Attachment 15

Date: 24 October 2018

## MONITORING FORM (Revised)

The Ministry of Infrastructure and Public Utilities conduct environmental monitoring. The result of monitoring will be reported to JICA by this form as a part of the Progress Report.

## 1. Responses/Actions to Comments and Guidance from Department of Environmental Protection and Conservation (DEPC)

Monitoring Item		Monitoring Results during Report Period	Comments from DEPC		
All			Results accepted with NO further comment.		

## 2. Ecosystems

1) Animals occurrence around the Project site (at any time)

Item	Remarks (Found date & locations, numbers)				
Dugongs	No animals sighted since the start of the project				
Sea Turtles	No animals sighted since the start of the project				
Others	Substantial aggregation of coral reef-associated fish and				
	macro-inverts at the relocation site.				

XPlease write the latest information and the date you observed the above animals.

3. Corals and Water Quality

Monitoring site		/live coral %/coral cover %		Water temp (°C)	Salinity (‰)			Turbidity (NTU)			Remarks	
		Result	Baseline	RANGE	RANGE	RANGE	Baseline	Standard <sup>(4)</sup>	Measured value (MAX)	Baseline	Standard <sup>(5)</sup>	
Coral relocation site	Bommie 1	33%	100%(3)	28.4 <sup>(2)</sup>	33.2(2)	8.16 <sup>(2)</sup>	N/A		0.0	N/A	<9.5	No baseline data available <sup>(6)</sup>
	Bommie 2	38%	100%(3)									
	Bommie 3	45%	100%(3)									
	Bommie 4	60%	100%(3)									
Permanent monitoring site of coral	S4T2 (Fatumar-u Bay) <sup>(7)</sup>	19%	<31%	28.2	33.4	8.16	N/A	7.8-8.3	0.0	N/A	<9.5	No baseline data available <sup>(6)</sup>
	S2T1 (Ifira) <sup>(7)</sup>	22%	<5%	27.9	33.2	8.13	N/A		0.0	N/A	<9.5	No baseline data available <sup>(6)</sup>
	S3T3 (Iririki) (7)	8%	<5%	28.4	33.2	8.16	N/A		0.0	N/A	<9.5	No baseline data available <sup>(6)</sup>
Construction site	M-1			27.6	30.9	8.16	8.15		0.0	0.0	<9.5	Works as noted <sup>(8)</sup>
	M-2			27.7	33.2	8.13	8.16		0.0	0.0	<9.5	Works as noted <sup>(8)</sup>
	M-3			27.9	33.2	8.14	8.14		0.0	0.0	<9.5	Works as noted <sup>(8)</sup>
	M-4			27.8	33.2	8.13	8.15		0.0	0.0	<9.5	Works as noted <sup>(8)</sup>
	M-5			28.0	33.2	8.12	8.14		0.0	0.0	<9.5	Works as noted <sup>(8)</sup>
	M-6 <sup>(9)</sup>			-	-	-	8.19		-	0.0	<9.5	Works as noted <sup>(8)</sup>
	M-7 <sup>(9)</sup>			-	-	-	8.16		-	0.0	<9.5	Works as noted <sup>(8)</sup>
Permanent monitoring site of water	C-1			27.4	33.1	8.16	8.15		0.0	0.0	<9.5	Works as noted <sup>(8)</sup>
	C-2			28.1	33.3	8.15	8.15		0.0	0.0	<9.5	Works as noted <sup>(8)</sup>
	C-3			28.2	33.4	8.14	8.16		0.0	0.0	<9.5	Works as

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noted<sup>(8)</sup>

Temperature and salinity is used to judge if turbidity is due to the project activities or storm water.

The coral data and water quality data were collected on March 16, 2017 and April 26, 2017 respectively.

- (1) The Corel Lukluk Method was used to determine live coral cover. The bleached coral is counted as live coral as VFD judges that these corals still have the potential to regrow.
- (2) The location of coral relocation site is close to the S3T3 and therefore the water quality data of S3T3 was used.
- (3) The relocated coral percentage is based on all live corals successfully transplanted
- (4) Environmental standard of the Basic Environment Act in Japan.
- (5) Standard of fisheries water in Japan Background + 2mg/L. The standard for the particular day with the highest result at the monitoring point is shown.
- (6) The baseline pH and Turbidity are not available for the Coral Monitoring & Coral Relocation Sites as the contractor's baseline survey conducted from October-November 2015 did not include these sites.
- (7) Water quality monitoring commenced for the additional points of S3T3, S2T1 and S4T2 on April 26, 2017 following a request from JICA.
- (8) Dredging at Wharf Zone III and Zone IV. Excavation at Wharf Zone IV and V. Pouring lean concrete and reinforced concrete coping beams Zone II Zone IV. Backfilling, Zone III IV. Removal of old wharf piles at Wharf Zone I.
- (9) Points M6 and M7 were both inside the silt curtain while dredging activity was underway, and therefore it was not able to measure the water quality data.

## 4. Grievance

Grievances from Project Affected Persons	Responses of Executing Agency and Results	Remarks
NO grievances reported		