ANNEX 4 FORM OF MONITORING RESULTS SHEET FOR SUBMITTING TO JICA (J1 PACKAGE)

Project: Greater Mekong Subregion (GMS) Ben Luc - Long Thanh Expressway Project

Implementing Agency: Vietnam Expressway Corporation (VEC)

Sub-Project: Package J1

Supervision Consultant: KEI-NE-OCG-TEDI JV

Location: J1 Construction site

Contractor(s): J1 Contractor Shimizu-VNCN E&C JO

Date: May 2024

Environmental Monitoring Sub-contractor: CEECO

Reporting Period: 1st Quarter 2024

Implementation Phase: Construction

Contractor(s)

Contractor(s)' Environmental Awareness	Yes/No	Actions Required	Contractor Response / Comment
Contractor(s) is/are aware of mitigation requirements?	Yes	No	
Contractor(s) have a copy of EMP?	Yes	No	

1. Mitigation Measure Compliance

Impact/ Mitigation Measure (From EMP)	Mitigations Implemented (Yes/No)	Mitigations Effective?*	Impact Observed/ Location	Action Required	Contractor Response/ Comment	Endorsed by:	
						Implementing Agency	Monitoring Agency
1. Completion of detailed design in accordance with EMP requirements	Yes	1		No	No		
2. Preparation of tender document included detailed requirements in pollution control and protection of natural ecosystems.	Yes	1		No	No		
3. Proper preparation of CEMP by contractors	Yes	1		No	No		
4. Evidence of marking of work site boundaries	Yes	1		No	No		
5. No cutting trees outside the project ROW	Yes	1		No	No		
6. Replanting vegetation damaged by site clearance	No site clearance			No	No		

7. No dumping of all kinds of wastes and cut trees in rivers, canals, ponds and field	Yes	2		No	No		
8. General site condition and cleanliness	Yes	1		No	No		
9. Covering of all trucks moving to and from site	Yes	2		No	No		
10. Watering road, construction site on rainless day	Yes	1		No	No		
11. Registration papers and compliance certificates of construction vehicles with Vietnam Automobile Registration Authority. Certification of environmental emissions standards.	Yes	1		No	No		
12. Installation of temporary waste storage areas at each construction site including segregation of hazardous and non-hazardous wastes.	Yes	2		No	No		
13. Sanitation conditions at construction camps, included sewage treatment facilities (toilets), domestic solid wastes management, storage etc.	Yes	1		No	No		
14. Clean water and safe food supply for workers	Yes	2		No	No		
15. Requirements for vegetation waste (cut trees) burning met	Yes	2		No	No		
16. Proper organization of material transport to minimize environmental pollution and community disturbance	Yes	2		No	No		
17. Condition and effectiveness of erosion controls	Yes	2		No	No		
18. Condition and effectiveness of construction waste management	Yes	2		No	No		
19. Evidence of soil and/or water acidification due to leakage of acidic water from construction site to surrounding field, canals	No leakage of water from site	1		No	No		
20. Evidence of direct or indirect disturbance of mangroves and other vegetation outside defined worksite boundaries	No disturbance on outside vegetation	1		No	No		

21. Stabilization, rehabilitation and landscaping of all land surfaces affected by construction activities	Yes	2		No	No		
22. Installation of noise and dust control walls	Yes	1		No	No		
23. Dust generation during windy conditions	Yes	1		No	No		
24. Number and type of community complaints on environmental issues received	No complaints received			No	No		
25. Mangrove replanting for compensation of mangrove area lost by the project at the Thi Vai river, Long Tau and Soai Rap river banks	Not applicable during construction phase			No	No		

*Mitigation Effectiveness Rating Criteria (Indicative examples)

1 Very good (all required mitigations implemented)
2 Good (the majority of required mitigations implemented)
3 Fair (some mitigations implemented)
4 Poor (few mitigations implemented)
5 Very Poor (very few mitigations implemented)

2. Ambient Monitoring (J1 package)

Parameter	Measured by	Monitoring Equipment	Result	Standard µg/Nm3	% Exceedance	Action Required	Contractor Responses/ Comments	Endorsed by:		Date/ Location
								Implementing Agency	Monitoring Agency	
SO_2	CEECO	SKC 224-PCXR8	44-77	350		No	No			**Date:** 18/03/2024 **Locations:** A1, A2, A3
NO_x	CEECO	SKC 224-PCXR8	40-72	200		No	No			
CO	CEECO	SKC 224-PCXR8	<10,000	30,000		No	No			
TSP	CEECO	RIDECO	80-193	300		No	No			
PM10*	Sent to subcontractor		41-59	100		No	No			

***Average of 24 hours

3. Noise and vibration (J1 package)

Parameter	Measured	Monitoring	Result	Standard	%	Action Required	Contractor	Endorsed by:	Date/

	by	Equipment			Exceedance		Responses/ Comments	Implementing Agency	Monitoring Agency	Location
Noise	CEECO	RION	50,1-60,2	6:00-21:00 70 dBA	No	No				**Date:** 18/03/2024 **Locations:** A1, A2, A3
	CEECO	RION	Not measured	21:00-06:00 55 dBA	No	No				
Vibration	CEECO	RION VM-83	34,5-48,7	6:00-21:00 75 dB	No	No				
	CEECO	RION-83	Not measured	21:00-06:00 Baseline Level	No	No				

4. Surface water quality (J1 package):

Date: 18/03/2024
Locations: SW1, SW2, SW3
Measured by: CEECO

TT	Thông số	Đơn vị	Kết quả						QCVN 08-2023				% Exceedance	Action required	Contractor Responses /	Endorsed by	
			SW1		SW2		SW3									Implementing	Implementing
			High time	Low tide	High time	Low tide	High time	Low tide	Level A	Level B	Level C	Level D					
1	pH	-	7.39	7.17	7.58	7.01	7.46	7.08	**6.5-8.5**	**6.0-8.5**	**6.0-8.5**	**< 6.0 or > 8.5**	K	K	K		
2	DO	mg/L	5.44	5.35	5.47	5.34	5.38	5.26	**≥ 6.0**	**≥ 5.0**	**≥ 4.0**	**≥ 2.0**	K	K	K		
3	Turbidity	NTU	5.45	8.02	6.33	10.2	6.57	14.8	**-**	**-**	**-**	**-**	K	K	K		
4	EC	mS/cm	33200	28400	36900	31300	37400	38200	**-**	**-**	**-**	**-**	K	K	K		
5	TSS	mg/L	10	14	12	14	17	24	**≤ 25**	**≤ 100**	**>100 and none floating garbage**	**>100 and having floating garbage**	K	K	K		
6	BOD_5	mgO_2/L	7	9	6	8	10	11	**≤ 4**	**≤ 6**	**≤ 10**	**> 10**	K	K	K		
7	COD	mgO_2/L	16	19	14	17	19	21	**≤ 10**	**≤ 15**	**≤ 20**	**> 20**	K	K	K		
8	NO_2^- (as N)	mg/L	0.041	0.036	0.026	0.029	0.024	0.027	-	-	-	-	K	K	K		
9	NO_3^- (as N)	mg/L	0.527	0.452	0.273	0.467	0.551	0.504	**-**	**-**	**-**	**-**	K	K	K		
10	PO_4^{3-} (as P)	mg/L	KPH	<0.06	<0.06	<0.06	<0.06	NDT	-	-	-	-	K	K	K		
11	Asen (As)	mg/L	KPH	KPH	KPH	KPH	KPH	KPH	**-**	**-**	**-**	**-**	K	K	K		
12	Zinc (Zn)	mg/L	KPH	KPH	KPH	KPH	KPH	KPH	**-**	**-**	**-**	**-**	K	K	K		
13	Iron (Fe)	mg/L	0.201	0.289	0.191	0.108	KPH	KPH	-	-	-	-	K	K	K		
14	Total oil & grease	mg/L	KPH	KPH	KPH	KPH	KPH	KPH	**-**	**-**	**-**	**-**	K	K	K		
15	Coliform	MPN/10	600	1100	300	750	900	1300	**≤**	**≤ 5.000**	**≤**	**>**	K	K	K		

TT	Thông số	Đơn vị	Kết quả						QCVN 08-2023				% Exceedance	Action required	Contractor Responses /	Endorsed by	
			SW1		SW2		SW3									Implementing	Implementing
			High time	Low tide	High time	Low tide	High time	Low tide	Level A	Level B	Level C	Level D					
		0mL							**1.000**		**7.500**	**7.500**					

Note:

"NDT": Not detected; QCVN 08:2023/BTNMT: National technical Regulation on Surface Water Quality.

*- **Level A:** Good water quality. Aquatic ecosystems have high dissolved oxygen (DO) content. Water can be used for domestic water supply, swimming, and water play purposes after applying appropriate treatment measures.*

*- **Level B:** Average water quality. Domestic ecosystems consume a lot of dissolved oxygen due to large amounts of pollutants. Water can be used for industrial and agricultural production purposes after applying appropriate treatment measures.*

*- **Level C:** Poor water quality. Domestic ecosystems have a sharply reduced amount of dissolved oxygen due to containing a large amount of pollutants. The water does not cause unpleasant odors and can be used for industrial production purposes after applying appropriate treatment measures.*

*- **Level D:** Water quality is very poor, can greatly affect fish and other organisms living in the water environment due to low dissolved oxygen concentration and high pollutant concentration.*

QCVN 08:2023/BTNMT takes effect from September 12th, 2023, replacing QCVN08-MT:2015/BTNMT. Environmental consultants will focus on evaluating the parameters in Table 2. Limit values of parameters in surface water Serves for classifying the water quality of rivers, streams, canals, ditches, slits, and ditches and protecting aquatic habitats.

5. Groundwater quality

Samples were not collected because the wellbore in residential area in previous monitoring period was destroyed.

6. Waste water quality (J1 package)

Parameter	Measured by	Monitoring Equipment	Result		Standard		% Exceedance	Action Required	Contractor Responses / Comments	Endorsed by:		Date/ Location
			WW 1	WW 3	B 1	B2				Implementing Agency	Monitoring Agency	
pH	CEECO		12.18	12.36	5-9	5-9		No	No			**Date:** 18/03/2024 **Locations:** WW1, WW3
BOD (mgO_2/L)	CEECO		45	14	30	50		No	No			
TSS (mg/L)	CEECO		47	12	50	100		No	No			
H_2S (mg/L)	CEECO		NDT	NDT	1	4		No	No			
$N\text{-}NO_3^-$ (mg/L)	CEECO		0.138	0.058	30	50		No	No			
$P\text{-}PO_4^{3}$(mg/L)	CEECO		NDT	NDT	6	10		No	No			
Total Oil and Grease (mg/L)	CEECO		NDT	NDT	10	20		No	No			
Coliforms (MPN/100mL)	CEECO		400	230	3000	5000	300%	No	No			

7. Soil quality (J1 package)

Parameter	Measured by	Monitoring Equipment	Result		Standard (mg/kg)			% Exceedance	Action Required	Contractor Responses / Comments	Endorsed by:		Date/ Location
			S1	S2	Residential land	Agri. land	Forest land				Implementing Agency	Monitoring Agency	
Arsenic (As)	CEECO		2.67	2.80	12	12	12	No	No	No			**Date:** 18/03/2024 **Locations:** S1, S2
Cadmium (Cd)	CEECO		NDT	NDT	2	2	5	No	No	No			
Copper (Cu)	CEECO		14,7	15,4	50	70	70	No	No	No			
Lead (Pb)	CEECO		20.8	20.0	70	100	120	No	No	No			
Zinc (Zn)	CEECO		83.	87.	200	200	20	No	No	No			

			3	5			0						
*pH has no unit													

8. Environmental Incidents During Reporting Period (if relevant)

Environmental Incidents (accidents, spills, complaint)	Date / Location	Reported by	Description / Location	Action Taken	Further Action Required	Endorsed by:	
						Implementing Agency	Monitoring Agency
Accidents	No			No	No		
Oil/Chemical spills	No			No	No		
People Complaint	No			No	No		

9. Natural environment monitoring (for whole project):

Mangroves and Aquatic Organism Monitoring	Date / Location	Reported by	Assessment	Action Taken	Further Action Required	Endorsed by:	
						Implementing Agency	Monitoring Agency
Mangroves Monitoring							
Total area (ha) at each site.	Mangrove areas at Phuoc Khanh commune (Can Gio district) and at Thi Vai river bank (Dong Nai province)						
Biomass of mangroves (kg/m^2)							
Density of predominant species (individuals/m^2)							
Species diversity measured by Shannon-Weaver index							
Average height and stem diameter							
Wild terrestrial animals (species composition and density)							
Aquatic organisms Monitoring							
Phytoplankton: species composition, density and Bio-indicators	Long Tau, Soai Rap and Thi Vai rivers						
Zooplanktons: species composition, density and Bio-indicators							
Benthos: species composition, density and Bio-indicators							

10. Summary of Actions Required and Follow-up (if relevant)

Action Required	**Timeframe** (e.g. within one week)	**Responsible Parties**	**Follow-up** (to be completed if inspection/monitoring indicates actions are required)
None			**Required Action Taken:**
			Effectiveness:
			Further Action Required?:
			Prepared by:
			Date:

Inspection Completed by: NGUYEN TRINH MINH ANH **Date:** May 06, 2024

Signature:

Notes:

Annex 1: Description of sampling locations

Phụ lục 1: Mô tả vị trí lấy mẫu

No	Symbol	Coordinates		Description
		N	E	
Air, noise and vibration (*)				
1	A1	10°39'43.1"	106°43'52.1"	Construction site office area between the package - Nha Be bank
2	A2	10°39'49.1"	106°43'38.2"	Household area at Sta: (Km 22+100.00) – nearly the gate of construction site on Road No. 01 - Nearly the intersection with Nguyen Van Tao street
3	A3	10°39'44.4"	106°44'3.0"	The Northern residential area of the package is nearly construction yard of Pier P19 - Nha Be Bank
Emission (If any) (**)				
1	E1	-	-	Concrete batching plant (Nha Be side)
Surface water				
1	SW1	10°39'45.0"	106°44'15.0"	Soai Rap river - 500m upstream of Binh Khanh bridge
2	SW2	10°39'35.0"	106°44'21.0"	Soai Rap river - 500m downstream of Binh Khanh bridge
3	SW3	10°39'21.0"	106°44'30.0"	Binh Khanh bridge construction area - Soai Rap river
Sediment (***)				
1	SD1	-	-	-
2	SD2	-	-	-
Underground water (If any) (***)				
1	GW1	-	-	-
Soil Quality (****)				
1	S1	10°39'44.0"	106°43'51.0"	Pier P10 at Sta: (Km22+400.00)
2	S2	10°39'37.0"	106°44'10.0"	Area nearly construction yard of Pier P19
Waste water (****)				
1	WW1	10°39'35.0"	106°44' 8.0"	Clarifier outlet of concrete batching plant (Nha Be side)
2	WW2	10°39' 9.0"	106°44' 8.0"	Mixing station drainage ditch
3	WW3	10°39' 9.0"	106°44' 8.0"	Worker camp (Nha Be side)

Annex 2: Pictures of ambient air, noise and vibration sampling

Phụ lục 2: Hình ảnh thu mẫu khí, đo tiếng ồn và độ dung

A1: Day time/ Ban ngày

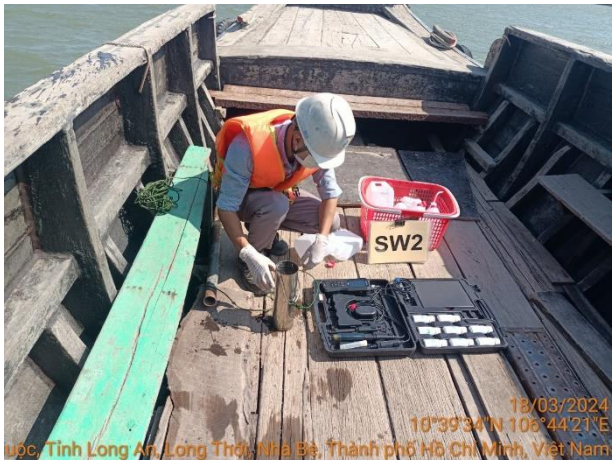
A1: Night time/ Ban đêm

A2: Day time/ Ban ngày

A3: Day time/ Ban ngày

Annex 3: Pictures of surface water, soil, and wastewater sampling
Phụ lục 3: Hình ảnh thu mẫu nước mặt, đất, và nước thải

Surface water sampling at SW1 /
Thu mẫu nước mặt tại SW1



Surface water sampling at SW2 /
Thu mẫu nước mặt tại SW2

Surface water sampling at SW3 /
Thu mẫu nước mặt tại SW3

Soil sampling S1 /
Thu mẫu đất S1

Soil sampling S2 / Thu mẫu đất S2

Wastewater sampling at WW1 /
Thu mẫu nước thải tại WW1

Wastewater sampling at WW3 /
Thu mẫu nước thải tại WW3

Annex 4: Sampling location diagram