOR	5.70	0.03	0.19	0.86	9.60
	INF	1.45	<LOR	<LOR	0.70	0.51	<LOR	1.73	<LOR	5.98	0.01	0.21	0.93	12.28
	Ma Wan Station	2.25	<LOR	<LOR	0.75	<LOR	<LOR	1.00	<LOR	2.38	0.05	0.19	0.96	4.19
	Shum Shui Kok Station	2.38	<LOR	<LOR	2.13	<LOR	<LOR	1.50	<LOR	4.38	0.04	0.20	0.96	4.75
	Tai Mo To Station	1.88	<LOR	<LOR	1.25	<LOR	<LOR	1.00	<LOR	2.50	0.01	0.16	0.73	8.81
	Tai Ho Bay Station 1	1.88	<LOR	<LOR	0.69	<LOR	<LOR	2.00	<LOR	4.13	0.04	0.28	1.03	16.63
	Tai Ho Bay Station 2	1.63	<LOR	<LOR	2.00	<LOR	<LOR	1.75	<LOR	4.75	0.03	0.25	0.80	7.88

WQO of TIN: 0.5 µg/L
Wet Season WQO of SS: 12.0 mg/L
Dry Season WQO of SS: 14.4 mg/L

Note: Cell shaded grey indicated value exceeding WQO.

Annex D

Dredging Record for CMP 2 in December 2013/ January 2014

Table D1 Dredging Record at SB CMP 2 in December 2013

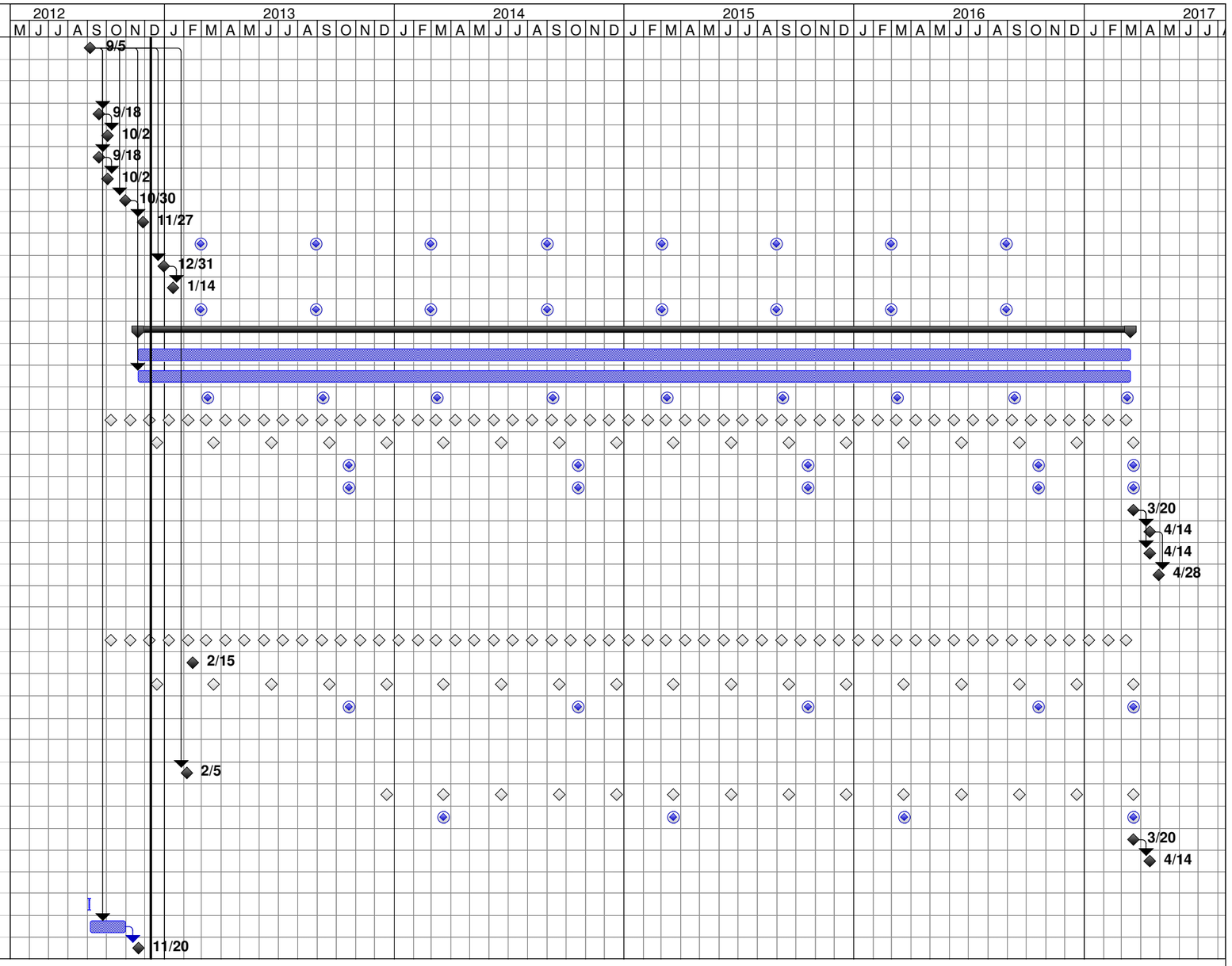
Date	Daily Dredging Volume (m^3)	Weekly Dredging Volume (m3)
01-Dec-2013	9,750	35,100
02-Dec-2013	11,050	33,800
03-Dec-2013	4,550	29,900
04-Dec-2013	7,150	33,150
05-Dec-2013	0	33,800
06-Dec-2013	0	37,050
07-Dec-2013	2,600	43,550
08-Dec-2013	8,450	47,450
09-Dec-2013	7,150	44,850
10-Dec-2013	7,800	42,900
11-Dec-2013	7,800	41,600
12-Dec-2013	3,250	39,000
13-Dec-2013	6,500	43,550
14-Dec-2013	6,500	42,900
15-Dec-2013	5,850	39,650
16-Dec-2013	5,200	42,250
17-Dec-2013	6,500	44,200
18-Dec-2013	5,200	44,200
19-Dec-2013	7,800	44,850
20-Dec-2013	5,850	41,600
21-Dec-2013	3,250	41,600
22-Dec-2013	8,450	42,250
23-Dec-2013	7,150	40,300
24-Dec-2013	6,500	39,000
25-Dec-2013	5,850	37,700
26-Dec-2013	4,550	-
27-Dec-2013	5,850	-
28-Dec-2013	3,900	-
29-Dec-2013	6,500	-
30-Dec-2013	5,850	-
31-Dec-2013	5,200	-

Note: Daily Dredging Volume from 1 January 2014 is unavailable during the preparation of this monthly report hence the Weekly dredging Volume are not calculated from 26 December 2013.

Annex E

Study Programme

Task Name
Project Commencement
For South Brothers CMPs and East of Sha Chau CMPs
Submission of Draft Inception Report & Draft Programme
Submission of Final Inception Report & Final Programme
Submission of Draft EM&A Manual (First Review)
Submission of Final EM&A Manual (First Review)
Submission of Draft EM&A Manual (Second Review)
Submission of Final EM&A Manual (Second Review)
Submission of Subsequent EM&A Manual Updates
Submission of Draft Operations Manual
Submission of Final Operations Manual
Submission of Operations Manual Updates
Monitoring Contracts
Regular Site Inspections of CMP Contractors
Participate in Liaison Group Meetings/ Consultations as required by CEDD
Submission of Report on Dredging & Capping Operations
Submission of Monthly Progress Report
Submission of Quarterly EM&A Report
Submission of Annual Review Report
Submission of Annual Risk Assessment Report
Submission of Draft Final Report
Submission of the Final Report
Submission of Draft Executive Summary Report
Submission of Final Executive Summary Report
For East Tung Lung Chau Disposal Facility
Submission of Monitoring Results & Monthly EM&A Progress Report
Submission of Initial Review Report (assume disposal commences in November 2012)
Submission of Quarterly EM&A Report
Submission of Annual Report
Alternative / Modified Capping Design
Submission of Investigation Report
Submission of Quarterly Report
Submission of Annual Report
Submission of Draft Final Report
Submission of the Final Report
Baseline Pelagic and Demersal Fisheries Survey
Baseline Shrimp Trawl & Hang Trawl Surveys, twice before SB CMPs dredging
Submission of Baseline Pelagic and Demersal Fisheries Survey Report



Study Programme	Task	Milestone	Summary	Rolled Up Task	Rolled Up Milestone

Agreement No. CE 23/2012 (EP) Environmental Monitoring and Audit for Contaminated Mud Pits to the South of The Brothers and at East Sha Chau (2012-2017) - Investigation