Environmental Monitoring Report

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India: Tripura Urban and Tourism Development Project

PART B

Prepared by Project Management Unit, Urban Development Department, Government of Tripura for Asian Development Bank (ADB).

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Figure 12H: Air and Noise monitoring sites at Belonia (Cluster IIA town)



Figure 12I: Air, Noise and surface water monitoring sites at Udaipur (Cluster IIA town)

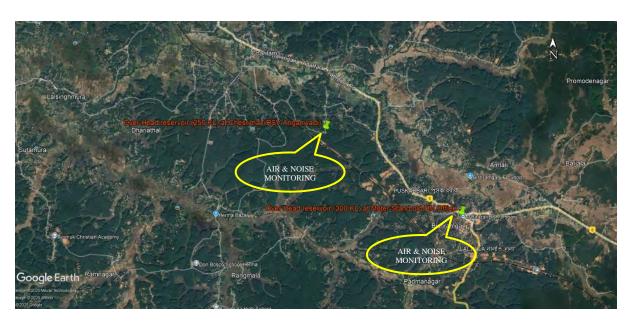


Figure 12J: Air and Noise monitoring sites at Bishramganj (Cluster IIA town)



Figure 12K: Air and Noise monitoring sites at Melaghar (Cluster IIA town)

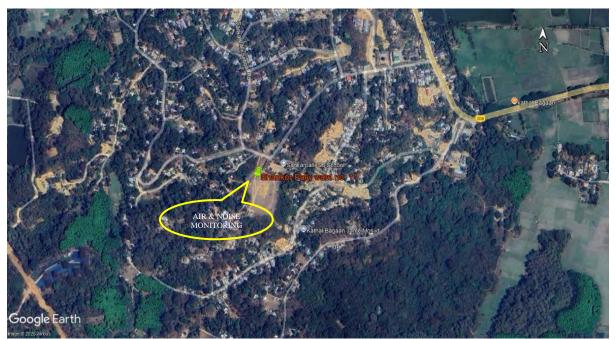


Figure 12L: Air and Noise monitoring sites at Amarpur pipeline site (Cluster IIA town)

69. <u>Monitoring Locations of Tourism sector Packages</u>. Monitoring locations are shown with Co-ordinate in Table below and in Figures followed.

Table 17: Ambient Air quality, Noise level and surface & ground water quality Monitoring Locations: Tourism sector packages –During construction, January 2025 and December 2024

	2024						
Sr. No.	Monitoring Location	Co-ordinates					
	Package Tourism Destination Development at Chabimura and Upgradation/ Beautification of Visitor Amenities/ Facilities at Fatik Sagar and Amar Sagar (TTDCL/CHB/W 01) (January 2025)						
Monitorin	g Phase: During construction						
1	Chabimura (Near Project Office) (Air quality)	23.553889° N, 91.614722° E					
2	Amarsagar- near project site (Air quality)	23.526389° N, 91.655556° E					
3	Fatiksagar- near project site (Air quality)	23°51638 N, 91.653333° E					
4	Chabimura (Near Project Office) (Noise level)	23.558333° N, 91.6125° E					
5	Amarsagar- near project site (Noise level)	23.526111° N, 91.655833° E					
6	Fatiksagar- near project site (Noise level)	23.516389° N, 91.653056° E					
7	Chabimura`(Surface water)	23.552914° N, 91.613204° E					
8	Amarsagar (Surface water)	23.526646° N, 91.655988° E					
9	Fatiksagar (Surface water)	23.517136° N, 91.653767° E					
10	Chabimura (Ground water)	23.551493° N, 91.628885° E					
11	Amarsagar(Ground water)	23.527855° N, 91.656465° E					
12	Fatiksagar(Ground water)	23.51641° N, 91.653596° E					
	Package - Development of Sonamukhi Eco Accommodation & Adventure Park and Rehabilitation of Unakoti Tourist Lodge at Kailashahar (TTDCL/UKT/W04) (December 2024)						
Monitorin	Monitoring Phase: During construction						
Sonamuk	Sonamukhi area						

Sr. No.	Monitoring Location	Co-ordinates
1	Sonamukhi tea garden starting point (Air quality)	24°16′29.0496″N, 92°2′9.0636″E
2	Sonamukhi tea garden end point (Air quality)	24°16′29.7912″N, 92°1′54.534″E
3	Sonamukhi tea garden end point (Noise level)	24.274920° N, 92.031815° E
4	Sonamukhi pond (Surface water)	24°16′21.738″N, 92°2′10.2984″E
5	Sonamukhi bore well (Ground water)	24°16′30.7704″N, 92°2′10.1976″E
Unakoti Lo	odge area	
6	Unakoti tourist lodge (Air quality)	24.330303° N, 91.998833° E
7	Unakoti tourist lodge (Noise level)	24.330032° N, 91.998779° E
8	Kathal dighi pond – beside Unakoti tourist lodge (Surface water)	24°19′44.2452″N, 91°59′56.292″E
9	Ground water near Unakoti tourist lodge (Ground water)	24°19′52.1472″N, 91°59′56.5656″E



Figure 13A: Air, noise and water quality monitoring sites at Chabimura



Figure 13B: Air, noise and water quality monitoring sites at Amarsagar area



Figure 13C: Air, noise, and water quality monitoring sites at Fatiksagar area



Figure 14A: Air, noise, surface and ground water sampling locations in and around Sonamukhi project area



Figure 14B: Air, noise, surface and ground water sampling locations in and around Unakoti Lodge project area

C Method of Monitoring and Equipment used

70. Ambient Air Quality Monitoring Equipment and Methodology. Respirable Dust Samplers and Fine Dust Samplers (Model no.-APM-860/APM-154) have been used to collect

samples for PM (10) and PM (2.5) in ambient air at a flow rate of 1.2 m³/min. The ambient air was sucked through the cyclone and filter paper by a blower. Samples of gases were drawn at a flow rate of 0.5 liters per minute and were analysed in the laboratory. Ambient air quality monitoring methodology is given in table below.

Table 18: Methodology for the ambient air monitoring

SI.	Parameters	Measurement Method	As per
No			
1.	PM ₁₀	Gravimetric	IS:5182 Part-23, RA-2017
2.	PM _{2.5}	Gravimetric	USEPA CFR-40, Part-50
3.	SO ₂	Colorimetric (EPA modified West & Gaeke	IS:5182 Part-2, 2001, RA-
		Method)	2017
4.	NO _X	Colorimetric (Arsenite modified Jacobs &	IS:5182 Part-6, 2006, RA-
		Hochheiser Method)	2017
5.	CO	Non-Dispersive Infra-Red (NDIR) Spectroscopy	IS:5182 Part-10, 1999, RA-
		Technique	2014

- 71. **Methodology of Surface and Ground Water Monitoring.** In order to establish baseline/ during construction conditions, grab samples were collected from water source and were analysed for various parameters as per the procedures laid down in the BIS. Samples were collected as per IS- 2488 (Part I-V). Surface water samples were analysed as per surface water quality criteria by Central Pollution Control Board (CPCB) for class B and C. Ground water samples were also analysed as per method provided by CPCB. Wet chemical, Atomic Absorption Spectrophotometer and UV/VIS Spectrophotometer were used for analysis of water samples according to the necessity.
- 72. **Methodology of Noise Level Monitoring**. Lutron Data logger Noise Meter (Model SL 4023 SD) was used to monitor the noise levels. Noise level was monitored continuously for 24 hours with one-hour interval. Noise level was measured in the form of Leq dB(A), Day and Night

D. Monitoring results and analysis of results

73. Monitoring results and analysis of results are presented below for sub projects under urban and tourism sectors

I. Environmental Monitoring Results for Urban Sector projects

74. **Table 19** shows monitoring results for Urban sector project

Table 19: Ambient Air Quality Monitoring Results- Urban sector packages – Baseline/
Pre-construction March 2025 (Cluster IIIA water supply)

Town	Date of	Site Location	Parameters							
	Testing		PM ₁₀	PM _{2.5}	CO	SO ₂	NO ₂			
			(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)			
Contract Packag	Contract Package – Cluster IIIA water supply									
Monitoring Phas	e: Pre -Constru	ction-March 2025								
Kumarghat	19.03.2025	250 KL OHSR, 2.3 MLD	142	75	1052	7.8	34.3			
		WTP & 4 MLD intake								
		well at AWC Moti								
		Colony, Kumarghat								
	19.03.2025	Pipeline-1 at Sukanta	98	52	995	7.2	32.1			

Town	Date of	Site Location		P	arameters		
	Testing		PM ₁₀	PM _{2.5}	CO	SO ₂	NO ₂
			(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)
		Pally, Kumarghat					
	20.03.2025	Pipeline-2 at Townhall, Kumarghat	56	26	664	5.1	27.3
Kailashahar	20.03.2025	2.45 MLD WTP, Kailashhar	103	52	1098	7.4	32.8
	21.03.2025	250 KL OHSR, Kailashahar	38	15	480	4.8	22.5
	21.03.2025	Kailasahar Municipal Council Pipeline	111	58	1110	7.8	33.8
	22.03.2025	300 KL OHSR, Near Kalipur JB School	64	33	812	6.4	29.4
Dharmanagar	23.03.2025	250KL OHSR, Dharmanagar circuit house	49	21	515	5	25.7
	23.03.2025	10.8 MLD WTP, 14MLD Intake well Near college Road Dharma Nagar	44	23	480	5	25.4
	24.03.2025	350 KL OHSR, Dharmanagar ISBT	86	41	984	6.9	32.1
	24.03.2025	Pipeline, Dharmanagar Municipal council	118	52	1133	7.5	35
Ambassa	26.03.2025	600 KL OHSR, Magazine Para, Ambassa Town	96	44	1007	7.3	32.6
	26.03.2025	10000 GPH Capacity DTW Dolubari	102	48	1030	7	31
	27.03.2025	Pipeline-1, Dolubari, Ambassa	130	63	1167	7.7	34.5
	27.03.2025	Pipeline-2, Ambassa Municipal Council	144	70	1190	8.3	35.7
National Am		y Standard (NAAQS)	100	60	2000	80	80
	WHO standard	d - 2021	45	15	4000	40	25

Note: National level Central Pollution Control Board's (Govt. of India) guideline/ protocol used for sampling, for analysis. INDIAN STANDARD IS 5182 and USEPA CFR 40 (International protocol) used for analysis

75. Baseline air quality monitoring results indicate that PM10 and PM2.5 values of cluster IIIA project sites are mostly higher than the prescribed National Ambient Air Quality standard, however not by much. Out of 15 locations where PM levels were monitored, 7 locations were found to have PM₁₀ levels higher than the prescribed NAAQS and 3 locations were found to have PM_{2.5} levels higher than the prescribed NAAQS. Level of PM₁₀ and PM_{2.5} are mostly above the WHO standard. Maximum PM₁₀ level (144 μ g/m³) is noted at Pipeline-2, Ambassa Municipal Council site. Level of SO₂, NO₂ and CO are much below the NAAQ standard at all the towns' project locations. The increased PM₁₀ and PM_{2.5} levels may be attributed to the fact that there is movement of vehicles in the existing roads adjacent to the locations where the PM levels were found to be higher than the standards, generating road dust. Also, the existing roads include National Highways as well as PWD roads.

Table 20: Ambient Air Quality Monitoring Results- Cluster IA & Cluster IIA water supply packages – Baseline and During Construction March 2025

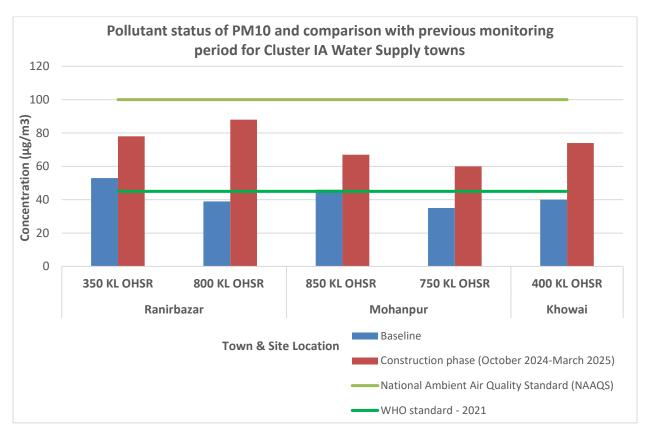
Town	Date of	Site Location	Parameters				
	Testing		PM ₁₀	PM _{2.5}	СО	SO ₂	NO ₂ (μg/m ³)
Contract Books	es Cluster IA	water cumply	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m²)
Contract Packa							
Monitoring Pha Ranirbazar	27.03.2025		78	34	847	6.9	23.6
Railli Dazai	27.03.2025	350 KL OHSR and pipeline laying* near Nalgaria	70	34	047	0.9	23.0
	27.03.2025	800 KL OHSR at Krishna talli, ward no. 11	88	49	972	7.8	24.5
Mohanpur	28.03.2025	850 KL OHSR at old MMC ward no.15	67	41	664	8.4	28.7
	28.03.2025	750 KL OHSR and pipeline laying* at Tulabagan	60	39	721	8.6	25.3
Khowai	28.03.2025	400 KL OHSR near WTP Campus ward no. 12	74	30	835	8.2	26.3
Contract Packa	ge - Cluster IIA	water supply					
Monitoring Pha	se: Base line a	nd Construction-March 20	25				
Belonia	31.03.2025	400 KL OHSR near Abul Kalam Community Hall	85	48	915	8.1	28.4
	31.03.2025	300 KL OHSR near Satmura SB School	91	58	686	8.8	26.8
Udaipur	29.03.2025	Over Head reservoir (900 KL) at Netaji Nagar	86	59	915	9.5	25.5
	29.03.2025	Over Head reservoir (750 KL) near Rajasri Town Hall	82	36	789	7.3	22.3
Bishramganj	30.03.2025	Over Head reservoir (250 KL) at Chesrimai (RSV Anganwadi)	90	42	629	9.8	24.6
	30.03.2025	Over Head reservoir (300 KL) at Moter Stand old DM Office	63	38	984	9.1	27.8
Melaghar	30.03.2025	Over Head reservoir (450 KL) at Radhamadhabpur JB School	97	54	847	10.2	30.2
Amarpur	31.03.2025	Shankor Pally ward no. 11 – pipeline area (Base line)	94	45	1030	7.9	30.5
NI-d' 1.5		(O(I I (NA A OO)	400		0000	00	
National Am	ibient Air Quali WHO standar	ty Standard (NAAQS)	100	60	2000	80	80
	45	15	4000	40	25		

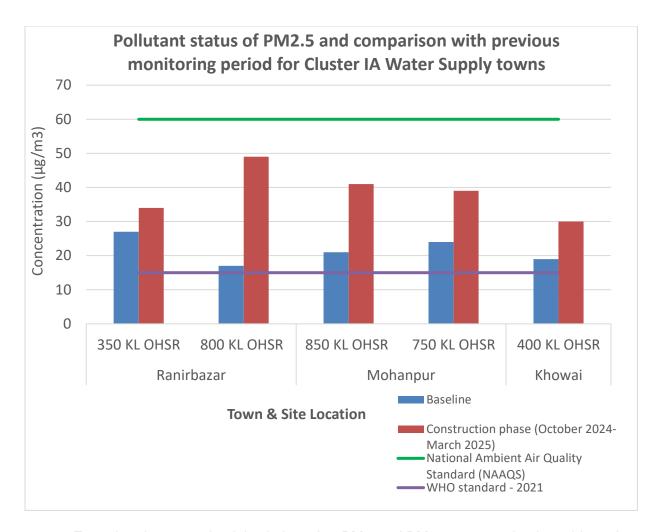
Note: National level Central Pollution Control Board's (Govt. of India) guideline/ protocol used for sampling, for analysis. INDIAN STANDARD IS 5182 and USEPA CFR 40 (International protocol) used for analysis Monitoring results are during construction, except one location - Shankor Pally ward no. 11- pipeline area is for base line. *Pipeline laying just started nearby the OHSR locations, hence environmental monitoring was conducted at the same location for both OHSR and pipeline (baseline monitoring only for pipeline).

76. Construction phase air quality monitoring results indicate that PM₁₀ and PM_{2.5} values of cluster IA project sites are within the National Ambient Air Quality standard. Level of PM₁₀ and

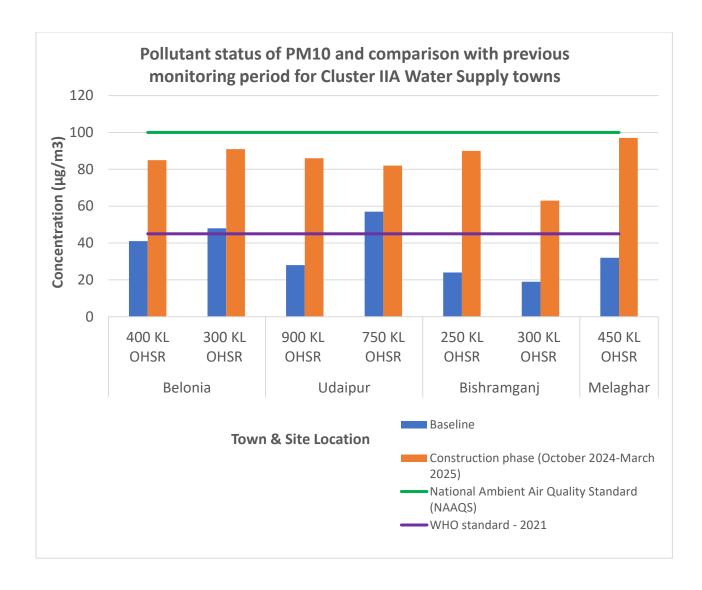
 $PM_{2.5}$ is generally above the WHO standard. Maximum PM_{10} level (97 μ g/m³) is noted at Ranirbazar (800 KL OHSR at Krishna talli, ward no. 11) site. Level of SO_2 , NO_2 and CO are much below the NAAQ standard at all the towns project locations. Sametime baseline monitoring results at pipelaying sites are within the NAAQ standard.

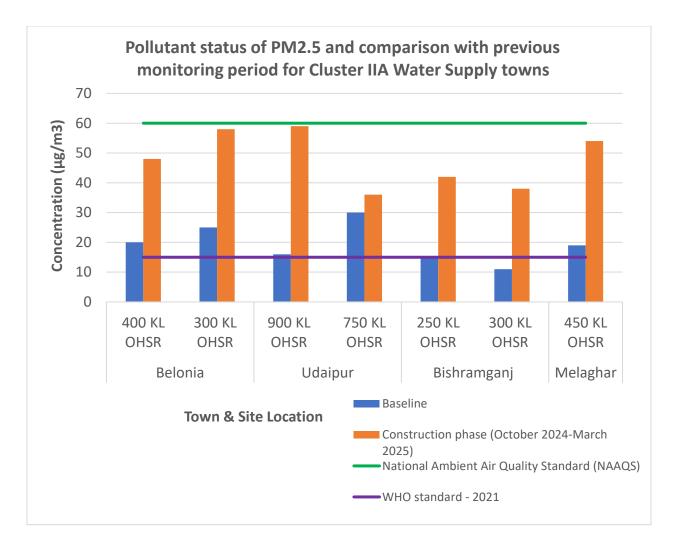
77. Based on data collection and analysis over time at the various locations, it is evident that the air quality at a particular location is more influenced by the season; however, impact from project activities also plays its part depending on the wind direction and distance from the project activity. Accordingly, the comparison of air quality data is presented in the graphs below.





- 78. From the above graphs, it is obvious that PM_{10} and $PM_{2.5}$ concentration in ambient air are exhibiting more or less similar pattern for all locations. At all the locations, the latest during construction monitoring conducted on March, 2025, for PM_{10} and $PM_{2.5}$ shows that concentration has increased from previous baseline monitoring (September, 2024).
- 79. The increasing trend observed at the monitoring locations is relatively higher due to a number of dusts generating activities (windy condition) being underway.
- 80. Construction phase air quality monitoring results indicate that PM_{10} and $PM_{2.5}$ values of cluster IIA project sites are within the National Ambient Air Quality standard. Level of PM_{10} and $PM_{2.5}$ is generally above the WHO standard Maximum PM_{10} level (97 μ g/m³) is noted at Melaghar (Over Head reservoir at Radhamadhabpur JB School) site. Level of SO_2 , NO_2 and CO are much below the NAAQ standard at all the towns project locations.





- 81. From the above graph, it is obvious that PM₁₀ and PM_{2.5} concentration in ambient air are exhibiting more or less similar pattern for all locations. At all the locations, the latest during construction monitoring conducted on March, 2025, for PM₁₀ and PM_{2.5} shows that concentration has increased from previous baseline monitoring period (September, 2024).
- 82. The increasing trend observed at the monitoring locations is relatively higher due to several dusts generating activities being underway.

Table 21 Ambient Noise Level Monitoring Results- Cluster IIIA water supply package – Baseline/ Pre-construction March 2025

Site No	Date of Testing	Site Location/ Land use	Leq dB(A)					
			Day Time	Night Time				
Contract Packag	Contract Package: Cluster IIIA water supply							
Monitoring Phas	e: Pre- construction	on-March 2025						
Kumarghat	19.03.2025	250 KL OHSR, 2.3 MLD WTP & 4 MLD intake	55.1	46.3				
		well at AWC Moti Colony, Kumarghat, C						
	19.03.2025	Pipeline-1 at Sukanta Pally, Kumarghat, C	56	44.6				
	20.03.2025	Pipeline-2 at Townhall, Kumarghat, C	57	45.7				
Kailashahar	20.03.2025	2.45 MLD WTP, Kailashahar, C	55.3	43.9				
	21.03.2025	250 KL OHSR, Kailashahar, C	56.7	45.1				

Site No	Date of	of Testing Site Location/ Land use			Leq	dB(A)
					Day Time	Night Time
	21.03	3.2025	Kailasahar Municipal Council P	ipeline, C	58.6	46.3
	22.03	3.2025	300 KL OHSR, Near Kalipur JE	School, C	60.2	47.2
Dharmanagar	23.03	3.2025	250KL OHSR, Dharmanagar C	ircuit house, B	57.5	46.4
	23.03	3.2025	10.8 MLD WTP, 14MLD Intal	ke well Circuit	57.9	47
			house, near college Road Dhar	rma Nagar, B		
	24.03	3.2025	350 KL OHSR, Dharmanagar IS	SBT, B	59.1	47.2
	24.03	3.2025	Pipeline, Dharmanagar Municip	oal council, B	58.9	46.4
Ambassa	26.03	3.2025	600 KL OHSR, Magazine P	ara, Ambassa	58.3	46.2
			Town, C			
	26.03	3.2025	10000 GPH Capacity DTW Dol	lubari, C	61.2	47.9
	27.03	3.2025	Pipeline-1, Dolubari, Ambassa, C		58.7	46.4
	27.03	3.2025	Pipeline-2, Ambassa Municipal	Council, B	56.8	45.6
Code/Catego	ory	Leq D	Day Time dB(A) – Standard	Leq Night T	ime dB(A) -	Standard
A/ Industrial			75		70	
B/ Commercial			65		55	
C/ Residential			55		45	_
D/Ecological- Se	nsitive		50		40	_

83. For cluster IIIA Towns project locations base line day time noise level more or less is above the standard at residential area, but within the standard, at commercial area. Whereas night time noise level within the standard at commercial area, but above the standard at residential area. Comparatively higher values are due to the local activity, movement of vehicle nearby the monitoring locations.

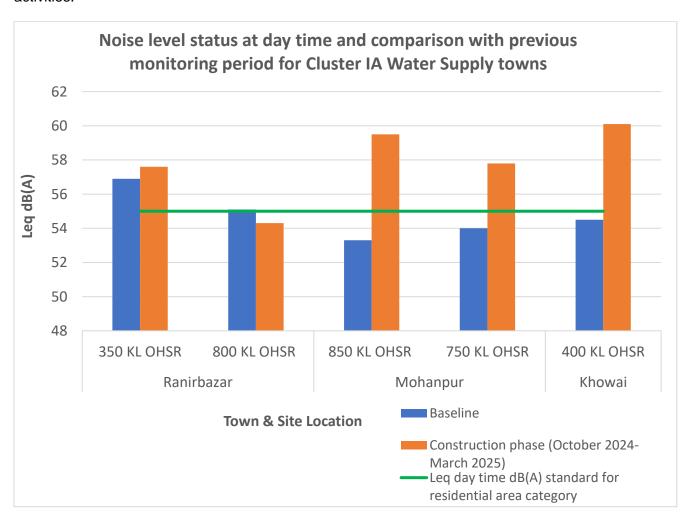
Table 22: Ambient Noise Level Monitoring Results- Cluster IA & Cluster IIA water supply packages – During Construction and Base line, March 2025

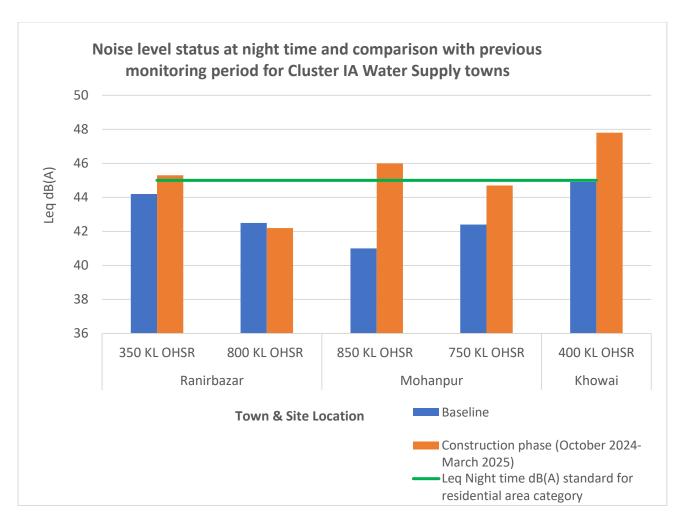
Site No	Date of Testing	Site Location/ Land use	Lea	dB(A)						
3.13		310 200000 2010	Day Time							
Contract Package	Contract Package: Cluster IA water supply									
Monitoring Phase	Monitoring Phase: During and Pre- construction-March 2025									
	27.03.2025	350 KL OHSR and pipeline laying* near	57.6	45.3						
Ranirbazar		Nalgaria, C								
	27.03.2025	800 KL OHSR at Krishna talli, ward no. 11, C	54.3	42.2						
Mohanpur	28.03.2025	850 KL OHSR at old MMC ward no.15, C	59.5	46						
	28.03.2025	750 KL OHSR and pipeline laying* at	57.8	44.7						
		Tulabagan, C								
Khowai	28.03.2025	400 KL OHSR near WTP Campus ward no.	60.1	47.8						
		12, C								
Contract Package	e – Cluster IIA wat	er supply								
Monitoring Phase	e: Construction-Ma	arch 2025								
Belonia	31.03.2025	400 KL OHSR near Abul Kalam Community	56.1	43.6						
		Hall, C								
	31.03.2025	300 KL OHSR near Satmura SB School, C	55.7	44.3						
Udaipur	29.03.2025	Over Head reservoir (900 KL) at Netaji Nagar,	58.9	45.3						
		C								
	29.03.2025	Over Head reservoir (750 KL) near Rajasri	56.8	43.9						
		Town Hall, C								
Bishramganj	30.03.2025	Over Head reservoir (250 KL) at Chesrimai	60.0	46.1						
		(RSV Anganwadi), C								

Site No Date of Testing			Site Location/ Land	use	Leq dB(A)	
					Day Time	Night Time
	30.03.2025		Over Head reservoir (300 KL) a old DM Office, C	57.2	43.5	
Melaghar	30.03.2025		Over Head reservoir (4: Radhamadhabpur JB School, R	,		
Amarpur	31.03	3.2025	Shankor Pally ward no. 11 , pipe	eline laying, R	51.5	41.4
Code/Catego	ory	Leq D	Day Time dB(A) – Standard	Leq Night T	ime dB(A) -	Standard
A/ Industrial			75		70	
B/ Commercial		65		55		
C/ Residential		55		45		
D/Ecological- Sensitive			50	40		

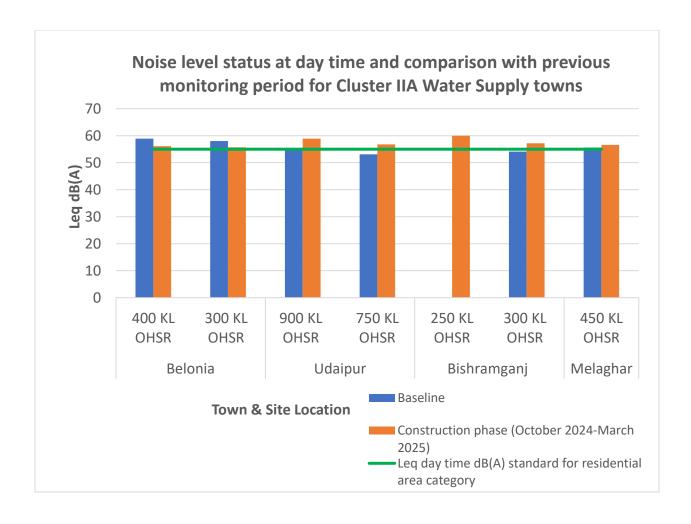
^{*}pipeline laying just started nearby the OHSR locations, hence environmental monitoring was conducted at the same location for both OHSR and pipeline (baseline monitoring only for pipeline).

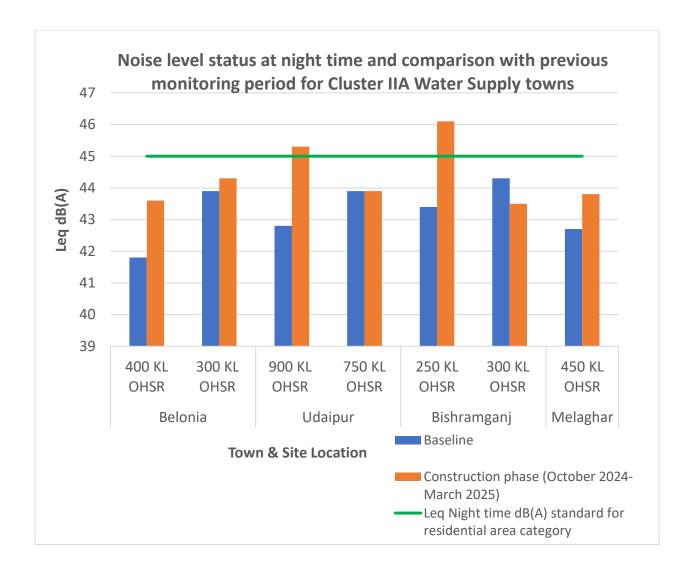
84. Noise level data collected over time at the various zones and analysis based on graphs below shows that the noise quality at different location varies by the level of noise generating activities.



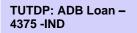


- 85. The plotted graph shows that the daytime noise level at the monitored locations in March 2025 (except for 800 KL OHSR at Ranirbazar) is above the prescribed day time limits for residential land uses. This may be attributed to continuous construction work being undertaken, however, proper precautionary measures such as provision of noise barriers are being undertaken by the contractor at all places during construction work.
- 86. Also, the monitored locations (except 800 KL OHSR at Ranirbazar and 750 KL OHSR at Mohanpur) show nighttime noise levels to be higher than the prescribed night time limits for residential land uses. However, no nighttime activities are being undertaken. The increase in the noise levels may be due to the movement of vehicles which have increased in the recent times.
- 87. For cluster IIA Towns project locations construction phase day time noise level is slightly higher than the standard, whereas night time noise level is more or less within the standard. This may be attributed to the fact that construction works are ongoing in all the clusters in full fledge. During daytime variation of baseline and during construction noise is not much. During construction, night time noise level is more than the baseline level at most of the cases. No nighttime activities are being undertaken. The increase in the noise levels may be due to the movement of vehicles which have increased in the recent times.





- 88. The plotted graph shows that the daytime noise level at the monitored locations in March 2025 is above the prescribed day time limits for residential land uses, though not by much. This may be attributed to continuous construction work being undertaken, however, proper precautionary measures such as provision of barriers are being undertaken by the contractor at all places during construction work.
- 89. Also, the monitored locations (except 900 KL OHSR at Udaipur and 250 KL OHSR at Bishramganj) show nighttime noise levels to be lower than the prescribed night time limits for residential land uses. However, no nighttime activities are being undertaken at any of the locations. The increase in the noise levels at the two exceptional locations may be due to the movement of vehicles which have increased in the recent times.
- 90. All original test certificates are available with PIU and PMSC office as back-up.
- 91. Surface water monitoring was not conducted for the Cluster IA and Cluster IIA locations as no surface water contamination was observed during the construction period.



II. <u>Environmental Monitoring Results for Tourism Sector projects</u>

92. **Table 23** shows monitoring results for Tourism sector project.

Ambient Air Quality

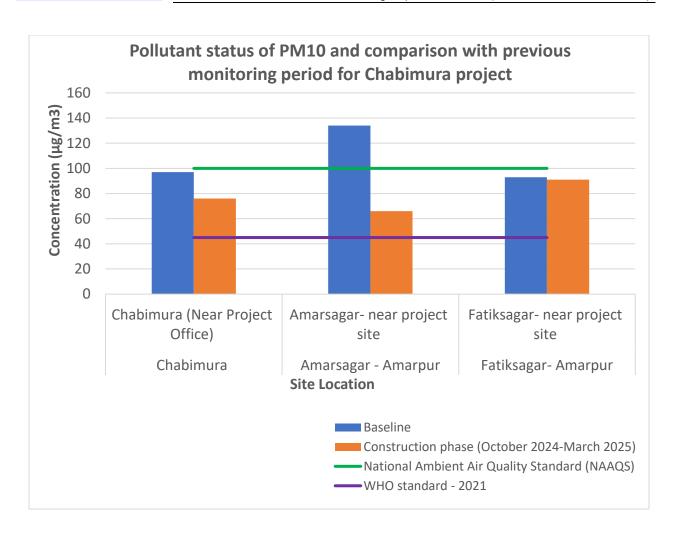
Table 23: Ambient Air Quality Monitoring Results- Tourism sector packages – Construction phase December 2024 – January 2025

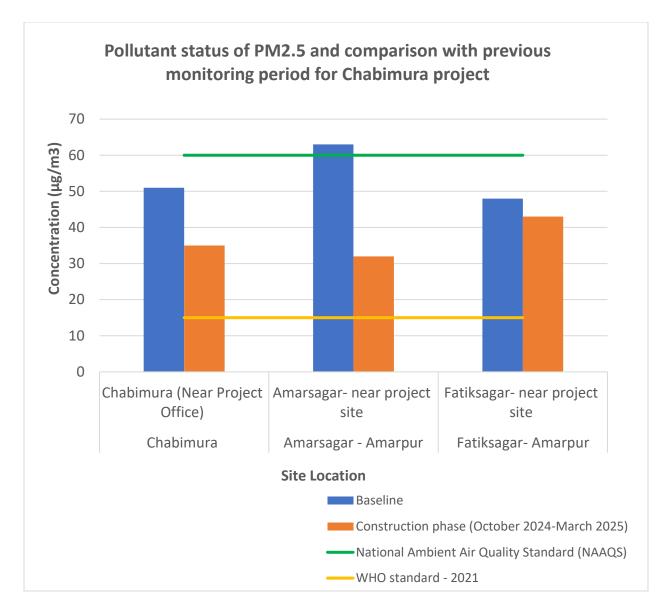
Locations	Date of	Monitoring Locations	Parameters							
	Testing		PM ₁₀	PM _{2.5}	CO	SO ₂	NO ₂			
			(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)			
	Package Tourism Destination Development at Chabimura and Upgradation/ Beautification of Visitor Amenities/									
	Facilities at Fatik Sagar and Amar Sagar (TTDCL/CHB/W 01)									
Monitoring Ph	ase: Construction									
Chabimura	15.01.2025	Chabimura (Near Project Office)	76	35	778	7.0	19.1			
Amarsagar - Amarpur	14.01.2025	Amarsagar- near project site	66	32	744	6.3	23.2			
Fatiksagar- Amarpur	13.01.2025	Fatiksagar- near project site	91	43	.892	7.8	28.5			
Package - Dev	elopment of Sor	namukhi Eco Accommodatior	& Adven	ture Park a	nd Rehabi	litation of I	Unakoti			
		TTDCL/UKT/W04)								
Monitoring Ph	ase: Construction	on-December 2024								
Sonamukhi	24.12.2024	Sonamukhi tea garden starting point	75.2	39.7	780	8.3	23.4			
	25.12.2024	Sonamukhi tea garden end point	87.6	48.5	920	9.4	25.2			
Unakoti	24.12.2024	Unakoti tourist lodge	62.8	29.9	640	<6.0	18.9			
National	Ambient Air Qua	lity Standard (NAAQS)	100	60	2000	80	80			
*Interior to	WHO standa	ard - 2021	45	15	4000	40	25			

^{*}Interim target 2

Note: National level Central Pollution Control Board's (Govt. of India) guideline/ protocol used for sampling, for analysis. INDIAN STANDARD IS 5182 and USEPA CFR 40 (International protocol) used for analysis

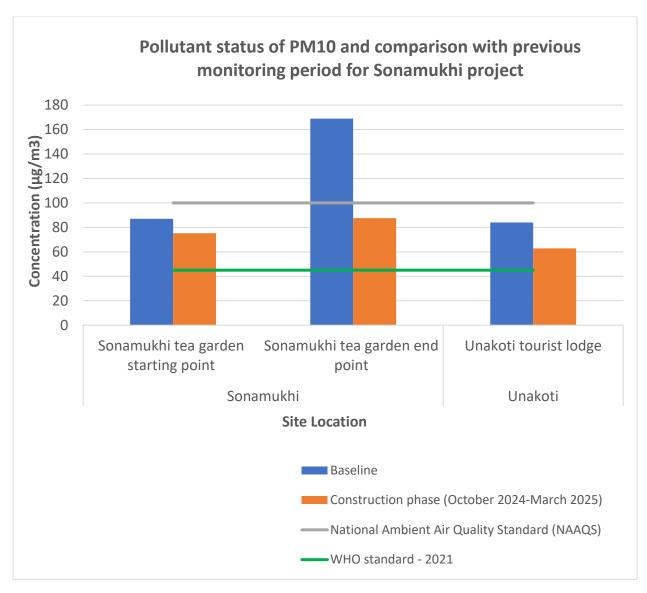
93. Construction phase air quality monitoring near the project (TTDCL/CHB/W 01) locations of Chabimura, Fatiksagar and Amarsagar lakes has been carried out through accredited environmental monitoring agency. It is noted that the concentration of air quality parameters is within the National Ambient Air Quality Standards for the all the locations, Chabimura, Fatiksagar and Amarsagar. Both PM_{10} and $PM_{2.5}$ values are above the WHO standards. However, concentrations of other parameters like SO_2 , NO_2 and CO are found to be within the NAAQ permissible limits.

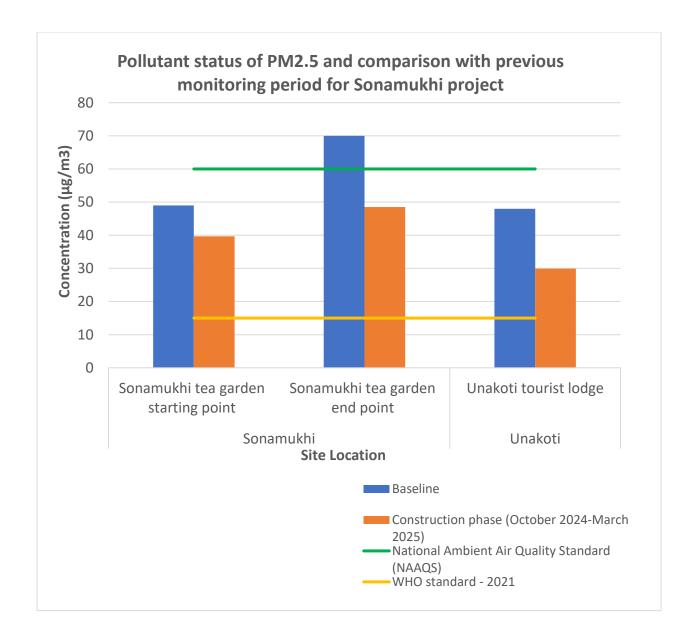




- 94. From the above graph, it is obvious that PM_{10} and $PM_{2.5}$ concentration in ambient air are exhibiting similar pattern for all locations. At all the locations, the latest during construction monitoring conducted on January, 2025 for PM_{10} and $PM_{2.5}$ shows that concentration has decreased from previous monitoring period (Baseline, April, 2024).
- 95. The decreasing trend observed at the monitoring locations is attributed to effective mitigation of a number of dusts generating activities being underway through regular water sprinkling, using low emission equipment, etc.
- 96. Construction phase air quality monitoring near the project ((TTDCL/UKT/W04)) locations of Sonamukhi and Unakoti lodge has also been carried out through accredited environmental monitoring agency. It is observed that the concentration of air quality parameters is within the National Ambient Air Quality Standards for the all the locations, i.e., Sonamukhi starting point, end of Sonamukhi site and Unakoti lodge site. Both PM₁₀ and PM_{2.5} values are above the WHO

standards. However, concentrations of other parameters like SO_2 , NO_2 and CO are found to be within the NAAQ permissible limits.





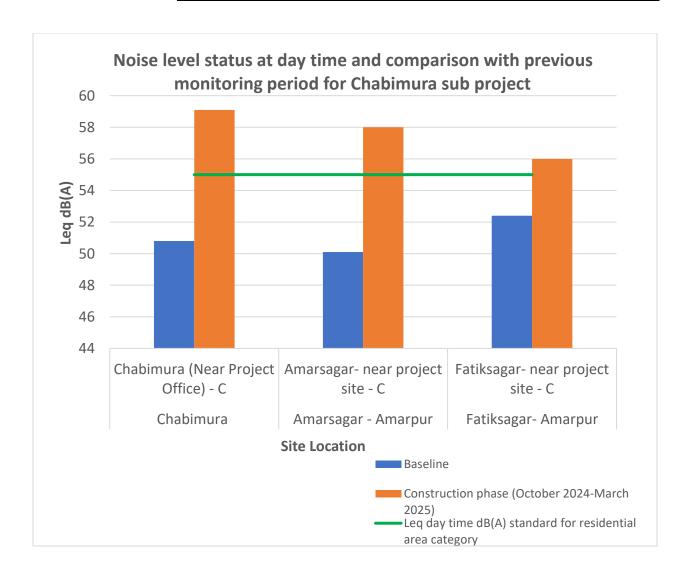
- 97. From the above graph, it is obvious that PM_{10} and $PM_{2.5}$ concentration in ambient air are exhibiting similar pattern for all locations. At all the locations, the latest during construction monitoring conducted on December, 2024 for PM_{10} and $PM_{2.5}$ shows that concentration has decreased from previous monitoring period (Baseline, April, 2024).
- 98. The decreasing trend observed at the monitoring locations is attributed to effective mitigation of a number of dusts generating activities being underway through regular water sprinkling, using low emission equipment, etc.

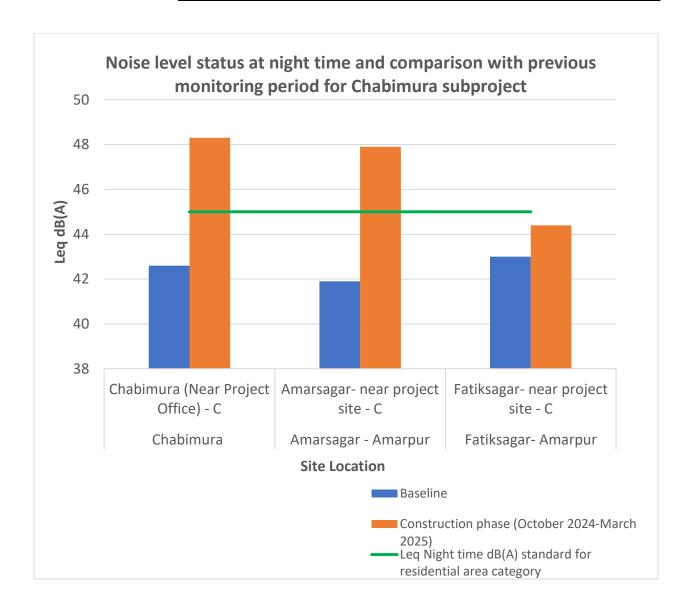
Ambient Noise Level

Table 24: Ambient Noise Level Monitoring Results- Tourism sector packages – Construction phase December 2024 – January 2025

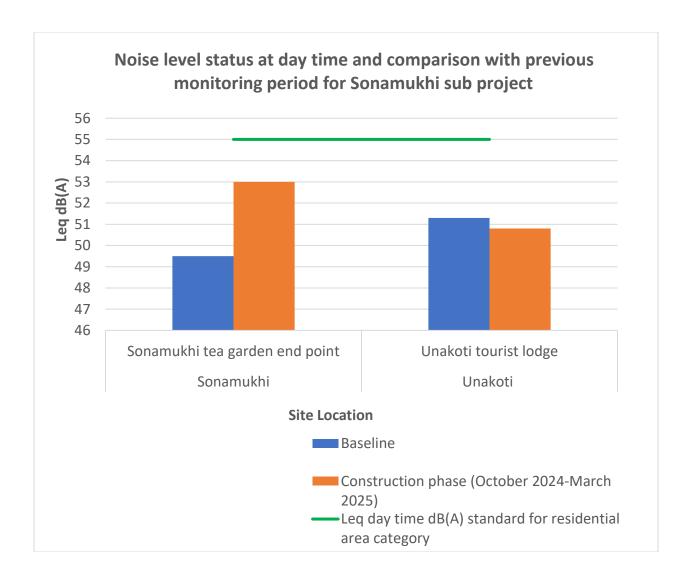
Site No	Dat	te of	Site Location/ Land use		Leq dB(A)		
	Tes	sting			Day	Night	
					Time	Time	
Package Tourism Destination Development at Chabimura and Upgradation/ Beautification of							
Visitor Amenities/ Facilities at Fatik Sagar and Amar Sagar (TTDCL/CHB/W 01)							
Monitoring Phase: Construction-January 2025							
Chabimura	15.01	1.2025	Chabimura (Near Project Office) - C 59.1 48.3			48.3	
Amarsagar -	14.01	1.2025	Amarsagar- near project site	58.0	47.9		
Amarpur							
Fatiksagar-	13.01	1.2025	Fatiksagar- near project site - C		56.0	44.4	
Amarpur							
Package - De	Package - Development of Sonamukhi Eco Accommodation & Adventure Park and						
Rehabilitation of Unakoti Tourist Lodge at Kailashahar (TTDCL/UKT/W04)							
Monitoring Phase: Construction-December 2024							
Sonamukhi	25.12	2.2024	Sonamukhi tea garden end point- C		53.0	37.3	
Unakoti	24.12	2.2024	Unakoti tourist lodge- C		50.8	45.1	
Code/Category Leq D		ay Time dB(A) – Standard Leq Night 1		Time dB(A) – Standard			
A/ Industrial			75	70			
B/ Commercial			65	55			
C/ Residential			55		45		
D/Ecological-			50		40		
Sensitive							

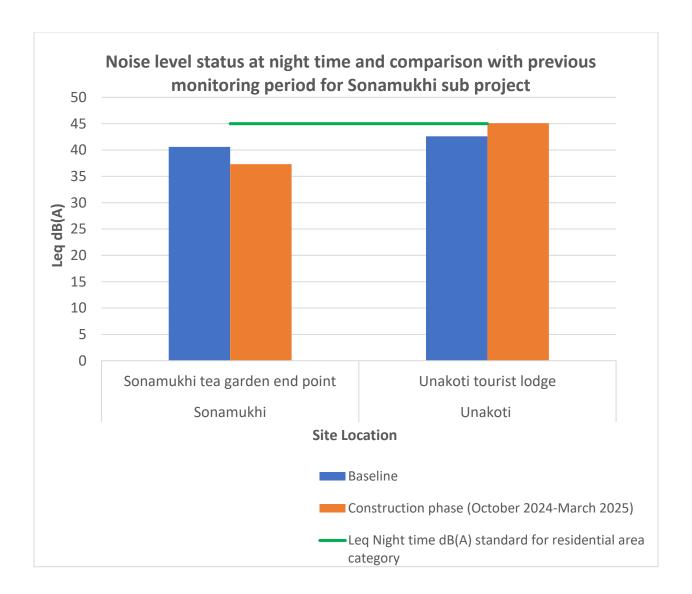
99. During construction noise level monitoring near the project (TTDCL/CHB/W01) locations of Chabimura, Amarsagar and Fatiksagar locations has been conducted through accredited Environmental Monitoring Agency. All the recorded noise levels are above day time and night time Leq levels of residential zone. This may be due to the fact that construction work is ongoing.





- 100. The plotted graph shows that the daytime noise level at the monitored locations in January 2025 is above the prescribed day time limits for residential land uses. This may be attributed to continuous construction work being undertaken, however, proper precautionary measures such as provision of noise barriers are being undertaken by the contractor at all places during construction work.
- 101. Also, the monitored locations (except at Fatiksagar) show nighttime noise levels to be higher than the prescribed night time limits for residential land uses. However, no nighttime activities are being undertaken at any of the locations. The increase in the noise levels at the two locations may be due to background activities that are ongoing at the location alongside the construction work. Also, during the time of monitoring, there was a festival being celebrated with loudspeakers running continuously.
- 102. During construction noise level monitoring was carried out for the two sub-project sites, Sonamukhi and Unakoti tourist lodge for the package TTDCL/UKT/W04. The result shows that the recorded noise levels are more or less within the noise level standard of the residential area.





- 103. The plotted graph shows that the daytime noise level at the monitored locations in December, 2024 is below the prescribed day time limits for residential land uses.
- 104. Also, the monitored locations show nighttime noise levels to be within the prescribed night time limits for residential land uses. At Unakoti tourist lodge, the nighttime noise levels were found to be upwards by just 0.1 Leq dB(A) than the prescribed limits. However, no nighttime activities are being undertaken at any of the locations.

Surface and Ground water quality

Package - Tourism Destination Development at Chabimura and Upgradation/ Beautification of Visitor Amenities/ Facilities at Fatik Sagar and Amar Sagar (TTDCL/CHB/W 01)

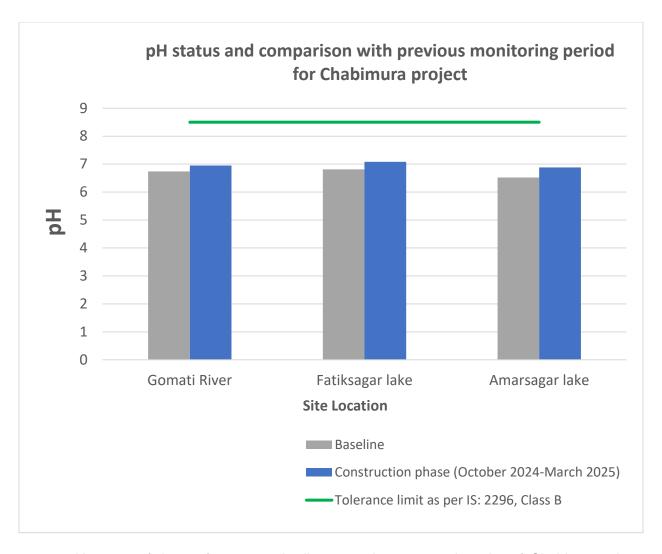
105. The contractor firm has carried out construction phase sampling and monitoring of the Gomati River water quality at Chabimura location as well as the two water bodies, viz., Amarsagar

and Fatiksagar during January, 2025. The pH value of the project sites varied from 6.88 – 7.08 indicating surface water to be normal in nature. The level of total dissolved solids of the project sites varied from the range of 64 - 522 mg/l. For Gomati River sample, the values for DO and BOD being 5.4 mg/l and less than 2 mg/l respectively as well as the total coliform, being 21 MPN/100 ml suggest the water quality belonging to class of water 'B' under Designated Best Use Water Quality Criteria. On the other hand, at Fatiksagar lake, the TDS is high, BOD is about 5.8 mg/l, Dissolved oxygen is around 4.2 mg/l and Total coliform is more than 63 MPN/100 ml thus, rendering the water quality to be unfit for any of the categories of designated use, not even for propagation of fishes and wildlife. However, the water quality of Amarsagar pond is comparatively better than that of Fatiksagar with BOD less than 2 mg/l, DO more than 5 mg/l and Total coliform is 39 MPN/100 ml, can be categorized under class 'B' used for outdoor bathing purpose. The results of surface water quality monitoring of project locations Chabimura, Fatiksagar and Amarsagar are summarized in **Table 25** below.

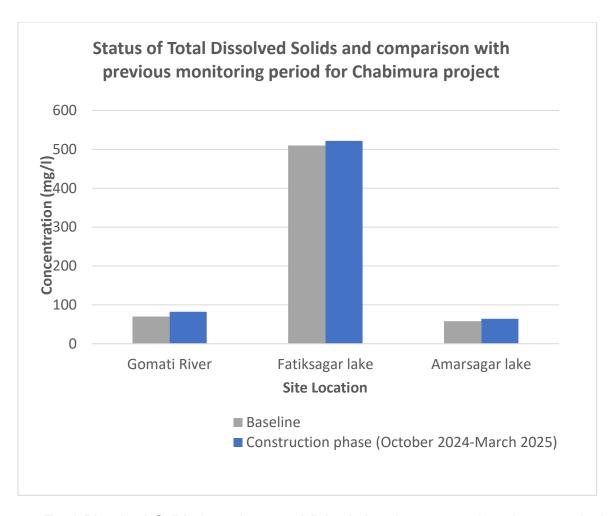
Table 25: Surface Water Quality status of Chabimura, Amarsagar and Fatiksagar

		•	•	_	•
SI. No.	Test parameter	Tolerance limit as per IS: 2296, Class B*	Gomati River	Fatiksagar lake	Amarsagar lake
			15.01.2025	13.01.2025	14.01.2025
1	pН	6.5 – 8.5	6.95	7.08	6.88
2	Total Dissolved Solids (TDS) in mg/l		82	522	64
3	Biochemical Oxygen Demand (BOD) mg/l	3 (max)	< 2	5.8	<2
4	Dissolved Oxygen (DO) mg/l	5 (min)	5.4	4.2	5.1
5	Total Coliform Organisms in MPN/100ml	500 (max)	21	63	39

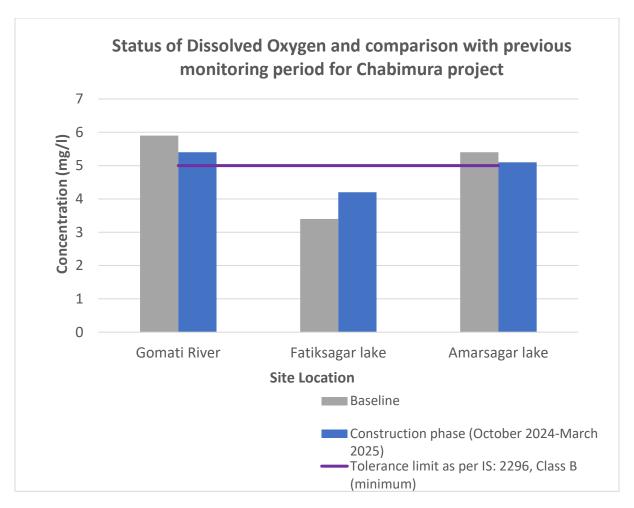
^{*} Note – Used for outdoor bathing purpose.



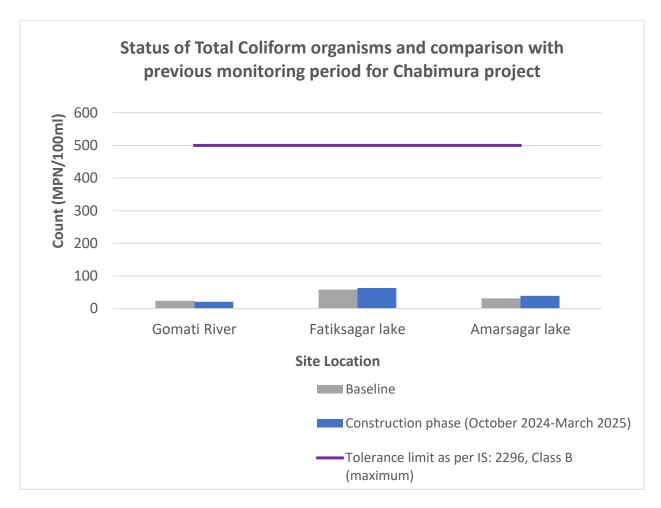
106. pH status of the surface water bodies near the construction site of Chabimura show conformance with the tolerance limit as per IS:2296, Class B during the monitoring period January, 2025. There is no as such variation in pH between baseline and during construction.



107. Total Dissolved Solids have increased little during the construction phase monitoring period (January 2025) for the Chabimura project than the previous monitoring period (April, 2024). The status of TDS is being continuously monitored and no chemicals or any runoff is being drained into the surface water bodies. However, the TDS has increased slightly due to construction activities and may also be attributed to the tourism activities ongoing in the region during the monitoring period.



108. Dissolved oxygen shows consistency with the baseline values (April 2024). The values of DO are found to be above the minimum level as prescribed in the IS:2296 standards. In Fatiksagar lake, the DO has been consistently lower than the standard, which was found to have increased during the monitoring period, however still having room for improvement to reach the desired amount for survival of aquatic organisms.

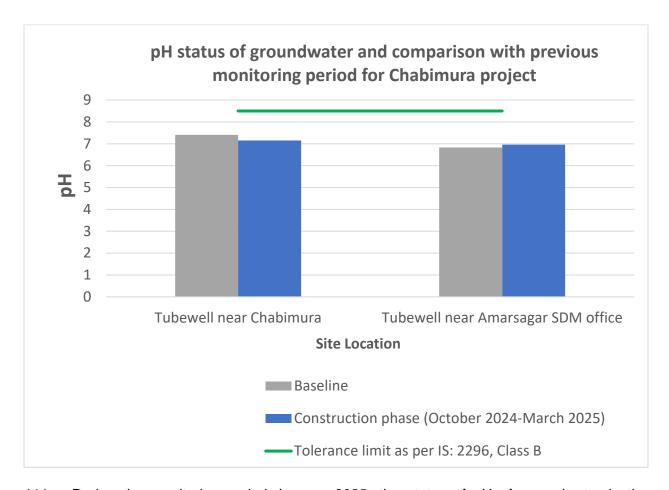


- 109. The total coliform was found to be well below the limit set in IS:2296.
- 110. Contractor has carried out ground water quality monitoring for the project locations during their construction phase. The ground water sample was collected from a tubewell near Chabimura project site as well as from a tubewell near Amarsagar SDM office. The pH value, total dissolved solid, total hardness and the iron concentration of the groundwater samples are within the tolerance limit prescribed in BIS drinking water specifications. The results of ground water quality monitoring are presented in **Table 26** below.

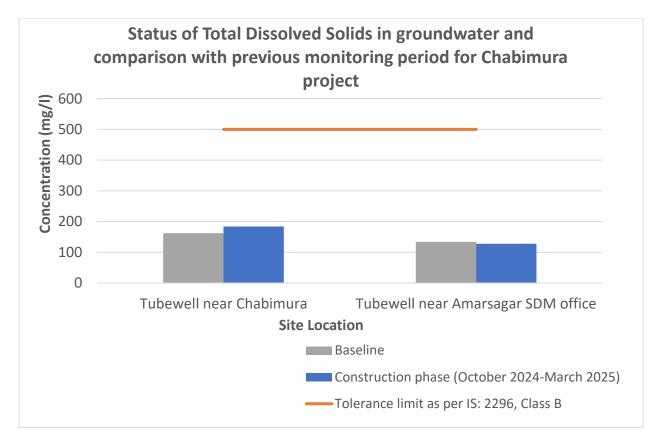
Table 26: Ground Water Quality in Project Area of Chabimura and Amarsagar

SI. No.	Test parameter	Tolerance limit as per BIS 10500 : 2012	Tubewell near Chabimura	Tubewell near Amarsagar SDM office	
			14.01.2025-15.01.2025		
1	pН	6.5 – 8.5	7.15	6.96	
2	Total Dissolved Solids (TDS) in mg/l	500	184	128	
3	Total Hardness (CaCO ₃) in mg/l	200	134.6	95	
4	Iron (as Fe), mg/l, Max (Drinking water	0.3	0.25	0.15	

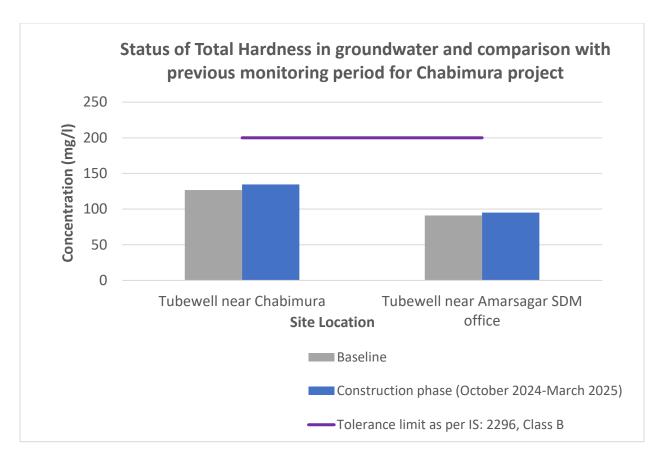
SI. No.	Test parameter	Tolerance limit as per BIS 10500 : 2012	Tubewell near Chabimura	Tubewell near Amarsagar SDM office
	standard as per IS 10500 : 2012)			



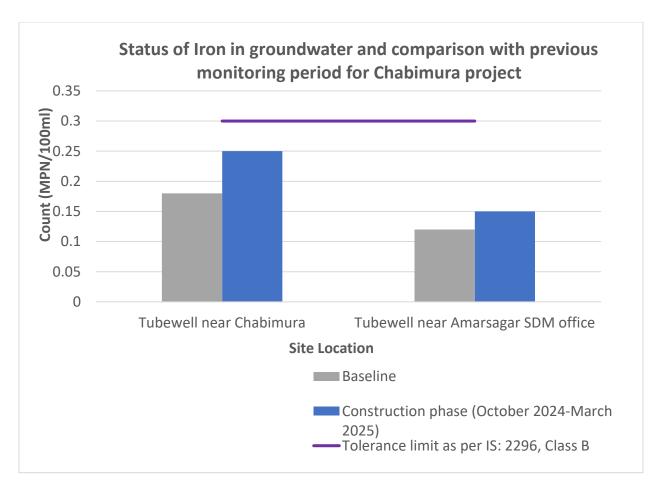
111. During the monitoring period January 2025, the status of pH of groundwater in the Chabimura project location was found to be within the prescribed limit of the IS:2296. There is no as such variation on pH level during construction and baseline stage.



112. The comparative graph for the Total Dissolved Solids (TDS) in the groundwater of the Chabimura sub project show that the concentration is well below the limits as given in IS:2296. There is no as such variation on TDS concentration during construction and baseline stage.



113. The total hardness of the groundwater in the Chabimura project was found to be within the prescribed limits of the IS:2296. The comparison with the baseline values (April 2024) shows a slight increase in the hardness.



114. The iron content in the groundwater of the Chabimura project region is below the prescribed standards, with marginal increase in iron content compared to the baseline (April 2024) values. This is being monitored so that proper mitigation measures may be employed to keep it below the prescribed limits.

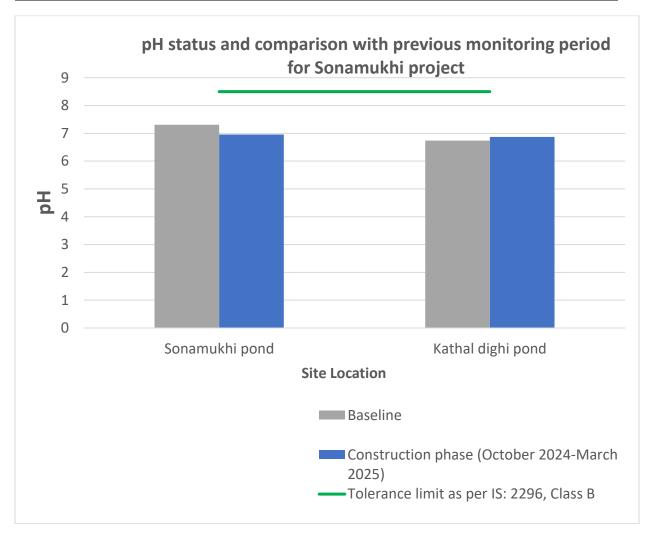
Package - Development of Sonamukhi Eco Accommodation & Adventure Park and Rehabilitation of Unakoti Tourist Lodge at Kailashahar (TTDCL/UKT/W04)

115. The contractor agency has carried out construction phase sampling and monitoring of the surface water qualities of Sonamukhi pond as well as Katal dighi in front of Unakoti lodge during December 2024. The pH value of the project sites varied from 6.87 – 6.96 indicating surface water to be normal in nature. The levels of dissolved oxygen of the water bodies showed values more than 5 mg/l and that of BOD was also more than 5 mg/l. Moreover, the total coliform count is also much less than 50 MPN / 100 ml thus, indicating the water bodies belonging to class B of Designated Best Use Water Quality Criteria that can be used for bathing purpose. The results of surface water quality monitoring of the two water bodies are summarized in **Table 27** below.

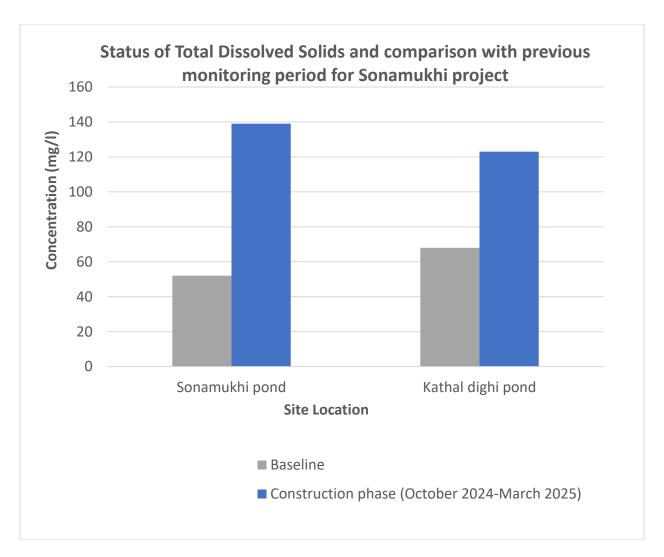
Table 27: Surface Water Quality status of Sonamukhi pond and Kathal Dighi pond

SI. No.	Test parameter	Tolerance limit as per IS: 2296, Class B	Sonamukhi pond	Kathal Dighi pond
		25.12.2	2024	
1	рН	6.5 – 8.5	6.96	6.87

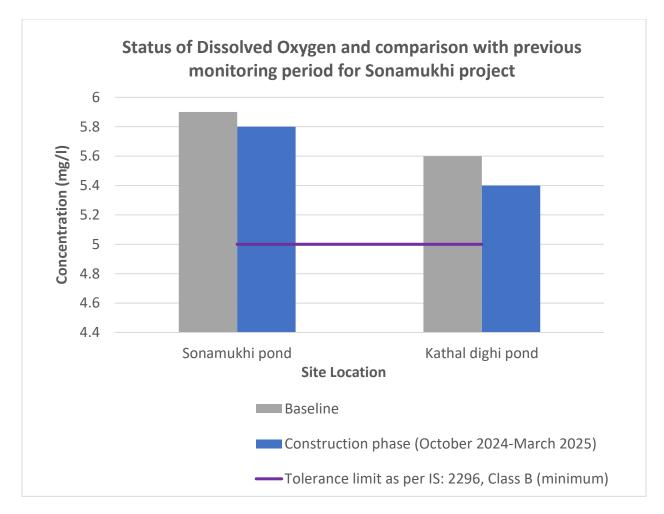
SI. No.	Test parameter	Tolerance limit as per IS: 2296, Class B	Sonamukhi pond	Kathal Dighi pond
			25.12.:	2024
2	Total Dissolved Solids (TDS) in mg/l		139	123
3	Biochemical Oxygen Demand (BOD) mg/l	3 (max)	5.78	5.31
4	Dissolved Oxygen (DO) mg/l	5 (min)	5.8	5.4



116. pH level of the surface water bodies near the construction site of Sonamukhi and Unakoti lodge show conformance with the tolerance limit as per IS:2296, Class B during the monitoring period December, 2024.



117. Total Dissolved Solids in surface water have increased during the construction phase monitoring period (December, 2024) for the Sonamukhi project than the previous monitoring period (April, 2024). The status of TDS is being continuously monitored and no chemicals or any runoff is being drained into the surface water bodies. However, the TDS has increased due to construction activities. Mitigation measures such as appropriate dust screen, transportation of C&D wastes in vehicles covered with tarpaulin, water sprinkling at the construction sites during dry season are in place as per EMP. It is important to note that the increase in TDS value at the Sonamukhi pond monitoring location may be attributed to another construction activity that took place in the Tertiary Waste Management Centre located just across the highway from the project site. The drainage to the pond is naturally connected from the opposite side of the highway through natural drainage channels. Improper management of waste debris of the tertiary waste management centre may be the probable reason for increase in TDS levels in the pond. No construction runoff is draining into the pond from the Sonamukhi project site as the natural slope of the terrain is away from the pond.

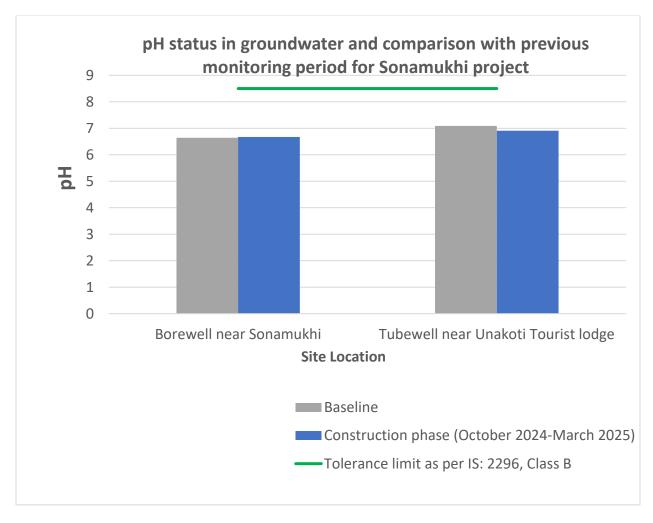


- 118. Dissolved oxygen shows consistency with the baseline values (April 2024). The values of DO are found to be above the minimum level as prescribed in the IS:2296 standards.
- 119. Contractor has carried out ground water quality monitoring for the project locations during their construction phase. The ground water sample was collected from a borewell near Sonamukhi project site as well as from a tubewell near Unakoti tourist lodge. The pH value, total dissolved solid and total hardness of the groundwater samples are within the tolerance limit prescribed in BIS drinking water specifications. However, the iron concentration was found to exceed from the tolerance limits as prescribed by BIS drinking water specifications at the Sonamukhi site. The results of ground water quality monitoring are presented in **Table 28** below.

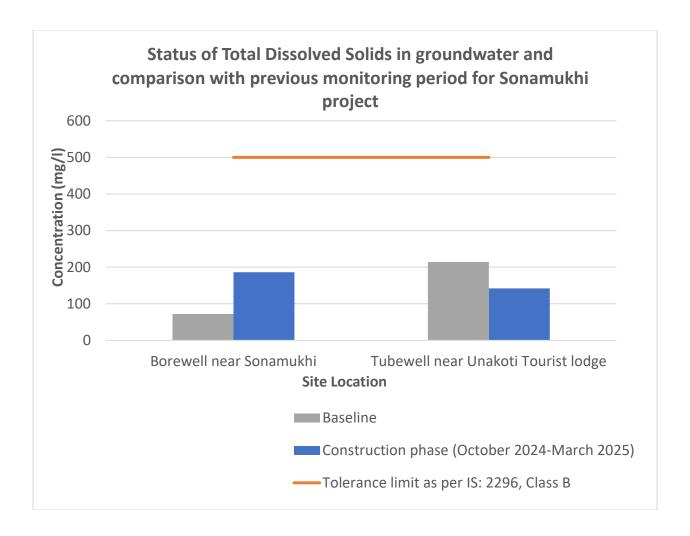
Table 28: Ground Water Quality in Project Area

SI. No.	Test parameter	Tolerance limit as per IS 10500 : 2012	Borewell near Sonamukhi	Tubewell near Unakoti Tourist Iodge
			24.12	.2024
1	рН	6.5 – 8.5	6.67	6.91
2	Total Dissolved Solids (TDS) in mg/l	500	186	142
3	Total Hardness (CaCO ₃) in mg/l	200	75	42
4	Iron (as Fe), mg/l, Max	0.3	1.17	0.06

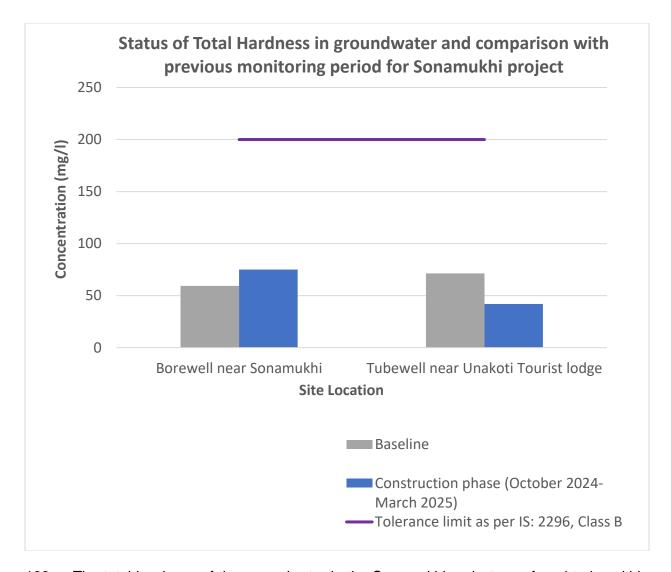
SI. No.	Test parameter	Tolerance limit as per IS 10500 : 2012	Borewell near Sonamukhi	Tubewell near Unakoti Tourist Iodge
	(Drinking water standard as per IS 10500 : 2012)			



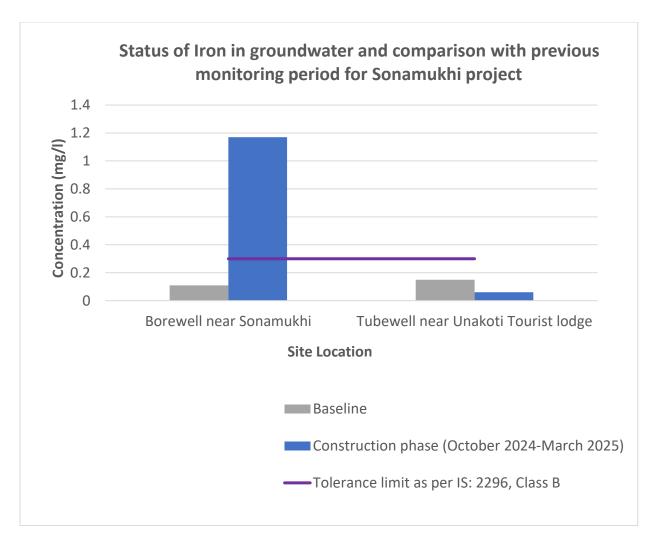
120. During the monitoring period December 2024, the status of pH of groundwater in the Sonamukhi project location was found to be within the prescribed limit of the IS:2296 and almost same that recorded before start of the construction.



121. The comparative graph for the Total Dissolved Solids (TDS) in the groundwater of the Sonamukhi sub project show that the concentration is well below the limits as given in IS:2296.



122. The total hardness of the groundwater in the Sonamukhi project was found to be within the prescribed limits of the IS:2296. The comparison with the baseline values (April 2024) shows a slight increase in the hardness in Sonamukhi site, whereas it has decreased in the Unakoti lodge site.



123. The iron content in the groundwater of the Sonamukhi project region during the monitoring period (December, 2024) is found to be much higher than the prescribed standard at the Sonamukhi site, whereas, it is within limits and even lesser than the baseline levels (April 2024) at the Unakoti tourist lodge. The iron levels in groundwater are naturally high in the region. Proper mitigation measures have been employed such as testing of the drinking water source of the labourers so as to keep in check the iron content, as well as provision of small scale filters to aid in the iron minimizing process in the drinking water of the contractor.

VII SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

124. Status of EMP application discussed in earlier section. It is noted that package work started few days back and progress of work is about 16 %. **Table 29**, shows key issues noted during report period and action plans for necessary compliance.

Table 29: Summary of Key issues and compliance requirement

Table 29: Summary of Key issues and compliance requirement					
Monitoring aspect	Findings & Key issues	Further Actions/Remedial/Corrective			
		Actions/Measures/Remarks			
Availability	Event Individual consultants (IC) at	With target completion dates			
Availability safeguards personnel (PMU, PIU,	Except Individual consultants (IC) at PMU level all safeguard personal in	IC placed in PMU from January 2025			
personnel (PMU, PIU, Consultants)	placed				
,		a NOC from CCWA mostly received			
Compliance with statutory requirements (clearance / permissions etc.,)	 For urban packages, TUDA/WS-01/P-01, TUDA/WS-02/P-02 NOC for withdrawal of ground water for construction purpose NOC from CGWA obtained by the contractor for all towns except 3 Melaghar, Bishramganj, and Belonia For package TUDA/WS-03/P-03 for withdrawal of ground water for construction purpose, applied to CGWA by the contractor. For withdrawal of ground water for water supply purpose application has been done to CGWA by project authority. 	 NOC from CGWA mostly received. Follow up for pending towns, i.e. Melaghar, Bishramganj and Belonia ongoing. At present tanker water is used for construction. Follow up is required for pending labour licence of package TUDA/WS-03/P-03 for 3 towns (Kailashahar, Kumarghat and Ambassa) except Dharmanagar. 			
	 authority. For tourism package at Chabimura, TTDCL/CHB/W 01-provisional NOC for withdrawal of surface water from Gomati River for construction purpose has been obtained by the contractor. 				
	 For Sonamukhi, TTDCL/UKT/W04- NOC for withdrawal of ground water for construction purpose obtained by the contractor from CGWA. 				
	 For package TUDA/WS-01/P-01 & TUDA/WS-02/P-02, labour license has been obtained for all the towns. 				
	 Labour licence has been obtained for Dharmanagar town, others are in process for package TUDA/WS- 03/P-03. 				
Compliance with ADB loan	Status shown in Table 6	Being complied. Follow up is ongoing for			
covenants	 NOC from CGWA for construction and supply of water after commissioning Submission of updated IEE (after finalization of design) Updated IEE for the package TUDA/WS-01/P-01 submitted. Updated IEE for the package TUDA/WS-02/P-02 to be submitted shortly. Continue health check-up and 	necessary compliance			
	training for the workers				

- Health check up is pending for the workers under the package TUDA/WS-03/P-03 - Health check up completed for both the tourism packages under implementation Compliance with preparation, approval, disclosure of draft IEEs Urban packages Urban package Urban pack	Monitoring aspect	Findings & Key issues	Further Actions/Remedial/Corrective Actions/Measures/Remarks
workers under the package TUDAWS-03/P-03 Health check up completed for both the tourism packages under implementation approval, disclosure of draft IEEs All draft IEE disclosed at ADB and project website preparation, approval, disclosure of draft IEEs Compliance with preparation, approval, disclosure of updated/final IEEs Compliance of updated/final IEEs Compliance progress of cluster IIA water supply, progress slowly. As per construction contractor and technical team of PMSC, design will be over by July 2025. After receive of final design IEE for the package will be done after inalization of the design. For other packages, and cluster IIA water supply, progress for cluster IIA. Design for Cluster IIIA water supply, progress slowly. As per construction contractor and technical team of PMSC, design will be over by July 2025. After receive of final design IEE for the package will be done by August 2025. For Road and Drainage package, in case of change in locations, scope IEE will be updated. Till date no road & drainage package are awarded Since finalization of design delayed, Addendums — showing change locations details, assessment of additional impacts (if any) for new locations for cluster IA and IIAWS have been submitted. Tourism package Some design modification / Master planning under progress for Chabimura package. After finalization of design IEE will be updated. Contractor compliance with pre- construction water withdrawal Contractor compliance with pre- construction water withdrawal Contractor compliance with pre- construction water withdrawal			
All draft IEE disclosed at ADB and project website		workers under the package TUDA/WS-03/P-03 Health check up completed for both the tourism packages under	
preparation, approval, disclosure of updated/final IEEs For DBO contracts — Cluster IIA package, and Cluster IIA water supply packages — design completed. Updation done for cluster IIA and under process for cluster IIIA. Design for Cluster IIIA water supply, progress slowly. As per construction contractor and technical team of PMSC, design will be over by July 2025. After receive of final design IEE for the package will be done by August 2025. For Road and Drainage package, in case of change in locations, scope IEE will be updated. Till date no road & drainage packages are awarded Since finalization of design delayed, Addendums — showing change locations details, assessment of additional impacts (if any) for new locations for cluster IA and IIA WS have been submitted. Tourism package Some design modification / Master planning under progress for Chabimura package. After finalization of design IEE will be updated. Contractor compliance with pre- construction - Collection of labour license - Construction Time Design completed. Updated and Under supply, progress. Report will be updated. Instructed to contractors for submission of pending documents by June/July 2025	preparation, approval,	All draft IEE disclosed at ADB and	TUDA/WS-01/P-01 submitted. - Updated IEE for the package TUDA/WS-02/P-02 to be submitted shortly. These are after finalization of the design. For other packages, updation will be done after finalization of design and as
Contractor compliance with pre- construction - Collection of labour license construction - Construction water withdrawal of pending documents by June/July 2025	preparation, approval, disclosure of updated/final	For DBO contracts — Cluster IA package, and Cluster IIA water supply packages — design completed. Updation done for cluster IA and under process for cluster IIIA. Design for Cluster IIIA water supply, progress slowly. As per construction contractor and technical team of PMSC, design will be over by July 2025. After receive of final design IEE for the package will be done by August 2025. For Road and Drainage package, in case of change in locations, scope IEE will be updated. Till date no road & drainage packages are awarded Since finalization of design delayed, Addendums — showing change locations details, assessment of additional impacts (if any) for new locations for cluster IA and IIA WS have been submitted. Tourism package Some design modification / Master planning under progress for Chabimura package. After finalization of design	Submission of updated IEE for Cluster IA done. Submission of updated IEE of Cluster IIA WS is under process. Report
I requirements permission	pre- construction	Collection of labour licenseConstruction water withdrawal	

Monitoring aspect	Findings & Key issues	Further Actions/Remedial/Corrective Actions/Measures/Remarks With target completion dates
	Other pre-construction requirement like, WC policy, All risk policy, engagement of EHS officer, pre-construction base line monitoring, health checkup, tie up with hospital — Done for most of the awarded packages. But for cluster IIIA water supply package — only WC policy is obtained and Labour license obtained for one town — Dharmanagar. Base line monitoring is done for cluster III A water supply.	
EMP implementation, monitoring, reporting	EMP implementation, reporting and compliance – continued Partially complied - Use of PPEs - Construction material storage. Demarcation of material storage area Arrangement of camp with proper ventilation and kitchen arrangement - Housekeeping - Display of executive summary of IEE – in local language	Site and desk review of EMP application Instructed to contractors for continuous compliance
Training and capacity building activities	Orientation training, safeguard compliance training started and to be continued	On regular basis
Public consultation	Consultation of public have been started; more will be done at pipe laying work sites under urban packages Informal consultation carried out with locals during site visit	Consultation needs to be continued on regular basis
GRM establishment and GRC formation	GRM notification – done. GRC mentioned in the notice. Selection of members at PIU level – done Display of local language GRM- GRC board- not done	Maintaining and arrangement of GRM-GRC boards and recording of grievances.
Ensuring checking of bamboo Scaffolding Safety as per standard on regular basis	Site supervisor Engineer are checking on continuous basis	To be continued as per standard
Implementation in all tube well drilling activities by contractors must be ensured, no discharge of muck on waterbody, agricultural land	Tube well construction sites are rehabilitated	As per scope tube well drilling activities are over under all the 3 packages.

APPENDIX

APPENDIX - 1: PHOTO ILLUSTRATION

Urban Package: TUDA/WS-01/P-01 (Cluster IA Water Supply)



HDPE Pipe line work at area ward number-01 Mohanpur, BSF camp, opposite side- just started



850 KL OHSR 1st TB reinforcement tying work is in progress at old MMC Ramkrishna palli, Mohanpur. Project display board is noted.



1st TB Concreting Work is Going on at 750kl OHSR Site Tulabagan Mohanpur. Use of PPEs - noted



DTW ERW Pipe lowering work done in Ranirbazar



First aid box available at Ranirbazar work site.



400KL OHSR Khowai 2nd Brace Beam Reinforcement and Shuttering checking

Urban Package: TUDA/WS-02/P-02 (Cluster IIA Water Supply)



Well demarcated scrap yard at Rajarshi Town Hall OHSR, Udaipur



Proper labour hutment set up with provision of fire extinguishers and drinking water at Rajarshi Town Hall OHSR, Udaipur



Sample Grievance record register at site



Scaffolding work at Melaghar OHSR (450kl) site



Abul kalam Community Hall @400 kl OHSR Site, Belonia Pile Cap Foundation Reinforcement Cutting & Bending Work is in Progress.



Foundation Concrete Work Is in progress at Chesrimai, Bishramganj 250kl OHSR Site.



Signage is provided at cluster IIA water supply project site



Belonia OHSR at Satmura School, provision of drinking water at site – noted

Tourism Package: TTDCL/CHB/W 01 (Tourism Destination Development at Chabimura)



Project display board noted at project site office



Emergency contact number board at project site office



Proper demarcation of stored material at Chabimura site



Reinforcement binding of footing grid 1 at admin building in progress



Toilet facility noted with labour camp.



First aid box placed at labour camp



Kitchen set up at Chabimura project



Sample Grievance/ Suggestion box arranged at work site



Material storage yard. Steel keeps under cover



Earth excavation of retaining wall work in progress



Casting is under progress at Chabimura Site. Use of PPEs by the workers - noted



Eco Cottage 3 column starter fixing at site Chabimura

Tourism Package: TTDCL/UKT/W04(Development of Sonamukhi Eco Accommodation & **Adventure Park)**



Worker's camp constructed at project site



Project display board at site



Dismantling of back side old plaster at Site laboratory and worker's camp Unakoti tourist lodge in progress. Safety net placed at work site





Top soil preserved and covered by terpolymer at Sonamukhi site



covered by Steel storage yard. Properly covered.



RCC casting of floor slab at suite cottage 3 started at Sonamukhi Site. Use of PPEs by workers - noted



Concreting is in progress at Banquet hall lower ground floor roof slab at Sonamukhi Site



Provision of fire extinguishers at Sonamukhi site with proper signage



Construction work ongoing at Unakoti lodge. Signage - noted



Public consultation at Sonamukhi site

APPENDIX - 2: POLLUTION UNDER CONTROL CERTIFICATE

SAMPLE COPY

Urban Package: TUDA/WS-01/P-01 (Cluster IA Water Supply)



Urban Package: TUDA/WS-02/P-02 (Cluster IIA Water Supply)

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

State Transport Department

Date : 04/12/2024 Time : 15:19:34 PM Validity upto : 03/06/2025



Certificate SL. No. : TR00300180000524

 Registration No.
 : TR01AL1527

 Date of Registration
 : 07/Jan/2019

 Month & Year of Manufacturing
 : October-2018

 Valid Mobile Number
 : ******8062

 Emission Norms
 :
 Bharat Stage III (CEV)

 Fuel
 :
 DIESEL

 PUC Code
 :
 TR0030018

 GSTIN
 :
 Rs.110.00

MIL observation :

Vehicle Photo with Registration plate

60 mm x 30 mm



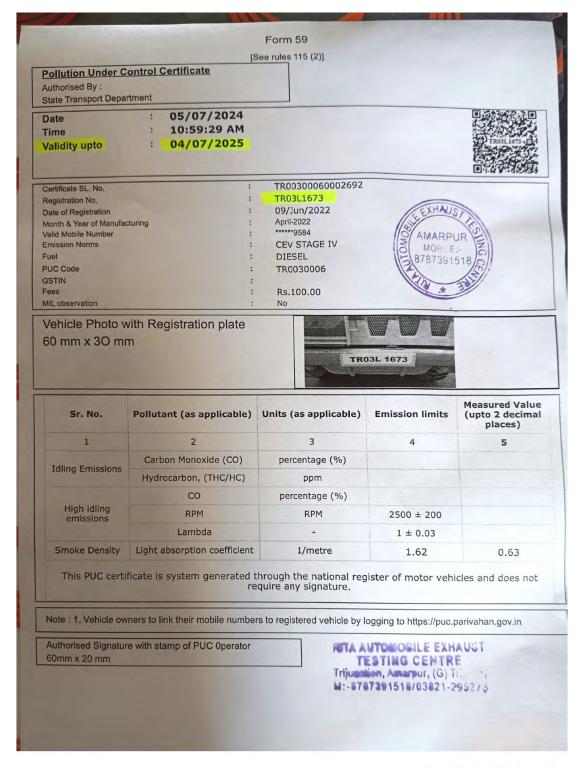
Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Valu (upto 2 decima places)
1	2	3	4	5
elección de la company	Carbon Monoxide (CO)	percentage (%)		
Idling Emissions	Hydrocarbon, (THC/HC)	ppm		
	со	percentage (%)		
High idling emissions	RPM	RPM	2500 ± 200	
	Lambda	8	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.02

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note: 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

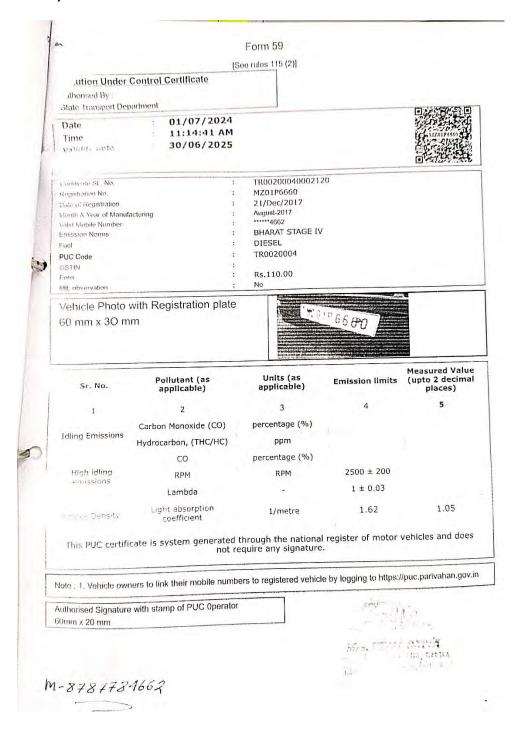
Authorised Signature with stamp of PUC Operator 60mm x 20 mm

Tourism Package: TTDCL/CHB/W 01 (Tourism Destination Development at Chabimura)



Scanned with ACE Scanner

Tourism Package: TTDCL/UKT/W04(Development of Sonamukhi Eco Accommodation & Adventure Park)



APPENDIX - 3: LABOUR LICENSE

Urban Package: TUDA/WS-01/P-01 (Cluster IA Water Supply) Labour license – Khowai

FORM VI

[Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules, 1980]

Government of Tripura Office of the Licensing Officer

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Licence No. TR/KHW/LCTR/2025/02646

Dated 22-01-2025

- Licence is hereby granted to MS ECO PROTECTION ENGINEERS PVT LTD MANAGING DIRECTOR Mr CHANDRASEKAR Son/Daughter of CHINNASAMI, Address: Sri. Pabindra Das S/O Lt. Manindra Ch Das, Khowai, Char Ganki, District. Khowai Tripura, Pin. 799 202 under sub-section (1) of section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) or sub-section (1) of section 8 of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) subject to the conditions specified in the Annexure.
- Name and location of work DESIGN, BUILD AND OPERATE DBO CONTRACT FOR COMPREHENSIVE WATER SUPPLY IMPROVEMENT WORKS FOR KHOWAI CLUSTER IA TOWN OF TRIPURA.
- Name of the principal employer EXECUTIVE ENGINEER, TUDA, GOVT. OF TRIPURA.
- Registration Certificate no. F.No.3-(53) TUDA/PROJECT/2023/P-I/2091-2109 and Date 06-02-2024 of the principal employer
- The licence shall remain in force till 21-01-2026.
- 6. Maximum number of contract labour 20 to be employed on a single day under the licence
- Maximum number of migrant workmen 15 to be employed on a single day under the licence

Fee Paid

Contract Labour Rs. 300 ISMW Rs. 300



Signature: Not Required

Labour license - Ranirbazar and Mohanpur

FORM VI

[Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules,1980]

Government of Tripura Office of the Licensing Officer

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Licence No. TR/WTR/LCTR/2024/02098

Dated. 11-06-2024

- Licence is hereby granted to MS ECO PROTECTION ENGINEERS PVT LTD MANAGING DIRECTOR Mr CHANDRASEKAR Son/Daughter of CHINNASAMI, Address: MALANCHANAGAR, SHAMOLI BAZAR, AGARTALA, TRIPURA WEST. under subsection (1) of section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) or sub-section (1) of section 8 of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) subject to the conditions specified in the Annexure.
- 2. Name and location of work MOHANPUR AND RANIRBAZAR OF TRIPURA
- 3. Name of the principal employer EXECUTIVE ENGINEER, TUDA, GOVT. OF TRIPURA.
- Registration Certificate no. F.NO.3-(53) TUDA/PROJECT/2023/P-I/2091-2109 and Date 06-02-2024 of the principal employer
- 5. The licence shall remain in force till 10-06-2025.
- 6. Maximum number of contract labour 40 to be employed on a single day under the licence
- 7. Maximum number of migrant workmen 20 to be employed on a single day under the licence

Fee Paid

Contract Labour Rs. 400 ISMW Rs. 200 Security Deposited Paid

Contract Labour Rs. 3600 ISMW Rs. 10000



Signature: Not Required

FORM VI

[Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules, 1980]

Government of Tripura Office of the Licensing Officer LICENCE ANNEXURE

The licence is subject to the following conditions:

- The licence shall be non-transferable
- The number of workmen employed as contract labour/migrant workmen in the establishment
- shall not, on any day, exceed the maximum number specified in the licence.

 3. Except as provided in the rules, the fees paid for the grant or, as the case may be, for renewal of the licence shall be non-refundable.
- 4. The rates of wages payable to the workmen by the contractor shall not be less than the rates prescribed for the Scheduled Employment under the Minimum Wages Act, 1948 (11 of 1948), where applicable, and where the rates have been fixed by agreement, settlement, award, or by the appropriate Government, not less than the rates so fixed.
- (a) In case where the workmen employed by the contractor perform the same or similar kind of work as the workmen directly employed by the principal employer of the establishment, the wage rates, holidays, hours of work and other conditions of service of the workmen of the contractor shall be the same as applicable to the workmen directly employed by the principal employer of the establishment on the same or similar kind of work; provided that in the case of any disagreement with regard to the type of work the same shall be decided by the Labour Commissioner whose decision shall be final.
 (b) In other cases the wage rates, holidays, hours of work and conditions of service of the workmen of the contractor shall be such as may be specified in this behalf by the Labour
- Every contract labour/migrant worker shall be entitled to allowances, benefits, facilities etc, as prescribed in the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) or the Inter-State Migrant Workmen(Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) and rules made there under.

 In every establishment where 20 or more women are ordinarily employed as there shall be
- provided 2 rooms of reasonable dimension for the use of their children under the age of six years. One of such rooms would be used as a play room for the children and the other as bed room for the children. For this purpose the contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the sleeping room. The standard of construction and maintenance of the crèches may be such as may be specified in this behalf by the Labour Commissioner.
- 8. No women shall be employed by any contractor before 6 a.m. or after 7 p.m.:

Provided that this clause shall not apply to the employment of women in pit head baths, crèches and canteens and as mid-wives and nurses in hospitals and dispensaries

9. The licensee shall notify any change in the number of workmen or the conditions of work to

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FORM VI

[Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules,1980]

Government of Tripura Office of the Licensing Officer LICENCE

the Licensing Officer.

- 10. A copy of the licence shall be displayed prominently at the premises where the contract work is being carried on.
- 11. The contractor shall comply with all the provisions of the Act and these Rules.
- 12. The licensee shall, within fifteen days of the commencement and completion of each contract work, submit a return to the Inspector appointed under section 28 of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) intimating the actual date of the commencement or, as the case may be, completion of such contract work in

Urban Package: TUDA/WS-02/P-02 (Cluster IIA Water Supply) Labour Licence - Belonia

[Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules, 1980]

Government of Tripura Office of the Licensing Officer

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Licence No. TR/STR/LCTR/2025/02649

Dated. 24-01-2025

- Licence is hereby granted to MS ECO PROTECTION ENGINEERS PVT LTD MANAGING DIRECTOR Mr CHANDRASEKAR Son/Daughter of CHINNASAMI, Address: House no 0039, Near Bul bul sanghit niketan, ward no 7, Pal colini, Belonia South Tripura, Pin: 799 155 under sub-section (1) of section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) or sub-section (1) of section 8 of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) subject to the conditions specified in the Annexure.
- 2. Name and location of work DESIGN BUILD AND OPERATE DBO CONTRACT FOR COMPREHENSIVE WATER SUPPLY IMPROVEMENT WORKS FOR BELONIA CLUSTER. IIA TOWN OF TRIPURA
- Name of the principal employer EXECUTIVE ENGINEER, TUDA, GOVT. OF TRIPURA.
- Registration Certificate no. F.No.3-(54) TUDA/PROJECT/2023/P-I/2070-90 and Date 06-02-2024 of the principal employer
- The licence shall remain in force till 23-01-2026.
- Maximum number of contract labour 20 to be employed on a single day under the licence
- Maximum number of migrant workmen 15 to be employed on a single day under the licence

Fee Paid

Contract Labour Rs. 300 ISMW Rs. 300



SPC-106-011673

Signature: Not Required

Labour license - Udaipur and Amarpur

FORM VI

[Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules, 1980]

Government of Tripura Office of the Licensing Officer

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Licence No. TR/GMT/LCTR/2024/02366

Dated. 21-09-2024

Signature: Not Required

Designation: Licensing Officer

- Licence is hereby granted to MS ECO PROTECTION ENGINEERS PVT LTD MANAGING DIRECTOR Mr CHANDRASEKAR Son/Daughter of CHINNASAMI, Address: 12 OPP. HOTEL ROYAL INN, VIDHYASAGAR SARANI, UDAIPUR, GOMATI TRIPURA. under sub-section (1) of section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) or sub-section (1) of section 8 of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) subject to the conditions specified in the Annexure.
- Name and location of work DESIGN BUILD AND OPERATE DBO CONTRACT FOR COMPREHENSIVE WATER SUPPLY IMPROVEMENT WORKS FOR UDAIPUR AND AMARPUR CLUSTER IIA TOWNS OF TRIPURA.
- 3. Name of the principal employer EXECUTIVE ENGINEER, TUDA, GOVT. OF TRIPURA.
- Registration Certificate no. TR/GMT/RCL/2024/00096 & TR/GMT/RISMW/2024/00069 and Date 20-08-2024 of the principal employer
- 5. The licence shall remain in force till 20-09-2025.
- 6. Maximum number of contract labour 60 to be employed on a single day under the licence
- 7. Maximum number of migrant workmen 25 to be employed on a single day under the licence

Fee Paid

Contract Labour Rs. 600
ISMW Rs. 200
Securit Inage not found Pand Inknown
Cont r Rs. 5400
ISM 00
SPC-106-008653

FORM VI [Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules, 1980]

Government of Tripura Office of the Licensing Officer LICENCE ANNEXURE

The licence is subject to the following conditions:

- The licence shall be non-transferable.
- 2. The number of workmen employed as contract labour/migrant workmen in the establishment shall not, on any day, exceed the maximum number specified in the licence
- 3. Except as provided in the rules, the fees paid for the grant or, as the case may be, for renewal of the licence shall be non-refundable.
- 4. The rates of wages payable to the workmen by the contractor shall not be less than the rates prescribed for the Scheduled Employment under the Minimum Wages Act, 1948 (11 of 1948), where applicable, and where the rates have been fixed by agreement, settlement, award, or by the appropriate Government, not less than the rates so fixed.
- 5. (a) In case where the workmen employed by the contractor perform the same or similar kind of work as the workmen directly employed by the principal employer of the establishment, the wage rates, holidays, hours of work and other conditions of service of the workmen of the contractor shall be the same as applicable to the workmen directly employed by the principal employer of the establishment on the same or similar kind of work; provided that in the case of any disagreement with regard to the type of work the same shall be decided by the Labour Commissioner whose decision shall be final. (b) In other cases the wage rates, holidays, hours of work and conditions of service of the workmen of the contractor shall be such as may be specified in this behalf by the Labour
- 6. Every contract labour/migrant worker shall be entitled to allowances, benefits, facilities etc, as prescribed in the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) or the Inter-State Migrant Workmen(Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) and rules made there under.
- 7. In every establishment where 20 or more women are ordinarily employed as there shall be provided 2 rooms of reasonable dimension for the use of their children under the age of six years. One of such rooms would be used as a play room for the children and the other as bed room for the children. For this purpose the contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the sleeping room The standard of construction and maintenance of the crèches may be such as may be specified in this behalf by the Labour Commissioner.
- 8. No women shall be employed by any contractor before 6 a.m. or after 7 p.m.:

Provided that this clause shall not apply to the employment of women in pit head baths, crèches and canteens and as mid-wives and nurses in hospitals and dispensaries.

9. The licensee shall notify any change in the number of workmen or the conditions of work to

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Government of Tripura Office of the Licensing Officer LICENCE

the Licensing Officer.

- 10. A copy of the licence shall be displayed prominently at the premises where the contract work is being carried on.
- 11. The contractor shall comply with all the provisions of the Act and these Rules.
- 12. The licensee shall, within fifteen days of the commencement and completion of each contract work, submit a return to the Inspector appointed under section 28 of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of1970) intimating the actual date of the commencement or, as the case may be, completion of such contract work in

Labour license – Melaghar & Bishramganj

FORM VI

[Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978; and rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules, 1980]

Government of Tripura Office of the Licensing Officer

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Licence No. TR/SPJ/LCTR/2025/02554

Dated. 10-02-2025

- Licence is hereby granted to MS ECO PROTECTION ENGINEERS PVT LTD MANAGING DIRECTOR Mr CHANDRASEKAR Son/Daughter of CHINNASAMI, Address: Melaghar, Near Radha Madhabpur SB School, PIN 799115 under sub-section (1) of section 12 of the Contract Labour (Regulation and Abolition) Act, 1970 (37 of 1970) or sub-section (1) of section 8 of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) subject to the conditions specified in the Annexure.
- Name and location of work DESIGN BUILD AND OPERATE DBO CONTRACT FOR COMPREHENSIVE WATER SUPPLY IMPROVEMENT WORKS FOR MELAGHAR BISHRAMGANJ CLUSTER IIA TOWNS OF TRIPURA
- 3. Name of the principal employer ECO PROTECTION ENGINEERS PVT LTD
- Registration Certificate no. TR/SPJ/RISMW/2025/00077 and Date 01-02-2025 of the principal employer
- The licence shall remain in force till 11-02-2026.
- 6. Maximum number of contract labour 20 to be employed on a single day under the licence
- Maximum number of migrant workmen 15 to be employed on a single day under the licence

Fee Paid

Contract Labour Rs. 300 ISMW Rs. 300



SPC-106-011674

Signature: Not Required

Urban Package: TUDA/WS-03/P-03 (Cluster IIIA Water Supply)

Labour Licence - Dharmanagar

FORM VI [Under rule 19(1) of the Tripura Contract Labour (Regulation and Abolition) Rules, 1978;]

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Licence No. TR/NTR/LCTR/2025/02994

Dated. 24-03-2025

- Licence is hereby granted to PREM CONSTRUCTION COMPANY PROP RAM SWAROOP VISHNOI Son/Daughter of MALLA RAM VISHNOI,
 - Address: DHARMANAGAR, NORTH TRIPURA, TRIPURA PIN- 799250 under sub-section (1) of section 12 of the Contract Labour
 - (Regulation and Abolition) Act, 1970 (37 of 1970) subject to the conditions specified in the Annexure.
- Name and location of work Design Build and Operate DBO Contract for Comprehensive Water Supply Improvement Works for Dharmanagar of Tripura
- 3. Name of the principal employer EXECUTIVE ENGINEER, TUDA, GOVT. OF TRIPURA.
- Registration Certificate no. F.NO.3-(66) TUDA/PROJECT/2023/P-I/1383-1400 and Date 21-12-2023 of the principal employer
- 5. The licence shall remain in force till 24-03-2026.
- 6. Maximum number of contract labour 20 to be employed on a single day under the licence

Fee Paid

Contract Labour Rs. 300 Security Deposited Paid Contract Labour Rs. 1800



SPC-106-012883

Signature: Not Required

Designation: Licensing Officer

FORM VI

[Under rule 11(1) of the Tripura Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Rules,1980]

Government of Tripura Office of the Licensing Officer LICENCE

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Licence No. TR/NTR/LCTR/2025/02992

Dated. 24-03-2025

- 1. Licence is hereby granted to PREM CONSTRUCTION COMPANY PROP RAM SWAROOP VISHNOI Son/Daughter of MALLA RAM VISHNOI,
 - Address: DHARMANAGAR, NORTH TRIPURA, TRIPURA PIN- 799250 under sub-section (1) of section 8 of the Inter-State
 - Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 (30 of 1979) subject to the conditions specified in the Annexure.
- Name and location of work Design Build and Operate DBO Contract for Comprehensive Water Supply Improvement Works for Dharmanagar of Tripura
- 3. Name of the principal employer EXECUTIVE ENGINEER, TUDA, GOVT. OF TRIPURA.
- Registration Certificate no. F.NO.3-(66) TUDA/PROJECT/2023/P-I/1383-1400 and Date 21-12-2023 of the principal employer
- 5. The licence shall remain in force till 24-03-2026.
- 6. Maximum number of migrant workmen 10 to be employed on a single day under the licence

Fee Paid

ISMW Rs. 200 Security Deposited Paid ISMW Rs. 5000



SPC-106-012884

Signature: Not Required