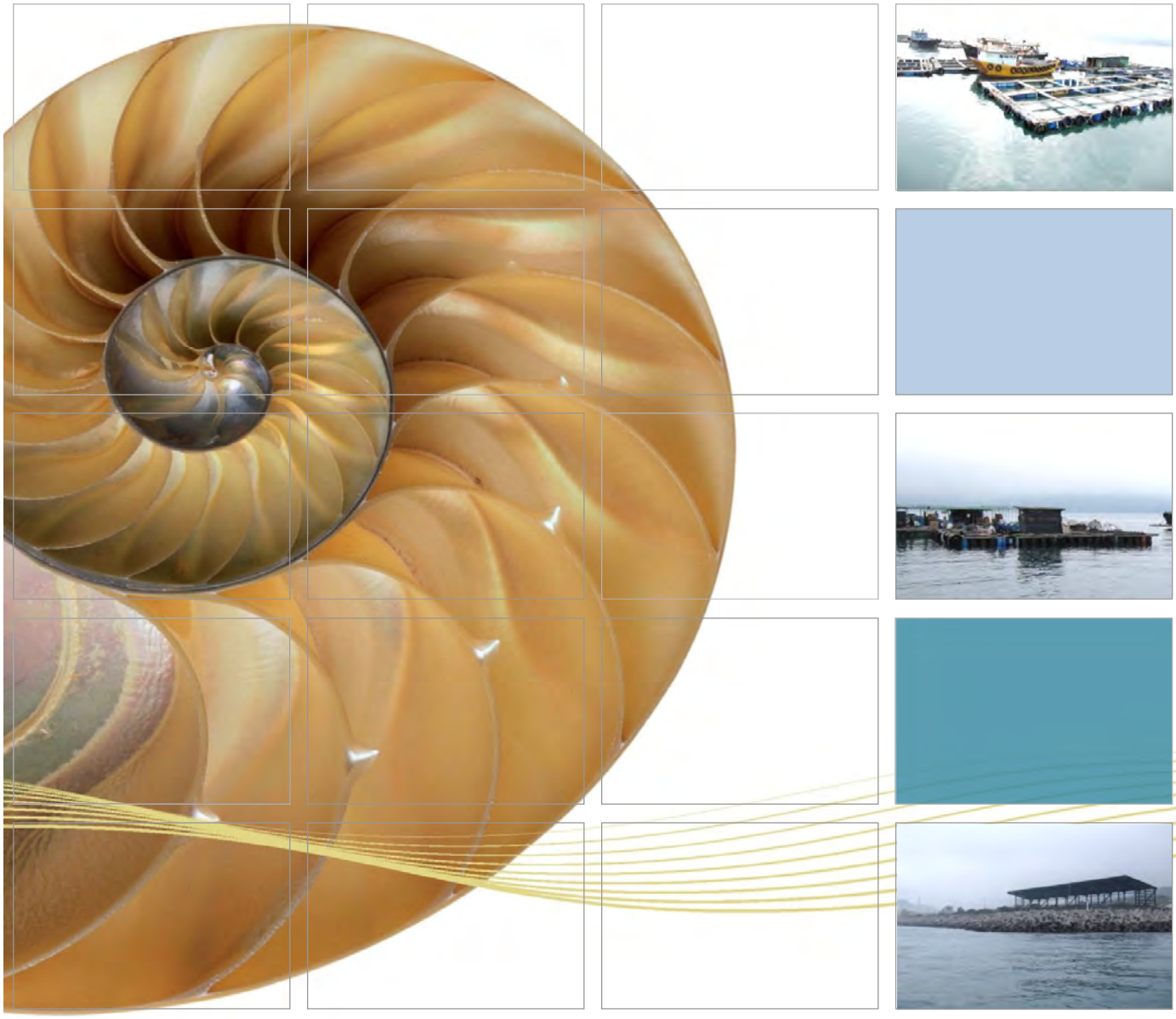
POST PROJECT REPORT



Asia Submarine-cable Express (ASE) – Tseung Kwan O

Post Project Coral Monitoring Survey Report

26 February 2013

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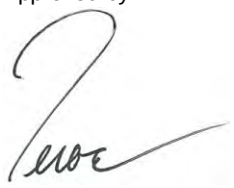
Client:	GMS No:
NTT Com Asia Ltd	0171870
Summary: This report presents the monitoring requirements, methodologies and results of the Post Project Coral Monitoring Survey at Cape Collinson, Tai Long Pai and Tung Lung Chau in accordance with the EM&A Manual.	Date: 26 February 2013 Approved by:  ***Terence Fong*** ***Project Director***

Revision	Description	By	Checked	Approved	Date
0	Post Project Coral Monitoring Survey Report	CLau	JTam	TFONG	26 Feb 13

Distribution

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☒ Public

☐ Confidential

Asia Submarine-cable Express (ASE) – Tseung Kwan O
Environmental Certification Sheet
EP-433/2011

Reference Document/Plan

Document/~~Plan~~ to be ~~Certified~~/ Verified:	Post Project Coral Monitoring Survey Report
Date of Report:	26 February 2013
Date prepared by ET:	ERM-Hong Kong Ltd
Date received by IEC:	Ecosystem Ltd

Reference EM&A Manual/ EP Requirement

EM&A Manual Requirement: Section 4

Content: *Coral Communities*

4.1 "Post Project Survey will be conducted within one month after completion of the jetting works. During the Post Project Survey, data will be collected at the same locations and using the same methodology as the Baseline Survey. The Post Project Survey data will be used to compare with the baseline data in order to determine any detectable changes in coral conditions after cable installation works. "

4.4 "Post Project Survey Report should be submitted within one month after completion of the marine works and the report should include, but not limited to, the following details: basic project information, review of the coral conditions at the monitoring stations and the health status of the corals after the cable installation and compare with the results as presented in Baseline Monitoring Report, and discussion of any detected adverse impacts to coral communities as a result of the cable installation works."

EP Condition: Condition No. 2.3

Content: *Coral Communities*

To protect the coral communities at Cape Collinson and Tai Long Pai, the Permit Holder shall confirm the identified coral communities will be more than 180m away from the cable alignment and in any case the IEC of the EM&A Programme shall certify in writing adequate buffer to the identified coral communities are maintained during the cable laying works. The conditions of the identified coral communities will also be verified by coral inspections immediate prior to and after the cable laying works.

ET Certification

I hereby certify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-433/2011.

Terence Fong, Environmental Team Leader: Date: 26 February 2013

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-433/2011.

Vincent Lai, Independent Environmental Checker:

Date: 26 February 2013

CONTENTS

ANNEX

1 INTRODUCTION

1.1 BACKGROUND

NTT Com Asia (NTTCA) proposed to install a telecommunication cable (Asia Submarine-cable Express (ASE) cable) of approximately 7,200 km in length, connecting Japan and Singapore with branches to the Philippines, Hong Kong SAR (HKSAR) and Malaysia. NTTCA is responsible for securing the approval to land the ASE cable in Tseung Kwan O, Hong Kong SAR (HKSAR). The landing site is at a new Beach Manhole (BMH) and the cable is ultimately connected with a Data Centre in Tseung Kwan O (TKO) Industrial Estate. From Tseung Kwan O, the cable extends westward approaching the Tathong Channel. Near to Cape Collinson, the cable is approximately parallel to the Tathong Channel until north of Waglan Island where the cable travels eastward to the boundary of HKSAR waters where it enters the South China Sea. The total length of cable in Hong Kong SAR waters is approximately 33.5 km. A map of the cable route is presented in *Figure 1.1*.

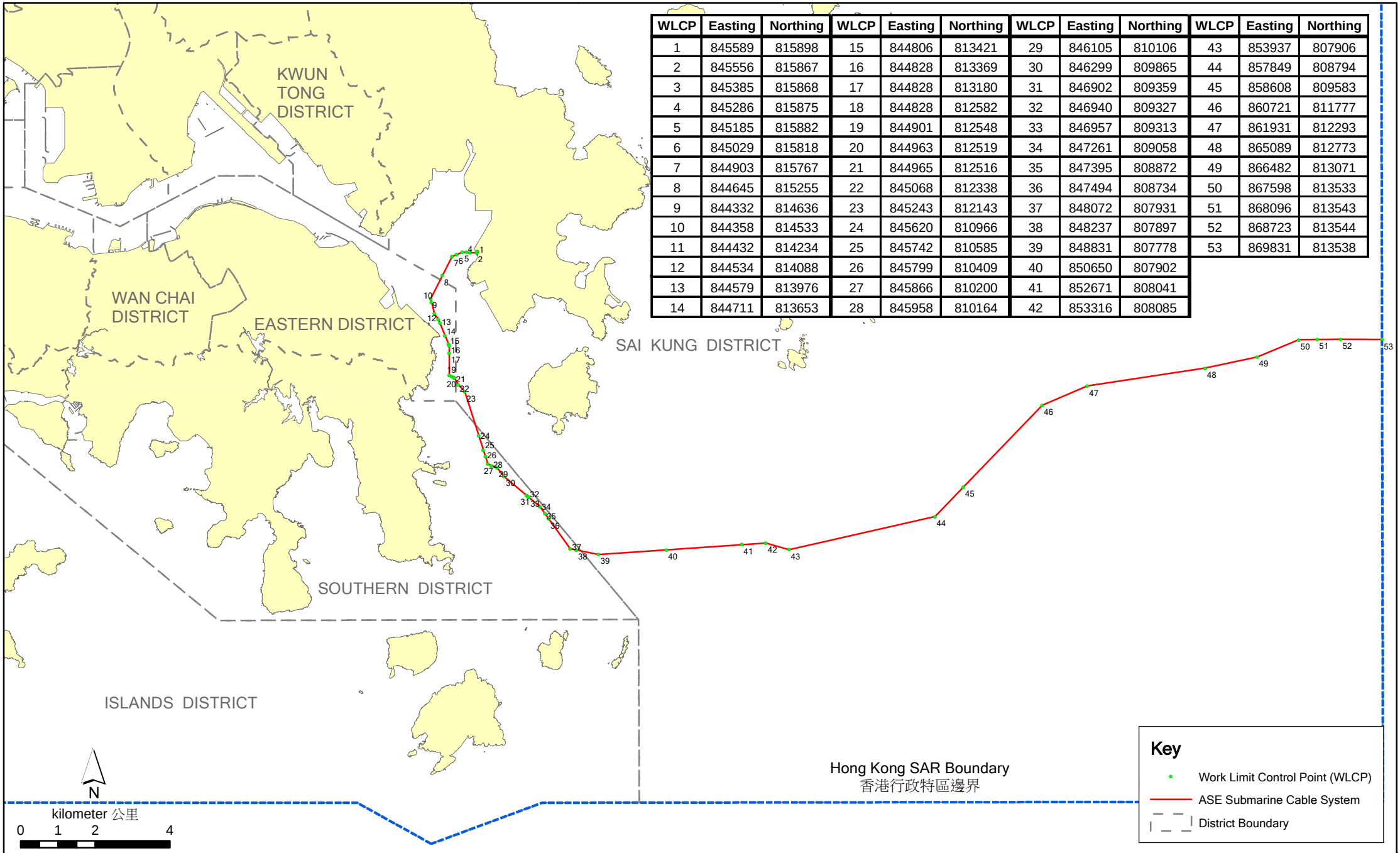
A *Project Profile* (*PP-452/2011*) which includes an assessment of the potential environmental impacts associated with the installation of the submarine telecommunications cable system was prepared and submitted to the Environmental Protection Department (EPD) under section 5.(1)(b) and 5.(11) of the *Environmental Impact Assessment Ordinance (EIAO)* for the application for Permission to apply directly for Environmental Permit (EP). The Environmental Protection Department, subsequently issued an *Environmental Permit* (*EP- 433/2011*) for the Project. In accordance with the EP conditions, an environmental monitoring and audit (EM&A) programme is required to be implemented in order to track the environmental performance of the cable installation works of the Project.

Marine works for the cable installation was completed in January 2013. In accordance with the EM&A Manual [(1)] , Post Project Coral Survey should be conducted within one month after completion of the marine works in order to determine any detectable changes in coral conditions which may be caused by the cable installation works.

1.2 PURPOSE OF THIS REPORT

This Post Project Coral Monitoring Survey Report ("the Report") is prepared by ERM-Hong Kong, Limited (ERM) on behalf of NTTCA to present the methodology and findings of the Post Project Coral Monitoring Survey in accordance with requirements of the *EM&A Manual*.

(1) ERM (2012) EM&A Manual for Asia Submarine-cable Express (ASE) – Tseung Kwan O.



WLCP	Easting	Northing	WLCP	Easting	Northing	WLCP	Easting	Northing	WLCP	Easting	Northing
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2	845556	815867	16	844828	813369	30	846299	809865	44	857849	808794
3	845385	815868	17	844828	813180	31	846902	809359	45	858608	809583
4	845286	815875	18	844828	812582	32	846940	809327	46	860721	811777
5	845185	815882	19	844901	812548	33	846957	809313	47	861931	812293
6	845029	815818	20	844963	812519	34	847261	809058	48	865089	812773
7	844903	815767	21	844965	812516	35	847395	808872	49	866482	813071
8	844645	815255	22	845068	812338	36	847494	808734	50	867598	813533
9	844332	814636	23	845243	812143	37	848072	807931	51	868096	813543
10	844358	814533	24	845620	810966	38	848237	807897	52	868723	813544
11	844432	814234	25	845742	810585	39	848831	807778	53	869831	813538
12	844534	814088	26	845799	810409	40	850650	807902			
13	844579	813976	27	845866	810200	41	852671	808041			
14	844711	813653	28	845958	810164	42	853316	808085			

Figure 1.1

Proposed ASE Submarine Cable System (Layout Plan)

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Date: 17/09/2012

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1.3 STRUCTURE OF THE REPORT

The remainder of the report is structured as follows:

Section 2: Post Project Coral Monitoring Survey Methodology

Presents the Post Project Coral Monitoring Survey methodology, parameters monitored, monitoring locations and depth in accordance with the *EM&A Manual*.

Section 3: Post Project Coral Monitoring Survey Results

Reviews the conditions and health status of corals at the monitoring stations as recorded during the Post Project Coral Monitoring Survey for comparison with the baseline coral information in order to determine any detectable changes that may be caused by the cable installation works of the Project.

Section 4: Conclusion

Concludes findings from the Post Project Coral Monitoring Survey.

2 POST PROJECT CORAL MONITORING SURVEY METHODOLOGY

This section presents the methodology of the Post Project Coral Monitoring Survey which is undertaken within one month after the marine works of the Project. The methodology adopted is the same as that for the Baseline Coral Survey undertaken before the cable installation works, except for the qualitative spot dive survey which was conducted for the Baseline Survey only to determine the locations of monitoring transects. The employment of the same methodology would allow for direct comparison of coral conditions and health status before and after the cable installation works and hence, determines any detectable changes in coral assemblages concerned after the works.

2.1 MONITORING LOCATIONS

The monitoring locations of marine ecological survey are shown in *Figure 2.1.* These included:

Monitoring Stations:

- Zone A: Cape Collinson; and
- Zone B: Tai Long Pai.

Control Station:

- Zone C: Tung Lung Chau.

2.2 METHODOLOGY

Subtidal dive surveys were undertaken at subtidal hard bottom habitats within and in close proximity to the Project Area with a key focus along the cable route where hard substrata were recorded from the geophysical survey. The Post Project Coral Monitoring Survey comprised the following two components:

- Semi-quantitative Rapid Ecological Assessment (REA) survey; and
- Coral Colony Monitoring.

Each of these surveys is described further in the following sections.

<u>Rapid Ecological Assessment Survey Method</u>

A standardised semi-quantitative REA survey technique was used to investigate the general conditions of the coral communities (hard, soft and black corals) associated with subtidal hard bottom habitats at the Monitoring and Control Stations. The collection of REA data during the Baseline Coral Survey and Post Project Coral Monitoring Survey would allow for a direct

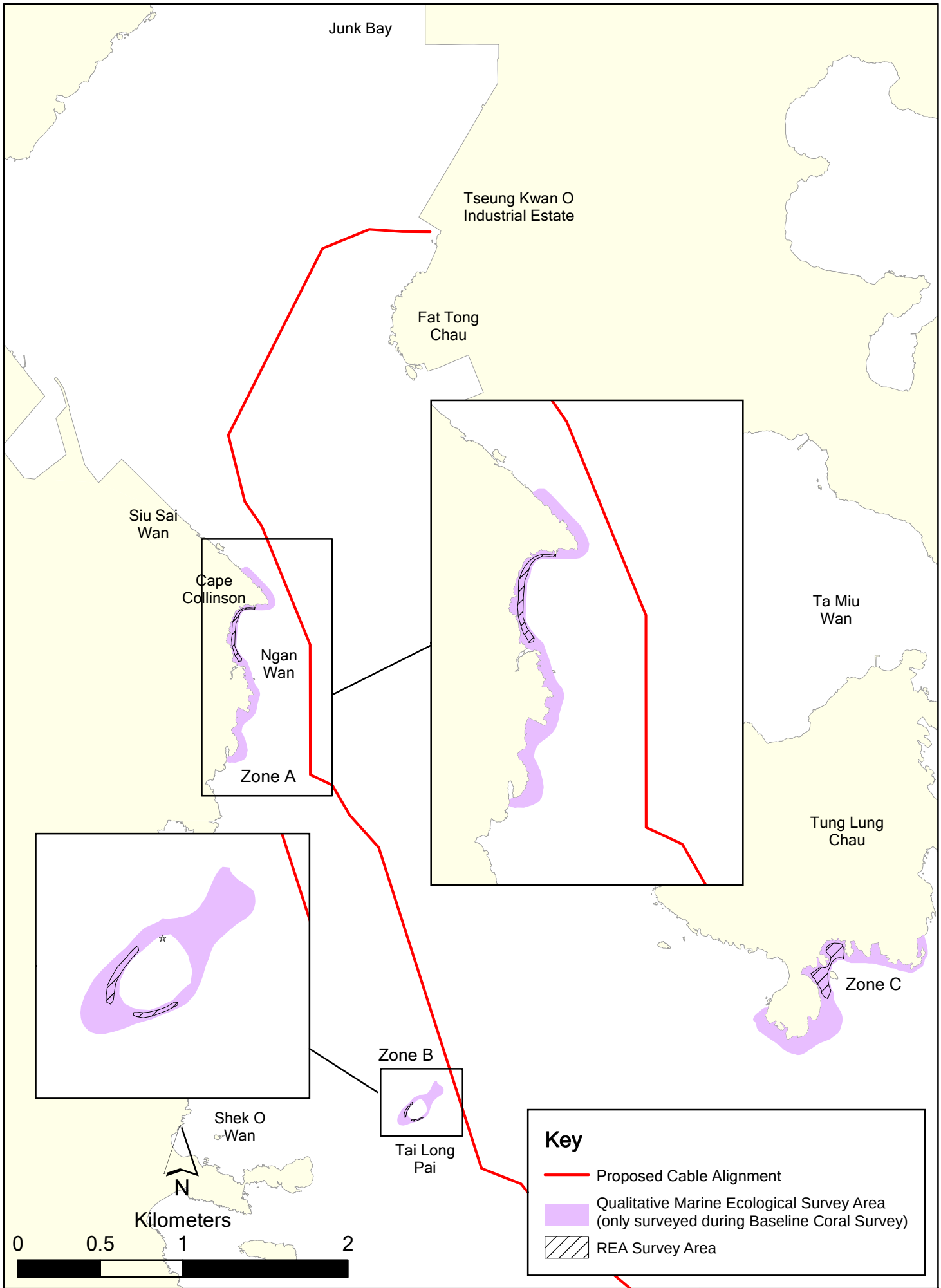

Figure 2.1

Locations of Coral Monitoring

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Date: 26-Feb-2013

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comparison of coral conditions before and after the cable installation works of the Project in order to determine any detectable changes in conditions which may be caused by the works.

The REA technique allows semi-quantitative information on the ecological attributes of the subtidal habitat to be obtained in a relatively simple way without compromising scientific rigour. This technique is the standard practices for EIA and EM&A marine ecological surveys in Hong Kong and has been modified from the standardised REA survey technique established for the assessment of coral communities on the Great Barrier Reef (1) for marine environment of Hong Kong (2).

A series of REA surveys were conducted by qualified coral ecologists by SCUBA at the Monitoring stations (Cape Collinson and Tai Long Pai) and Control Station (Tung Lung Chau) with the aim to record the condition of substratum, estimate the diversity and relative abundance of coral assemblages (ie hard corals, octocorals and black corals) and with all hard coral colonies identified to species level while octocorals and black corals recorded to genus level. The survey was undertaken on REA transects laid onto the seabed, each of which measure 100 m in length, at the following two depth regions of each station:

- Shallow depth region: -2 to -5 m CD (typically the depth range of hard coral colonies associated with subtidal hard bottom habitat); and
- Deep depth region: -5 to -15 m CD.

The location of the REA transects as well as the depth ranges of the monitored depth regions were determined based on findings from the qualitative spot dive survey which were undertaken during the baseline monitoring. A total of three (3) REA transects were monitored at each depth region of Cape Collinson and Tung Lung Chau, while two (2) transects were monitored at each depth region of Tai Long Pai due to smaller area of this Monitoring Station.

Following the laying of the transect line, the coral specialist swam along the transect slowly and conducted the REA survey. The REA methodology encompassed an assessment of the benthic cover (Tier I) and taxon abundance (Tier II) undertaken in a swathe ~ 4 m wide, 2 m either side of each transect. The belt transect width was dependent on underwater visibility and might be adjusted to a swathe ~ 2 m wide, 1 m either side of each transect in case of reduced visibility. An explanation of the two assessment categories (Tiers) used in the survey is presented below.

Tier I – Categorisation of Benthic Cover

(1) DeVantier, L.M., G.De'Ath, T.J. Done and E. Turak (1998). *Ecological assessment of a complaex natural system: A case study from the Great Barrier Reef.* Ecological Applications 8: 480-496.

(2) Fabricius, K.E. and D. McCorry. (2006). *Changes in octocoral communities and benthic cover along a water quality gradient in reefs of Hong Kong.* Marine Pollution Bulletin 52: 22-23.

Upon the completion of each survey transect, five ecological and seven substratum attributes were assigned to one of seven standard ranked (ordinal) categories (*Tables 2.1 and 2.2*).

Table 2.1 Categories used in the REA Surveys – Benthic Attributes

Ecological	Substratum
Hard coral	Hard Substratum
Dead standing coral	Continuous pavement
Soft coral	Bedrock
Black coral	Rubble
Macroalgae	Sand
Turf Algae	Silt
	Large boulders (>50 cm)
	Small boulders (<50 cm)
	Rocks (<26 cm)

Table 2.2 Categories used in the REA Surveys – Ordinal Ranks of Percentage Cover

Rank	Percentage Cover (%)
0	None recorded
1	1-5
2	6-10
3	11-30
4	31-50
5	51-75
6	76-100

Tier II – Taxonomic Inventories to Define Types of Benthic Communities

An inventory of benthic taxa were compiled for each transect. Taxa were identified *in situ* to the following levels:

- Scleractinian (hard) corals to species wherever possible;
- Soft corals, gorgonians, black corals, anemones and conspicuous macroalgae recorded according to morphological features and to genus level where possible; and
- Other benthos (including sponges, zoanthids, ascidians and bryozoans) recorded to genus level wherever possible but more typically to phylum plus growth form.

Following the completion of each transect survey, each taxon in the inventory was ranked in terms of abundance in the community (*Table 2.3*). These broad categories rank taxa in terms of relative abundance of individuals, rather than the contribution to benthic cover along each transect. The ranks are subjective assessments of abundance, rather than quantitative counts of each taxon.

Table 2.3 Ordinal Ranks of Taxon Abundance

Rank	Abundance
0	Absent
1	Rare [a]
2	Uncommon
3	Common
4	Abundant
5	Dominant

Note:
(a) The classification of "rare" abundance refers to low abundance (small quantity) on the transect, rather than in terms of distribution in Hong Kong waters.

A set of environmental site descriptors were recorded for each REA transect as follows:

(A) The degree of exposure to prevailing wave energy was ranked from 1 – 4, where:

1 = sheltered (highly protected by topographic features from prevailing waves);

2 = semi-sheltered (moderately protected);

3 = semi-exposed (only partly protected); and

4 = exposed (experiences the full force of prevailing wave energy).

(B) Sediment deposition on the reef substratum (particle sizes ranging from very fine to moderately coarse) rated on a four point scale, from 0 -3, where:

0 = no sediment;

1 = minor (thin layer) sediment deposition;

2 = moderate sediment deposition (thick layer), but substrate can be cleaned by fanning off the sediment; and

3 = major sediment deposition (thick, deep layer), and substrate cannot be cleaned by fanning.

A suite of representative photographs was taken for each REA transect. All field data were checked upon completion of each REA transect and a dive survey proforma sheet was completed at the end of the fieldwork day. Photographs were compiled for each REA transect which was then reviewed to verify the REA data. Verified REA data were presented in terms of:

- Site (transect) information (Tier I and II data), depth and environmental descriptors;
- Species abundance data for each transect; and

- Species lists, species richness and mean values for ecological and substratum types were compiled. The rank abundance values were converted to a mid-value percentage cover.

Coral Colony Monitoring

Coral Colony Monitoring was undertaken during the Baseline Coral Survey and the Post Project Coral Monitoring Survey to identify any evidence of sediment stress to corals before and after cable installation works of the Project. At each coral monitoring station, a total of fifteen (15) hard coral colonies and fifteen (15) octocoral/black coral colonies were selected for monitoring. Priority was given to selecting colonies of horizontal plate-like and massive growth forms which present large stable surfaces for the interception and retention of settling solids. Each of the selected corals was identified to species or genus levels and photographed. The following data were collected:

- Maximum diameter of the identified hard coral and soft coral colonies;
- Maximum height and width of the identified gorgonians and black corals;
- Percentage of sediment cover on the identified colonies and the colouration, texture and approximate thickness of sediment on the coral colonies and adjacent substrate;
- Percentage of bleached area on the identified colonies of which two categories were recorded: a. blanched (ie pale) and b. bleached (ie whitened);
- Percentage of colony area showing partiality mortality; and
- Physical damage to colonies, tissue distension, mucous production and any other factors indicating to corals were noted in the field.

Although coral tagging is a common practice for repeated monitoring of individual colony, this technique was not employed in this monitoring programme due to difficulties in re-locating the tagged corals given the generally low visibility in the area and low light conditions in deep water. Instead, colonies of similar growth forms and size would be selected for the Baseline and Post Project Coral Monitoring Surveys.

3 POST PROJECT CORAL MONITORING SURVEY RESULTS

3.1 INTRODUCTION

This section presents findings of the Post Project Coral Monitoring Survey which is undertaken within one month after completion of jetting works for the cable installation of the Project. Findings from the Post Project Coral Monitoring Survey are compared with those obtained from the Baseline Coral Survey which was undertaken before cable installations works in order to determine any detectable changes in coral conditions and health status and the relationship of such changes, if any, to the cable installation works of the Project.

The Post Project Coral Monitoring Survey was conducted over two days on 18 and 19 February 2013. The weather condition was mainly sunny, with light (Force 2) to moderate (Force 3) east to southeasterly winds. Slight to moderate swell presented in the sea on the two survey days. The underwater visibility was moderate and generally ranged between 3 to 5 m. Coral communities at Zone A: Cape Collinson, Zone B: Tai Long Pai and Zone C: Tung Lung Chau were monitored (see *Figure 2.1* for monitoring locations). Detailed description and discussion of the monitoring results are presented below.

3.2 REA SURVEY RESULTS

Seabed compositions along each monitored transects of Zone A to C are shown in *Tables 3.1, 3.2a* and *3.2b.* Each taxon in the inventory was ranked in terms of relative abundance in the community and results recorded during the Baseline and Post Project Coral Monitoring Surveys are shown in *Table 3.3a* and *3.3b,* respectively. Findings of the REA surveys are discussed below.

Zone A – Cape Collinson

Major Abiotic Attributes

The seabed at the REA survey area of Zone A was mainly composed of bedrocks in shallow depth region (2-5 m CD) and bedrocks and boulders at deep depth region (5-15m CD), except at the deep depth region of Transect 1 which was mainly composed of sand and small boulders (*Tables 3.2a-b*). The estimated percentage covers of the major abiotic attributes were noted to be similar between the Baseline and Post Project Coral Monitoring Surveys.

Major Biotic Attributes

Both hard coral and octocoral covers were less than 5% in shallow depth region (2-5 m CD) as recorded during both the Baseline and Post Project Coral Monitoring Surveys (*Tables 3.2a-b*). Compositions of coral assemblages were also noted to be similar between the Baseline and Post Project Coral

Monitoring Surveys, with six (6) hard coral and eight (8) octocoral species recorded during both surveys (*Tables 3.3a-b*). *Oulastrea crispata* and *Goniopora stutchburyi* were the dominant hard coral species recorded while *Echinomuricea* sp. was the dominant octocoral species found.

Octocoral cover was found between 6-10% while no hard coral was recorded in deep depth region (5-15 m CD) during both the Baseline and Post Project Coral Monitoring Survey (*Tables 3.2a-b*). Species compositions of coral assemblages were similar between the Baseline and Post Project Coral Monitoring Surveys, with 11 octocoral species recorded during the Baseline Coral Survey while 13 octocoral species were recorded during the Post Project Coral Monitoring Survey (*Tables 3.3a-b*). *Echinomuricea* sp. and *Dendronephthya* sp. were the dominant octocoral species recorded.

Less than 5% of macroalgae cover was recorded at both shallow and deep depth regions during the Post Project Coral Monitoring in February 2013 (*Tables 3.2a-b*). The presence of macroalgae in winter during the Post Project Coral Monitoring in February 2013 but not during the Baseline Coral Survey in September 2012 is due to the natural seasonal cycle as with lower seawater temperature in winter which triggered the growth of macroalgae.

Overall, comparison of the Baseline and Post Project Coral Monitoring Survey results did not indicate any detectable changes in coral conditions at Zone A before and after the cable installation works. Therefore, there did not appear to be any unacceptable ecological impacts to coral assemblages at Zone A as a result of the cable installation works.

Zone B – Tai Long Pai

Major Abiotic Attributes

Seabed at the REA survey area of Zone B was mainly composed of bedrocks in both shallow (2-5 m CD) and deep (5-15m CD) depth regions (*Tables 3.2a-b*). The estimated percentage covers of the major abiotic attributes were noted to be similar between the Baseline and Post Project Coral Monitoring Surveys.

Major Biotic Attributes

Hard coral and octocoral covers were less than 5% and about 5% in shallow depth region (2-5 m CD) respectively as recorded during both the Baseline and Post Project Coral Monitoring Surveys (*Tables 3.2a-b*). Species compositions of coral assemblages were also similar between the Baseline and Post Project Coral Monitoring Surveys, with four (4) hard coral and five (5) octocoral species recorded respectively (*Tables 3.3a-b*). *Goniopora stutchburyi and Tubastrea* sp. were the dominant hard coral species while *Dendronephthya* sp. was the dominant octocoral species recorded during both surveys.

Octocoral cover was between 11 – 30% in deep depth region (5-15 m CD) during both the Baseline and Post Project Coral Monitoring Surveys (*Tables 3.2a-b*). No hard coral was found in the deep depth region. Species

compositions of coral assemblages were similar between the Baseline and Post Project Coral Monitoring Surveys, with 10 octocoral species recorded during both surveys (*Tables 3.3a-b*). *Echinomuricea* sp. and *Dendronephthya* sp. were the dominant octocoral species recorded.

Macroalgae covers were found to be less than 5% and between 6-10% at shallow and deep depth regions, respectively, during the Post Project Coral Monitoring in February 2013 (*Tables 3.2a-b*). The record of macroalgae during the Post Project Coral Monitoring Survey only is due to the natural seasonal cycle in winter as explained above.

Overall, comparison of the Baseline and Post Project Coral Monitoring Survey results did not indicate any detectable changes in coral conditions at Zone B before and after the cable installation works. Therefore, there did not appear to be any unacceptable ecological impacts to coral assemblages at Zone B as a result of the cable installation works.

Zone C – Tung Lung Chau

Major Abiotic Attributes

Seabed at the REA survey area of Zone C was mainly composed of bedrocks, large and small boulders in shallow depth region (2-5 m CD) whereas at the deep depth region (5-15m CD) was predominantly composed of bedrocks (*Tables 3.2a-b*). The estimated percentage covers of the major abiotic attributes were noted to be similar between the Baseline and Post Project Coral Monitoring Surveys.

Major Biotic Attributes

Both hard coral and octocoral covers were less than 5% in shallow depth region (2-5 m CD) as recorded during both the Baseline and Post Project Coral Monitoring Surveys (*Tables 3.2a-b*). Compositions of coral assemblages were also noted to be similar between both surveys with nine (9) hard coral and three (3) octocoral species recorded in the Baseline Coral Survey, and 10 hard coral species and three (3) octocoral species recorded in the Post Project Coral Monitoring Survey (*Tables 3.3a-b*). *Montipora venosa* and *Goniopora stutchburyi* were the dominant hard coral species while *Dendronephthya* sp. was the dominant octocoral species recorded.

Both hard coral and octocoral covers were less than 5% and less than 10% in deep (5-15 m CD) depth region respectively during both the Baseline Coral Survey and Post Project Coral Monitoring Survey (*Tables 3.2a-b*). Comparison of coral assemblages were similar between the Baseline and Post Project Coral Monitoring Surveys, with five (5) hard coral species and seven (7) octocoral species recorded during the Baseline Coral Survey, whereas five (5) hard coral species and 11 octocoral species were recorded during the Post Project Coral Monitoring (*Tables 3.3a-b*). *Dendronephthya* sp. and *Scleronephythya* sp. were the dominant octocoral species recorded. As for Zone A and Zone B, macroalgae were recorded at the deep depth region of

Zone C during the Post Project Coral Monitoring Survey in February 2013 but not the Baseline Coral Survey in September 2012 (*Tables 3.2a-b*) due to the natural seasonal cycle in winter which triggered the growth of seaweed.

Overall, comparison of the Baseline and Post Project Coral Monitoring Survey results did not indicate any detectable changes in coral conditions at Zone C which serves as a Control station that is unlikely to be affected by the cable installation works.

Table 3.1 ***Description of the Seabed*** Composition ***Recorded along Each REA*** *Survey* ***Transect*** [(1)]

Transect	Depth (-m CD)	Description
Zone A - Cape Collinson (Monitoring Site)		
Transect 1		
Shallow	~5	The seabed was composed of rubbles and small boulders. The hard coral cover was low (< 5%) with 4 hard coral species *Oulastrea crispata, Goniopora stutchburyi, Psammocora superficialis* and *Cyphastrea chalcidicum* recorded. The octocoral cover was low (< 5%) with four species (*Paraplexaura* sp., *Echinomuricea* sp., *Viminella* sp. and *Ellisella* sp.) recorded.
Deep	~9	The seabed was mainly composed of sand (~50%). No hard coral colonies were found. The octocoral cover was low (between 6-10%) with gorgonians growing on sand. Seven species of octocorals (*Echinomuricea* sp., *Paraplexaura* sp., *Menella* sp., *Euplexaura* sp., *Muricella* sp., *Sinularia* sp. and *Dendronephthya* sp.) were recorded.
Transect 2		
Shallow	~5	The seabed was mainly composed of bedrocks (~60%). The hard coral cover was low (< 5%) with 2 hard coral species *Oulastrea crispata* and *Psammocora superficialis* recorded. The octocoral cover was low (< 5%) with 6 species (*Dendronethphya* sp., *Ellisella* sp. *Echinomuricea* sp., *Euplexaura* sp., *Paraplexaura* sp. and *Menella* sp.) recorded.
Deep	~8-9	The seabed was mainly composed of bedrocks (~50%). No hard coral colonies were found. The octocoral cover was low (between 6-10%) with 6 species (*Dendronethphya* sp., *Dichotella* sp., *Paraplexaura* sp., *Echinomuricea* sp. and *Euplexaura* sp. and *Viminella* sp.) recorded. Two species of black corals, *Antipathes curvata* and *Cirrhipathes* sp., were recorded.
Transect 3		
Shallow	~5	The seabed was mainly composed of bedrocks (~60%). The hard coral cover was low (< 5%) with 3 hard coral species *Oulastrea crispata, Goniopora stutchburyi* and *Plesiastrea versipora* recorded. The octocoral cover was low (< 5%) with 7 species (*Dendronethphya* sp., *Scleronephthya gracillicum, Ellisella* sp. *Echinomuricea* sp., *Viminella* sp., *Paraplexaura* sp., *Euplexaura* sp. and *Menella* sp.) recorded.
Deep	~9	The seabed was mainly composed of bedrocks (~60%). No hard coral species was found. The octocoral cover was between 6-10% with 6 species (*Paraplexaura* sp., *Echinomuricea* sp., *Euplexaura* sp., *Anthogorgia* sp., *Dendronephthya* sp. and *Scleronephthya gracillicum*) recorded.
Zone B – Tai Long Pai (Monitoring Site)		
Transect 1		
Shallow	~2-5	The seabed was mainly composed of bedrocks (> 80%). No hermatypic hard coral species was recorded while 1 species of ahermatypic hard coral (*Tubastrea/Dendrophyllia* sp.) was recorded. The octocoral cover was about 5% with 4 species (*Dendronephthya* sp., *Menella* sp., *Euplexaura* sp., *Paraplexaura* sp.) recorded.

(1) Since conditions of major biotic and abiotic attributes are similar between the Baseline and Post Project Coral Monitoring Surveys, the descriptions of seabed composition provided in this table are based on data recorded from both surveys.

Transect	Depth (-m CD)	Description
Deep	~5-15	The seabed was mainly composed of bedrocks (> 80%). No hard coral species was recorded. The octocoral cover was between 11-30% with 8 species (*Dendronephthya* sp., *Menella* sp., *Euplexaura* sp., *Paraplexaura* sp., *Anthogorgia* sp., *Acanthogorgia* sp., *Verrucella* sp. and *Echinomuricea* sp.) recorded. Black coral colonies, *Antipathes curvata* and *Cirrhipathes* sp. were observed.
Transect 2		
Shallow	~2-5	The seabed was mainly composed of bedrocks (> 80%). The hard coral cover was extremely low (< 5%) with 3 species *Goniopora stutchburyi*, *Cyphastrea chalcidicum* and *Psammocora superficialis* recorded. Colonies of ahermatypic hard coral *Tubastrea/ Dendrophyllia* sp. were found. The octocoral cover was about 5% with 3 species (*Euplexaura* sp., *Paraplexaura* sp. and *Echinomuricea* sp.) recorded.
Deep	~5-15	The seabed was mainly composed of bedrocks (> 80%). No hard coral species were recorded. The octocoral cover was between 11-30% with 7 species (*Dendronephthya* sp., *Menella* sp., *Euplexaura* sp., *Paraplexaura* sp., *Anthogorgia* sp., *Verrucella* sp. and *Echinomuricea* sp.) recorded. Black coral colonies, *Antipathes curvata* and *Cirrhipathes* sp. were observed.
Zone C – Tung Lung Chau (Control Site)		
Transect 1		
Shallow	~5	The seabed was mainly composed of bedrocks (~80%). The hard coral cover was low (< 5%) with 7 hermatypic hard coral species *Goniopora stutchburyi*, *Psammocora superficialis*, *Cyphastrea chalcidicum*, *Plesiastrea versipora*, *Porites lobata*, *Montipora mollis* and *Montipora venosa* recorded. One species of ahermatypic hard coral *Tubastrea/ Dendrophyllia* sp. was recorded. The octocoral cover was very low (< 5%) with *Dendronephthya* sp. and *Scleronephthya gracillicum* recorded.
Deep	~10	The seabed was mainly composed of bedrocks (~60%). The hard coral cover was low (<5%). The octocoral cover was low (< 10%) with *Euplexaura* sp., *Paraplexaura* sp., *Dendronephthya* sp. and *Scleronephthya gracillicum* recorded.
Transect 2		
Shallow	~5	The seabed was mainly composed of bedrocks (~40%). The hard coral cover was low (< 5%) with 7 species *Montipora peltiformis*, *Porites lobata*, *Cyphastrea chalcidicum*, *Favites chinensis*, *Goniopora stutchburyi*, *Montipora venosa* and *Plesiastrea verisipora* recorded. One species of ahermatypic hard coral *Tubastrea/ Dendrophyllia* sp. was recorded. The octocoral cover was very low (< 5%) with only a few small colonies of *Dendronephthya* sp. recorded.
Deep	~8	The seabed was mainly composed of bedrocks (~80%). The hard coral cover was low (< 5%) with 3 species *Plesiastrea versipora*, *Porites lobata* and *Psammocora superficialis* recorded. The octocoral cover was low (< 10%) with *Acanthogorgia* sp., *Echinomuricea* sp., *Euplexaura* sp., *Menella* sp., *Dendronephthya* sp. and *Scleronephthya gracillicum* recorded.
Transect 3		
Shallow	5	The seabed was mainly composed of bedrocks and small boulders. The hard coral cover was low (< 5%) with 5 species *Montipora venosa*, *Porites lobata*, *Goniopora stutchburyi*, *Plesiastrea verisipora* and *Cyphastrea chalcidicum* recorded. One species of ahermatypic hard coral *Tubastrea/ Dendrophyllia* sp. was recorded. The octocoral cover was very low (< 5%) with *Echinomuricea* sp. recorded.

Transect	Depth (-m CD)	Description
Deep	~9	The seabed was mainly composed of bedrocks (50%). The hard coral cover was low (< 5%) with 4 species *Montipora peltiformis, Goniopora stutchburyi, Cyphastrea chalcidicum* and *Psammocora superficialis* recorded. The octocoral cover was low (< 10%) with *Paraminabea* sp., *Euplexaura* sp., *Echinogorgia* sp., *Dendronephthya* sp. and *Scleronephthya gracillicum recorded*. Two species of black corals, *Antipathes curvata* and *Cirrhipathes* sp., were recorded.

Table 3.2a ***Ordinal Rank of Percentage Cover of Seabed Attributes along the REA Survey Transects during the Baseline Coral Survey***

Zone	A						B				C					
Depth [(a)]	S1	S2	S3	D1	D2	D3	S1	S2	D1	D2	S1	S2	S3	D1	D2	D3
Seabed attributes [(b)]																
Bedrock	0	5	4	1	5	5	6	6	6	6	6	4	4	5	6	4
Boulders – large	3	2	3	2	3	3	1	2	3	3	0	3	3	2	2	2
Boulders – small	3	2	3	3	3	2	1	1	2	2	0	3	3	2	0	3
Rock	1	1	1	1	1	1	0	0	0	0	1	2	1	1	0	1
Rubble	3	2	1	2	1	1	1	1	1	1	1	2	1	2	0	2
Sand	2	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1
Silt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecological attributes [(b)]																
Hard coral	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dead standing coral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Octocoral	1	1	1	2	2	2	1	1	3	3	1	1	1	2	2	2
Black coral	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Turf algae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macroalgae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coralline algae	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Notes:

(a) s = shallow water; m = mid water; d=deep water

(b) 1=<5% Cover, 2= 6-10% Cover, 3 = 11-30% Cover, 4 = 31-50% Cover, 5 = 51-75% Cover, 6 = 76-100% Cover. Also refer to *Table 2.2.*

Table 3.2b ***Ordinal Rank of Percentage Cover of Seabed Attributes along the REA Survey Transects during the Post Project Coral Monitoring***

Zone	A						B				C					
Depth [(a)]	S1	S2	S3	D1	D2	D3	S1	S2	D1	D2	S1	S2	S3	D1	D2	D3
Seabed attributes [(b)]																
Bedrock	0	5	4	1	5	5	6	6	6	6	6	4	4	5	6	4
Boulders – large	3	2	3	2	3	3	1	2	3	3	0	3	3	2	2	2
Boulders – small	3	2	3	3	3	2	1	1	2	2	0	3	3	2	0	3
Rock	1	1	1	1	1	1	0	0	0	0	1	2	1	1	0	1
Rubble	3	2	1	2	1	1	1	1	1	1	1	2	1	2	0	2
Sand	2	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1
Silt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecological attributes [(b)]																
Hard coral	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dead standing coral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Octocoral	1	1	1	2	2	2	1	1	3	3	1	1	1	2	2	2
Black coral	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Turf algae	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0
Macroalgae	1	1	1	1	1	1	1	1	2	2	0	0	0	1	1	1
Coralline algae	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Notes:

(a) s = shallow water; m = mid water; d=deep water

(b) 1=<5% Cover, 2= 6-10% Cover, 3 = 11-30% Cover, 4 = 31-50% Cover, 5 = 51-75% Cover, 6 = 76-100% Cover. Also refer to *Table 2.2.*

Table 3.3a Ordinal Rank of Taxon Abundance along the REA Survey Transects during the Baseline Coral Survey

Type	Taxon/ Family	Species	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C
		Depth [(a)]	S1	S2	S3	D1	D2	D3	S1	S2	D1	D2	S1	S2	S3	D1	D2	D3
Hard Coral	Acroporidae	*Montipora peltiformis*												2				2
		Montipora mollis											3					
		Montipora venosa																
	Siderastreidae	*Psammocora superficialis*	1	1						1			2				2	2
	Dendrophyllidae	*Turbinaria peltata*																
		Tubastrea/ Dendrophyllia sp.		1					3	3			2	2	2			
	Faviidae	*Cyphastrea chalcidicum*	1							1			2	2	2			1
		Favites chinensis												1				
		Oulastrea crispata	3	1	2													
		Plesiastrea versipora			1								2	2	2			
	Poritidae	*Goniopora stutchburyi*	2		1					2			2	2	2		2	1
		Porites lobata											2	1	2		2	
Octocoral	Acanthogorgiidae	*Acanthogorgia* sp.									1						1	
		Anthogorgia sp.									1							
		Muricella sp.																
	Alcyoniidae	*Paraminabea* sp.																
		Sinularia sp.				1		1										

Type	Taxon/ Family	Species	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C
		Depth [(a)]	S1	S2	S3	D1	D2	D3	S1	S2	D1	D2	S1	S2	S3	D1	D2	D3
	Nephtheidae	*Dendronephthya* sp.		2	4	1	1	4	3		3	3	2	2		3		2
		Scleronephythya sp.			1			3					2			2		
	Plexauridae	*Astrogorgia* sp.																
		Echinogorgia sp.					2											
		Echinomuricea sp.	2	3	3	4	3	3		2	2	2			2		2	
		Euplexaura sp.		2	2	2		2	2	2	2					2	1	1
		Menella sp.		2		2			2		2	2					1	
		Paraplexaura sp.	1	1	2	1	1	2	2	2	1					1		
	Ellisiidae	*Dichotella* sp.																
		Ellisella sp.	1	1	1													
		Viminella sp.	1		1		1											
		Verrucella sp.									1							
Black Coral	*Antipathidae*	*Antipathes* sp.					1				1	1						
		Cirrhipathes sp.					1				1	1						

Notes:

* Abundance rating (refer to *Table 2.3*): 1 = rare; 2 = uncommon; 3 = common; 4 = abundant.

Table 3.3b Ordinal Rank of Taxon Abundance along the REA Survey Transects during the Post Project Coral Monitoring

Type	Taxon/ Family	Species	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C
		Depth [(a)]	S1	S2	S3	D1	D2	D3	S1	S2	D1	D2	S1	S2	S3	D1	D2	D3
Hard Coral	Acroporidae	*Montipora peltiformis*												2				2
		Montipora mollis											3					
		Montipora venosa											3	3	3			
	Siderastreidae	*Psammocora superficialis*	1	1						1			2				2	2
	Dendrophyllidae	*Turbinaria peltata*																
		Tubastrea/ Dendrophyllia sp.		1					3	3			2	2	2			
	Faviidae	*Cyphastrea chalcidicum*	1							1			2	2	2			1
		Favites chinensis												1				
		Oulastrea crispata	3	1	2	1												
		Plesiastrea versipora			1								2	2	2			
	Poritidae	*Goniopora stutchburyi*	2		1					2			2	2	2		2	1
		Porites lobata											2	1	2		2	
Octocoral	Acanthogorgiidae	*Acanthogorgia* sp.									1						1	
		Anthogorgia sp.						2			1							
		Muricella sp.																
	Alcyoniidae	*Paraminabea* sp.																2
		Sinularia sp.				1		1										

Type	Taxon/ Family	Species	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C
		Depth [(a)]	S1	S2	S3	D1	D2	D3	S1	S2	D1	D2	S1	S2	S3	D1	D2	D3
	Nephtheidae	*Dendronephthya* sp.		2	4	1	1	4	3		3	3	2	2		3	3	2
		Scleronephythya sp.			1			3					2			2	2	2
	Plexauridae	*Astrogorgia* sp.																
		Echinogorgia sp.					2											1
		Echinomuricea sp.	2	3	3	4	3	3		2	2	2			2		2	
		Euplexaura sp.		2	2	2		2	2	2	2					2	1	1
		Menella sp.		2		2			2		2	2					1	
		Paraplexaura sp.	1	1	2	1	1	2	2	2	1					1		
	Ellisiidae	*Dichotella* sp.					1											
		Ellisella sp.	1	1	1													
		Viminella sp.	1		1		1											
		Verrucella sp.									1							
Black Coral	*Antipathidae*	*Antipathes* sp.					1				1	1						1
		Cirrhipathes sp.					1				1	1						1

Notes:

* Abundance rating (refer to *Table 2.3*): 1 = rare; 2 = uncommon; 3 = common; 4 = abundant.

3.3 *RESULTS OF CORAL COLONY MONITORING*

Coral Colony Monitoring was undertaken at Zone A, Zone B and Zone C and the monitoring area was the same as the REA survey area (*Figure 2.1*). Data collected for the selected hard coral, soft coral, black coral and gorgonian colonies during both Baseline and Post Project Coral Monitoring Surveys are summarized in *Tables 3.4 to 3.9.* Photographic records of the selected coral colonies are shown in *Annex A*. Coral colonies with similar growth forms and size to those monitored during the Baseline Coral Survey were being selected and measured during the Post Project Coral Monitoring Survey.

Due to the natural high sedimentation rate in the region, encrusting (ie *Oulastrea crispata, Montipora venosa* or *Psammocora superficialis*) and submassive (ie *Goniopora stutchburyi, Cyphastrea chalcidicum*) hermatypic hard corals were commonly found to be covered by sediments of less than 1 mm thickness and sediment coverage ranged between 1 to 5 % during both Baseline and Post Project Coral Monitoring Surveys (*Tables 3.4 – 3.9)*. Octocorals, except for *Dendronephthya* sp. and *Scleronephthya gracillicum*, were generally free of sediments. Monitoring results indicated that similar sediment cover was recorded on the selected coral colonies, which were mainly encrusting and submassive forms of hard coral colonies, at all three monitoring stations (Cape Collinson, Tai Long Pai and Tung Lung Chau) during both Baseline and Post Project Coral Monitoring Surveys. In addition, the selected coral colonies did not exhibit any sign of bleaching, partial mortality or any physical damage at all monitoring stations during both surveys.

Overall, the health conditions of coral colonies recorded during the Post Project Coral Monitoring Survey were similar to those recorded during the Baseline Coral Survey. There thus did not appear to be any unacceptable impacts to the health conditions of coral colonies as a result of the cable installation works.

Table 3.4 Monitoring Data Recorded for the Selected Coral Colonies in Zone A (Cape Collinson) during Baseline Coral Colony Monitoring

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
Hard Corals													
1	Poritidae	*Goniopora*	*stutchburyi*	15	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
2	Faviidae	*Oulastrea*	*crispata*	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Faviidae	*Oulastrea*	*crispata*	2	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
4	Faviidae	*Oulastrea*	*crispata*	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Faviidae	*Oulastrea*	*crispata*	1	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
6	Poritidae	*Goniopora*	*stutchburyi*	14	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
7	Faviidae	*Oulastrea*	*crispata*	2	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
8	Faviidae	*Oulastrea*	*crispata*	4	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
9	Siderastreidae	*Psammocora*	*superficialis*	15	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
10	Faviidae	*Plesiastrea*	*versipora*	15	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
11	Faviidae	*Favia*	*rotumana*	33	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
12	Acroporidae	*Montipora*	*mollis*	12	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
13	Dendrophyllidae	*Turbinaria*	*peltata*	19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Dendrophyllidae	*Turbinaria*	*peltata*	18	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
15	Poritidae	*Goniopora*	*stutchburyi*	40	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
Octocorals													
1	Plexauridae	*Paraplexaura*		N/A	10	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Plexauridae	*Echinomuricea*		N/A	26	22	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
3	Plexauridae	*Echinomuricea*		N/A	26	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Plexauridae	*Echinomuricea*		N/A	25	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Ellisellidae	*Viminella*		N/A	23	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Ellisellidae	*Ellisella*		N/A	16	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Nephtheidae	*Dendronephthya*		*12*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Nephtheidae	*Dendronephthya*		14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
9	Nephtheidae	*Dendronephthya*		7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	Ellisellidae	*Ellisella*		N/A	11	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Plexauridae	*Echinomuricea*		N/A	13	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Nephtheidae	*Scleronephthya*	*gracillicum*	12	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
13	Acanthogorgiidae	*Muricella*		N/A	20	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Alcyoniidae	*Sinularia*		14	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
15	Antipathidae	*Antipathes*	*curvata*	N/A	110	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.5 Monitoring Data Recorded for the Selected Coral Colonies in Zone A (Cape Collinson) during Post Project Coral Colony Monitoring

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
Hard Corals													
1	Poritidae	*Goniopora*	*stutchburyi*	23	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
2	Poritidae	*Goniopora*	*stutchburyi*	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Poritidae	*Goniopora*	*stutchburyi*	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Poritidae	*Goniopora*	*stutchburyi*	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Poritidae	*Goniopora*	*stutchburyi*	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Poritidae	*Goniopora*	*stutchburyi*	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Poritidae	*Goniopora*	*stutchburyi*	12	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
8	Siderastreidae	*Psammocora*	*superficialis*	16	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
9	Poritidae	*Gonipora*	*stutchburyi*	16	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
10	Poritidae	*Gonipora*	*stutchburyi*	19	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
11	Poritidae	*Gonipora*	*stutchburyi*	12	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
12	Poritidae	*Gonipora*	*stutchburyi*	10	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
13	Faviidae	*Oulastrea*	*crispata*	4	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
14	Faviidae	*Oulastrea*	*crispata*	2	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
15	Faviidae	*Oulastrea*	*crispata*	3	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
Octocorals													
1	Plexauridae	*Echinomuricea*		N/A	17	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Plexauridae	*Echinomuricea*		5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Plexauridae	*Echinomuricea*		9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Plexauridae	*Echinomuricea*		21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Plexauridae	*Echinomuricea*		N/A	15	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Acanthogorgiidae	*Anthogorgia*		N/A	23	23	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Plexauridae	*Echinogorgia*		N/A	10	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Plexauridae	*Echinogorgia*		N/A	14	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
9	Ellisellidae	*Viminella*		7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	Plexauridae	*Paraplexaura*		N/A	28	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Plexauridae	*Paraplexaura*		N/A	30	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Plexauridae	*Echinomuricea*		N/A	25	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Plexauridae	*Paraplexaura*		N/A	31	27	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Plexauridae	*Euplexaura*		10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Ellisellidae	*Dichotella*		N/A	26	17	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.6 Monitoring Data Recorded for the Selected Coral Colonies in Zone B (Tai Long Pai) during Baseline Coral Colony Monitoring

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
Hard Corals													
1	Poritidae	*Goniopora*	*stutchburyi*	5	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
2	Siderastreidae	*Psammocora*	*superficialis*	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Siderastreidae	*Psammocora*	*superficialis*	11	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
4	Faviidae	*Cyphastrea*	*chalcidicum*	9	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
5	Faviidae	*Cyphastrea*	*chalcidicum*	9	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
6	Dendrophyllidae	*Dendrophyllia*	-	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Dendrophyllidae	*Dendrophyllia*	-	3.5	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
8	Dendrophyllidae	*Dendrophyllia*	-	3.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Poritidae	*Goniopora*	*stutchburyi*	5	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
10	Faviidae	*Cyphastrea*	*chalcidicum*	10	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
11	Dendrophyllidae	*Dendrophyllia*	-	3.5	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
12	Faviidae	*Plesiastrea*	*versipora*	23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Dendrophyllidae	*Dendrophyllia*	-	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Poritidae	*Goniopora*	*stutchburyi*	12	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
15	Faviidae	*Cyphastrea*	*chalcidicum*	11	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
Octocorals													
1	Nephtheidae	*Dendronephthya*		18	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
2	Nephtheidae	*Dendronephthya*		43	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
3	Nephtheidae	*Dendronephthya*		34	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
4	Plexauridae	*Menella*		N/A	12	21	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Antipathidae	*Cirrhipathes*		87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Plexauridae	*Euplexaura*		N/A	16	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Nephtheidae	*Dendronephthya*		27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Nephtheidae	*Dendronephthya*		25	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
9	Nephtheidae	*Dendronephthya*		27	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
10	Nephtheidae	*Dendronephthya*		27	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
11	Nephtheidae	*Dendronephthya*		25	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
12	Nephtheidae	*Dendronephthya*		10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Plexauridae	*Paraplexaura*		N/A	13	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Plexauridae	*Paraplexaura*		N/A	20	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Plexauridae	*Paraplexaura*		N/A	23	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.7 Monitoring Data Recorded for the Selected Coral Colonies in Zone B (Tai Long Pai) during Post Project Coral Colony Monitoring

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
Hard Corals													
1	Siderastreidae	*Psammocora*	*superficialis*	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Poritidae	*Goniopora*	*stutchburyi*	10	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
3	Siderastreidae	*Psammocora*	*superficialis*	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Poritidae	*Goniopora*	*stutchburyi*	9	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
5	Poritidae	*Goniopora*	*stutchburyi*	6	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
6	Poritidae	*Goniopora*	*stutchburyi*	8	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
7	Poritidae	*Goniopora*	*stutchburyi*	10	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
8	Poritidae	*Goniopora*	*stutchburyi*	3.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Faviidae	*Plesiastrea*	*versipora*	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	Poritidae	*Goniopora*	*stutchburyi*	44	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
11	Poritidae	*Goniopora*	*stutchburyi*	36	N/A	N/A	5	Light yellow	Fine	<1mm	N/A	N/A	N/A
12	Siderastreidae	*Psammocora*	*superficialis*	14	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
13	Siderastreidae	*Psammocora*	*superficialis*	8	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
14	Siderastreidae	*Psammocora*	*superficialis*	7	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
15	Poritidae	*Goniopora*	*stutchburyi*	13	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
Octocorals													
1	Nephtheidae	*Dendronephthya*		13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Plexauridae	*Echinomuricea*		N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Plexauridae	*Echinomuricea*		N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Plexauridae	*Echinomuricea*		N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Plexauridae	*Echinomuricea*		N/A	6.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Plexauridae	*Echinomuricea*		N/A	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Nephtheidae	*Dendronephthya*		23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Acanthogorgiidae	*Acanthogorgia*		N/A	14	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Nephtheidae	*Dendronephthya*		14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
10	Plexauridae	*Echinomuricea*		N/A	4.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Nephtheidae	*Dendronephthya*		17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Nephtheidae	*Dendronephthya*		13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Nephtheidae	*Dendronephthya*		9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Nephtheidae	*Dendronephthya*		5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Nephtheidae	*Dendronephthya*		28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.8 Monitoring Data Recorded for the Selected Coral Colonies in Zone C (Tung Lung Chau) during Baseline Coral Colony Monitoring

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
Hard Corals													
1	Siderastreidae	*Psammocora*	*superficialis*	16	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
2	Siderastreidae	*Psammocora*	*superficialis*	21	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
3	Siderastreidae	*Montipora*	*venosa*	9	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
4	Siderastreidae	*Montipora*	*venosa*	18	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
5	Siderastreidae	*Montipora*	*venosa*	22	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
6	Siderastreidae	*Montipora*	*mollis*	10	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
7	Faviidae	*Plesiastrea*	*versipora*	24	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
8	Faviidae	*Plesiastrea*	*versipora*	4	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
9	Siderastreidae	*Psammocora*	*superficialis*	11.5	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
10	Siderastreidae	*Montipora*	*venosa*	9	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
11	Faviidae	*Plesiastrea*	*versipora*	18	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
12	Poritidae	*Goniopora*	*stutchburyi*	13	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
13	Faviidae	*Plesiastrea*	*versipora*	6	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
14	Poritidae	*Goniopora*	*stutchburyi*	11	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
15	Poritidae	*Goniopora*	*stutchburyi*	40	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
Octocorals													
1	Plexauridae	*Euplexaura*		40	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Nephtheidae	*Dendrophthya*		4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Nephtheidae	*Dendrophthya*		8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Nephtheidae	*Dendrophthya*		3.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Nephtheidae	*Dendrophthya*		3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Nephtheidae	*Dendrophthya*		5	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
7	Nephtheidae	*Dendrophthya*		3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Nephtheidae	*Dendrophthya*		7	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
9	Nephtheidae	*Dendrophthya*		5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
10	Nephtheidae	*Dendrophthya*		12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Nephtheidae	*Dendrophthya*		12	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
12	Nephtheidae	*Dendrophthya*		8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Acanthogorgiidae	*Acanthogorgia*		N/A	9	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Nephtheidae	*Scleronephthya*	*gracillicum*	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Nephtheidae	*Scleronephthya*	*gracillicum*	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.9 Monitoring Data Recorded for the Selected Coral Colonies in Zone C (Tung Lung Chau) during Post Project Coral Colony Monitoring

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
Hard Corals													
1	Siderastreidae	*Montipora*	*venosa*	5	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
2	Poritidae	*Goniopora*	*stutchburyi*	6	N/A	N/A	1	Light yellow	Fine	1mm	N/A	N/A	N/A
3	Siderastreidae	*Montipora*	*venosa*	3	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
4	Siderastreidae	*Montipora*	*venosa*	9	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
5	Siderastreidae	*Montipora*	*venosa*	8	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
6	Poritidae	*Goniopora*	*stutchburyi*	6	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
7	Poritidae	*Goniopora*	*stutchburyi*	14	N/A	N/A	5	Light yellow	Fine	1mm	N/A	N/A	N/A
8	Siderastreidae	*Montipora*	*venosa*	8	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
9	Siderastreidae	*Montipora*	*venosa*	8	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
10	Siderastreidae	*Montipora*	*venosa*	8	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
11	Poritidae	*Goniopora*	*stutchburyi*	14	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
12	Siderastreidae	*Montipora*	*venosa*	9	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
13	Poritidae	*Goniopora*	*stutchburyi*	40	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
14	Poritidae	*Goniopora*	*stutchburyi*	24	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
15	Siderastreidae	*Montipora*	*venosa*	6	N/A	N/A	1	Light yellow	Fine	<1mm	N/A	N/A	N/A
Octocorals													
1	Plexauridae	*Echinomuricea*		N/A	6.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Alcyoniidae	*Paraminabea*		N/A	7	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Plexauridae	*Echinogorgia*		N/A	16	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Plexauridae	*Echinomuricea*		N/A	*1.5*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Nephtheidae	*Dendronephthya*		3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Nephtheidae	*Scleronephthya*	*gracillicum*	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Nephtheidae	*Scleronephthya*	*gracillicum*	*5*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Nephtheidae	*Scleronephthya*	*gracillicum*	*12*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Nephtheidae	*Scleronephthya*	*gracillicum*	*5*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Coral No.	Family	Genus	Species	Max. diameter (cm)	Max. height (cm)	Max. width (cm)	Sediment cover (%)	Sediment color	Sediment Texture	Sediment thickness (cm)	Bleached area (%)	Partial mortality	Physical damage to colonies
10	Nephtheidae	*Dendronephthya*		6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Nephtheidae	*Dendronephthya*		15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Plexauridae	*Echinomuricea*		N/A	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Antipathidae	*Cirrhipathes*		135	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Nephtheidae	*Dendronephthya*		5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Plexauridae	*Paraplexaura*		N/A	9.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4 CONCLUSION

In accordance with the *EM&A Manual*, Post Project Coral Monitoring Survey was undertaken on 18 and 19 February 2013 at three designated monitoring zones (ie including two Impact Monitoring stations at Cape Collinson and Tai Long Pai, and one Control station at Tung Lung Chau) within one month after completion of the marine works in order to determine any detectable changes in coral conditions and health status which may be caused by the installation of the ASE cable. REA surveys and Coral Colony Monitoring were conducted for the Post Project Coral Monitoring Survey and the methodology adopted is the same as that for the Baseline Coral Survey undertaken before the cable installation works. The employment of the same methodology would allow for direct comparison of coral conditions and health status before and after the cable installation works and hence, determines any detectable changes in coral assemblages concerned which may be caused by the Project.

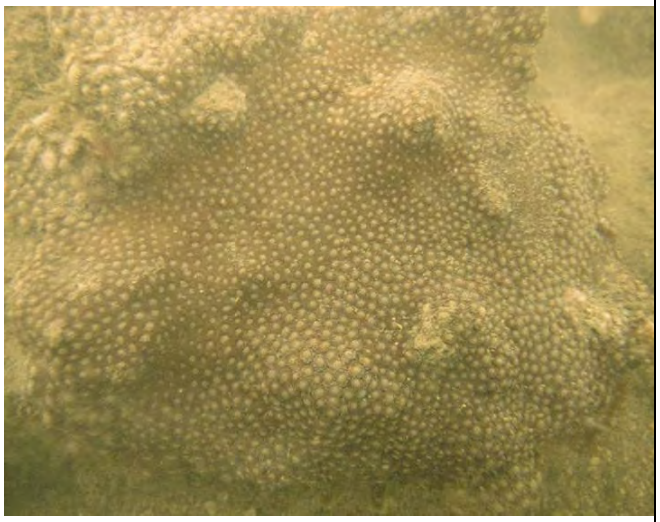
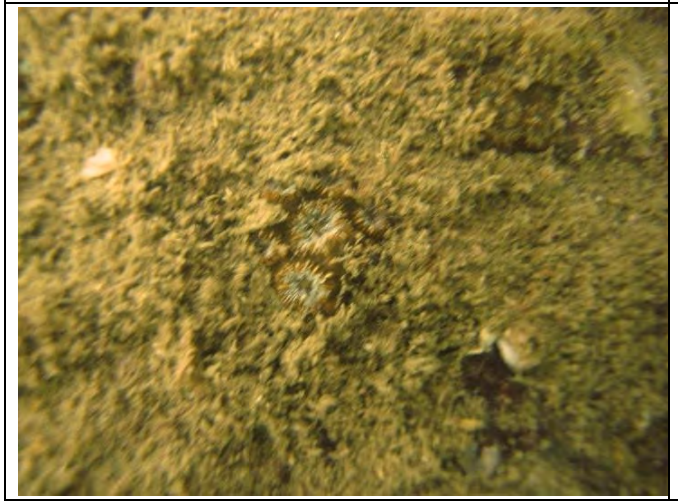
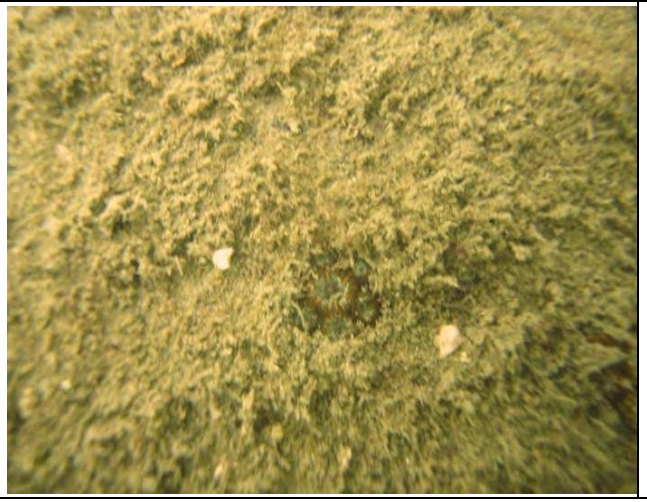
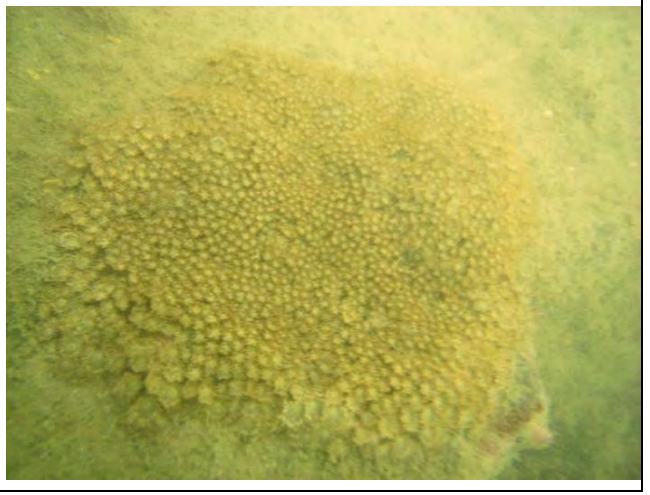
Comparison of REA survey data indicated that the conditions of the coral communities were similar before and after cable installation works, with similar cover and composition of major abiotic and biotic attributes between the Baseline and Post Project Coral Monitoring Surveys at the three monitoring stations. In addition, results of Coral Colony Monitoring showed that the health conditions of coral colonies were similar between the Baseline and Post Project Coral Monitoring Surveys. Sediment covers recorded on the selected coral colonies at all three monitoring stations were similar, ranged between 0 to 5%, during both the Baseline and Post Project Coral Monitoring Surveys. The selected coral colonies did not exhibit any sign of bleaching, partial mortality or physical damage during both Baseline and Post Project Coral Monitoring Surveys.

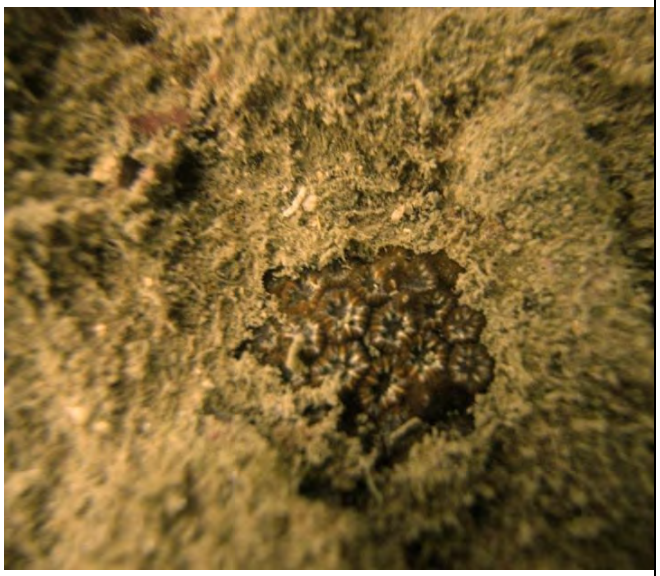
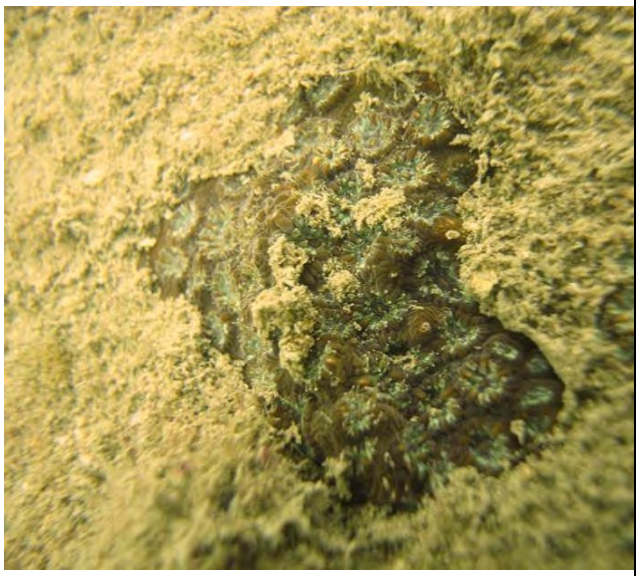
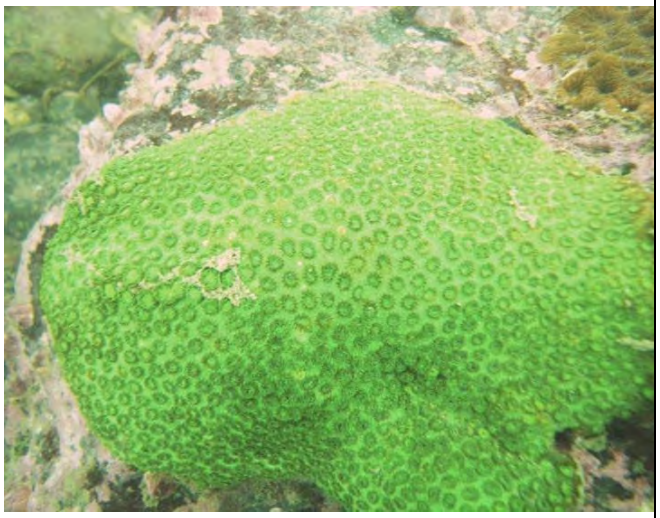
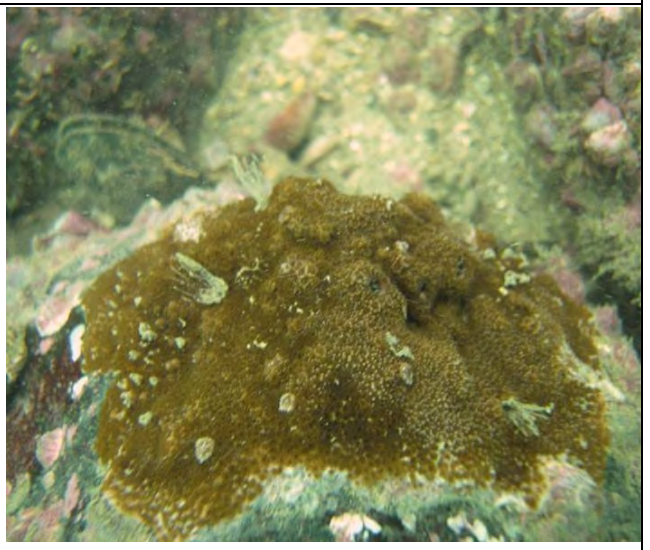
Overall, there did not appear to be any unacceptable impacts to corals as a result of the AES cable installation works.

Annex A

Photographic Results of Identified Coral Colonies in Zone A, B & C

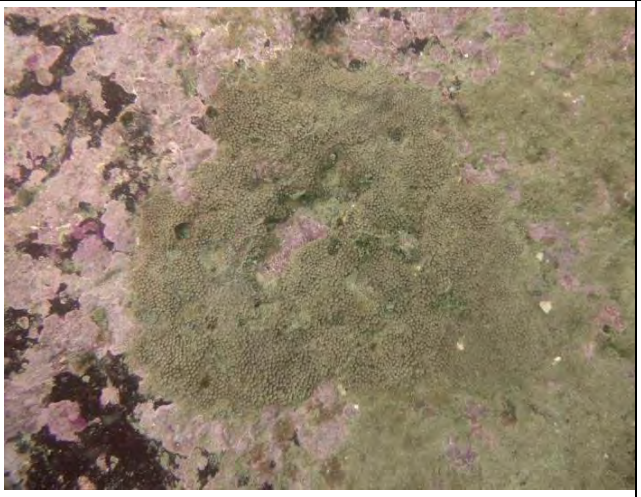
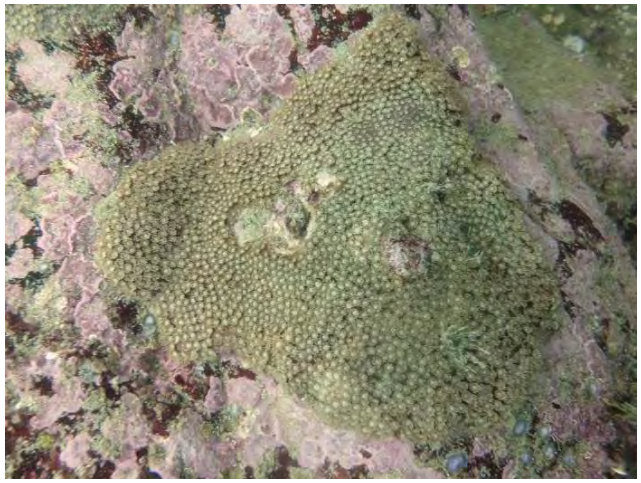
Annex A1 Photographic Records of Identified Hard Coral Colonies at Impact Monitoring Site (Zone A – Cape Collinson) during the Baseline Coral Survey

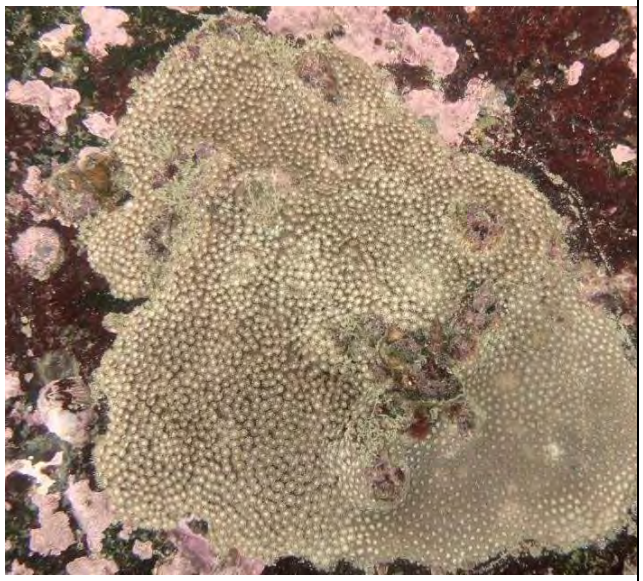
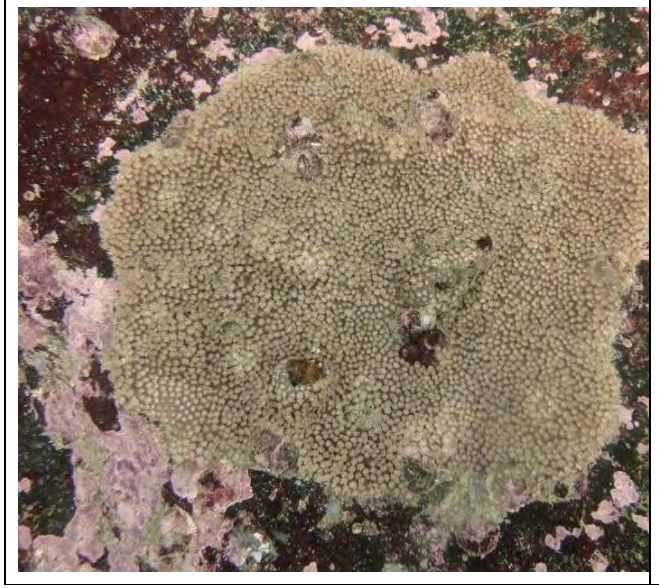
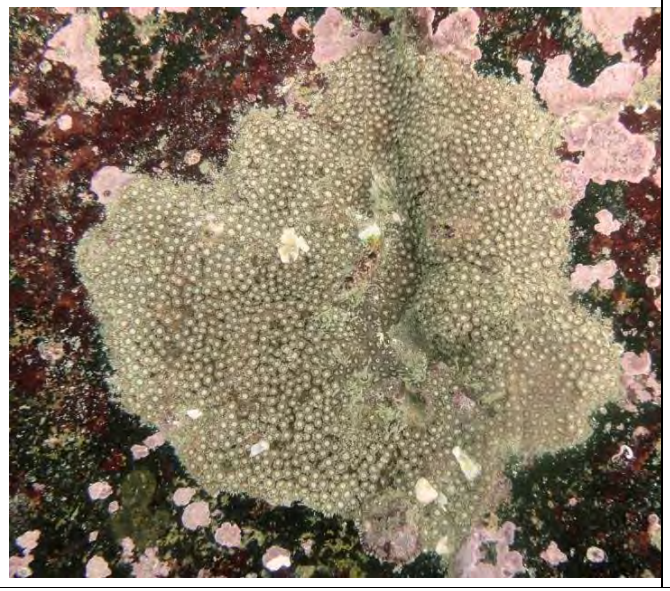
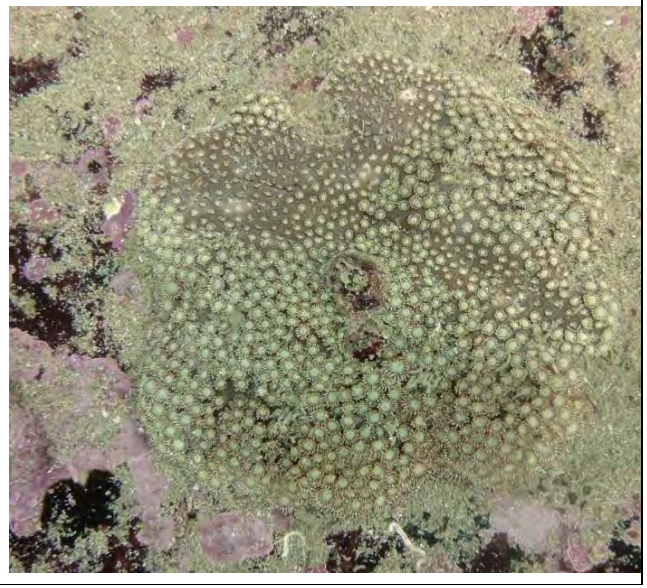
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

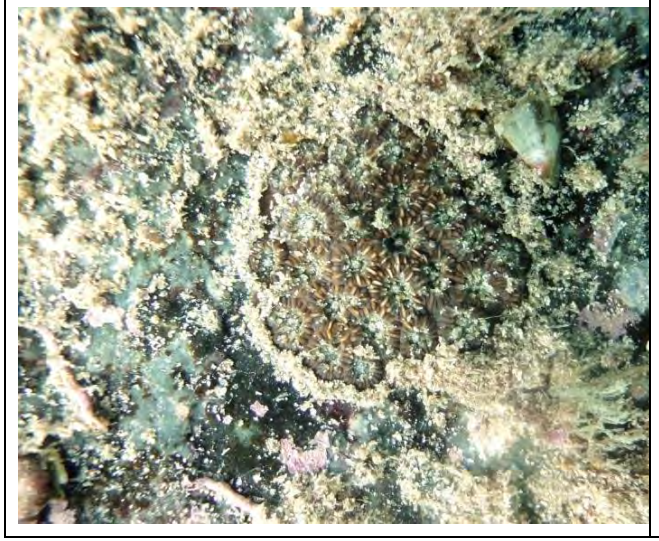
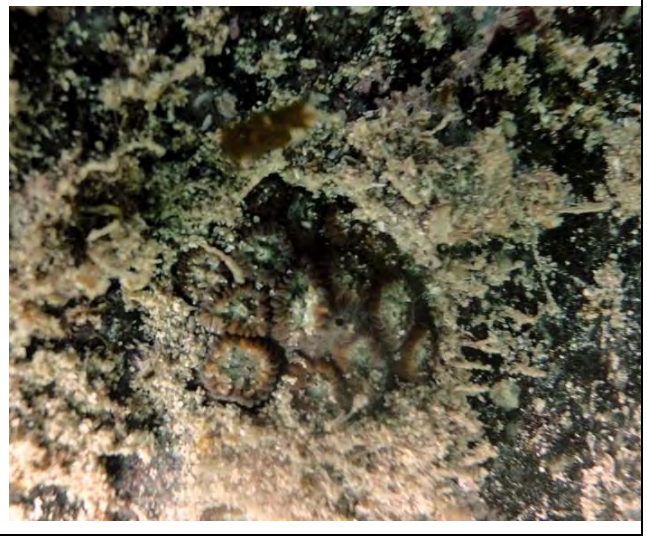
Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

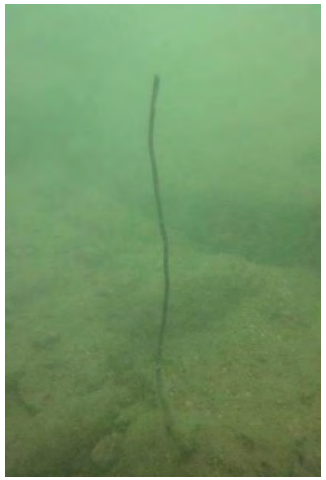
Annex A2 Photographic Records of Identified Hard Coral Colonies at Impact Monitoring Site (Zone A – Cape Collinson) during the Post Project Coral Monitoring

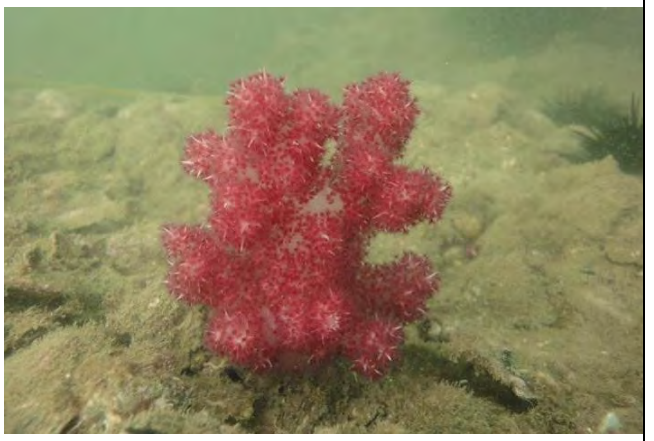
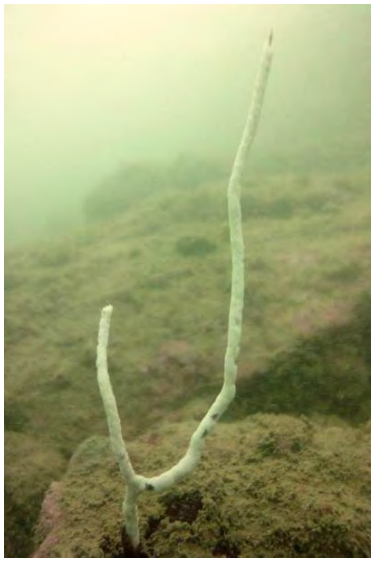
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex A3 Photographic Records of Identified Octocoral Colonies at Impact Monitoring Site (Zone A – Cape Collinson) during the Baseline Coral Survey

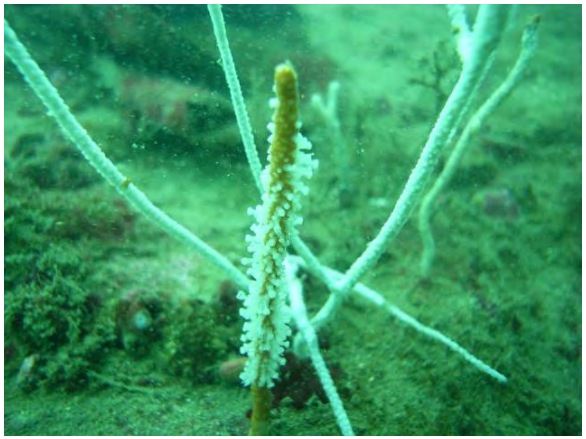
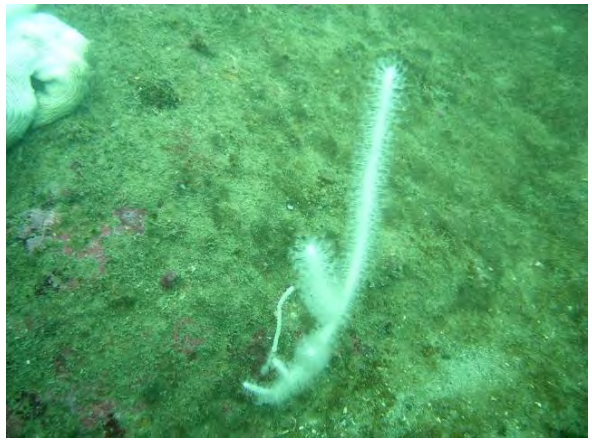
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex A4 Photographic Records of Identified Octocoral Colonies at Impact Monitoring Site (Zone A – Cape Collinson) during the Post Project Coral Monitoring

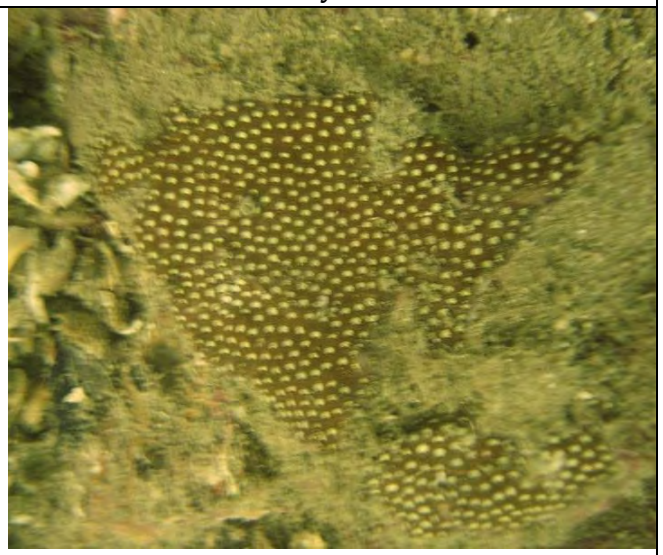
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

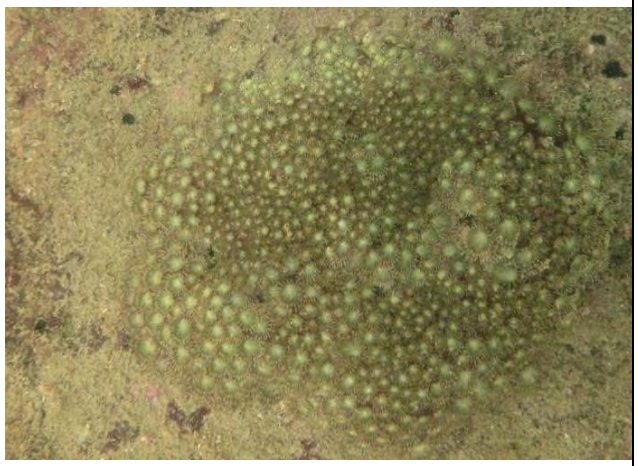
Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

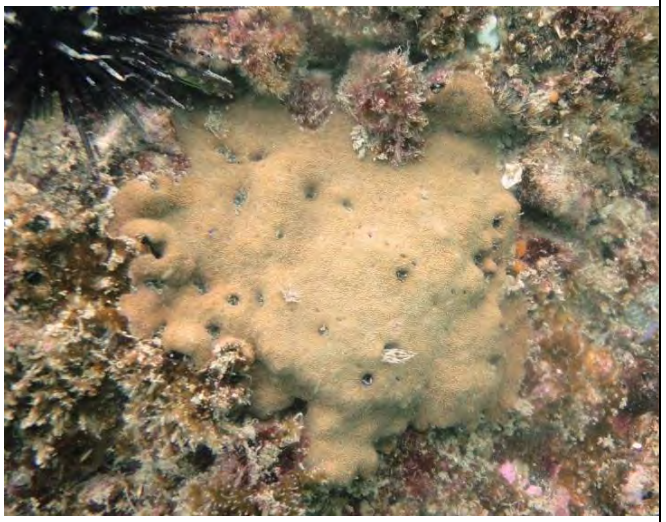
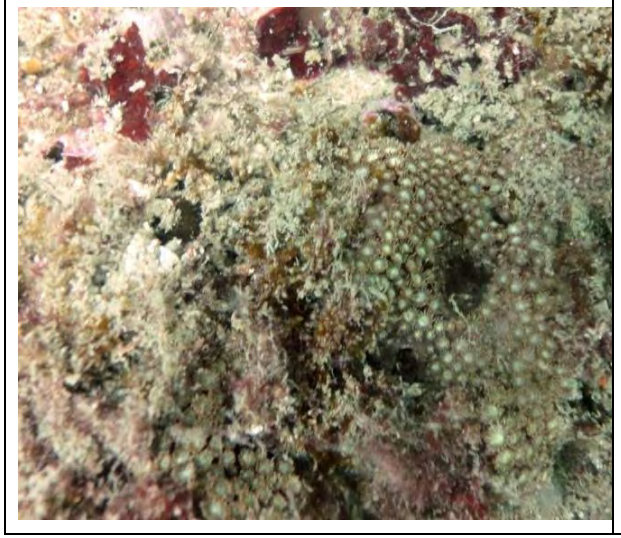
Annex A5 Photographic Records of Identified Hard Coral Colonies at Impact Monitoring Site (Zone B – Tai Long Pai) during the Baseline Coral Survey

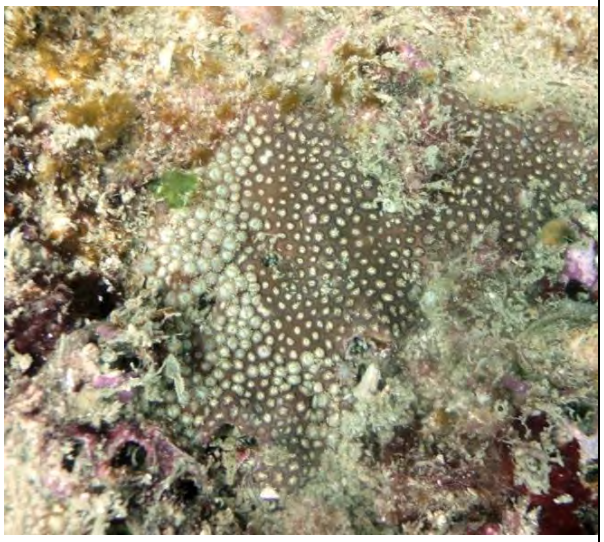
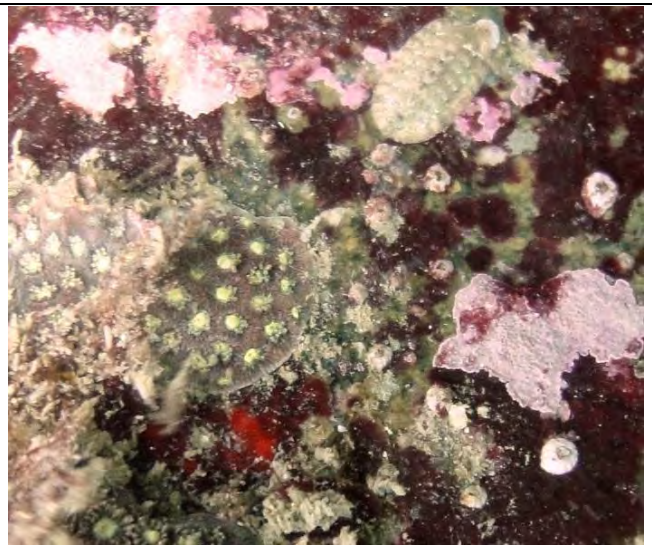
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

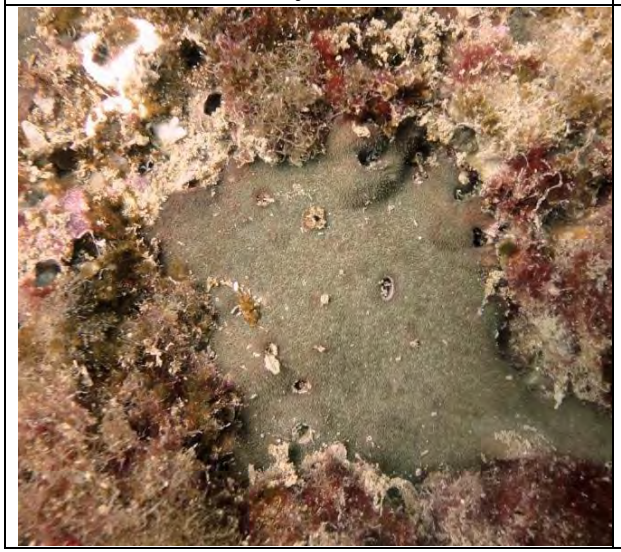
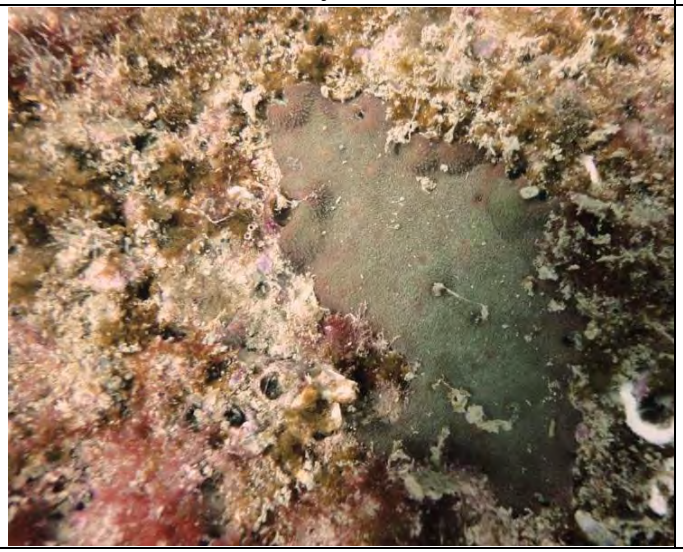
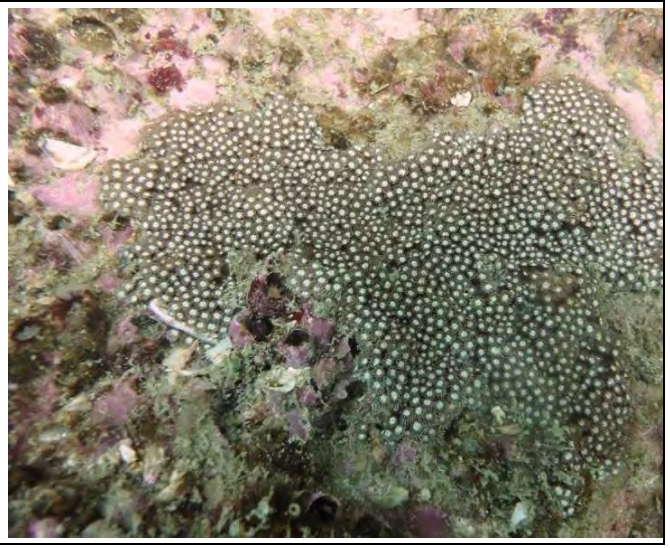
Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex A6 Photographic Records of Identified Hard Coral Colonies at Impact Monitoring Site (Zone B – Tai Long Pai) during the Post Project Coral Monitoring

Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex A7 Photographic Records of Identified Octocoral Colonies at Impact Monitoring Site (Zone B – Tai Long Pai) during the Baseline Coral Survey

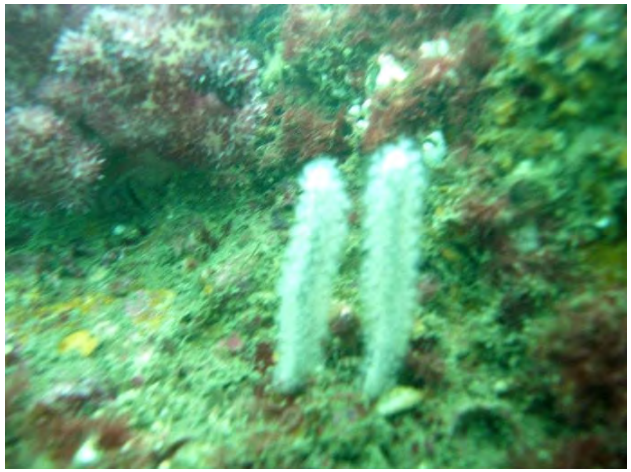
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

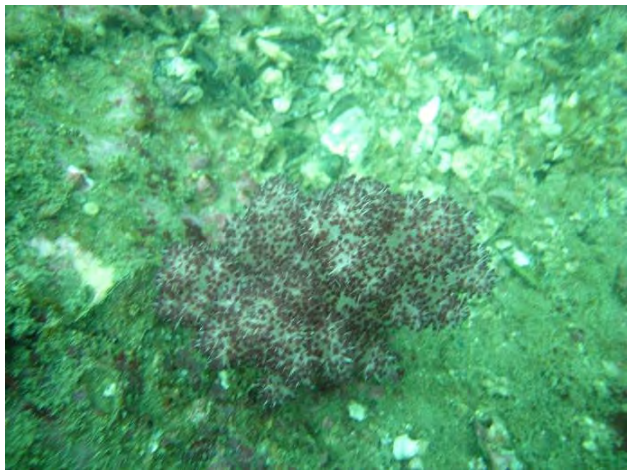
Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

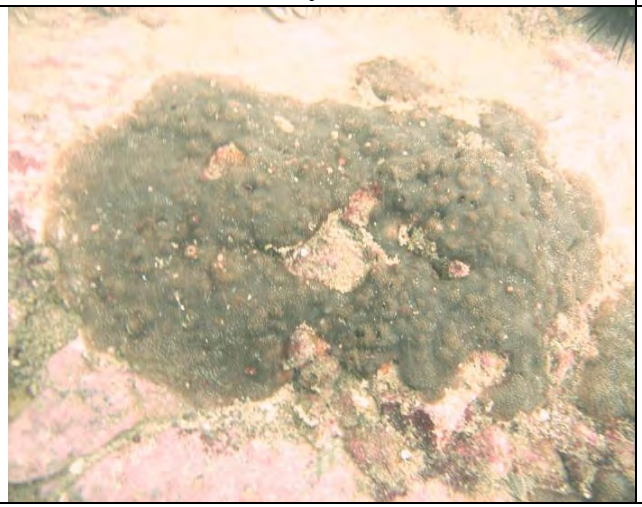
Annex A8 Photographic Records of Identified Octocoral Colonies at Impact Monitoring Site (Zone B – Tai Long Pai) during the Post Project Coral Monitoring

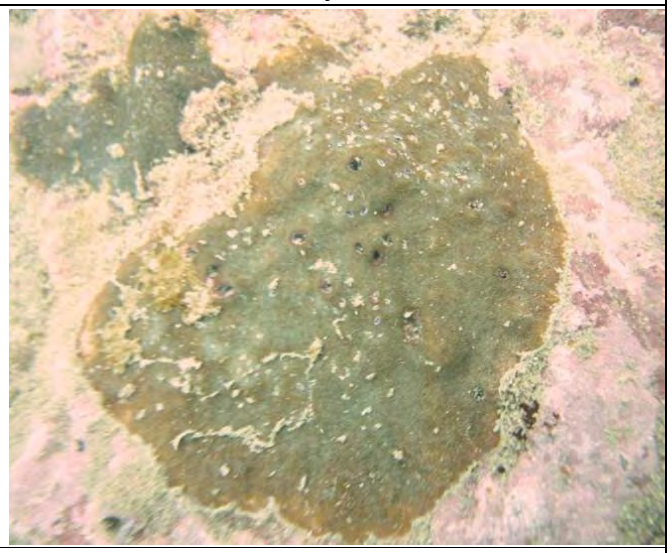
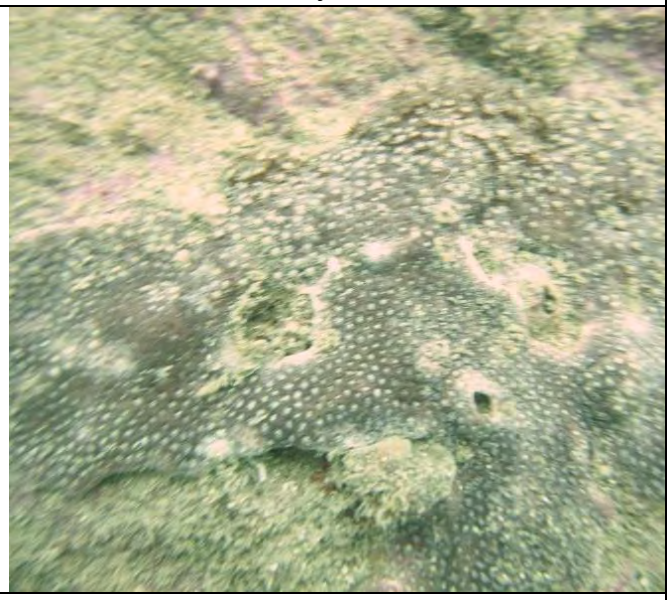
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

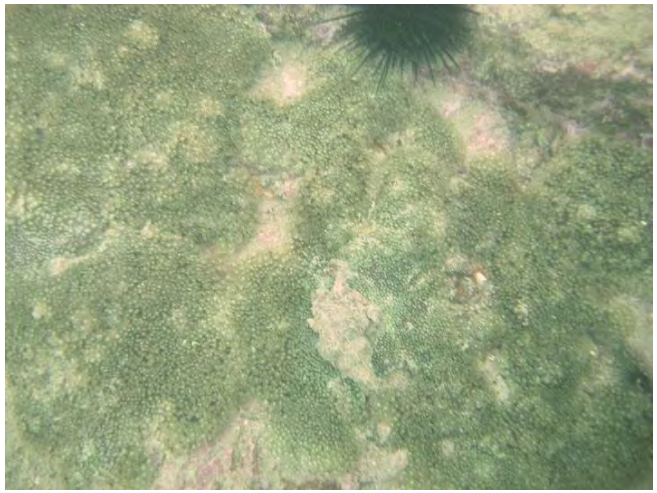
Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

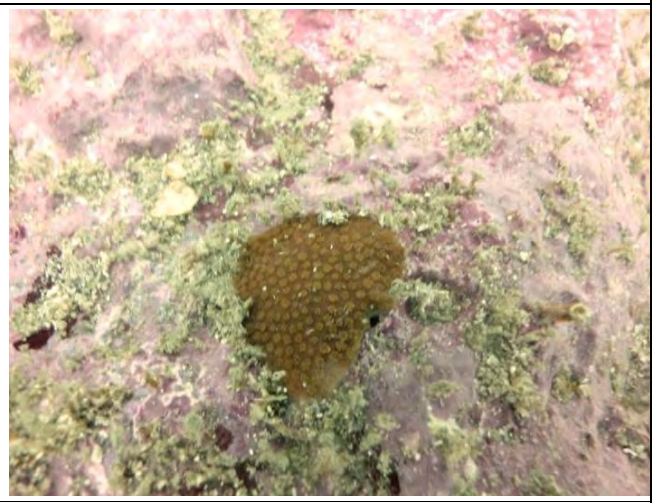
Annex A9 Photographic Records of Identified Hard Coral Colonies at Control Monitoring Site (Zone C –Tung Lung Chau) during the Baseline Coral Survey

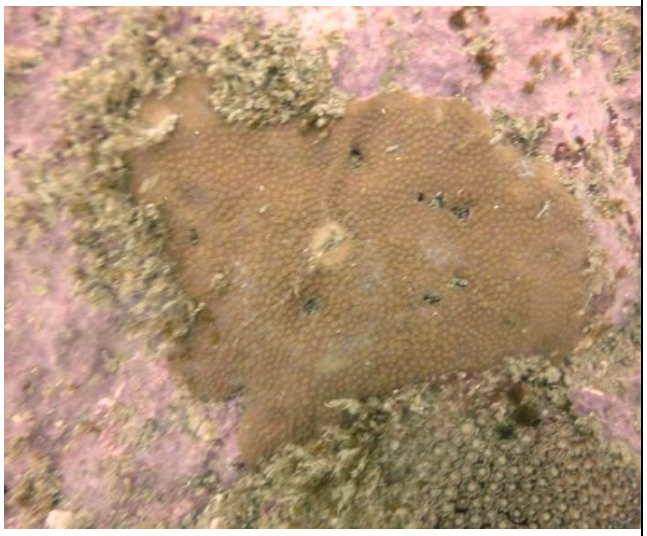
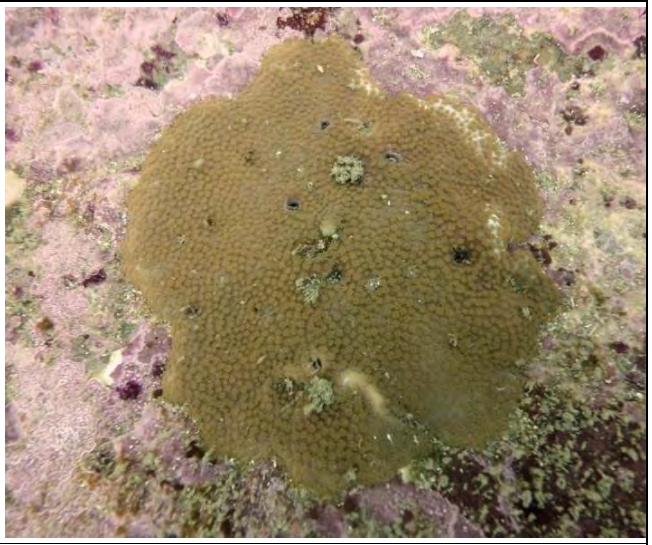
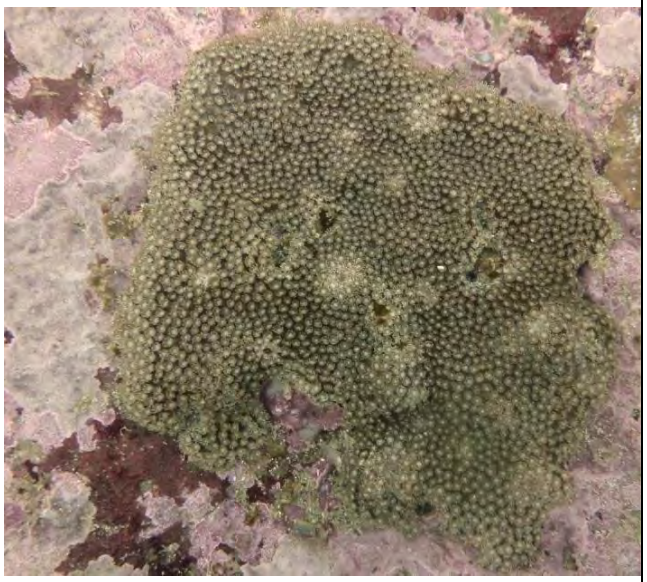
Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

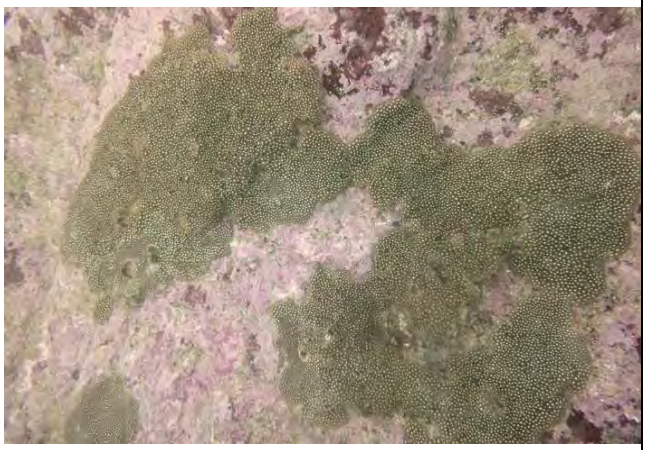
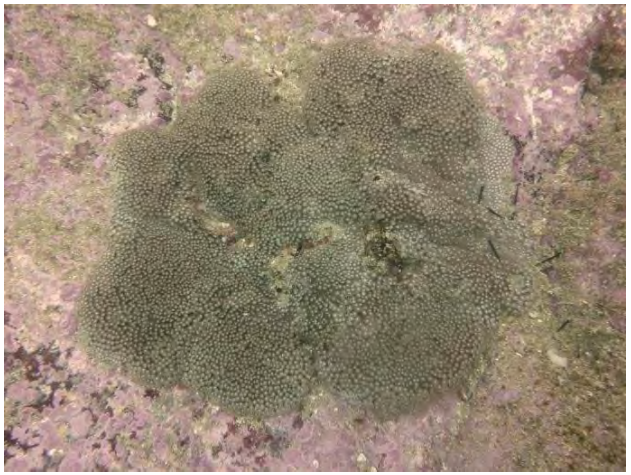
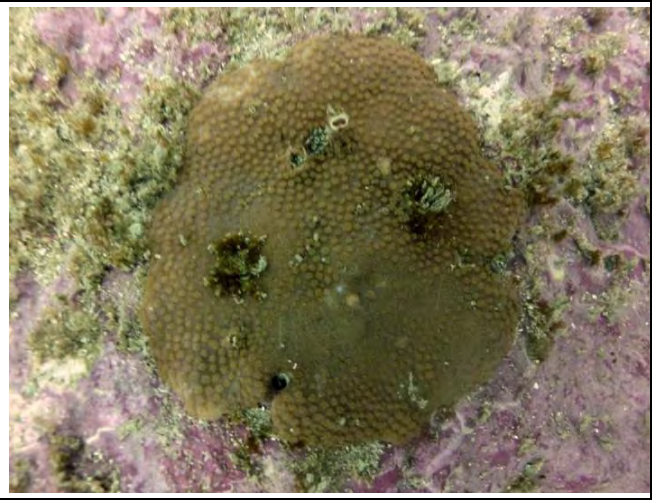
Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex A10 Photographic Records of Identified Hard Coral Colonies at Control Monitoring Site (Zone C –Tung Lung Chau) during the Post Project Coral Monitoring

Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex A11 Photographic Records of Identified Octocoral Colonies at Control Monitoring Site (Zone C –Tung Lung Chau) during the Baseline Coral Survey

Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

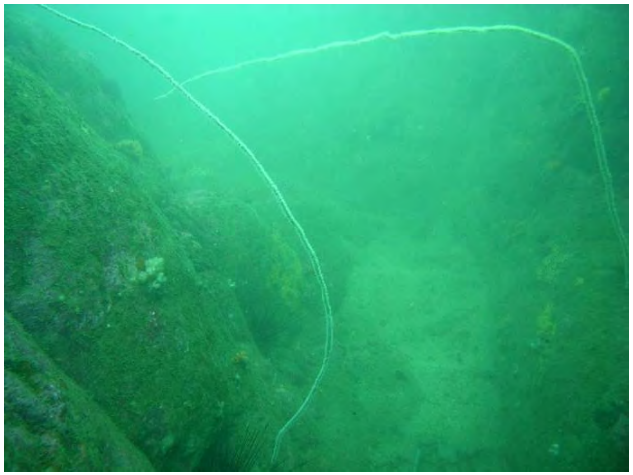
Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex A12 Photographic Records of Identified Octocoral Colonies at Control Monitoring Site (Zone C –Tung Lung Chau) during the Baseline Coral Survey

Colony No. 1	Colony No. 2	Colony No. 3
		
Colony No. 4	**Colony No. 5**	**Colony No. 6**
		

Colony No. 7	Colony No. 8	Colony No. 9
		
Colony No. 10	**Colony No. 11**	**Colony No. 12**
		

Colony No. 13	Colony No. 14	Colony No. 15
		

Annex B

RTC Table

Ref.	Department	Reference	Comments	The Consultant's Response
1.	AFCD	Ref.: via email Dated 28 February 2013	I have only minor typo comments on the report. P. 8, 3.2, first para, lines 4-5 - The tables should be numbered as 3.3a and 3.3b.	Text has been revised accordingly in Section 3.2
2.			P. 13, Table 3.1, Zone C, transect 2, shallow ~5, line 2 - Please amend the last coral to Porites lobata.	Spelling of *Porites lobata* has been revised accordingly in Table 3.1.

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