

Analysis Report on Water Quality Parameters of Different Ponds in Dhanbad Municipal Corporation Area

**(Dhanbad Municipal Corporation, Dhanbad: Letter No.: XIX/AMRUT/23/2020-
21/2323/DMC dated 16.11.2021)**



**Prepared
By**



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CERTIFICATE OF WORK

This is to certify that work entitled “Analysis of Water Quality Parameters of Different Ponds in Dhanbad Municipal Corporation Area” (Dhanbad Municipal Corporation Dhanbad: Letter No: XIX/AMRUT/23/2020-21/2323/DMC dated 16.11.2021) is carried out by the Centre for Water Resource Management, Indian Institute of Technology (ISM) Dhanbad-826004. The study team comprises of the following members:

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2. Prof. Tinesh Pathania, Project Investigator /CWRM

The team acknowledges the contribution of Mr. Sanchit Kumar, Research Scholar, Dept. of ESE, IIT(ISM) Dhanbad for his contribution during the study period.

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1. Study Area



Figure 1: Sampling Locations Map

Table 1: Latitude and Longitude for collected water sampling locations.

Name of waterbody	latitude	longitude
Jora Talab, Ward No-30	23°46'23.5"	86°26'20.5"
Barahmasia Talab, Ward No – 29	23°46'57.1"	86°26'27.1"
Loco Talab, Ward No -27	23°47'18.7"	86°26'27.3"
Raja Talab, near big bazar	23°49'27.4"	86°28'06.7"
Pampu Talab, Ward No-20	23°48'03.3"	86°25'13.1"
Guihibandh Talab, Ward No-03	23°48'24.5"	86°17'49.6"

2. Sampling of pond water

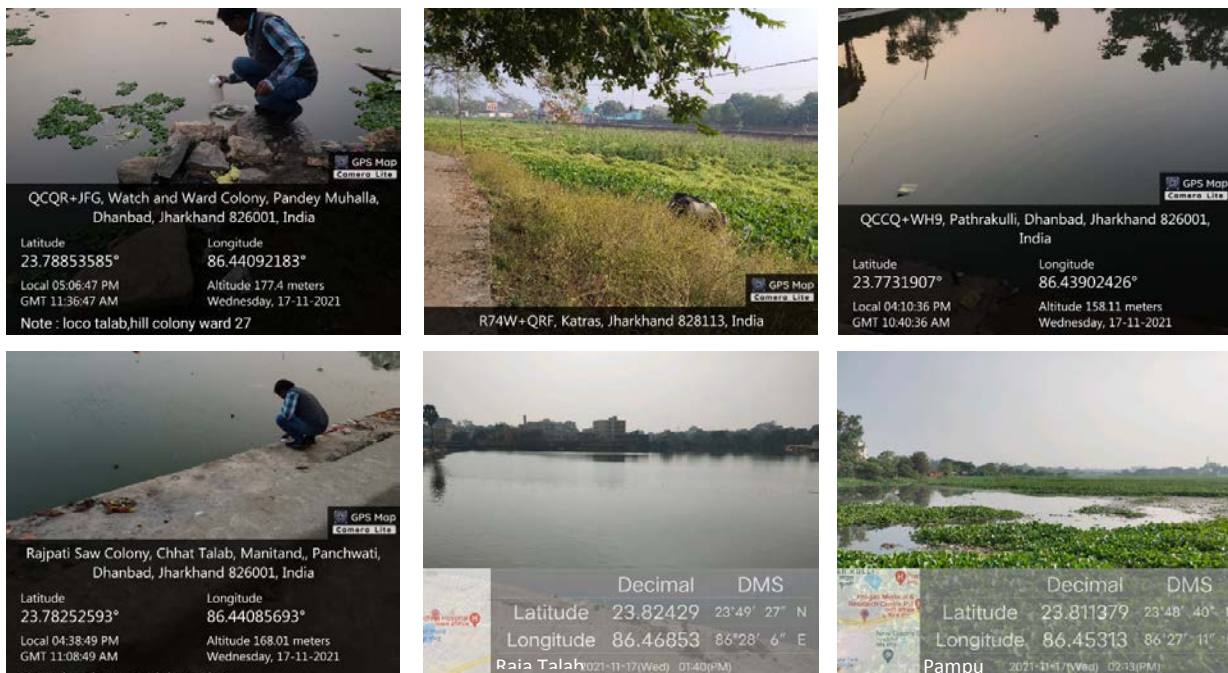


Figure 2: Location of six ponds in Dhanbad Municipal Corporation Area.

3. Analysis

Table 2: Analytical methods and equipment used for physico-chemical analysis of the six pond water samples.

S. No.	Parameters	Equipment/Analytical method	Standard
1.	BOD (mg/l)	Winkler's and modified Strickland-Parsons Alkali-Azide method	IS 3025 (Part 44): 1993 (RA 2014)
2.	COD (mg/l)	Closed Reflux Standard Potassium dichromate ($K_2Cr_2O_7$) digestion method/Merck Spectro quant TR320 COD digester	IS 3025 (Part 58): 2006 (RA 2017)
3.	DO (mg/l)	Membrane Electrode Method/HANNAH HI98193 DO analyzer	APHA 4500-O G
4.	TDS (mg/l)	Multiparameter analysis/PCSTester35 Multiparameter analyzer	IS 3025 (Part 15): 1984 (RA 2014)
5.	Turbidity (NTU)	Nepheloturbidometry method/HANNAHI98703 Turbidity meter	IS 3025 (Part 10): 1984 (RA 2017)

4. Laboratory Analysis



Figure 3: Analysis of water samples at CWRM.

5. Results

Table 3: Water quality parameters of six pond water samples (Dhanbad Municipal Area).

S. No.	Location	pH	BOD (mg/l)	COD (mg/l)	DO (mg/l)	TDS (mg/l)	Turbidity (NTU)
1	Jora Talab, Ward No-30	6.72	21.5	32.8	8.08	315	10.7
2	Barahmasia Talab, Ward No - 27	6.90	33.2	52.6	3.16	600	63.3
3	Loco Talab, Ward No - 27	7.27	36.36	58.8	4.47	442	11.8
4	Raja Talab, near big bazar	7.12	24.0	38.1	7.55	333	9.84
5	Pampu Talab, Ward No-20	6.78	56.4	102.6	1.19	651	66.0
6	Guihibandh Talab, Ward No-03	7.30	27.2	44.7	4.68	291	14.8

Impression:

1. The values of BOD, COD and Turbidity are not meeting the Water Quality Criteria as per the CPCB Guidelines.
2. The DO at Barahmasia Talab and Pampu Talab is extremely low indicating unsuitable for aquatic life and needs immediate attention for restoration.

Suggestion:

Dhanbad Municipal Corporation is advised to monitor point and non-point sources of water discharge in the studied six pond systems.