Appendix

THE PROJECT FOR THE EXPANSION
OF WATER SUPPLY SYSTEM IN SVAY RIENG

Monthly Report
for
Environmental Monitoring
(February 2024)

March 2024

KUBOTA Construction Co., LTD.

Contents

(1) Monitoring Item List

(2) Environmental Monitoring (February 2024)

(3) Monitoring Record Sheet of EMP

(Daily)

1. Dust
2. Noise-1
3. Noise-2
4. Water Quality (Turbidity, Oil)
5. Water Quality

(Weekly)

6. Waste (Domestic)

(Monthly)

7. Condition of construction machinery and vehicles
8. Traffic management
9. Accident
10. Training and educational meeting to worker
11. Claim

(Others)

12. Land for waste dumping, Land for temporary use
13. Plan of safety transportation
14. Waste (Treatment Sludge)
15. Land for waste dumping
16. Noise and Vibration (Pump)

Monitoring Item List
(Specification)

Monitoring Item List

1) Daily Monitoring

Monitoring Item		Procedure	Reference Standard		Frequency	Remarks
Dust		Visual	Acceptable or not		Daily	
Noise		Sensory	Acceptable or not		Daily	85db at boundary
		Operation Time Check	Stated Operation Time in EMP		Daily	
Water Quality		Visual	Acceptable or not		Daily (During foundation work)	
Water Quality	pH	Laboratory Test	6.0-8.0	Determined by the monitoring result	In case of abnormal observation of turbidity or oil	
	EC		80μS/cm			
	BOD		10mg/L			
	Turbidity		500NTU			

2) Weekly Monitoring

Monitoring Item	Procedure	Reference Standard	Frequency	Remarks
Dust	Visual	Acceptable or not	Weekly	Weekly Patrol

3) Monthly Monitoring

Construction Site (Monthly Monitoring)

Monitoring Item	Procedure	Reference Standard	Frequency	Remarks
Condition of Constrtuction Machinery and Vehicles	Maintenance Record Check	Acceptable or not (Exhaust gas, Noise, Viblation, and Usual Safety Check)	Monthly	
Traffic Management	Patrol	Stated procedure in EMP	Monthly	Monthly Patrol
Accident	Patrol	Acceptable or not	Monthly	Monthly Patrol
Training and Educational Meeting to Worker	Report Check	Stated procedure in EMP (Frequency, Contents, Target, etc.)	Monthly	
Claim and Comment	Report Check	Acceptable or not	Monthly	

4) Others

Monitoring Item	Procedure	Reference Standard	Frequency	Remarks
Land for Waste Dumping Land for Temporary Use	Lease Condition	Acceptable or not	Cotract of Lease	
Plan Saafety Transportation	Plan Check	Acceptable or not	At Planning	

Monitoring Item	Procedure	Reference Standard	Frequency	Remarks
Waste (Treatment Sludge)	Patrol	Acceptable or not	Monthly	
Land for Waste Dumping	Procedure Check	Acceptable or not	At Contract Agreement	
Noise and Vibration	Patrol and Maintenance	Normal Condition or not	Daily	

Environmental Monitoring

(February 20240)

Air (PM2.5)

Noise

Vibration

Environmental Monitoring (February 2024)

Intake

Monitoring Item		Unit	Monitoring Date		Satandard
			20th Feb	29th Feb	
			Before start work	After start work	
Air	PM2.5	μg/m3	9	9	Less than 35
Noise	(L5)	db	70.6	77.8	Less than 85
Vibration	(L10)	db	53.8	53.6	Less than 75

20th Feb 2024 (Intake)

29th Feb 2024 (Intake)

WTP

Monitoring Item		Unit	Monitoring Date		Satandard
			20th Feb	29th Feb	
			Before start work	After start work	
Air	PM2.5	μg/m3	12	11	Less than 35
Noise	(L5)	db	64.5	65.0	Less than 85
Vibration	(L10)	db	37.1	39.2	Less than 75

20th Feb 2024 (WTP)

29th Feb 2024 (WTP)

Monitoring Record Sheet of EMP
(February 2024)

Health Safety and Environment Control

HSE Report

Monitoring Record Sheet of EMP

The following forms shall be applied for monitoring to ensure that EMP is fully followed and implemented during the execution of the work.

February, 2024

No	Item	Monitoring Cycle	Acceptable : ✓ Not Acceptable : ×	Remark
1	Dust	Daily	✔	
2	Noise - 1	Daily	✔	
3	Noise - 2	Daily	✔	
4	Water Quality - 1 (Turbidity, Oil)	Daily	✔	During foundation work
5	Water Quality - 2 (In case of abnormal observation of turbidity or oil)	Daily	✔	
6	Waste (Domestic)	Weekly	✔	
7	Condition of construction machinery and vehicles	Monthly	✔	
8	Traffic management	Monthly	✔	
9	Accident	Monthly	✔	
10	Training and educational meeting to worker	Monthly	✔	
11	Claim and coment	Monthly	✔	
12	Land for waste dumping, Land for temporary use	Contract of lease	✔	
13	Plan of safety transportation	At planning	✔	
14	Waste (tretment sludge)	Monthly	✔	
15	Land for waste dumping	At contract agreement	✔	
16	Noise and vibration	Daily	✔	

※ Monthly, Separate Environmental Report is Submitted.

1. Monitoring form for Dust

Daily

Monitoring item:		Monitoring indicator:
Dust		Procedure: Visual Inspection Reference Standard: Acceptable or not Frequency: Daily
Location		(Intake Facility and Water Treatment Plant)
Feb-24		Results
Day	Time	
1	7:30	Acceptable / Not acceptable
2	8:45	Acceptable / Not acceptable
3	9:00	Acceptable / Not acceptable
4	8:30	Acceptable / Not acceptable
5	10:35	Acceptable / Not acceptable
6	9:30	Acceptable / Not acceptable
7	10:00	Acceptable / Not acceptable
8	9:45	Acceptable / Not acceptable
9	14:00	Acceptable / Not acceptable
10	10:30	Acceptable / Not acceptable
11	8:30	Acceptable / Not acceptable
12	10:35	Acceptable / Not acceptable
13	8:40	Acceptable / Not acceptable
14	9:30	Acceptable / Not acceptable
15	14:30	Acceptable / Not acceptable
16	8:45	Acceptable / Not acceptable
17	14:40	Acceptable / Not acceptable
18	8:30	Acceptable / Not acceptable
19	7:30	Acceptable / Not acceptable
20	7:30	Acceptable / Not acceptable
21	14:50	Acceptable / Not acceptable
22	15:45	Acceptable / Not acceptable
23	8:40	Acceptable / Not acceptable
24	9:00	Acceptable / Not acceptable
25	8:30	Acceptable / Not acceptable
26	10:30	Acceptable / Not acceptable
27	16:30	Acceptable / Not acceptable
28	15:15	Acceptable / Not acceptable
29	16:10	Acceptable / Not acceptable

2. Monitoring form for Noise - 1

Daily

Monitoring item:	Monitoring indicator:		
Noise	Procedure: Sensory Inspection Reference Standard: Acceptable or not (Site Boundary Rerence Value: 85db) Frequency: Daily		
Location	(Intake Facility and Water Treatment Plant)		
Feb-24	Results	(Reference) Monitoring (db)	
Day / Time		Intake	WTP
1 / 7:35	Acceptable / Not acceptable	71	65
2 / 9:00	Acceptable / Not acceptable	70	64
3 / 9:45	Acceptable / Not acceptable	72	65
4 / 8:30	Acceptable / Not acceptable	72	65
5 / 10:45	Acceptable / Not acceptable	70	64
6 / 10:00	Acceptable / Not acceptable	70	62
7 / 10:30	Acceptable / Not acceptable	72	63
8 / 10:00	Acceptable / Not acceptable	71	63
9 / 14:30	Acceptable / Not acceptable	70	64
10 / 10:45	Acceptable / Not acceptable	72	65
11 / 8:30	Acceptable / Not acceptable	70	62
12 / 11:00	Acceptable / Not acceptable	70	63
13 / 9:00	Acceptable / Not acceptable	71	65
14 / 10:30	Acceptable / Not acceptable	71	64
15 / 14:30	Acceptable / Not acceptable	70	64
16 / 14:30	Acceptable / Not acceptable	71	64
17 / 14:40	Acceptable / Not acceptable	70	63
18 / 8:30	Acceptable / Not acceptable	72	64
19 / 7:30	Acceptable / Not acceptable	72	63
20 / 7:30	Acceptable / Not acceptable	71	65
21 / 14:50	Acceptable / Not acceptable	75	65
22 / 16:15	Acceptable / Not acceptable	75	64
23 / 8:30	Acceptable / Not acceptable	78	65
24 / 8:00	Acceptable / Not acceptable	76	64
25 / 8:30	Acceptable / Not acceptable	77	64
26 / 10:35	Acceptable / Not acceptable	77	65
27 / 16:00	Acceptable / Not acceptable	76	63
28 / 15:20	Acceptable / Not acceptable	77	66
29 / 16:10	Acceptable / Not acceptable	78	65

Before the start of construction, the noise that is not affected by the construction will be measured at the site boundary.

If the value is already above or close to the reference value, the contractor will report to the consultant the daily monitoring reference value.

3. Monitoring form for Noise - 2

Daily

Monitoring item:		Monitoring indicator:
Noise		Procedure: Operation time check Reference Standard: Stated operation time in EMP: 7:00 AM Frequency: Daily
Location		(Intake Facility and Water Treatment Plant)
Feb-24		Results
Day	Time	
1	7:30	Acceptable / Not acceptable
2	9:30	Acceptable / Not acceptable
3	10:00	Acceptable / Not acceptable
4	8:30	Acceptable / Not acceptable
5	11:00	Acceptable / Not acceptable
6	10:30	Acceptable / Not acceptable
7	10:45	Acceptable / Not acceptable
8	10:30	Acceptable / Not acceptable
9	15:00	Acceptable / Not acceptable
10	15:30	Acceptable / Not acceptable
11	8:30	Acceptable / Not acceptable
12	11:15	Acceptable / Not acceptable
13	9:30	Acceptable / Not acceptable
14	10:35	Acceptable / Not acceptable
15	14:45	Acceptable / Not acceptable
16	7:45	Acceptable / Not acceptable
17	7:40	Acceptable / Not acceptable
18	8:30	Acceptable / Not acceptable
19	8:00	Acceptable / Not acceptable
20	7:35	Acceptable / Not acceptable
21	7:30	Acceptable / Not acceptable
22	16:45	Acceptable / Not acceptable
23	8:30	Acceptable / Not acceptable
24	8:00	Acceptable / Not acceptable
25	8:30	Acceptable / Not acceptable
26	10:35	Acceptable / Not acceptable
27	15:35	Acceptable / Not acceptable
28	8:40	Acceptable / Not acceptable
29	15:50	Acceptable / Not acceptable

4. Monitoring form for Water Quality - 1 (Turbidity, Oil)

Daily

Monitoring item:		Monitoring indicator:
Water Quality (Turbidity, Oil)		Procedure: Visual Inspection (Turbidity, Oil) Reference Standard: Acceptable or not Frequency: Daily (during foundation work)
Location		(Intake Facility and Water Treatment Plant)
Feb-24		Results
Day	Time	
1	14:55	Acceptable / Not acceptable
2	10:30	Acceptable / Not acceptable
3	11:15	Acceptable / Not acceptable
4	8:30	Acceptable / Not acceptable
5	14:20	Acceptable / Not acceptable
6	15:00	Acceptable / Not acceptable
7	11:00	Acceptable / Not acceptable
8	10:30	Acceptable / Not acceptable
9	16:00	Acceptable / Not acceptable
10	15:30	Acceptable / Not acceptable
11	8:30	Acceptable / Not acceptable
12	14:00	Acceptable / Not acceptable
13	11:00	Acceptable / Not acceptable
14	14:30	Acceptable / Not acceptable
15	8:30	Acceptable / Not acceptable
16	14:55	Acceptable / Not acceptable
17	9:00	Acceptable / Not acceptable
18	8:30	Acceptable / Not acceptable
19	15:30	Acceptable / Not acceptable
20	15:50	Acceptable / Not acceptable
21	14:55	Acceptable / Not acceptable
22	8:30	Acceptable / Not acceptable
23	7:30	Acceptable / Not acceptable
24	8:40	Acceptable / Not acceptable
25	8:30	Acceptable / Not acceptable
26	11:15	Acceptable / Not acceptable
27	15:00	Acceptable / Not acceptable
28	9:00	Acceptable / Not acceptable
29	15:50	Acceptable / Not acceptable

5. Monitoring form for Water Quality - 2

Daily

*** In case of abnomal observation of turbidity or oil**

Monitoring item:		Monitoring indicator:
Water Quality		Procedure: pH, EC, BOD, Turbidity Reference Standard: Determined by the monitoring result Items / pH / EC / BOD / Turbidity Reference Value / 6-8 / 80µs/cm / 10mg/L / 500NTU Frequency: Daily (during foundation work)
Location		(Intake Facility and Water Treatment Plant)
Feb-24		Results
Day	time	
15-Feb-24	8:45	Items / pH / EC / BOD / Turbidity Monitoring Value Acceptable / Not acceptable — Under analysis. Waiting for the results Measures to be taken (if result is not acceptable);

6. Monitoring form for Waste (Domestic)

Weekly

Monitoring item:		Monitoring indicator:
Waste (Domestic)		Procedure: Patrol Reference Standard: Acceptable or not Frequency: Weekly
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
5-Feb-24	10:30	Acceptable / Not acceptable
12-Feb-24	10:30	Acceptable / Not acceptable
19-Feb-24	10:30	Acceptable / Not acceptable
26-Feb-24	10:30	Acceptable / Not acceptable

7. Monitoring form for Condition of construction machinery and vehicles

Monthly

Monitoring item:		Monitoring indicator:
Condition of construction machinery and vehicles		Procedure: Maintenance record check Reference Standard: Acceptable or not (Exhaust gas, noise, vibration, and usual safety check) Frequency: **Monthly**
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
1-Feb-24	8:00	Acceptable / Not acceptable
24-Feb-24	8:00	Acceptable / Not acceptable

8. Monitoring form for Traffic management

Monthly

Monitoring item:		Monitoring indicator:
Traffic management		Procedure: Patrol Reference Standard: Stated procedure in EMP Frequency: Monthly (Weekly by KCC)
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
5-Feb-24	10:30	Acceptable / Not acceptable
12-Feb-24	10:30	Acceptable / Not acceptable
19-Feb-24	10:30	Acceptable / Not acceptable
26-Feb-24	10:30	Acceptable / Not acceptable

9. Monitoring form for Accident **Monthly**

Monitoring item:		Monitoring indicator:
Accident		Procedure: Patrol Reference Standard: Acceptable or not Frequency: Monthly
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
29-Feb-24	18:00	Acceptable / Not acceptable Measures to be taken (if result is not acceptable);

10. Monitoring form for Training and educational meeting to worker **Monthly**

Monitoring item:		Monitoring indicator:
Training and educational meeting to worker		Procedure: Report check Reference Standard: Stated procedure in EMP (frequency, contents, target, etc.) Frequency: Monthly
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
1-Feb-24	7:30	Carry out / Not carry out
19-Feb-24	17:00	Carry out / Not carry out

11. Monitoring form for Claim **Monthly**

Monitoring item:		Monitoring indicator:
Claim		Procedure: Report check Reference Standard: Acceptable or not Frequency: Monthly
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
No have		Acceptable / Not acceptable Measures to be taken (if result is not acceptable);

12. Monitoring form for Land for waste dumping, Land for temporary use **Others**

Monitoring item:		Monitoring indicator:
Land for waste dumping, Land for temporary use.		Procedure: Lease Condition Reference Standard: Appropriate or not Frequency: Contract of lease
Location-1		Construction Site (Intake)
Location-2		Construction Site (WTP)
Location-3		Temporary Disporsal Area (WTP)
Location-4		Wast Dumping (Public Garbage Dump Area)
Location-5		Temorary Stockyard for Pipeline Material and Equipment)
Date	Time	Results
1-Feb-24	8:30	Location-1: Construction Site (Intake) Appropriate / Not appropriate
1-Feb-24	8:30	Location-2: Construction Site (WTP) Appropriate / Not appropriate
1-Feb-24	8:30	Location-3: Temporary Disporsal Area (WTP) Appropriate / Not appropriate
1-Feb-24	8:30	Location-4: Wast Dumping (Public Garbage Dump Area) Appropriate / Not appropriate
24-Feb-24	8:30	Location-5: Temporary Use for Stockyard of Pipeline Material and Equipment) Appropriate / Not appropriate

13. Monitoring form for Plan of safety transportation **Others**

Monitoring item:		Monitoring indicator:
Plan of safety transportation		Procedure: Plan check Reference Standard: Appropriate or not Frequency: At planning
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
16-Feb-24	13:30	Location: WTP (Treatment facilities) Appropriate / Not appropriate
19-Feb-24	13:30	Location: INTAKE (Pump Room, Channel, and Cofferdam) Appropriate / Not appropriate

14. Monitoring form for Waste (Treatment Sludge) **Monthly**

Monitoring item:		Monitoring indicator:
Waste (Treatment Sludge)		Procedure: Patrol Reference Standard: Appropriate or not Frequency: Monthly
Location		(Intake Facility and Water Treatment Plant)
Date	Time	Results
No have		Appropriate / Not appropriate Measures to be taken (if result is not acceptable);

15. Monitoring form for Land for waste dumping **Others**

Monitoring item:		Monitoring indicator:
Land for waste dumping		Procedure: Procedure check Reference Standard: Appropriate or not Frequency: At contract agreement
Location-1		Temporary Disporsal Area (WTP)
Location-2		Wast Dumping (Public Garbage Dump Area)
Date	Time	Results
1-Feb	8:30	Location-3: Temporary Disporsal Area (WTP) Appropriate / Not appropriate
1-Feb	8:30	Location-4: Wast Dumping (Public Garbage Dump Area) Appropriate / Not appropriate

16. Monitoring form for Noise and vibration **Daily**

Monitoring item:		Monitoring indicator:
Noise and Vibration (Pump)		Procedure: Patrol and maintenance Reference Standard: Normal condition or not Frequency: Daily
Location		(Intake Facility and Water Treatment Plant)
Feb-24		Results
Day	Time	
No have		Normal condition / Not normal condition Measures to be taken (if result is not acceptable);