

 土木工程拓展署
Civil Engineering and
Development Department

Environmental Monitoring and Audit for Contaminated Mud Pit at Sha Chau (2009-2013) – Investigation Agreement No. CE 4/2009(EP)

19th Monthly Progress Report for Contaminated Mud Pits at Sha Chau – January 2011

Revision 0

31 March 2011

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Summary: This document presents progress of monitoring works on contaminated mud pits at Sha Chau in January 2011 under Agreement No. CE 4/2009 (EP).		Date: 31 March 2011			
		Approved by:  <i>Dr Robin Kennish</i> Director			
0	19 th Monthly Progress Report for CMP – Revision 0	JT	CAR	RK	31/03/11
Revision	Description	By	Checked	Approved	Date
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CONTENTS

1.1	BACKGROUND	1
1.2	REPORTING PERIOD	1
1.3	DETAILS OF SAMPLING AND LABORATORY TESTING ACTIVITIES	1
1.4	DETAILS OF OUTSTANDING SAMPLING AND / OR ANALYSIS	1
1.5	BRIEF DISCUSSION OF THE MONITORING RESULTS	2
1.6	ACTIVITIES SCHEDULED FOR THE NEXT MONTH	2
1.7	STUDY PROGRAMME	2

ANNEXES

<i>Annex A</i>	<i>Sampling Schedule</i>
<i>Annex B</i>	<i>Monitoring Results</i>
<i>Annex C</i>	<i>Study Programme</i>

Agreement No. CE 4/2009 (EP)
Environmental Monitoring and Audit
for Contaminated Mud Pit at Sha Chau (2009-2013) - Investigation

19th MONTHLY PROGRESS REPORT FOR CONTAMINATED MUD PITS
AT SHA CHAU - January 2011

1.1 BACKGROUND

Since 1992, the East of Sha Chau area has been the site of a series of dredged contaminated mud pits (CMPs) designed to provide confined marine disposal capacity for contaminated mud arising from the HKSAR's dredging and reclamation projects. CMP IVc is presently in operation for backfilling by contaminated mud and is anticipated to reach its capacity in 2011. A series of four newly constructed seabed pits at the East of Sha Chau area, CMP Va-d, will be provided for the disposal of contaminated mud after CMP IVc is full. Dredging operations were completed for the construction of CMP Va and are now taking place to construct CMP Vb. The environmental monitoring and audit (EM&A) programme for the CMPs at the East of Sha Chau area presently covers disposal and capping operations at CMP IV and dredging operations at CMP Vb.

1.2 REPORTING PERIOD

This *Monthly Progress Report* covers the monitoring period of January 2011.

1.3 DETAILS OF SAMPLING AND LABORATORY TESTING ACTIVITIES

The following monitoring activities have been undertaken for CMP IVc and CMP Vb in January 2011:

- *Impact Water Quality Monitoring during Dredging Operations* for CMP V was conducted on 4 January;
- *Water Column Profiling* for CMP IVc was conducted on 6 January; and
- *Demersal Trawling* for CMP IVc was conducted on 13-14 January.

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

1.4 DETAILS OF OUTSTANDING SAMPLING AND / OR ANALYSIS

No outstanding sampling and laboratory analysis remained from January 2011.

1.5 **BRIEF DISCUSSION OF THE MONITORING RESULTS**

Results of *Impact Water Quality Monitoring during Dredging Operations* for January 2011 are presented for CMP V. Detailed results will be discussed in the relevant *Quarterly Reports*.

1.5.1 **CMP V**

Impact Water Quality Monitoring during Dredging Operations of CMP V – January 2011

Impact Water Quality Monitoring during Dredging Operations of CMP V was conducted on 4 January 2011. On the 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 V. Monitoring was also conducted at the Ma Wan station. At each station, *in-situ* measurements of water quality parameters as well as water samples were taken from three depths in the water column (ie surface: 1 m below sea surface, mid-depth and bottom: 1 m above the seabed).

Monitoring results are presented in *Table B1* of *Annex B*. Levels of Dissolved Oxygen (DO), Turbidity and Total Suspended Solids (TSS) generally complied with the Action and Limit Levels set in the *Baseline Monitoring Report* ⁽¹⁾. Levels of TSS and Turbidity exceeded the Action Level in the downstream station DS1 during the mid-ebb tide. Station DS1 is located on the edge of the works area of CMP Vb and the compliance of Action and Limit Levels at other downstream stations (ie DS2-4) outside the works area would indicate that there is no evidence of any unacceptable adverse water quality impacts arising from the dredging operations of CMP V at ESC.

1.6 **ACTIVITIES SCHEDULED FOR THE NEXT MONTH**

Water Column Profiling, Water Quality Monitoring during Capping and Demersal Trawling will be undertaken for CMP IV while *Impact Water Quality Monitoring during Dredging* will be undertaken for CMP V in the next monitoring month.

The sampling schedule is presented in *Annex A*.

1.7 **STUDY PROGRAMME**

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

(1) ERM (2009) *Baseline Monitoring Report. Environmental Monitoring and Audit for Contaminated Mud Pit at Sha Chau (2009-2013) – Investigation*. Agreement No. CE 4/2009(EP). Submitted to EPD in September 2009.

Annex A

Sampling Schedule

Annex A2 - East of Sha Chau Environmental Monitoring and Audit Sampling Schedule for CMP V (July 2009 - April 2011)

			2009							2010							2011								
Baseline 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	
Near Field	ESC-WNAA	To be surveyed 24 times (3 days per week during mid-flood and mid-ebb tide of each day) in the month prior to commencement of marine works	*	*																					
	ESC-WNAB		*	*																					
	ESC-WNAC		*	*																					
	ESC-WNAD		*	*																					
	ESC-WNBA		*	*																					
	ESC-WNBB		*	*																					
	ESC-WNBC		*	*																					
	ESC-WNBD	*	*																						
Mid Field	ESC-WMB	To be surveyed 24 times (3 days per week during mid-flood and mid-ebb tide of each day) in the month prior to commencement of marine works	*	*																					
	ESC-WMA		*	*																					
Far Field	ESC-WFA	To be surveyed 24 times (3 days per week during mid-flood and mid-ebb tide of each day) in the month prior to commencement of marine works	*	*																					
	ESC-WFB		*	*																					
	MW1		*	*																					
Reference Stations	NM1	To be surveyed 24 times (3 days per week during mid-flood and mid-ebb tide of each day) in the month prior to commencement of marine works	*	*																					
	NM2		*	*																					
	NM3		*	*																					
	NM5		*	*																					
	NM6		*	*																					
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	
Plume Stations	Upstream			2	2	2	2	2	2	2															
	Downstream			2	2	2	2	2	2	2															
Water Quality 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	
Downcurrent Impact Stations	1			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	2			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	3			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	4			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	5			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Upcurrent Stations	1			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	2			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	MW1			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

■ Sampling completed
■ Sampling to be completed

Annex B

Monitoring Results

Table B1 *Summary Table of DO, Turbidity and TSS Levels recorded in January 2011*

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average TSS Level (mg/L)
			Bottom	Surface and Mid Depth		
2011/01/04	ME	DS1	7.40	7.29	29.68	39.50
		DS2	7.59	7.30	12.98	16.00
		DS3	7.29	7.23	7.92	10.00
		DS4	7.31	7.20	6.35	9.00
		DS5	7.37	7.19	6.08	8.83
		MW1	7.03	6.98	7.95	14.83
		US1	7.89	7.38	7.32	12.33
	MF	US2	7.41	7.32	8.78	11.83
		DS1	7.46	7.26	9.52	12.33
		DS2	7.49	7.26	19.78	25.67
		DS3	7.56	7.35	19.20	20.33
		DS4	7.49	7.35	15.80	21.17
		DS5	7.50	7.28	8.92	13.00
		MW1	6.88	6.82	7.18	11.00
		US1	7.44	7.24	7.77	10.00
		US2	7.28	7.16	10.05	12.83

1. Cell shaded yellow indicates value exceeding the Action Level.
2. Cell shaded red indicates value exceeding the Limit Level.

Annex C

Study Programme

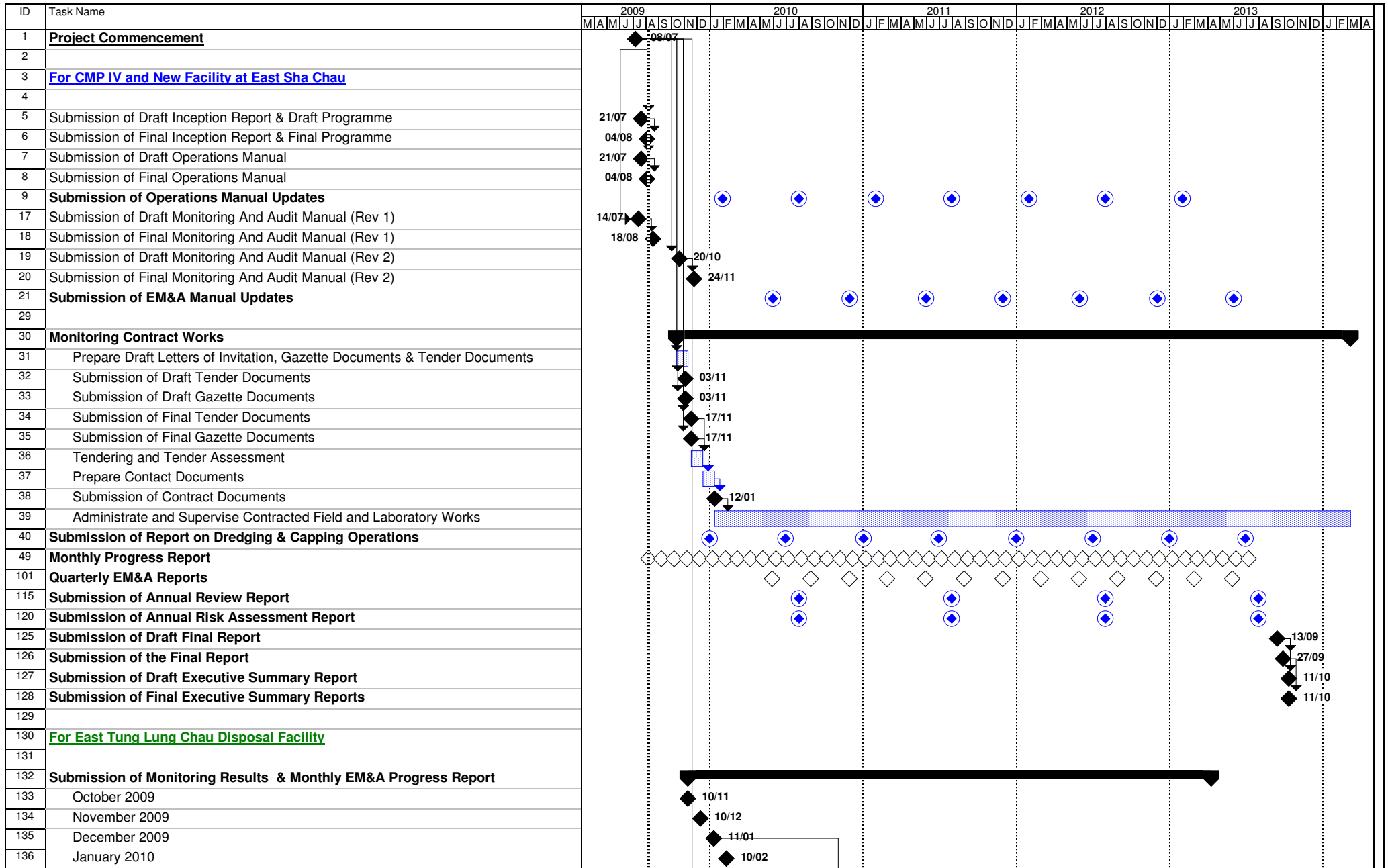


Figure 4.1 - Study Programme



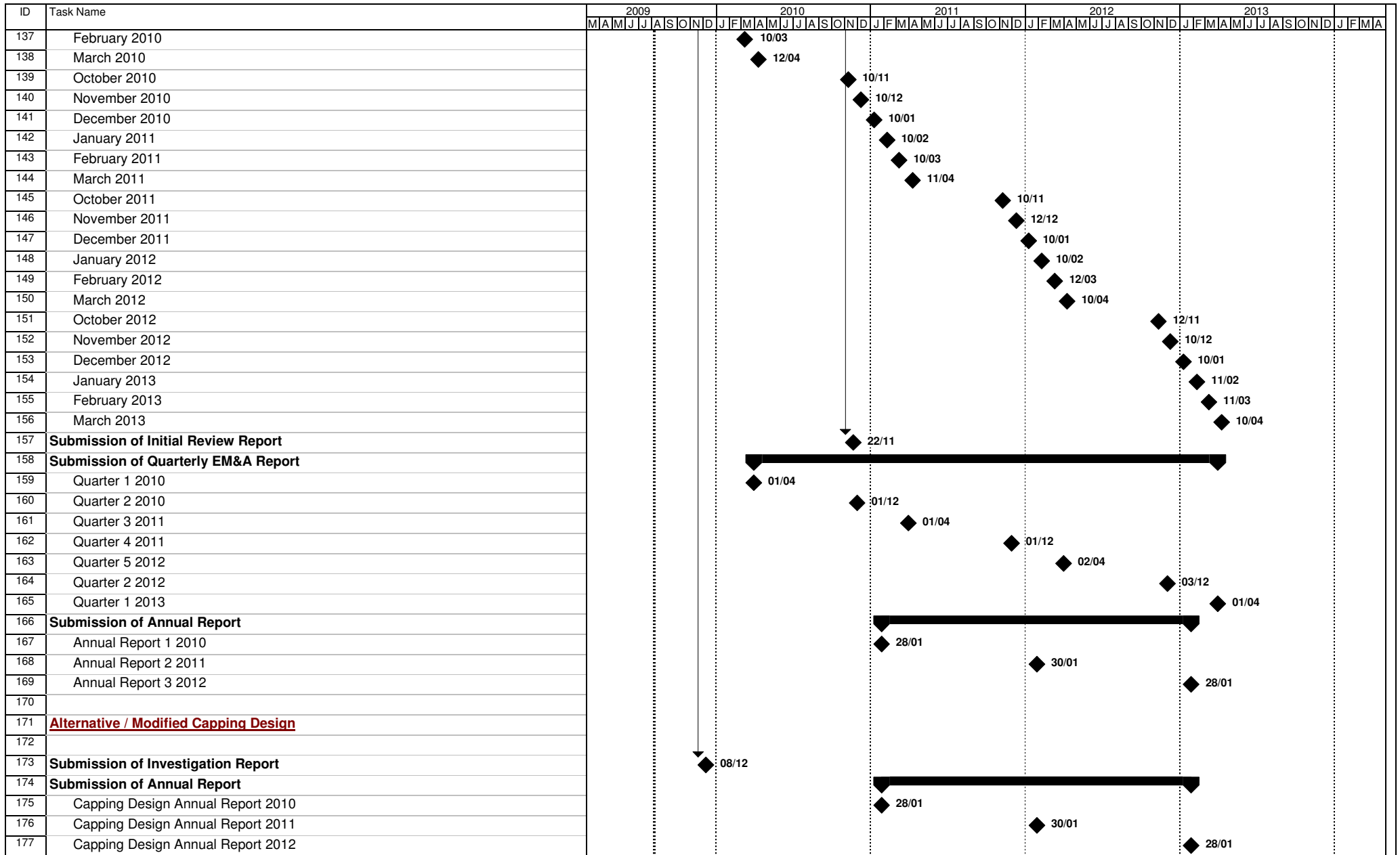


Figure 4.1 - Study Programme

