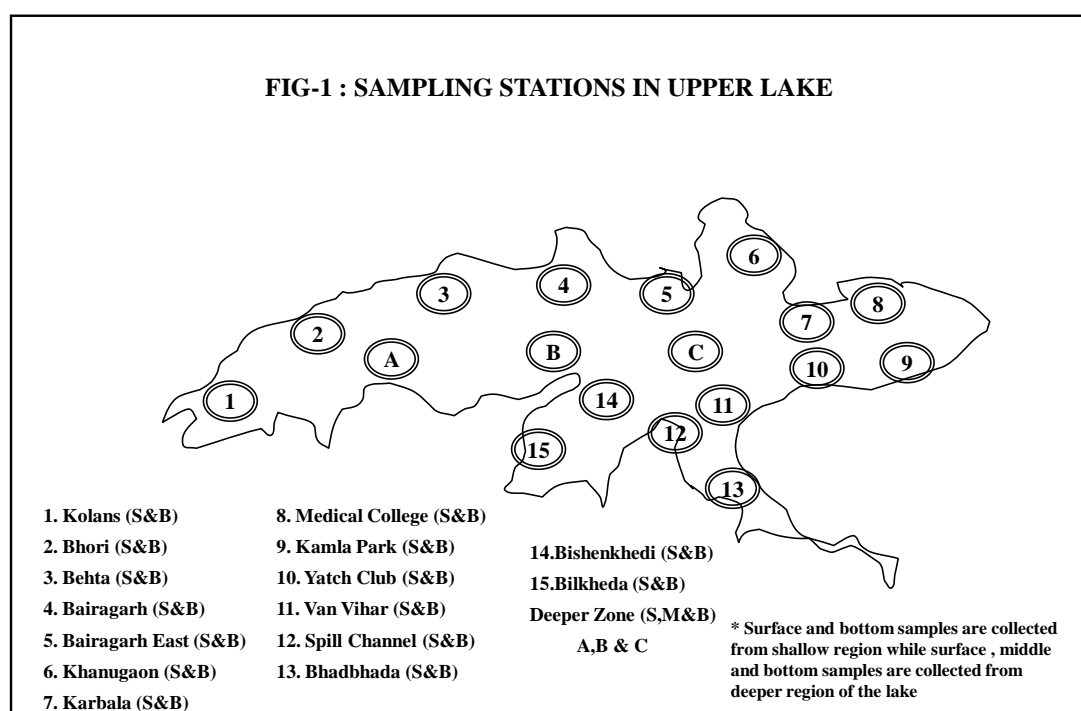


## Monthly Water Quality Report of Upper & Lower Lake, Bhopal (Bhoj Wetland)

### I. Background

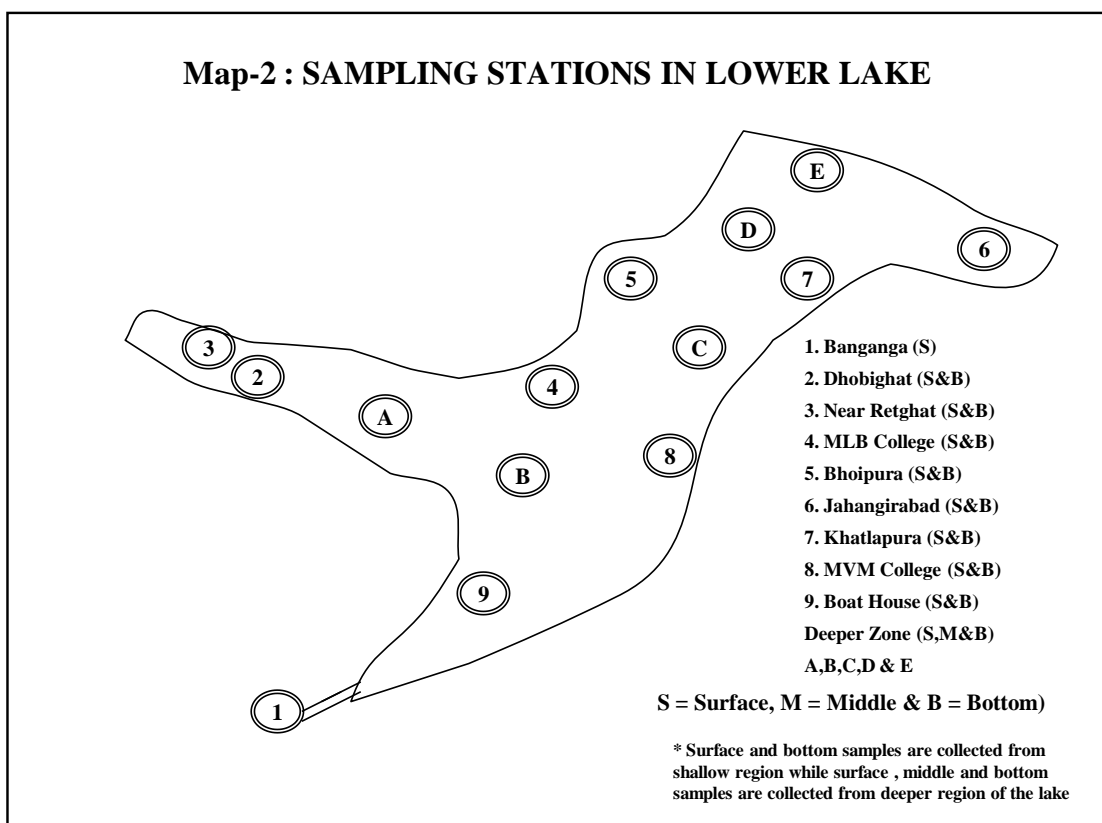
With reference to approval of ED Sir, the monthly water quality analysis for Upper & Lower Lakes resumed from December, 2021.

Water samples were collected from 18 sampling stations of Upper Lake (Map-1) and 14 sampling stations of Lower Lake (Map-2). Samples were collected from limnetic (shallow) as well as littoral (deeper) regions of the lake which were finalized based on fringe area activities, anthropogenic impacts and catchment characteristics.



### II. Methodology

Standard methods as depicted in APHA (2017) were followed for collection of water samples and analysis of various physicochemical parameters.



### III. Parameters

Total 20 parameters (Table-1) were analyzed to understand the existing water quality of the lakes.

**Table-1: Parameters analyzed**

S. No	Physical Parameters	S. No	Chemical Parameters
1	Air Temp. °C	1	Dissolved Oxygen (mg./l)
2	Water Temp. °C	2	Free CO <sub>2</sub> (mg/l)
3	pH	3	Total Alkalinity (mg/l)
4	Transparency (cm)	4	Carbonate alkalinity (mg/l)
5	TDS (mg/l)	5	Bi-Carbonate alkalinity (mg/l)
6	Conductivity (mS/cm)	6	Total Hardness (mg/l)
7	Turbidity	7	Ca hardness (mg/l)
		8	Mg hardness (mg/l)
		9	Calcium content (mg/l)
		10	Magnesium content (mg/l)
		11	Chloride (mg/l)
		12	BOD (mg/l)
		13	COD (mg/l)

#### IV. Results

##### 1. Upper Lake

December: 2021

Results (Field Analysis) of water samples collected from different sampling stations of Upper Lake is depicted in Table-1a

Table-1a Water Quality at different locations of Upper Lake: Dec - 2021 (Field Analysis)												
S. No	St. Name & No.	Layer	Date	Time	Air Temp. °C	Water Temp. °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg./l)	Conductivity (mS/cm)	TDS (mg/l)	Transparency (cm)
1	KOLANS (U/1)	Surface	22.12.21	2.15 pm	24.6	20.2	8.2	Abs	8.8	0.42	257	54
		Bottom			0	19.0	7.4	6	5.6	0.43	260	
2	BHORI (U/2)	Surface	22.12.21	1.45 pm	24.7	20.5	8.3	Abs	8.4	0.42	255	56
		Bottom			0	19.3	7.5	4	6.0	0.43	265	
3	BETHA. (U/3)	Surface	22.12.21	1.25 pm	24.6	20.4	8.1	Abs	8.8	0.42	254	50
		Bottom			0	19.1	7.6	6	6.4	0.43	260	
4	BAIRAGARH (U/4)	Surface	22.12.21	1.0 pm	24.5	20.5	8.2	Abs	8.0	0.42	254	52
		Bottom			0	19.4	7.5	4	6.0	0.44	268	
5	BAIRAGARH EAST (U/5)	Surface	22.12.21	12.35 pm	24.3	20.3	8.5	Abs	8.4	0.41	252	48
		Bottom			0	19.2	7.4	2	5.2	0.43	265	
6	KHANUGAU (U/6)	Surface	20.12.21	4.0 pm	21.5	17.2	8.4	Abs	7.6	0.41	252	36
		Bottom			0	16.5	7.6	6	4.8	0.42	255	
7	KARBALA (U/7)	Surface	20.12.21	3.15 pm	21.7	17.5	8.5	Abs	8.0	0.42	258	46
		Bottom			0	16.9	7.5	4	5.2	0.43	264	
8	MEDICAL COLLEGE (U/8)	Surface	20.12.21	2.45 pm	21.5	17.5	8.7	Abs	8.4	0.43	262	44
		Bottom			0	17.0	7.4	6	5.6	0.45	275	
9	KAMLA PARK (U/9)	Surface	20.12.21	2.20 pm	21.2	17.3	8.6	Abs	7.2	0.43	264	46
		Bottom			0	16.8	7.5	4	6.0	0.48	292	
10	YACHT CLUB (U/10)	Surface	21.12.21	1.15 pm	23.1	20.0	8.3	Abs	8.0	0.41	252	38

Table-1a Water Quality at different locations of Upper Lake: Dec - 2021 (Field Analysis)

S. No	St. Name & No.	Layer	Date	Time	Air Temp. °C	Water Temp. °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg./l)	Conductivity (mS/cm)	TDS (mg/l)	Transparency (cm)
		Bottom			0	18.1	7.8	2	6.4	0.45	276	
11	VAN VIHAR (U/11)	Surface	21.12.21	1.55 pm	23.3	20.1	8.4	Abs	7.6	0.43	260	40
		Bottom			0	18.4	7.6	4	6.4	0.43	263	
12	SPILL CHANEL (U/12)	Surface	21.12.21	2.45 pm	24.1	20.3	8.5	Abs	8.4	0.43	263	44
		Bottom			0	19.1	7.7	2	6.0	0.43	264	
13	BHADBHADA (U/13)	Surface	21.12.21	3.15 pm	24.6	20.4	8.7	Abs	8.8	0.43	260	46
		Bottom			0	19.3	7.6	6	6.4	0.43	262	
14	STUD FARM (U/14)	Surface	21.12.21	3.50 pm	24.4	20.2	8.5	Abs	8.4	0.42	254	44
		Bottom			0.0	18.9	7.4	2	6.0	0.42	257	
15	BISEKHEDE (U/15)	Surface	21.12.21	4.20 pm	24.2	20.1	8	Abs	8.0	0.42	256	42
		Bottom			0.0	19.0	8	4	5.6	0.43	260	
16	A (Deeper Zone)	Surface	23.12.21	12.45 pm	24.7	20.4	8.4	Abs	8.4	0.42	254	46
		Middle			0.0	20.0	7.8	4	6.8	0.42	255	
		Bottom			0.0	19.3	7.3	6	4.8	0.43	265	
17	B (Deeper Zone)	Surface	23.12.21	1.25 pm	24.8	20.3	8.5	Abs	9.2	0.42	257	44
		Middle			0	20.1	7.7	2	7.2	0.42	257	
		Bottom			0	19.1	7.5	4	4.0	0.43	260	
18	C (Deeper Zone)	Surface	23.12.21	2.15 pm	25.0	20.5	8.4	Abs	8.4	0.43	260	44
		Middle			0	19.9	7.8	4	6.8	0.43	265	
		Bottom			0	19.0	7.4	6	5.2	0.45	274	
				Min	0	16.5	7.3	2.0	4.0	0.00		36.0
				Max	25	20.5	8.7	6.0	9.2	0.00		56.0
				Mean	11.02	19.1	8.0	4.2	6.9	0.00		45.6
										0.00		

Results of water samples collected from different sampling stations of Upper Lake is depicted in Table-1b

Table-1b Water Quality at different locations of Upper Lake : Dec - 2021(Laboratory Analysis) Units mg/l													
S · N o	St. Name & No.	Layer	Total Alkalinity (mg/l)	Carbo nate alkalinity (mg/l)	Bi- Carbo nate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calci um conte nt (mg/l )	Magnes ium content (mg/l)	Chlor ide (mg/l)	BO D (mg /l)	COD (mg/l)
1	KOLANS (U/1)	Surf ace	86	4	82	82	60.9	21.1	25.6	5.1	14.99	4.8	24.0
		Botto m	102	Abs	102	84	63.0	21.0	26.5	5.1	16.98	8.0	40.0
2	BHORI (U/2)	Surf ace	80	6	74	76	54.6	21.4	22.9	5.2	13.99	4.0	20.0
		Botto m	96	Abs	96	80	58.8	21.2	24.7	5.2	15.98	6.0	32.0
3	BETHA. (U/3)	Surf ace	84	4	80	74	56.7	17.3	23.8	4.2	12.99	4.8	24.0
		Botto m	106	Abs	106	80	60.9	19.1	25.6	4.6	14.99	10.0	36.0
4	BAIRAGARH (U/4)	Surf ace	90	6	84	72	52.5	19.5	22.1	4.7	15.98	5.2	16.0
		Botto m	100	Abs	100	94	67.2	26.8	28.2	6.5	17.98	8.0	32.0
5	BAIRAGARH EAST (U/5)	Surf ace	102	4	98	100	63.0	37.0	26.5	9.0	19.98	4.4	28.0
		Botto m	106	Abs	106	108	65.1	42.9	27.3	10.4	20.98	8.0	40.0
6	KHANUGAU (U/6)	Surf	104	6	98	92	52.5	39.5	22.1	9.6	17.98	4.8	24.0

Table-1b Water Quality at different locations of Upper Lake : Dec - 2021(Laboratory Analysis) Units mg/l													
S · N o	St. Name & No.	Layer	Total Alkalinity (mg/l)	Carbo nate alkalinity (mg/l)	Bi-Carbo nate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calci um conte nt (mg/l )	Magnes ium content (mg/l)	Chlor ide (mg/l)	BO D (mg /l)	COD (mg/l)
		ace											
		Botto m	112	Abs	112	102	63.0	39.0	26.5	9.5	21.98	6.0	40.0
7	KARBALA (U/7)	Surf ace	100	4	96	90	58.8	31.2	24.7	7.6	16.98	3.2	20.0
		Botto m	104	Abs	104	94	63.0	31.0	26.5	7.5	20.98	8.0	32.0
8	MEDICAL COLLEGE (U/8)	Surf ace	102	4	98	92	63.0	29.0	26.5	7.0	15.98	4.4	16.0
		Botto m	110	Abs	110	100	65.1	34.9	27.3	8.5	19.98	8.0	36.0
9	KAMLA PARK (U/9)	Surf ace	104	6	98	88	60.9	27.1	25.6	6.6	14.99	3.6	20.0
		Botto m	114	Abs	114	96	65.1	30.9	27.3	7.5	17.98	6.0	44.0
10	YACHT CLUB (U/10)	Surf ace	100	4	96	86	56.7	29.3	23.8	7.1	13.99	4.0	24.0
		Botto m	108	Abs	108	92	58.8	33.2	24.7	8.1	16.98	8.0	36.0
11	VAN VIHAR (U/11)	Surf ace	102	6	96	94	63.0	31.0	26.5	7.5	12.99	4.4	20.0
		Botto m	106	Abs	106	98	65.1	32.9	27.3	8.0	15.98	8.0	32.0
1	SPIILL CHANEL	Surf	100	4	96	102	65.1	36.9	27.3	9.0	14.99	4.0	16.0

Table-1b Water Quality at different locations of Upper Lake : Dec - 2021(Laboratory Analysis) Units mg/l													
S · N o	St. Name & No.	Layer	Total Alkalinity (mg/l)	Carbo nate alkalini ty (mg/l)	Bi- Carbo nate alkalini ty (mg/l)	Total Hardness (mg/l)	Ca hardn ess (mg/l)	Mg hardn ess (mg/l)	Calci um cont ent (mg/l )	Magnes ium content (mg/l)	Chlor ide (mg/l)	BO D (mg /l)	COD (mg/l)
2	(U/12)	ace											
		Botto m	110	Abs	110	106	69.3	36.7	29.1	8.9	16.98	8.0	28.0
1 3	BHADBHADA (U/13)	Surf ace	106	6	100	98	63.0	35.0	26.5	8.5	17.98	4.8	24.0
		Botto m	114	Abs	114	102	65.1	36.9	27.3	9.0	19.98	10. 0	48.0
1 4	STUD FARM (U/14)	Surf ace	92	4	88	94	58.8	35.2	24.7	8.6	13.99	4.4	24.0
		Botto m	102	Abs	102	100	63.0	37.0	26.5	9.0	15.98	8.0	36.0
1 5	BISEKHEDE (U/15)	Surf ace	88	6	82	86	56.7	29.3	23.8	7.1	14.99	4.0	20.0
		Botto m	106	Abs	106	92	60.9	31.1	25.6	7.6	18.98	6.0	36.0
1 6	A (Deeper Zone)	Surf ace	88	4	84	80	54.6	25.4	22.9	6.2	12.99	4.0	16.0
		Midd le	92	Abs	92	88	58.8	29.2	24.7	7.1	14.99	4.8	24.0
		Botto m	100	Abs	100	96	63.0	33.0	26.5	8.0	17.98	6.0	36.0
1 7	B (Deeper Zone)	Surf ace	96	4	92	86	56.7	29.3	23.8	7.1	14.99	4.8	20.0
		Midd	102	Abs	102	92	60.9	31.1	25.6	7.6	16.98	5.6	28.0

Table-1b Water Quality at different locations of Upper Lake : Dec - 2021(Laboratory Analysis) Units mg/l													
S · N o	St. Name & No.	Layer	Total Alkalinity (mg/l)	Carbo nate alkalini ty (mg/l)	Bi- Carbo nate alkalini ty (mg/l)	Total Hardness (mg/l)	Ca hardn ess (mg/l)	Mg hardn ess (mg/l)	Calci um cont ent (mg/l )	Magnes ium content (mg/l)	Chlor ide (mg/l)	BO D (mg /l)	COD (mg/l)
		le											
		Bottom	112	Abs	112	98	63.0	35.0	26.5	8.5	19.98	<b>10.0</b>	40.0
1 8	C (Deeper Zone)	Surface	92	6	86	86	<b>52.5</b>	33.5	<b>22.1</b>	8.1	13.99	4.4	20.0
		Middle	100	Abs	100	90	56.7	33.3	23.8	8.1	15.98	5.2	24.0
		Bottom	104	Abs	104	96	63.0	33.0	26.5	8.0	18.98	8.0	36.0
		Min	<b>80</b>	<b>4</b>	<b>74</b>	<b>72</b>	<b>52.5</b>	<b>17.3</b>	<b>22.05</b>	<b>4.2039</b>	<b>12.99</b>	<b>3.20</b>	<b>16</b>
		Max	<b>114</b>	<b>6</b>	<b>114</b>	<b>108</b>	<b>69.3</b>	<b>42.9</b>	<b>29.11</b>	<b>10.42</b>	<b>21.98</b>	<b>10.00</b>	<b>48</b>
		Mean	<b>80</b>	<b>4</b>	<b>98.31</b>	<b>91.44</b>	<b>60.74</b>	<b>30.70</b>	<b>25.51</b>	<b>7.46</b>	<b>16.73</b>	<b>5.99</b>	<b>28.51</b>



January: 2022

Water Quality at different locations of Upper Lake: Jan - 2022 (Field Analysis)												
S. No	St.Name & No.	Layer	Date	Time	Air Temp . °C	Water Temp . °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg./l)	Conductivity (mS/cm)	TDS (mg/l)	Transparency (cm)
1	KOLANS (U/1)	Surface	25.01.22	3.20 pm	22	19.7	8.3	Abs	8.0	0.45	272	82
		Bottom			0	19.1	7.4	6	6.0	0.47	288	
2	BHORI (U/2)	Surface	25.01.22	3.0 pm	21.8	19.5	8.5	Abs	7.2	0.44	269	84
		Bottom			0	19	7.6	4	5.2	0.47	285	
3	BETHA. (U/3)	Surface	25.01.22	2.40 pm	21.5	19.3	8.4	Abs	8.0	0.44	270	80
		Bottom			0	18.5	7.5	4	6.4	0.46	282	
4	BAIRAGARH (U/4)	Surface	25.01.22	2.08 pm	21.4	19.1	8.5	Abs	7.6	0.44	269	84
		Bottom			0	18.4	7.4	4	6.0	0.45	273	
5	BAIRAGARH EAST (U/5)	Surface	24.01.22	3.0 pm	22.1	19.3	8.8	Abs	8.4	0.44	268	74
		Bottom			0	18.7	7.6	4	6.4	0.44	271	
6	KHANUGAU (U/6)	Surface	24.01.22	2.30 pm	22	19.2	8.9	Abs	8.8	0.44	267	76
		Bottom			0	18.6	7.7	4	6.0	0.44	270	

		m										
7	KARBALA (U/7)	Surface	24.01.2 2	2.10 pm	20.1	18.3	8.7	Abs	8.4	0.44	269	74
		Bottom			0	17.6	7.4	4	6.0	0.44	271	
8	MEDICAL COLLEGE (U/8)	Surface	24.01.2 2	1.40 pm	19.5	17.8	8.8	Abs	8.0	0.44	267	74
		Bottom			0	17.5	7.5	2	6.4	0.45	277	
9	KAMLA PARK (U/9)	Surface	24.01.2 2	1.0 pm	19.2	17.6	8.7	Abs	7.6	0.44	268	76
		Bottom			0	17.3	7.6	2	6.0	0.46	278	
10	YACHT CLUB (U/10)	Surface	27.01.2 2	12.45 pm	20	19.1	8.4	Abs	8.0	0.44	270	78
		Bottom			0	18.5	7.5	6	6.4	0.45	272	
11	VAN VIHAR (U/11)	Surface	27.01.2 2	3.0 pm	22.3	19.4	8.3	Abs	8.4	0.44	271	76
		Bottom			0	18.5	7.4	4	5.6	0.46	280	
12	SPILL CHANEL (U/12)	Surface	28.01.2 2	1.30 pm	21.4	19.4	8.2	Abs	8.0	0.44	269	78
		Bottom			0	18.8	7.4	4	5.2	0.45	275	
13	BHADBHADA (U/13)	Surface	28.01.2 2	2.0 pm	21.6	19.6	8.3	Abs	7.6	0.44	270	76
		Bottom			0	19.1	7.5	4	4.8	0.46	282	
14	STUD FARM (U/14)	Surface	25.01.2 2	4.0 pm	21.9	19.6	8.4	Abs	7.2	0.44	270	76
		Bottom			0.0	19.0	7.5	6	4.4	0.46	282	

		m										
15	BISENKHEDI (U/15)	Surface	25.01.22	3.40 pm	22.1	19.8	8.3	Abs	8.4	0.44	268	78
		Bottom			0.0	19.3	7.5	4	5.6	0.45	272	
16	A (Deeper Zone)	Surface	27.01.22	2.40 pm	21.0	19.6	8.4	Abs	8.4	0.44	267	76
		Middle			0.0	19.2	8.0	Abs	7.2	0.44	271	
		Bottom			0.0	18.8	7.4	4	5.6	0.46	283	
17	B (Deeper Zone)	Surface	27.01.22	2.0 pm	20.5	19.5	8.5	Abs	8.0	0.44	266	78
		Middle			0	19.1	7.9	Abs	6.8	0.45	272	
		Bottom			0	18.4	7.5	6	5.2	0.47	284	
18	C (Deeper Zone)	Surface	27.01.22	1.30 pm	20.3	19.3	8.4	Abs	8.0	0.44	269	76
		Middle			0	19.0	8.1	Abs	7.6	0.44	271	
		Bottom			0	18.7	7.4	4	6.0	0.46	282	
				Min	<b>0</b>	<b>17.3</b>	<b>7.4</b>	<b>2.0</b>	0.0	0.00		<b>74.0</b>
				Max	<b>22.3</b>	<b>19.8</b>	<b>8.9</b>	<b>6.0</b>	0.0	0.00		<b>84.0</b>
				Mean	<b>9.83</b>	<b>18.9</b>	<b>8.0</b>	<b>4.2</b>	0.0	0.00		<b>77.7</b>
									0.00			
Sample collected by				Sample analyzed by				Report prepared by				

**Table-1 Water Quality at different locations of Upper Lake Jan - 2022 (Laboratory Analysis) Units mg/l**

<b>S · N o</b>	<b>St.Name &amp; No.</b>	<b>Laye r</b>	<b>Total Alkali nity (mg/l)</b>	<b>Carbo nate alkalini ty (mg/l)</b>	<b>Bi- Carbo nate alkalini ty (mg/l)</b>	<b>Total Hardn ess (mg/l)</b>	<b>Ca hardn ess (mg/l)</b>	<b>Mg hardn ess (mg/l)</b>	<b>Calci um conte nt (mg/l)</b>	<b>Magnes ium content (mg/l)</b>	<b>Chlor ide (mg/l)</b>	<b>BO D (mg /l)</b>	<b>COD (mg/l)</b>
1	KOLANS (U/1)	Surfa ce	96	4	92	100	79.8	20.2	33.5	4.9	19.98	4.8	36.0
		Botto m	104	Abs	104	106	84.0	22.0	35.3	5.3	20.98	10	44.0
2	BHORI (U/2)	Surfa ce	92	6	86	120	73.5	46.5	30.9	11.3	20.98	5.2	32.0
		Botto m	106	Abs	106	128	79.8	48.2	33.5	11.7	21.98	8	40.0
3	BETHA. (U/3)	Surfa ce	96	2	94	116	73.5	42.5	30.9	10.3	19.98	4	48.0
		Botto m	110	Abs	110	124	77.7	46.3	32.6	11.3	20.98	10	56.0
4	BAIRAGARH (U/4)	Surfa ce	94	4	90	98	84.0	14.0	35.3	3.4	18.98	3.6	44.0
		Botto m	114	Abs	114	106	90.3	15.7	37.9	3.8	20.98	6	52.0
5	BAIRAGARH EAST (U/5)	Surfa ce	104	6	98	120	73.5	46.5	30.9	11.3	17.98	4.4	36.0
		Botto m	110	Abs	110	128	79.8	48.2	33.5	11.7	19.98	8	48.0
6	KHANUGAU (U/6)	Surfa	102	8	94	120	79.8	40.2	33.5	9.8	20.98	4.8	40.0

		ce											
		Bottom	106	Abs	106	130	86.1	43.9	36.2	10.7	22.98	10	56.0
7	KARBALA (U/7)	Surface	106	6	100	102	84.0	18.0	35.3	4.4	17.98	4	28.0
		Bottom	114	Abs	114	114	92.4	21.6	38.8	5.2	20.98	6	36.0
8	MEDICAL COLLEGE (U/8)	Surface	108	6	102	94	79.8	14.2	33.5	3.5	19.98	4	52.0
		Bottom	112	Abs	112	108	84.0	24.0	35.3	5.8	21.98	8	60.0
9	KAMLA PARK (U/9)	Surface	106	4	102	112	75.6	36.4	31.8	8.8	18.98	5.2	36.0
		Bottom	108	Abs	108	118	84.0	34.0	35.3	8.3	20.98	8	48.0
10	YACHT CLUB (U/10)	Surface	100	4	96	110	77.7	32.3	32.6	7.8	16.98	4.8	40.0
		Bottom	110	Abs	110	120	86.1	33.9	36.2	8.2	19.98	8	52.0
11	VAN VIHAR (U/11)	Surface	102	6	96	134	86.1	47.9	36.2	11.6	19.98	4.4	36.0
		Bottom	110	Abs	110	138	90.3	47.7	37.9	11.6	20.98	8	48.0
12	SPILL CHANEL (U/12)	Surface	100	4	96	114	86.1	27.9	36.2	6.8	18.98	4	44.0
		Bottom	108	Abs	108	122	92.4	29.6	38.8	7.2	19.98	8	56.0
13	BHADBHADA (U/13)	Surface	102	6	96	112	92.4	19.6	38.8	4.8	20.98	5.2	48.0
		Bottom	108	Abs	108	120	96.6	23.4	40.6	5.7	22.98	10	60.0
14	STUD FARM	Surface	108	4	104	132	88.2	43.8	37.0	10.6	18.98	4	40.0

4	(U/14)	ce												
		Bottom	114	Abs	114	136	92.4	43.6	38.8	10.6	21.98	6	52.0	
1	BISENKHEDI (U/15)	Surface	102	6	96	120	84.0	36.0	35.3	8.7	19.98	4.4	44.0	
		Bottom	112	Abs	112	134	94.5	39.5	39.7	9.6	20.98	8	52.0	
1	A (Deeper Zone)	Surface	102	6	96	124	84.0	40.0	35.3	9.7	17.98	4	28.0	
		Middle	108	4	104	130	90.3	39.7	37.9	9.6	19.98	4.8	40.0	
		Bottom	112	Abs	112	136	94.5	41.5	39.7	10.1	21.98	6	48.0	
1	B (Deeper Zone)	Surface	104	4	100	120	79.8	40.2	33.5	9.8	18.98	4.8	32.0	
		Middle	106	2	104	124	86.1	37.9	36.2	9.2	20.98	5.6	44.0	
		Bottom	110	Abs	110	130	92.4	37.6	38.8	9.1	22.98	8	52.0	
1	C (Deeper Zone)	Surface	104	6	98	116	79.8	36.2	33.5	8.8	19.98	5.2	36.0	
		Middle	110	2	108	126	84.0	42.0	35.3	10.2	21.98	5.6	48.0	
		Bottom	114	Abs	114	132	88.2	43.8	37.0	10.6	22.98	10	56.0	
		Min	<b>92</b>	<b>2</b>	<b>86</b>	<b>94</b>	<b>73.5</b>	<b>14</b>	<b>30.87</b>	<b>3.402</b>	<b>16.98</b>	<b>3.60</b>	<b>28</b>	
		Max	<b>114</b>	<b>8</b>	<b>114</b>	<b>138</b>	<b>96.6</b>	<b>48.2</b>	<b>40.57</b>	<b>11.71</b>	<b>22.98</b>	<b>10.00</b>	<b>60</b>	
		Mean	<b>106.00</b>	<b>2</b>	<b>103.44</b>	<b>119.85</b>	<b>84.81</b>	<b>35.04</b>	<b>35.62</b>	<b>8.51</b>	<b>20.47</b>	<b>6.23</b>	<b>44.82</b>	
<b>Sample collected by</b>					<b>Sample analyzed by</b>					<b>Report prepared by</b>				

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**February 2022**

**March 2022**

**NOTE DONE**

April, 2022

Water Quality at different locations of Upper Lake: April - 2022 (Field Analysis)												
S. No	St.Name & No.	Layer	Date	Time	Air Temp . °C	Water Temp . °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg./l)	Conductivity (mS/cm)	TDS (mg/l)	Transparency (cm)
1	KOLANS (U/1)	Surface	13.04.22	2.0pm	38.7	32.6	8.4	Abs	7.2	0.47	286	84
		Bottom			0	29.2	7.4	4	6.0	0.50	308	
2	BHORI (U/2)	Surface	13.04.22	1.45pm	38.6	32.5	8.3	Abs	8.0	0.47	284	80
		Bottom			0	29.1	7.4	6	5.6	0.50	305	
3	BETHA. (U/3)	Surface	13.04.22	1.30pm	38.4	32.4	8.5	Abs	8.0	0.44	271	78
		Bottom			0	28.9	7.6	6	4.0	0.47	284	
4	BAIRAGARH (U/4)	Surface	13.04.22	1:00 PM	38.2	32.3	8.4	Abs	8.0	0.44	267	80
		Bottom			0	28.8	7.5	6	3.2	0.45	274	
5	BAIRAGARH EAST (U/5)	Surface	12.04.22	2.15pm	38.9	33.1	8.3	Abs	8.4	0.47	284	82
		Bottom			0	29.4	7.4	4	5.2	0.50	303	
6	KHANUGAU (U/6)	Surface	12.04.22	1.55pm	38.6	32.9	8.4	Abs	8.0	0.46	280	80
		Bottom			0	29.3	7.5	6	4.8	0.51	310	



		m										
7	KARBALA (U/7)	Surface	12.04.2 2	1.25 pm	38.4	32.7	8.5	Abs	6.8	0.46	283	82
		Bottom			0	29.0	7.6	4	5.2	0.50	304	
8	MEDICAL COLLEGE (U/8)	Surface	12.04.2 2	12.55 pm	38	32.5	8.4	Abs	7.6	0.46	278	84
		Bottom			0	28.8	7.4	4	4.0	0.47	286	
9	KAMLA PARK (U/9)	Surface	12.04.2 2	12.20 pm	37	32.0	8.3	Abs	7.2	0.47	284	82
		Bottom			0	28.4	7.5	4	3.6	0.50	304	
10	YACHT CLUB (U/10)	Surface	18.04.2 2	12.00 pm	38	32.3	8.4	Abs	8.4	0.45	275	80
		Bottom			0	28.5	7.5	6	4.8	0.50	303	
11	VAN VIHAR (U/11)	Surface	18.04.2 2	12.30 pm	38.4	32.6	8.3	Abs	8.8	0.48	295	82
		Bottom			0	28.7	7.4	4	5.6	0.52	315	
12	SPILL CHANEL (U/12)	Surface	19.04.2 2	12.00 pm	38.1	32.4	8.4	Abs	8.0	0.44	270	80
		Bottom			0	28.7	7.5	6	5.2	0.50	303	
13	BHADBHADA (U/13)	Surface	19.04.2 2	12.30 pm	38.3	32.6	8.2	Abs	8.4	0.47	285	78
		Bottom			0	28.9	7.4	8	4.4	0.51	310	
14	STUD FARM (U/14)	Surface	18.04.2 2	1.40 pm	38.7	33.1	8.1	Abs	8.0	0.47	287	80
		Bottom			0.0	29.4	7.4	4	4.8	0.50	306	

		m										
15	BISENKHEDI (U/15)	Surface	18.04.22	2.10 pm	38.9	33.3	8.1	Abs	8.8	0.45	277	80
		Bottom			0.0	29.4	7.5	6	5.6	0.50	305	
16	A (Deeper Zone)	Surface	13.04.22	2.30 pm	40.0	33.3	8.4	Abs	7.2	0.44	271	80
		Middle			0.0	30.4	8.2	Abs	6.8	0.47	284	
		Bottom			0.0	29.3	7.4	6	5.6	0.50	304	
17	B (Deeper Zone)	Surface	13.04.22	3.0 pm	40.1	33.5	8.3	Abs	8.4	0.47	284	82
		Middle			0	30.7	8.1	Abs	7.2	0.49	297	
		Bottom			0	29.5	7.5	4	4.4	0.50	308	
18	C (Deeper Zone)	Surface	18.04.22	1.15 pm	38.6	32.8	8.3	Abs	8.8	0.46	278	81
		Middle			0	30.9	8.0	Abs	8.0	0.48	295	
		Bottom			0	28.8	7.4	4	6.0	0.50	307	
				Min	<b>0</b>	<b>28.4</b>	<b>7.4</b>	<b>4.0</b>	<b>3.2</b>	<b>0.4</b>	<b>267.0</b>	<b>78.0</b>
				Max	<b>40.1</b>	<b>33.5</b>	<b>8.5</b>	<b>8.0</b>	<b>8.8</b>	<b>0.5</b>	<b>315.0</b>	<b>84.0</b>
				Mean	<b>17.90</b>	<b>30.9</b>	<b>7.9</b>	<b>5.2</b>	<b>6.5</b>	<b>0.5</b>	<b>291.1</b>	<b>80.9</b>
Sample collected by				Sample analyzed by				Report prepared by				

Table-1 Water Quality at different locations of Upper Lake April - 2022 (Laboratory Analysis) Units mg/l													
S · N o	St. Name & No.	Laye r	Total Alkali nity (mg/l)	Carbo nate alkalini ty (mg/l)	Bi- Carbo nate alkalini ty (mg/l)	Total Hardn ess (mg/l)	Ca hardn ess (mg/l)	Mg hardn ess (mg/l)	Calci um conte nt (mg/l)	Magnes ium content (mg/l)	Chlor ide (mg/l)	BO D (mg /l)	COD (mg/l)
1	KOLANS (U/1)	Surfa ce	100	6	94	100	50.4	49.6	21.2	12.1	27.97	4	20.0
		Botto m	108	Abs	108	106	54.6	51.4	22.9	12.5	29.97	8	28.0
2	BHORI (U/2)	Surfa ce	104	8	96	104	54.6	49.4	22.9	12.0	24.98	4.8	24.0
		Botto m	106	Abs	106	112	63.0	49.0	26.5	11.9	26.97	12	36.0
3	BETHA. (U/3)	Surfa ce	112	4	108	94	63.0	31.0	26.5	7.5	23.98	4.4	16.0
		Botto m	116	Abs	116	104	67.2	36.8	28.2	8.9	27.97	10	24.0
4	BAIRAGARH (U/4)	Surfa ce	102	4	98	102	56.7	45.3	23.8	11.0	24.98	5.2	20.0
		Botto m	108	Abs	108	108	60.9	47.1	25.6	11.4	28.97	14	32.0
5	BAIRAGARH EAST (U/5)	Surfa ce	116	6	110	100	65.1	34.9	27.3	8.5	24.98	4.4	12.0
		Botto m	122	Abs	122	110	69.3	40.7	29.1	9.9	27.97	12	24.0
6	KHANUGAU (U/6)	Surfa	110	8	102	118	67.2	50.8	28.2	12.3	23.98	6	28.0

		ce											
		Bottom	114	Abs	114	122	71.4	50.6	30.0	12.3	25.97	12	32.0
7	KARBALA (U/7)	Surface	112	6	106	104	67.2	36.8	28.2	8.9	25.97	5.6	12.0
		Bottom	118	Abs	118	112	73.5	38.5	30.9	9.4	28.97	10	20.0
8	MEDICAL COLLEGE (U/8)	Surface	94	6	88	92	65.1	26.9	27.3	6.5	24.98	5.2	16.0
		Bottom	98	Abs	98	98	67.2	30.8	28.2	7.5	25.97	10	28.0
9	KAMLA PARK (U/9)	Surface	104	8	96	104	65.1	38.9	27.3	9.5	23.98	4.8	20.0
		Bottom	106	Abs	106	112	69.3	42.7	29.1	10.4	26.97	8	32.0
10	YACHT CLUB (U/10)	Surface	100	6	94	94	60.9	33.1	25.6	8.0	22.98	4.4	24.0
		Bottom	106	Abs	106	100	65.1	34.9	27.3	8.5	25.97	8	28.0
11	VAN VIHAR (U/11)	Surface	106	8	98	106	67.2	38.8	28.2	9.4	25.97	5.2	12.0
		Bottom	110	Abs	110	114	73.5	40.5	30.9	9.8	30.97	8	24.0
12	SPILL CHANEL (U/12)	Surface	108	4	104	102	65.1	36.9	27.3	9.0	25.97	5.2	28.0
		Bottom	112	Abs	112	108	69.3	38.7	29.1	9.4	29.97	12	36.0
13	BHADBHADA (U/13)	Surface	110	6	104	104	63.0	41.0	26.5	10.0	26.97	5.2	24.0
		Bottom	116	Abs	116	110	71.4	38.6	30.0	9.4	31.97	12	32.0
14	STUD FARM	Surface	106	6	100	94	58.8	35.2	24.7	8.6	22.98	5.2	20.0

4	(U/14)	ce												
		Bottom	110	Abs	110	108	69.3	38.7	29.1	9.4	24.98	10	28.0	
1	BISENKHEDI (U/15)	Surface	88	8	80	106	63.0	43.0	26.5	10.4	25.97	4.8	12.0	
		Bottom	92	Abs	92	114	73.5	40.5	30.9	9.8	27.97	12	20.0	
1	A (Deeper Zone)	Surface	94	6	88	92	60.9	31.1	25.6	7.6	24.98	6	16.0	
		Middle	100	4	96	104	65.1	38.9	27.3	9.5	26.97	6.4	24.0	
		Bottom	104	Abs	104	108	69.3	38.7	29.1	9.4	28.97	8	32.0	
1	B (Deeper Zone)	Surface	100	6	94	106	63.0	43.0	26.5	10.4	23.98	4.4	12.0	
		Middle	104	4	100	110	67.2	42.8	28.2	10.4	25.97	6.4	24.0	
		Bottom	110	Abs	110	112	73.5	38.5	30.9	9.4	29.97	10	28.0	
1	C (Deeper Zone)	Surface	96	4	92	104	69.3	34.7	29.1	8.4	24.98	4.8	16.0	
		Middle	102	6	96	110	71.4	38.6	30.0	9.4	25.97	5.2	20.0	
		Bottom	106	Abs	106	116	75.6	40.4	31.8	9.8	30.97	14	28.0	
		Min	<b>88</b>	<b>4</b>	<b>80</b>	<b>92</b>	<b>50.4</b>	<b>26.9</b>	<b>21.16</b> <b>8</b>	<b>6.5367</b>	<b>22.98</b>	<b>4.0</b> <b>0</b>	<b>12</b>	
		Max	<b>122</b>	<b>8</b>	<b>122</b>	<b>122</b>	<b>75.6</b>	<b>51.4</b>	<b>31.75</b>	<b>12.49</b>	<b>31.97</b>	<b>14.</b> <b>00</b>	<b>36</b>	
		Mean	<b>105.90</b>	<b>4</b>	<b>102.72</b>	<b>105.74</b>	<b>65.80</b>	<b>39.94</b>	<b>27.64</b>	<b>9.71</b>	<b>26.69</b>	<b>7.6</b> <b>3</b>	<b>23.38</b>	
<b>Sample collected by</b>					<b>Sample analyzed by</b>					<b>Report prepared by</b>				

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May 2022

Water Quality at different locations of Upper Lake: May - 2022 (Field Analysis)												
S. No	St.Name & No.	Layer	Date	Time	Air Temp . °C	Water Temp . °C	p H	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg./l)	Conductivity (mS/cm)	TDS (mg/l)	Transparency (cm)
1	KOLANS (U/1)	Surface	19.05.22	12.45 pm	38.6	29.3	8.3	Abs	8.4	0.47	288	80
		Bottom			0	28.7	7.4	4	6.0	0.50	306	
2	BHORI (U/2)	Surface	19.05.22	12.30 pm	38.5	29.1	8.4	Abs	9.6	0.48	292	78
		Bottom			0	28.6	7.5	6	6.4	0.50	305	
3	BETHA. (U/3)	Surface	19.05.22	12.10 pm	38.3	28.7	8.5	Abs	9.2	0.47	289	80
		Bottom			0	28.4	7.4	4	6.0	0.51	310	
4	BAIRAGARH (U/4)	Surface	19.05.22	11.45 am	38	28.5	8.4	Abs	8.4	0.47	288	81
		Bottom			0	28.2	7.6	6	5.6	0.50	305	
5	BAIRAGARH EAST (U/5)	Surface	18.05.22	1.30 pm	38.8	29.7	8.3	Abs	9.2	0.47	288	80
		Bottom			0	28.8	7.4	4	6.0	0.50	308	
6	KHANUGAU (U/6)	Surface	18.05.22	1.0	38.6	29.5	8.	Abs	8.8	0.47	284	82

		e	2	pm			2					
		Bottom			0	28.6	7.5	6	5.2	0.49	296	
7	KARBALA (U/7)	Surface	18.05.22	12.30 pm	38.4	29.3	8.3	Abs	8.0	0.47	287	76
		Bottom			0	28.4	7.4	6	6.0	0.49	301	
8	MEDICAL COLLEGE (U/8)	Surface	18.05.22	11.55 am	37.3	28.4	8.4	Abs	8.8	0.46	283	80
		Bottom			0	27.7	7.6	4	4.8	0.50	304	
9	KAMLA PARK (U/9)	Surface	18.05.22	11.0 am	37	28.2	8.5	Abs	8.4	0.47	289	78
		Bottom			0	27.6	7.5	6	5.2	0.57	346	
10	YACHT CLUB (U/10)	Surface	20.05.22	1.45 pm	39.3	29.7	8.3	Abs	8.8	0.47	288	81
		Bottom			0	28.8	7.5	4	6.0	0.50	303	
11	VAN VIHAR (U/11)	Surface	20.05.22	1.15 pm	39.1	29.6	8.4	Abs	8.0	0.47	287	80
		Bottom			0	28.6	7.4	4	5.6	0.52	315	
12	SPILL CHANEL (U/12)	Surface	23.05.22	10.15 am	37	28.2	8.2	Abs	7.6	0.47	288	80
		Bottom			0	27.8	7.4	6	4.8	0.48	293	
13	BHADBHADA (U/13)	Surface	23.05.22	10.50 am	37.3	28.3	8.1	Abs	7.2	0.46	278	78
		Bottom			0	27.9	7.5	4	5.2	0.50	306	
14	STUD FARM	Surface	19.05.22	1.30	39.1	29.7	8.	Abs	8.0	0.47	288	82





Sample collected by	Sample analyzed by	Report prepared by
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Water Quality at different locations of Upper Lake May - 2022 (Laboratory Analysis) Units mg/l													
S · N o	St.Name & No.	Layer	Total Alkalinity (mg/l)	Carbo nate alkalinity (mg/l)	Bi- Carbo nate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calcium content (mg/l)	Magnesium content (mg/l)	Chloride (mg/l)	BO D (mg /l)	COD (mg/l)
1	KOLANS (U/1)	Surface	96	6	90	102	54.6	47.4	22.9	11.5	25.97	5.6	20.0
		Bottom	100	Abs	100	108	58.8	49.2	24.7	12.0	27.97	6	24.0
2	BHORI (U/2)	Surface	102	10	92	104	52.5	51.5	22.1	12.5	23.98	6.4	28.0
		Bottom	106	Abs	106	110	60.9	49.1	25.6	11.9	25.97	8	32.0
3	BETHA. (U/3)	Surface	104	8	96	100	58.8	41.2	24.7	10.0	24.98	5.6	20.0
		Bottom	108	Abs	108	106	65.1	40.9	27.3	9.9	26.97	6	24.0
4	BAIRAGARH (U/4)	Surface	100	4	96	104	54.6	49.4	22.9	12.0	25.97	4.4	12.0
		Bottom	104	Abs	104	108	63.0	45.0	26.5	10.9	27.97	8	20.0
5	BAIRAGARH EAST (U/5)	Surface	102	8	94	102	58.8	43.2	24.7	10.5	24.98	5.2	24.0
		Bottom	108	Abs	108	106	67.2	38.8	28.2	9.4	27.97	8	32.0
6	KHANUGAU (U/6)	Surface	104	4	100	106	63.0	43.0	26.5	10.4	23.98	7.6	24.0

		ce											
		Bottom	112	Abs	112	112	69.3	42.7	29.1	10.4	25.97	10	28.0
7	KARBALA (U/7)	Surface	104	4	100	102	60.9	41.1	25.6	10.0	24.98	4.8	16.0
		Bottom	114	Abs	114	108	65.1	42.9	27.3	10.4	27.97	6	28.0
8	MEDICAL COLLEGE (U/8)	Surface	102	6	96	100	58.8	41.2	24.7	10.0	23.98	6.8	24.0
		Bottom	106	Abs	106	106	63.0	43.0	26.5	10.4	25.97	8	28.0
9	KAMLA PARK (U/9)	Surface	100	6	94	106	67.2	38.8	28.2	9.4	22.98	5.2	20.0
		Bottom	108	Abs	108	114	71.4	42.6	30.0	10.4	24.98	8	28.0
10	YACHT CLUB (U/10)	Surface	98	8	90	104	58.8	45.2	24.7	11.0	24.98	4.8	16.0
		Bottom	104	Abs	104	110	69.3	40.7	29.1	9.9	26.97	10	32.0
11	VAN VIHAR (U/11)	Surface	102	6	96	102	60.9	41.1	25.6	10.0	24.98	4	28.0
		Bottom	108	Abs	108	112	67.2	44.8	28.2	10.9	28.97	8	36.0
12	SPILL CHANEL (U/12)	Surface	106	4	102	108	56.7	51.3	23.8	12.5	25.97	5.2	20.0
		Bottom	112	Abs	112	114	63.0	51.0	26.5	12.4	29.97	10	32.0
13	BHADBHADA (U/13)	Surface	104	6	98	106	65.1	40.9	27.3	9.9	29.97	4	28.0
		Bottom	108	Abs	108	116	71.4	44.6	30.0	10.8	32.97	8	36.0
14	STUD FARM	Surface	104	6	98	104	54.6	49.4	22.9	12.0	23.98	4.8	20.0

4	(U/14)	ce											
		Bottom	110	Abs	110	110	60.9	49.1	25.6	11.9	26.97	6	24.0
1	BISENKHEDI (U/15)	Surface	94	8	86	104	56.7	47.3	23.8	11.5	25.97	5.6	24.0
		Bottom	100	Abs	100	112	63.0	49.0	26.5	11.9	28.97	10	28.0
1	A (Deeper Zone)	Surface	92	8	84	100	58.8	41.2	24.7	10.0	23.98	4.4	12.0
		Middle	98	4	94	104	63.0	41.0	26.5	10.0	25.97	5.6	20.0
		Bottom	104	Abs	104	110	67.2	42.8	28.2	10.4	29.97	8	24.0
1	B (Deeper Zone)	Surface	100	6	94	102	60.9	41.1	25.6	10.0	25.97	4.8	20.0
		Middle	106	4	102	106	65.1	40.9	27.3	9.9	27.97	5.2	24.0
		Bottom	110	Abs	110	114	69.3	44.7	29.1	10.9	30.97	10	28.0
1	C (Deeper Zone)	Surface	104	6	98	108	63.0	45.0	26.5	10.9	24.98	4.4	24.0
		Middle	110	4	106	112	67.2	44.8	28.2	10.9	27.97	4.8	28.0
		Bottom	114	Abs	114	114	73.5	40.5	30.9	9.8	29.97	10	36.0
		Min	<b>92</b>	<b>4</b>	<b>84</b>	<b>100</b>	<b>52.5</b>	<b>38.8</b>	<b>22.05</b>	<b>9.4284</b>	<b>22.98</b>	<b>4.00</b>	<b>12</b>
		Max	<b>114</b>	<b>10</b>	<b>114</b>	<b>116</b>	<b>73.5</b>	<b>51.5</b>	<b>30.87</b>	<b>12.51</b>	<b>32.97</b>	<b>10.00</b>	<b>36</b>
		Mean	<b>104.31</b>	<b>4</b>	<b>84</b>	<b>107.08</b>	<b>62.78</b>	<b>44.29</b>	<b>26.37</b>	<b>10.76</b>	<b>26.72</b>	<b>6.59</b>	<b>24.92</b>
<b>Sample collected by</b>			<b>Sample analyzed by</b>				<b>Report prepared by</b>						

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June 2022

Water Quality at different locations of Upper Lake: June - 2022 (Field Analysis)												
S. No	St.Name & No.	Layer	Date	Time	Air Temp. °C	Water Temp. °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg./l)	Conductivity (mS/cm)	TDS (mg/l)	Transparency (cm)
1	KOLANS (U/1)	Surface	14.06.22	1.55 pm	36.6	32.8	8.3	Abs	8.4	0.45	275	80
		Bottom			30	29.1	7.4	4	6.0	0.48	290	
2	BHORI (U/2)	Surface	14.06.22	2.15 pm	36.8	33	8.4	Abs	8.8	0.47	284	82
		Bottom			30	29.3	7.7	Abs	6.8	0.49	301	
3	BETHA. (U/3)	Surface	14.06.22	1.30 pm	36.4	32.6	8.4	Abs	9.2	0.46	282	80
		Bottom			30	28.9	7.9	Abs	7.6	0.50	305	
4	BAIRAGARH (U/4)	Surface	14.06.22	1.0 pm	36.2	32.4	8.3	Abs	7.6	0.45	273	80
		Bottom			30	28.6	7.4	6	6.4	0.47	285	
5	BAIRAGARH EAST (U/5)	Surface	13.06.22	3.30 pm	37.6	33.3	8.4	Abs	8.8	0.46	280	78
		Bottom			30	29.8	7.5	4	5.6	0.48	295	
6	KHANUGAU (U/6)	Surface	13.06.22	3.15 pm	37.6	33.5	8.2	Abs	8.4	0.46	278	78
		Bottom			30	29.9	7.4	6	6.0	0.48	294	
7	KARBALA (U/7)	Surface	13.06.22	2.45	37.5	33.4	8.	Abs	9.2	0.47	285	80

		e	2	pm			3					
		Botto m			0	29.7	7. 5	8	5.2	0.50	303	
8	MEDICAL COLLEGE (U/8)	Surfac e	13.06.2 2	2.10 pm	37.3	33.1	8. 4	Abs	8.8	0.46	280	82
		Botto m			0	29.5	7. 4	4	5.6	0.48	295	
9	KAMLA PARK (U/9)	Surfac e	13.06.2 2	12.45 pm	36.1	32.2	8. 4	Abs	8.4	0.46	278	80
		Botto m			0	29.3	7. 6	6	6.0	0.47	284	
10	YACHT CLUB (U/10)	Surfac e	15.06.2 2	2.50 pm	37.2	33.3	8. 3	Abs	8.4	0.46	278	78
		Botto m			0	29.5	7. 5	4	5.2	0.48	290	
11	VAN VIHAR (U/11)	Surfac e	15.06.2 2	2.20 pm	37.1	33.2	8. 2	Abs	8.8	0.45	276	80
		Botto m			0	29.4	7. 4	6	5.6	0.47	284	
12	SPELL CHANEL (U/12)	Surfac e	16.06.2 2	11.30 am	34.1	30.3	8. 1	Abs	8.0	0.45	275	80
		Botto m			0	28.5	7. 3	6	4.4	0.48	290	
13	BHADBHADA (U/13)	Surfac e	16.06.2 2	12.10 pm	34.3	30.5	8. 2	Abs	8.4	0.46	281	78
		Botto m			0	28.6	7. 4	4	4.0	0.48	294	
14	STUD FARM (U/14)	Surfac e	14.06.2 2	2.30 pm	37.1	33.1	8. 5	Abs	8.0	0.47	287	82
		Botto m			0.0	29.4	8. 1	Abs	7.2	0.51	310	
15	BISEKHEDE (U/15)	Surfac	14.06.2	2.50	37.3	33.2	8.	Abs	8.4	0.46	280	82

		e	2	pm			4					
		Bottom			0.0	29.5	7.8	Abs	7.2	0.48	295	
16	A (Deeper Zone)	Surface	15.06.22	12.20 pm	36.2	32.7	8.3	Abs	8.8	0.45	275	80
		Middle			0.0	29.5	8.1	Abs	7.6	0.46	282	
		Bottom			0.0	28.6	7.4	4	6.0	0.49	301	
17	B (Deeper Zone)	Surface	15.06.22	1.10 pm	36.6	32.9	8.4	Abs	9.2	0.46	280	80
		Middle			0	29.6	8.0	Abs	8.0	0.48	293	
		Bottom			0	28.8	7.5	6	5.6	0.50	304	
18	C (Deeper Zone)	Surface	15.06.22	1.55 pm	36.8	33.1	8.2	Abs	8.4	0.47	285	78
		Middle			0	29.7	7.9	Abs	7.2	0.49	296	
		Bottom			0	29.0	7.6	4	6.0	0.50	305	
				Min	<b>0</b>	<b>28.5</b>	<b>7.3</b>	<b>4.0</b>	<b>4.0</b>	<b>0.45</b>	<b>273.0</b>	<b>78.0</b>
				Max	<b>37.6</b>	<b>33.5</b>	<b>8.5</b>	<b>8.0</b>	<b>9.2</b>	<b>0.51</b>	<b>310.0</b>	<b>82.0</b>
				Mean	<b>16.99</b>	<b>30.8</b>	<b>7.9</b>	<b>5.3</b>	<b>7.2</b>	<b>0.47</b>	<b>288.1</b>	<b>79.9</b>
Sample collected by				Sample analyzed by				Report prepared by				

Water Quality at different locations of Upper Lake June - 2022 (Laboratory Analysis) Units mg/l													
S · N o	St.Name & No.	Laye r	Total Alkali nity (mg/l)	Carbo nate alkalini ty (mg/l)	Bi- Carbo nate alkalini ty (mg/l)	Total Hardne ss (mg/l)	Ca hardn ess (mg/l)	Mg hardn ess (mg/l)	Calci um conte nt (mg/l)	Magnes ium content (mg/l)	Chlor ide (mg/l)	BO D (mg /l)	COD (mg/l)
1	KOLANS (U/1)	Surfa ce	92	6	86	98	52.5	45.5	22.1	11.1	22.98	4.4	16.0
		Botto m	96	Abs	96	104	56.7	47.3	23.8	11.5	24.98	8	24.0
2	BHORI (U/2)	Surfa ce	94	6	88	100	50.4	49.6	21.2	12.1	23.98	4.8	20.0
		Botto m	100	4	96	108	58.8	49.2	24.7	12.0	25.97	5.6	28.0
3	BETHA. (U/3)	Surfa ce	102	6	96	102	54.6	47.4	22.9	11.5	21.98	5.2	28.0
		Botto m	106	4	102	106	60.9	45.1	25.6	11.0	23.98	6.8	32.0
4	BAIRAGARH (U/4)	Surfa ce	96	6	90	104	56.7	47.3	23.8	11.5	23.98	5.6	24.0
		Botto m	100	Abs	100	110	63.0	47.0	26.5	11.4	25.97	6	32.0
5	BAIRAGARH EAST (U/5)	Surfa ce	98	6	92	100	52.5	47.5	22.1	11.5	22.98	4	20.0
		Botto m	106	Abs	106	106	58.8	47.2	24.7	11.5	24.98	8	32.0
6	KHANUGAU (U/6)	Surfa ce	102	6	96	102	54.6	47.4	22.9	11.5	23.98	4.4	24.0
		Botto m	108	Abs	108	112	58.8	53.2	24.7	12.9	26.97	6	36.0



		m											
7	KARBALA (U/7)	Surfa ce	100	6	94	104	56.7	47.3	23.8	11.5	24.98	5.2	28.0
		Botto m	104	Abs	104	114	65.1	48.9	27.3	11.9	27.97	8	32.0
8	MEDICAL COLLEGE (U/8)	Surfa ce	98	6	92	102	54.6	47.4	22.9	11.5	22.98	4.4	24.0
		Botto m	104	Abs	104	106	60.9	45.1	25.6	11.0	25.97	10	32.0
9	KAMLA PARK (U/9)	Surfa ce	102	4	98	106	63.0	43.0	26.5	10.4	22.98	4	28.0
		Botto m	106	Abs	106	110	65.1	44.9	27.3	10.9	25.97	10	36.0
1 0	YACHT CLUB (U/10)	Surfa ce	104	6	98	102	58.8	43.2	24.7	10.5	21.98	4.4	32.0
		Botto m	108	Abs	108	108	65.1	42.9	27.3	10.4	24.98	8	36.0
1 1	VAN VIHAR (U/11)	Surfa ce	100	4	96	98	56.7	41.3	23.8	10.0	23.98	4.8	28.0
		Botto m	108	Abs	108	104	60.9	43.1	25.6	10.5	25.97	6	32.0
1 2	SPILL CHANEL (U/12)	Surfa ce	96	4	92	104	60.9	43.1	25.6	10.5	22.98	5.6	24.0
		Botto m	102	Abs	102	110	67.2	42.8	28.2	10.4	24.98	8	32.0
1 3	BHADBHADA (U/13)	Surfa ce	106	6	100	108	69.3	38.7	29.1	9.4	23.98	6	32.0
		Botto m	110	Abs	110	112	73.5	38.5	30.9	9.4	26.97	10	36.0
1 4	STUD FARM (U/14)	Surfa ce	102	8	94	102	58.8	43.2	24.7	10.5	21.98	5.2	20.0
		Botto	104	6	98	106	60.9	45.1	25.6	11.0	23.98	6.4	24.0

		m											
15	BISENKHEDI (U/15)	Surface	100	6	94	100	58.8	41.2	24.7	10.0	22.98	4.4	16.0
		Bottom	102	4	98	104	63.0	41.0	26.5	10.0	24.98	6	24.0
16	A (Deeper Zone)	Surface	94	6	88	102	54.6	47.4	22.9	11.5	21.98	4.8	20.0
		Middle	100	4	96	104	58.8	45.2	24.7	11.0	22.98	5.2	28.0
		Bottom	102	Abs	102	108	65.1	42.9	27.3	10.4	23.98	8	32.0
17	B (Deeper Zone)	Surface	92	8	84	98	56.7	41.3	23.8	10.0	19.98	5.2	24.0
		Middle	98	4	94	102	60.9	41.1	25.6	10.0	24.98	6	32.0
		Bottom	104	Abs	104	112	67.2	44.8	28.2	10.9	25.97	10	36.0
18	C (Deeper Zone)	Surface	100	6	94	104	58.8	45.2	24.7	11.0	23.98	4.4	24.0
		Middle	102	4	98	106	63.0	43.0	26.5	10.4	24.98	5.2	28.0
		Bottom	106	Abs	106	110	65.1	44.9	27.3	10.9	24.98	8	36.0
		Min	<b>92</b>	<b>4</b>	<b>84</b>	<b>98</b>	<b>50.4</b>	<b>38.5</b>	<b>21.168</b>	<b>9.3555</b>	<b>19.98</b>	<b>4.00</b>	<b>16</b>
		Max	<b>110</b>	<b>8</b>	<b>110</b>	<b>114</b>	<b>73.5</b>	<b>53.2</b>	<b>30.87</b>	<b>12.93</b>	<b>27.97</b>	<b>10.00</b>	<b>36</b>
		Mean	<b>101.38</b>	<b>4</b>	<b>84</b>	<b>105.08</b>	<b>60.20</b>	<b>44.88</b>	<b>25.28</b>	<b>10.91</b>	<b>24.28</b>	<b>6.21</b>	<b>28.00</b>
<b>Sample collected by</b>				<b>Sample analyzed by</b>				<b>Report prepared by</b>					



## Annexure - Data Sheet

## Lower Lake

Results (Field analysis) of water samples collected from different sampling stations of Lower Lake is depicted in Table-2a

Table-2a Water Quality at different locations of Lower Lake: Dec-2021 (Field Parameters) (Units in mg/litre)											
S. No.	St. Name & No.	Layer	Date	Time	Air Temp. °C	Water Temp. °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg/l)	Conductivity (mS/cm)	TDS (mg/l)
1	Banganga (L/1)	Surface	30.12.21	3.20 pm	23.6	19.8	7.5	8.0	3.6	0.67	410
2	Dhobighat (L/2)	Surface	30.12.21	2.0 pm	22.9	19.7	7.6	6.0	4.8	0.65	394
		Bottom			0.0	18.6	7.4	8.0	1.6	0.67	408
3	Near Retgahat (L/3)	Surface	30.12.21	1.45 pm	22.7	19.6	7.5	4.0	5.6	0.68	413
		Bottom			0.0	18.5	7.3	6.0	2.0	0.69	418
4	MLB College (L/4)	Surface	24.12.21	1.25 pm	24.4	20.3	8.5	Abs	9.2	0.49	297
		Bottom			0.0	19.1	7.3	8.0	5.2	0.64	390
5	Bhoipura (L/5)	Surface	24.12.21	1.45 pm	24.5	20.2	8.4	Abs	8.8	0.66	402
		Bottom			0.0	18.9	7.4	6.0	5.6	0.67	408
6	Jehangirabad (L/6)	Surface	24.12.21	3.0 pm	25.0	20.4	8.4	Abs	8.8	0.65	395
		Bottom			0.0	18.7	7.3	4.0	4.8	0.67	406
7	Khatlapura (L/7)	Surface	24.12.21	2.15 pm	26.6	20.3	8.3	Abs	8.0	0.63	385
		Bottom			0.0	19.4	7.4	6.0	5.2	0.64	392
8	MVM College (L/8)	Surface	30.12.21	3.10 pm	23.6	20.1	7.5	4.0	6.4	0.64	390
		Bottom			0.0	19.4	7.3	8.0	2.8	0.67	406
9	Boat House (L/9)	Surface	30.12.21	2.50 pm	23.5	20.0	7.6	4.0	6.0	0.64	390

Table-2a Water Quality at different locations of Lower Lake: Dec-2021 (Field Parameters) (Units in mg/litre)											
S. No.	St. Name & No.	Layer	Date	Time	Air Temp. °C	Water Temp. °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg/l)	Conductivity (mS/cm)	TDS (mg/l)
		Bottom			0.0	19.3	7.4	6.0	2.4	0.66	404
10	A (Deeper Zones)	Surface	30.12.21	2.30 pm	23.6	20.0	7.6	4.0	6.4	0.65	395
		Middle			0.0	19.5	7.4	3.0	3.6	0.66	403
		Bottom			0	19.1	7.3	10.0	2.0	0.67	406
11	B (Deeper Zones)	Surface	30.12.21	2.45 pm	23.5	20.1	7.7	2.0	6.4	0.63	385
		Middle			0.0	19.6	7.5	4.0	3.2	0.66	402
		Bottom			0.0	19.0	7.4	8.0	1.6	0.67	408
12	C (Deeper Zones)	Surface	24.12.21	2.0 pm	24.6	20.4	8.4	Abs	8.4	0.65	395
		Middle			0.0	19.5	7.4	4.0	6.0	0.66	404
		Bottom			0.0	19.1	7.3	6.0	2.8	0.66	405
13	D (Deeper Zones)	Surface	24.12.21	2.45 pm	24.7	20.4	8.5	Abs	8.8	0.64	390
		Middle			0.0	19.3	7.6	6.0	6.4	0.65	395
		Bottom			0	18.7	7.3	8.0	2.4	0.67	406
14	E (Deeper Zones)	Surface	24.12.21	3.15 pm	25.1	20.3	8.4	Abs	8.4	0.63	385
		Middle			0.0	19.1	7.5	6.0	5.6	0.64	390
		Bottom			0.0	18.5	7.3	10.0	2.0	0.67	410
				Min	0.0	18.5	7.3	2.0	1.6	0.5	297.0
				Max	26.6	20.4	8.5	10.0	9.2	0.7	418.0
				Mean	10.7	19.5	7.7	6.0	5.2	0.6	394.2

Results of water samples (Laboratory analysis) collected from different sampling stations of Lower Lake is depicted in Table-2b

Table-2b Water quality at different locations of Lower Lake :Dec - 2021 (Laboratory Analysis) (Units in mg/liter)													
S. N o.	Sampling Stations & No.	Layer	Total Alkalinity (mg/l)	Carbonate Alkalinity (mg/l)	Bi-carbonate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calcium content (mg/l)	Magnesium content (mg/l)	Chloride (mg/l)	BO D (mg/l)	COD (mg/l)
1	Banganga (L/1)	Surface	156	abs	156	218	157.5	60.5	66.2	14.7	49.95	20	52
2	Dhobighat (L/2)	Surface	148	abs	148	214	149.1	64.9	62.6	15.8	34.97	14	60
		Bottom	150	abs	150	216	153.3	62.7	64.4	15.2	41.96	18	88
3	Near Retgahat (L/3)	Surface	134	abs	134	210	147.0	63.0	61.7	15.3	40.96	12	40
		Bottom	140	abs	140	216	151.2	64.8	63.5	15.7	42.96	18	72
4	MLB College (L/4)	Surface	144	6	138	190	142.8	47.2	60.0	11.5	29.97	8	48
		Bottom	148	abs	148	198	149.1	48.9	62.6	11.9	34.97	10	60
5	Bhoipura (L/5)	Surface	156	4	152	184	138.6	45.4	58.2	11.0	42.96	7.6	40
		Bottom	160	abs	160	192	142.8	49.2	60.0	12.0	44.96	10	52
6	Jehangirabad (L/6)	Surface	150	6	144	200	147.0	53.0	61.7	12.9	32.97	7.2	44

Table-2b Water quality at different locations of Lower Lake :Dec - 2021 (Laboratory Analysis) (Units in mg/liter)

S. No.	Sampling Stations & No.	Layer	Total Alkalinity (mg/l)	Carbonate Alkalinity (mg/l)	Bi-carbonate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calcium content (mg/l)	Magnesium content (mg/l)	Chloride (mg/l)	BOD (mg/l)	COD (mg/l)
		Bottom	154	abs	154	210	155.4	54.6	65.3	13.3	34.97	12	84
7	Khatlapura (L/7)	Surface	148	8	140	194	140.7	53.3	59.1	13.0	33.97	6.4	52
		Bottom	154	abs	154	204	144.9	59.1	60.9	14.4	38.96	14	64
8	MVM College (L/8)	Surface	140	abs	140	212	149.1	62.9	62.6	15.3	40.96	8	36
		Bottom	146	abs	146	218	157.5	60.5	66.2	14.7	43.96	12	56
9	Boat House (L/9)	Surface	134	abs	134	194	142.8	51.2	60.0	12.4	37.96	6	44
		Bottom	142	abs	142	204	153.3	50.7	64.4	12.3	41.96	10	60
10	A (Deeper Zones)	Surface	136	abs	136	190	138.6	51.4	58.2	12.5	33.97	8	36
		Middle	140	abs	140	196	142.8	53.2	60.0	12.9	35.96	12	48
		Bottom	144	abs	144	200	149.1	50.9	62.6	12.4	39.96	14	60
11	B (Deeper Zones)	Surface	132	abs	132	194	142.8	51.2	60.0	12.4	36.96	6	40
		Middle	136	abs	136	202	147.0	55.0	61.7	13.4	38.96	10	52

**Table-2b Water quality at different locations of Lower Lake :Dec - 2021 (Laboratory Analysis) (Units in mg/liter)**

S. No.	Sampling Stations & No.	Layer	Total Alkalinity (mg/l)	Carbonate Alkalinity (mg/l)	Bi-carbonate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calcium content (mg/l)	Magnesium content (mg/l)	Chloride (mg/l)	BOD (mg/l)	COD (mg/l)
		Bottom	140	abs	140	208	155.4	52.6	65.3	12.8	42.96	14	60
12	C (Deeper Zones)	Surface	130	6	124	196	149.1	46.9	62.6	11.4	39.96	6	32
		Middle	132	abs	132	204	153.3	50.7	64.4	12.3	41.96	10	56
		Bottom	142	abs	142	210	159.6	50.4	67.0	12.2	44.96	14	64
13	D (Deeper Zones)	Surface	126	6	120	192	136.5	55.5	57.3	13.5	34.97	8	40
		Middle	130	abs	130	198	138.6	59.4	58.2	14.4	36.96	10	60
		Bottom	134	abs	134	202	144.9	57.1	60.9	13.9	38.96	10	68
14	E (Deeper Zones)	Surface	130	4	126	194	144.9	49.1	60.9	11.9	37.96	7.2	36
		Middle	136	abs	136	200	151.2	48.8	63.5	11.9	40.96	10	56
		Bottom	140	abs	140	206	155.4	50.6	65.3	12.3	43.96	14	64
	<b>Min</b>		<b>126</b>	<b>4</b>	<b>120</b>	<b>184</b>	<b>136.5</b>	<b>45.4</b>	<b>57.33</b>	<b>11.03</b>	<b>29.97</b>	<b>6</b>	<b>32</b>
	<b>Max</b>		<b>160</b>	<b>8</b>	<b>160</b>	<b>218</b>	<b>159.6</b>	<b>64.9</b>	<b>67.032</b>	<b>15.77</b>	<b>49.95</b>	<b>20</b>	<b>88</b>
	<b>Mean</b>		<b>141.71</b>	<b>5.78</b>	<b>140.35</b>	<b>202.00</b>	<b>147.86</b>	<b>54.26</b>	<b>62.10</b>	<b>13.19</b>	<b>39.37</b>	<b>10.95</b>	<b>54.24</b>





January, 2022

<b>*Water Quality at different locations of Lower Lake: Jan -2022 (Field Parameters) (Units in mg/liter)</b>											
<b>S. No.</b>	<b>St.Name &amp; No.</b>	<b>Layer</b>	<b>Date</b>	<b>Time</b>	<b>Air Temp. °C</b>	<b>Water Temp. °C</b>	<b>pH</b>	<b>Free CO<sub>2</sub> (mg/l)</b>	<b>Dissolved Oxygen (mg/l)</b>	<b>Conductivity (mS/cm)</b>	<b>TDS (mg/l)</b>
1	Banganga (L/1)	Surface	31.01.22	2.35 pm	27.0	21.0	7.6	12.0	2.0	0.89	541
2	Dhobighat (L/2)	Surface	31.01.22	1.15 pm	25.0	22.5	7.6	6.0	5.6	0.66	404
		Bottom			0.0	18.6	7.3	10.0	3.6	0.67	410
3	Near Retgahat (L/3)	Surface	31.01.22	1.25 pm	25.6	22.6	7.8	8.0	4.8	0.67	408
		Bottom			0.0	19.0	7.5	12.0	3.2	0.68	416
4	MLB College (L/4)	Surface	02.02.22	12.45 pm	24.8	22.3	7.6	4.0	5.6	0.66	404
		Bottom			0.0	19.6	7.4	6.0	2.0	0.68	415
5	Bhoipura (L/5)	Surface	02.02.22	1.0 pm	24.9	22.5	8.3	Abs	8.0	0.66	403
		Bottom			0.0	20.3	7.5	6.0	3.2	0.68	413
6	Jehangirabad (L/6)	Surface	02.02.22	1.30 pm	25.2	22.7	8.2	Abs	8.8	0.64	390
		Bottom			0.0	20.5	7.4	4.0	4.0	0.66	404
7	Khatlapura (L/7)	Surface	02.02.22	2:00 PM	25.4	23.0	8.1	Abs	8.4	0.66	403
		Bottom			0.0	21.4	7.5	4.0	3.6	0.69	418
8	MVM College (L/8)	Surface	31.01.22	2.10 pm	27.2	21.2	8.0	Abs	7.2	0.67	406
		Bottom			0.0	19.2	7.5	6.0	2.4	0.68	414
9	Boat House (L/9)	Surface	31.01.22	2.30 pm	27.3	20.0	7.9	Abs	6.4	0.71	435
		Bottom			0.0	19.2	7.6	8.0	3.2	0.74	450
10	A (Deeper Zones)	Surface	31.01.22	1.30 pm	26.0	20.0	7.8	6.0	6.0	0.64	390
		Middle			0.0	18.7	7.6	10.0	3.6	0.67	410
		Bottom			0	18.0	7.4	12.0	1.6	0.68	416
11	B (Deeper Zones)	Surface	31.01.22	1.45 pm	26.5	20.1	7.7	8.0	6.4	0.66	405
		Middle			0.0	19.6	7.5	10.0	4.8	0.67	408
		Bottom			0.0	19.0	7.4	12.0	3.2	0.68	415
12	C (Deeper Zones)	Surface	31.01.22	2.0 pm	27.0	20.4	8.0	6.0	6.0	0.69	419
		Middle			0.0	19.3	7.6	8.0	2.4	0.70	425

		Bottom			0.0	19.1	7.5	10.0	2.0	0.70	430	
13	D (Deeper Zones)	Surface	02.02.22	1.45 pm	25.3	22.8	8.5	Abs	8.8	0.65	396	
		Middle			0.0	21.7	7.6	4.0	4.8	0.67	411	
		Bottom			0	21.0	7.3	6.0	2.4	0.69	422	
14	E (Deeper Zones)	Surface	02.02.22	1.15 pm	25.1	22.7	8.4	Abs	8.0	0.65	394	
		Middle			0.0	20.3	7.6	6.0	5.2	0.66	405	
		Bottom			0.0	20.0	7.4	10.0	3.2	0.67	410	
				Min	<b>0.0</b>	<b>18.0</b>	<b>7.3</b>	<b>4.0</b>	<b>1.6</b>	<b>0.64</b>	<b>390.0</b>	
				Max	<b>27.3</b>	<b>23.0</b>	<b>8.5</b>	<b>12.0</b>	<b>8.8</b>	<b>0.89</b>	<b>541.0</b>	
				Mean	<b>11.5</b>	<b>20.6</b>	<b>7.7</b>	<b>7.8</b>	<b>4.7</b>	<b>0.69</b>	<b>418.3</b>	
<b>Sample collected by</b>					<b>Sample analyzed by</b>				<b>Report prepared by</b>			

<b>Table-3 Water quality at different locations of Lower Lake Jan - 2022 (Laboratory Analysis) (Units in mg/liter)</b>													
<b>S. N o.</b>	<b>Sampling Stations &amp; No.</b>	<b>Layer</b>	<b>Total Alkalinity (mg/l)</b>	<b>Carbonate Alkalinity (mg/l)</b>	<b>Bi-carbonate alkalinity (mg/l)</b>	<b>Total Hardness (mg/l)</b>	<b>Ca hardness (mg/l)</b>	<b>Mg hardness (mg/l)</b>	<b>Calcium content (mg/l)</b>	<b>Magnesium content (mg/l)</b>	<b>Chloride (mg/l)</b>	<b>BO D (mg/l)</b>	<b>COD (mg/l)</b>
1	Banganga (L/1)	Surface	170	abs	170	180	117.6	62.4	49.4	15.2	51.95	16	48
2	Dhobighat (L/2)	Surface	140	abs	140	172	113.4	58.6	47.6	14.2	29.97	10	32
		Bottom	150	abs	150	186	121.8	64.2	51.2	15.6	34.97	14	40
3	Near Retgahat (L/3)	Surface	126	abs	126	142	119.7	22.3	50.3	5.4	28.97	12	36
		Bottom	146	abs	146	168	123.9	44.1	52.0	10.7	32.97	16	44

4	MLB College (L/4)	Surface	146	6	140	176	113.4	62.6	47.6	15.2	30.97	8	28
		Bottom	150	abs	150	184	123.9	60.1	52.0	14.6	34.97	12	40
5	Bhoipura (L/5)	Surface	132	6	126	152	115.5	36.5	48.5	8.9	31.97	6.4	36
		Bottom	138	abs	138	162	119.7	42.3	50.3	10.3	37.96	10	52
6	Jehangirabad (L/6)	Surface	156	8	148	136	111.3	24.7	46.7	6.0	32.97	6.8	28
		Bottom	162	abs	162	138	115.5	22.5	48.5	5.5	37.96	12	36
7	Khatlapura (L/7)	Surface	126	6	120	160	117.6	42.4	49.4	10.3	29.97	6.8	40
		Bottom	136	abs	136	170	123.9	46.1	52.0	11.2	33.97	10	48
8	MVM College (L/8)	Surface	144	4	140	168	117.6	50.4	49.4	12.2	30.97	6.4	32
		Bottom	150	abs	150	172	119.7	52.3	50.3	12.7	35.96	10	44
9	Boat House (L/9)	Surface	146	6	140	168	126.0	42.0	52.9	10.2	34.97	8	28
		Bottom	154	abs	154	174	130.2	43.8	54.7	10.6	40.96	12	40
10	A (Deeper Zones)	Surface	120	abs	120	164	126.0	38.0	52.9	9.2	29.97	8	36
		Middle	128	abs	128	170	132.3	37.7	55.6	9.2	35.96	10	44
		Bottom	138	abs	138	174	136.5	37.5	57.3	9.1	38.96	12	52
11	B (Deeper Zones)	Surface	134	abs	134	152	100.8	51.2	42.3	12.4	30.97	8	28

		Middle	142	abs	142	158	111.3	46.7	46.7	11.3	32.97	10	36
		Bottom	150	abs	150	164	117.6	46.4	49.4	11.3	36.96	10	44
12	C (Deeper Zones)	Surface	138	6	132	152	132.3	19.7	55.6	4.8	31.97	10	28
		Middle	146	abs	146	156	138.6	17.4	58.2	4.2	34.97	12	40
		Bottom	156	abs	156	166	142.8	23.2	60.0	5.6	38.96	14	48
13	D (Deeper Zones)	Surface	140	abs	140	166	119.7	46.3	50.3	11.3	31.97	7.2	28
		Middle	150	4	146	170	123.9	46.1	52.0	11.2	35.96	8	40
		Bottom	154	6	148	178	130.2	47.8	54.7	11.6	37.96	12	52
14	E (Deeper Zones)	Surface	142	abs	142	160	113.4	46.6	47.6	11.3	32.97	7.2	32
		Middle	148	4	144	170	119.7	50.3	50.3	12.2	36.96	10	40
		Bottom	158	6	152	180	128.1	51.9	53.8	12.6	39.96	14	48
	<b>Min</b>		<b>120</b>	<b>4</b>	<b>120</b>	<b>136</b>	<b>100.8</b>	35.2	42.3	8.6	<b>28.97</b>	<b>6.4</b>	<b>28</b>
	<b>Max</b>		<b>170</b>	<b>8</b>	<b>170</b>	<b>186</b>	<b>142.8</b>	43.2	60.0	10.5	<b>51.94</b>	<b>8</b>	<b>16</b>
	<b>Mean</b>		<b>144.29</b>	<b>5.69</b>	138.60 18	<b>165.00</b>	0.0	165.0	0.0	40.1	<b>35.32</b>	<b>10.3</b>	<b>3</b>
<b>Sample collected by</b>				<b>Sample analyzed by</b>						<b>Report prepared by</b>			

**February, 2022**

**March, 2022**

April, 2022

<b>*Water Quality at different locations of Lower Lake: April -2022 (Field Parameters) (Units in mg/liter)</b>											
<b>S. No.</b>	<b>St.Name &amp; No.</b>	<b>Layer</b>	<b>Date</b>	<b>Time</b>	<b>Air Temp. °C</b>	<b>Water Temp. °C</b>	<b>pH</b>	<b>Free CO<sub>2</sub> (mg/l)</b>	<b>Dissolved Oxygen (mg/l)</b>	<b>Conductivity (mS/cm)</b>	<b>TDS (mg/l)</b>
1	Banganga (L/1)	Surface	07.04.22	1.50 pm	40.0	32.0	7.6	12.0	0.8	0.54	332
2	Dhobighat (L/2)	Surface	07.04.22	12.15 pm	38.0	31.0	8.5	Abs	10.0	0.59	360
		Bottom									
3	Near Retgahat (L/3)	Surface	07.04.22	12.25 pm	38.0	31.1	8.3	Abs	9.6	0.56	342
		Bottom									
4	MLB College (L/4)	Surface	07.04.22	12.40 pm	38.2	31.3	8.4	Abs	10.4	0.58	353
		Bottom									
5	Bhoipura (L/5)	Surface	08.04.22	12.30 pm	39.1	34.0	8.3	Abs	9.2	0.54	327
		Bottom									
6	Jehangirabad (L/6)	Surface	08.04.22	1.25 pm	39.7	34.5	8.4	Abs	9.6	0.56	340
		Bottom									
7	Khatlapura (L/7)	Surface	08.04.22	1.45 pm	40.0	34.6	8.8	Abs	8.4	0.55	337
		Bottom									
8	MVM College (L/8)	Surface	07.04.22	1.20 pm	38.7	31.7	8.3	Abs	8.8	0.57	347
		Bottom									

9	Boat House (L/9)	Surface	07.04.22	1.35 pm	38.8	31.8	8.4	Abs	9.6	0.55	337
		Bottom			0.0	28.7	7.5	6.0	4.0	0.57	349
10	A (Deeper Zones)	Surface	07.04.22	12.50 pm	38.4	31.5	8.5	Abs	9.2	0.55	336
		Middle			0.0	28.7	7.6	4.0	5.2	0.57	345
		Bottom			0	28.5	7.5	6.0	3.2	0.59	360
11	B (Deeper Zones)	Surface	07.04.22	1.10 pm	38.6	31.6	8.4	Abs	10.0	0.57	347
		Middle			0.0	28.8	7.5	6.0	4.8	0.57	350
		Bottom			0.0	28.6	7.4	8.0	3.6	0.60	365
12	C (Deeper Zones)	Surface	08.04.22	12.45 pm	39.2	34.2	8.5	Abs	9.2	0.54	332
		Middle			0.0	32.5	7.5	4.0	5.6	0.56	340
		Bottom			0.0	30.4	7.3	8.0	4.0	0.57	347
13	D (Deeper Zones)	Surface	08.04.22	1.0 pm	39.4	34.3	8.7	Abs	10.0	0.56	340
		Middle			0.0	32.5	7.5	8.0	5.2	0.57	348
		Bottom			0	30.1	7.4	10.0	3.6	0.59	357
14	E (Deeper Zones)	Surface	08.04.22	1.15 pm	39.5	34.4	8.5	Abs	9.6	0.55	337
		Middle			0.0	32.6	7.4	6.0	6.0	0.56	343
		Bottom			0.0	30.2	7.3	8.0	4.4	0.58	354
				Min	<b>0.0</b>	<b>28.5</b>	<b>7.3</b>	<b>4.0</b>	<b>0.8</b>	<b>0.54</b>	<b>327.0</b>
				Max	<b>40.0</b>	<b>34.6</b>	<b>8.8</b>	<b>12.0</b>	<b>10.4</b>	<b>0.60</b>	<b>366.0</b>
				Mean	<b>17.7</b>	<b>31.2</b>	<b>7.9</b>	<b>7.1</b>	<b>6.2</b>	<b>0.57</b>	<b>347.6</b>
<b>Sample collected by</b>					<b>Sample analyzed by</b>				<b>Report prepared by</b>		



Water quality at different locations of Lower Lake April - 2022 (Laboratory Analysis) (Units in mg/liter)													
S. N o.	Sampling Stations & No.	Layer	Total Alkalinity (mg/l)	Carbonate Alkalinity (mg/l)	Bi-carbonate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calcium content (mg/l)	Magnesium content (mg/l)	Chloride (mg/l)	BO D (mg/l)	COD (mg/l)
1	Banganga (L/1)	Surface	116	abs	116	130	86.1	43.9	36.2	10.7	42.96	14	44
2	Dhobighat (L/2)	Surface	110	16	94	110	75.6	34.4	31.8	8.4	39.96	6	36
		Bottom	114	abs	114	116	77.7	38.3	32.6	9.3	43.96	14	48
3	Near Retgahat (L/3)	Surface	90	12	78	114	86.1	27.9	36.2	10.7	42.96	6.4	44
		Bottom	94	abs	94	118	75.6	42.4	31.8	8.4	44.96	16	52
4	MLB College (L/4)	Surface	88	8	80	102	77.7	24.3	32.6	9.3	36.96	6.4	40
		Bottom	92	abs	92	110	73.5	36.5	30.9	6.8	42.96	12	48
5	Bhoipura (L/5)	Surface	106	18	88	122	75.6	46.4	31.8	10.3	38.96	5.6	44
		Bottom	110	abs	110	128	75.6	52.4	31.8	5.9	44.96	18	48
6	Jehangirabad (L/6)	Surface	102	16	86	124	79.8	44.2	33.5	8.9	38.96	5.6	36
		Bottom	106	abs	106	126	73.5	52.5	30.9	11.3	42.96	10	44
7	Khatlapura (L/7)	Surface	90	20	70	112	77.7	34.3	32.6	12.7	50.95	6.4	40
		Bottom	102	abs	102	116	65.1	50.9	27.3	10.7	52.95	12	52

		m											
8	MVM College (L/8)	Surface	94	18	76	108	71.4	36.6	30.0	12.8	37.96	6	44
		Bottom	106	abs	106	114	67.2	46.8	28.2	8.3	41.96	14	56
9	Boat House (L/9)	Surface	92	14	78	110	73.5	36.5	30.9	12.4	43.96	5.6	32
		Bottom	100	abs	100	118	65.1	52.9	27.3	8.9	45.95	14	48
10	A (Deeper Zones)	Surface	92	20	72	110	73.5	36.5	30.9	11.4	36.96	6	36
		Middle	96	abs	96	116	69.3	46.7	29.1	8.9	40.96	10	44
		Bottom	104	abs	104	124	77.7	46.3	32.6	12.9	44.96	14	52
11	B (Deeper Zones)	Surface	90	18	72	112	67.2	44.8	28.2	8.9	39.96	6	32
		Middle	94	abs	94	118	73.5	44.5	30.9	11.3	42.96	10	40
		Bottom	100	abs	100	126	77.7	48.3	32.6	11.3	46.95	12	48
12	C (Deeper Zones)	Surface	94	22	72	108	69.3	38.7	29.1	10.9	37.96	6.4	40
		Middle	104	abs	104	114	75.6	38.4	31.8	10.8	41.96	10	48
		Bottom	106	abs	106	120	77.7	42.3	32.6	11.7	43.96	14	56
13	D (Deeper Zones)	Surface	96	20	76	110	65.1	44.9	27.3	9.4	40.96	6	36
		Middle	102	abs	102	118	71.4	46.6	30.0	9.3	42.96	8	44
		Bottom	108	abs	108	122	75.6	46.4	31.8	10.3	45.95	12	56

		m											
14	E (Deeper Zones)	Surface	92	24	68	112	67.2	44.8	28.2	10.9	39.96	6.8	40
		Middle	98	abs	98	120	75.6	44.4	31.8	11.3	43.96	10	44
		Bottom	104	abs	104	124	77.7	46.3	32.6	11.3	45.95	14	52
	<b>Min</b>		<b>88</b>	<b>8</b>	<b>68</b>	<b>102</b>	<b>65.1</b>	<b>24.3</b>	<b>27.34</b>	<b>5.90</b>	<b>36.96</b>	<b>5.6</b>	<b>32</b>
	<b>Max</b>		<b>116</b>	<b>24</b>	<b>116</b>	<b>130</b>	<b>86.1</b>	<b>52.9</b>	<b>36.16</b>	<b>12.85</b>	<b>52.95</b>	<b>18</b>	<b>56</b>
	<b>Mean</b>		<b>99.88</b>	<b>17.20</b>	<b>92.65</b>	<b>116.59</b>	<b>74.18</b>	<b>42.30</b>	<b>31.16</b>	<b>10.14</b>	<b>42.96</b>	<b>10.02</b>	<b>44.47</b>
<b>Sample collected by</b>				<b>Sample analyzed by</b>								<b>Report prepared by</b>	

May, 2022

<b>*Water Quality at different locations of Lower Lake: May -2022 (Field Parameters) (Units in mg/liter)</b>											
<b>S. No.</b>	<b>St.Name &amp; No.</b>	<b>Layer</b>	<b>Date</b>	<b>Time</b>	<b>Air Temp. °C</b>	<b>Water Temp. °C</b>	<b>pH</b>	<b>Free CO<sub>2</sub> (mg/l)</b>	<b>Dissolved Oxygen (mg/l)</b>	<b>Conductivity (mS/cm)</b>	<b>TDS (mg/l)</b>
1	Banganga (L/1)	Surface	24.05.22	12.40 pm	35.7	29.1	7.5	14.0	4.4	0.63	385
2	Dhobighat (L/2)	Surface	24.05.22	10.45 am	35.0	28.0	8.4	Abs	9.2	0.57	350
		Bottom									
3	Near Retgahat (L/3)	Surface	24.05.22	11.0 am	35.2	28.1	8.5	Abs	8.8	0.60	365
		Bottom									
4	MLB College (L/4)	Surface	24.05.22	11.20 am	35.3	28.2	8.2	Abs	8.4	0.61	371
		Bottom									
5	Bhoipura (L/5)	Surface	25.05.22	11.40 am	36.1	28.8	8.3	Abs	8.8	0.61	370
		Bottom									
6	Jehangirabad (L/6)	Surface	25.05.22	1.0 pm	36.6	29.5	8.4	Abs	9.2	0.61	371
		Bottom									
7	Khatlapura (L/7)	Surface	25.05.22	1.20 pm	36.7	29.7	8.3	Abs	8.8	0.61	373
		Bottom									
8	MVM College (L/8)	Surface	24.05.22	12.15 pm	35.6	29.0	8.4	Abs	8.8	0.61	375
		Bottom									
9	Boat House	Surface	24.05.22	12.30	35.7	28.8	8.3	Abs	8.0	0.61	373

	(L/9)			pm							
		Bottom			0.0	28.0	7.5	8.0	5.6	0.62	380
10	A (Deeper Zones)	Surface	24.05.22	11.40 am	35.4	28.3	8.2	Abs	8.8	0.61	371
		Middle			0.0	27.8	7.8	Abs	7.6	0.61	374
		Bottom			0	27.6	7.4	8.0	5.2	0.62	376
11	B (Deeper Zones)	Surface	24.05.22	12.0 pm	35.5	28.5	8.3	Abs	9.6	0.61	372
		Middle			0.0	27.9	7.7	Abs	8.0	0.61	375
		Bottom			0.0	27.5	7.5	6.0	5.6	0.62	378
12	C (Deeper Zones)	Surface	25.05.22	11.55 am	36.3	28.9	8.4	Abs	8.8	0.61	372
		Middle			0.0	28.1	7.5	6.0	6.0	0.63	385
		Bottom			0.0	27.5	7.4	8.0	4.8	0.66	405
13	D (Deeper Zones)	Surface	25.05.22	12.15 pm	36.4	29.2	8.5	Abs	9.2	0.61	371
		Middle			0.0	28.7	7.6	Abs	6.4	0.65	395
		Bottom			0	28.0	7.4	6.0	5.2	0.67	407
14	E (Deeper Zones)	Surface	25.05.22	12.40 pm	36.5	29.3	8.4	Abs	8.8	0.61	375
		Middle			0.0	28.5	7.8	Abs	7.2	0.66	403
		Bottom			0.0	27.9	7.5	4.0	4.8	0.68	415
				Min	<b>0.0</b>	<b>27.5</b>	<b>7.3</b>	<b>4.0</b>	<b>4.0</b>	<b>0.57</b>	<b>350.0</b>
				Max	<b>36.7</b>	<b>29.7</b>	<b>8.5</b>	<b>14.0</b>	<b>9.6</b>	<b>0.68</b>	<b>415.0</b>
				Mean	<b>16.3</b>	<b>28.4</b>	<b>7.8</b>	<b>7.9</b>	<b>6.8</b>	<b>0.63</b>	<b>381.8</b>
<b>Sample collected by</b>					<b>Sample analyzed by</b>				<b>Report prepared by</b>		

Water quality at different locations of Lower Lake May - 2022 (Laboratory Analysis) (Units in mg/liter)													
S. No.	Sampling Stations & No.	Layer	Total Alkalinity (mg/l)	Carbonate Alkalinity (mg/l)	Bi-carbonate alkalinity (mg/l)	Total Hardness (mg/l)	Ca hardness (mg/l)	Mg hardness (mg/l)	Calcium content (mg/l)	Magnesium content (mg/l)	Chloride (mg/l)	BO D (mg/l)	COD (mg/l)
1	Banganga (L/1)	Surface	120	abs	120	136	88.2	47.8	37.0	11.6	44.96	12	40
2	Dhobighat (L/2)	Surface	108	6	102	114	77.7	36.3	32.6	8.8	40.96	6	28
		Bottom	112	abs	112	120	81.9	38.1	34.4	9.3	44.96	8	36
3	Near Retgahat (L/3)	Surface	106	8	98	116	73.5	42.5	30.9	10.3	40.96	5.2	20
		Bottom	110	abs	110	122	77.7	44.3	32.6	10.8	42.96	10	28
4	MLB College (L/4)	Surface	108	8	100	106	73.5	32.5	30.9	7.9	39.96	4.8	16
		Bottom	114	abs	114	112	79.8	32.2	33.5	7.8	43.96	12	32
5	Bhoipura (L/5)	Surface	98	10	88	116	71.4	44.6	30.0	10.8	41.96	5.6	28
		Bottom	106	abs	106	122	75.6	46.4	31.8	11.3	44.96	14	32
6	Jehangirabad (L/6)	Surface	104	8	96	114	71.4	42.6	30.0	10.4	40.96	5.6	24
		Bottom	108	abs	108	118	75.6	42.4	31.8	10.3	43.96	12	36

		m											
7	Khatlapura (L/7)	Surface	96	6	90	112	69.3	42.7	29.1	10.4	38.96	6	20
		Bottom	110	abs	110	118	73.5	44.5	30.9	10.8	42.96	10	32
8	MVM College (L/8)	Surface	106	8	98	112	71.4	40.6	30.0	9.9	41.96	5.6	28
		Bottom	112	abs	112	120	77.7	42.3	32.6	10.3	44.96	14	36
9	Boat House (L/9)	Surface	102	6	96	114	73.5	40.5	30.9	9.8	40.96	4.8	20
		Bottom	108	abs	108	122	79.8	42.2	33.5	10.3	44.36	10	32
10	A (Deeper Zones)	Surface	100	8	92	112	69.3	42.7	29.1	10.4	39.96	5.2	16
		Middle	106	4	102	118	73.5	44.5	30.9	10.8	42.96	6	24
		Bottom	110	abs	110	124	79.8	44.2	33.5	10.7	38.96	14	32
11	B (Deeper Zones)	Surface	98	10	88	114	67.2	46.8	28.2	11.4	41.96	5.6	24
		Middle	104	6	98	118	73.5	44.5	30.9	10.8	44.96	6.4	28
		Bottom	112	abs	112	126	77.7	48.3	32.6	11.7	40.96	14	36
12	C (Deeper Zones)	Surface	104	6	98	110	63.0	47.0	26.5	11.4	42.96	4.8	28
		Middle	106	abs	106	114	69.3	44.7	29.1	10.9	45.95	10	36
		Bottom	110	abs	110	120	73.5	46.5	30.9	11.3	39.96	14	40
13	D (Deeper	Surfa	102	8	94	110	69.3	40.7	29.1	9.9	41.96	5.2	20

	Zones)	ce											
		Middle	106	6	100	114	77.7	36.3	32.6	8.8	44.96	6	28
		Bottom	112	abs	112	128	81.9	46.1	34.4	11.2	38.96	14	36
14	E (Deeper Zones)	Surface	104	6	98	114	71.4	42.6	30.0	10.4	40.96	4.8	28
		Middle	110	4	106	118	75.6	42.4	31.8	10.3	43.96	5.6	32
		Bottom	114	abs	114	124	79.8	44.2	33.5	10.7	39.96	14	40
	<b>Min</b>		<b>96</b>	<b>4</b>	<b>88</b>	<b>106</b>	<b>63</b>	<b>32.2</b>	<b>26.46</b>	<b>7.82</b>	<b>41.96</b>	<b>4.8</b>	<b>16</b>
	<b>Max</b>		<b>120</b>	<b>10</b>	<b>120</b>	<b>136</b>	<b>88.2</b>	<b>48.3</b>	<b>37.04</b>	<b>11.74</b>	<b>44.96</b>	<b>14</b>	<b>40</b>
	<b>Mean</b>		<b>107.12</b>	<b>6.95</b>	<b>103.41</b>	<b>117.65</b>	<b>74.86</b>	<b>42.49</b>	<b>31.44</b>	<b>10.32</b>	<b>42.38</b>	<b>8.65</b>	<b>29.18</b>
<b>Sample collected by</b>				<b>Sample analyzed by</b>						<b>Report prepared by</b>			



June, 2022

<b>*Water Quality at different locations of Lower Lake: June -2022 (Field Parameters) (Units in mg/liter)</b>											
S. No.	St.Name & No.	Layer	Date	Time	Air Temp. °C	Water Temp. °C	pH	Free CO <sub>2</sub> (mg/l)	Dissolved Oxygen (mg/l)	Conductivity (mS/cm)	TDS (mg/l)
1	Banganga (L/1)	Surface	17.06.22	1.45 pm	33.2	30.1	7.4	10.0	2.0	0.65	395
2	Dhobighat (L/2)	Surface	17.06.22	11.50 am	32.3	29.1	8.5	Abs	9.6	0.57	345
		Bottom				28.3	7.4	8.0	5.2	0.61	375
3	Near Retgahat (L/3)	Surface	17.06.22	12.10 pm	32.4	29.3	8.4	Abs	9.2	0.58	355
		Bottom			0.0	28.5	7.5	6.0	4.4	0.63	384
4	MLB College (L/4)	Surface	17.06.22	12.45 pm	32.7	29.6	8.6	Abs	9.6	0.57	348
		Bottom			0.0	29.1	7.3	6.0	4.8	0.60	367
5	Bhoipura (L/5)	Surface	20.06.22	12:00 PM	30.1	28.6	8.1	Abs	8.4	0.58	356
		Bottom			0.0	27.8	7.4	8.0	5.6	0.62	378
6	Jehangirabad (L/6)	Surface	20.06.22	12.30 pm	30.5	29.2	8.2	Abs	8.0	0.59	361
		Bottom			0.0	28.7	7.5	6.0	5.2	0.63	383
7	Khatlapura (L/7)	Surface	20.06.22	1.10 pm	30.8	29.3	8.1	Abs	8.4	0.61	371
		Bottom			0.0	28.5	7.4	8.0	4.8	0.64	390
8	MVM College (L/8)	Surface	17.06.22	1.30 pm	33.0	29.9	8.3	Abs	8.8	0.59	361
		Bottom			0.0	29.3	7.5	8.0	5.6	0.63	384
9	Boat House (L/9)	Surface	17.06.22	1.15 pm	32.9	29.8	8.4	Abs	8.4	0.59	357
		Bottom			0.0	29.3	7.3	6.0	5.6	0.62	381
10	A (Deeper Zones)	Surface	17.06.22	12.30 pm	32.6	29.5	8.3	Abs	8.8	0.57	350
		Middle			0.0	28.9	7.5	8.0	6.0	0.60	363
		Bottom			0	28.5	7.4	6.0	4.4	0.62	376
11	B (Deeper Zones)	Surface	17.06.22	12.55 pm	32.8	29.7	8.4	Abs	9.2	0.58	353
		Middle			0.0	29.2	7.8	Abs	7.6	0.61	374
		Bottom			0.0	28.8	7.4	6.0	5.2	0.64	393
12	C (Deeper Zones)	Surface	20.06.22	11.40 am	30.0	28.4	8.2	Abs	8.0	0.61	371

		Middle			0.0	27.6	7.4	8.0	5.6	0.63	385	
		Bottom			0.0	27.5	7.3	10.0	4.4	0.64	390	
13	D (Deeper Zones)	Surface	20.06.22	12.45 pm	30.7	29.2	8.1	Abs	8.0	0.61	374	
		Middle			0.0	28.6	7.4	6.0	5.6	0.63	383	
		Bottom			0	28.1	7.3	4.0	4.8	0.66	401	
14	E (Deeper Zones)	Surface	20.06.22	12.15 pm	30.3	28.9	8.2	Abs	9.2	0.60	365	
		Middle			0.0	28.1	7.6	Abs	7.6	0.61	372	
		Bottom			0.0	27.8	7.4	8.0	5.6	0.65	395	
				Min	<b>0.0</b>	<b>27.5</b>	<b>7.3</b>	<b>4.0</b>	<b>2.0</b>	<b>0.57</b>	<b>345.0</b>	
				Max	<b>33.2</b>	<b>30.1</b>	<b>8.6</b>	<b>10.0</b>	<b>9.6</b>	<b>0.66</b>	<b>401.0</b>	
				Mean	<b>14.5</b>	<b>28.8</b>	<b>7.8</b>	<b>7.2</b>	<b>6.6</b>	<b>0.61</b>	<b>373.0</b>	
<b>Sample collected by</b>					<b>Sample analyzed by</b>				<b>Report prepared by</b>			

<b>Water quality at different locations of Lower Lake June - 2022 (Laboratory Analysis) (Units in mg/liter)</b>													
<b>S. N o.</b>	<b>Sampling Stations &amp; No.</b>	<b>Layer</b>	<b>Total Alkalinity (mg/l)</b>	<b>Carbonate Alkalinity (mg/l)</b>	<b>Bi-carbonate alkalinity (mg/l)</b>	<b>Total Hardness (mg/l)</b>	<b>Ca hardness (mg/l)</b>	<b>Mg hardness (mg/l)</b>	<b>Calcium content (mg/l)</b>	<b>Magnesium content (mg/l)</b>	<b>Chloride (mg/l)</b>	<b>BO D (mg/l)</b>	<b>COD (mg/l)</b>
1	Banganga (L/1)	Surface	82	abs	118	134	86.1	47.9	36.2	11.6	44.96	8.00	36
2	Dhobighat (L/2)	Surface	72	10	94	114	75.6	38.4	31.8	9.3	38.96	5.60	28
		Bottom	76	abs	108	118	79.8	38.2	33.5	9.3	40.96	10.00	32
3	Near Retgahat (L/3)	Surface	68	8	98	110	71.4	38.6	30.0	9.4	39.96	5.20	24
		Bottom	72	abs	110	116	75.6	40.4	31.8	9.8	41.96	8.00	28

		m											
4	MLB College (L/4)	Surface	68	10	98	106	71.4	34.6	30.0	8.4	37.96	5.20	20
		Bottom	70	abs	112	110	73.5	36.5	30.9	8.9	39.96	12.00	28
5	Bhoipura (L/5)	Surface	70	6	100	112	73.5	38.5	30.9	9.4	38.96	4.40	28
		Bottom	74	abs	108	118	77.7	40.3	32.6	9.8	42.96	6.00	32
6	Jehangirabad (L/6)	Surface	72	6	102	114	75.6	38.4	31.8	9.3	40.96	4.80	20
		Bottom	80	abs	114	122	84.0	38.0	35.3	9.2	43.96	8.00	24
7	Khatlapura (L/7)	Surface	68	6	104	110	71.4	38.6	30.0	9.4	39.96	4.40	28
		Bottom	72	abs	116	118	75.6	42.4	31.8	10.3	42.96	8.00	32
8	MVM College (L/8)	Surface	70	6	102	112	73.5	38.5	30.9	9.4	37.96	4.80	24
		Bottom	74	abs	116	118	77.7	40.3	32.6	9.8	41.96	10.00	32
9	Boat House (L/9)	Surface	66	8	98	108	69.3	38.7	29.1	9.4	40.96	4.80	20
		Bottom	70	abs	112	112	73.5	38.5	30.9	9.4	42.96	8.00	28
10	A (Deeper Zones)	Surface	68	8	94	110	71.4	38.6	30.0	9.4	38.96	4.80	16
		Middle	72	abs	106	114	75.6	38.4	31.8	9.3	40.96	8.00	24
		Bottom	76	abs	108	118	79.8	38.2	33.5	9.3	42.96	10.00	32
11	B (Deeper	Surface	80	8	96	114	84.0	30.0	35.3	7.3	39.96	5.20	20

	Zones)	ce											
		Middle	86	6	102	118	90.3	27.7	37.9	6.7	41.96	6.00	28
		Bottom	88	abs	112	122	92.4	29.6	38.8	7.2	43.96	8.00	36
12	C (Deeper Zones)	Surface	82	4	96	112	86.1	25.9	36.2	6.3	40.96	4.80	20
		Middle	86	abs	104	116	90.3	25.7	37.9	6.2	42.96	6.00	24
		Bottom	90	abs	108	120	94.5	25.5	39.7	6.2	44.96	8.00	32
13	D (Deeper Zones)	Surface	76	6	96	114	79.8	34.2	33.5	8.3	37.96	5.20	24
		Middle	80	abs	106	116	84.0	32.0	35.3	7.8	40.96	8.00	28
		Bottom	82	abs	110	124	86.1	37.9	36.2	9.2	41.96	10.00	36
14	E (Deeper Zones)	Surface	80	6	98	116	84.0	32.0	35.3	7.8	38.96	5.60	28
		Middle	84	4	106	120	88.2	31.8	37.0	7.7	39.96	8.00	32
		Bottom	88	abs	112	126	92.4	33.6	38.8	8.2	42.96	10.00	32
	<b>Min</b>		<b>66</b>	<b>4</b>	<b>94</b>	<b>106</b>	<b>69.3</b>	<b>25.5</b>	<b>29.11</b>	<b>6.20</b>	<b>41.96</b>	<b>4.4</b>	<b>16</b>
	<b>Max</b>		<b>90</b>	<b>10</b>	<b>118</b>	<b>134</b>	<b>94.5</b>	<b>47.9</b>	<b>39.69</b>	<b>11.64</b>	<b>44.96</b>	<b>12</b>	<b>36</b>
	<b>Mean</b>		<b>76.41</b>	<b>6.82</b>	<b>105.18</b>	<b>116.24</b>	<b>80.23</b>	<b>35.92</b>	<b>33.70</b>	<b>8.73</b>	<b>41.34</b>	<b>7.09</b>	<b>27.29</b>
<b>Sample collected by</b>				<b>Sample analyzed by</b>						<b>Report prepared by</b>			



## Biological Parameters

### Phytoplankton

#### Phytoplankton

S.No	Species recorded during April, 2022
1	<i>Anabaena spiroides</i>
2	<i>Anabaenopsis sp.</i>
3	<i>Ankistrodesmus hantzchii</i>
4	<i>Arthrospira sp.</i>
5	<i>Asterionella sp.</i>
6	<i>Caloneis sp.</i>
7	<i>Characium limneticum</i>
8	<i>Chlorella humicola</i>
9	<i>Chlorococcum sp</i>
10	<i>Closteriopsis sp.</i>
11	<i>Closterium longissima</i>
12	<i>Closterium sp.</i>
13	<i>Coelastrum microporum</i>
14	<i>Coelastrum reticulatum</i>
15	<i>Cosmarium quinarium</i>
16	<i>Crucigenia crucifera</i>
17	<i>Crucigenia elegans</i>
18	<i>Cyclotella sp</i>
19	<i>Cymbella sp.</i>
20	<i>Diatoma sp.</i>
21	<i>Diatomella sp.</i>
22	<i>Diatomella sp.</i>
23	<i>E. viridis</i>
24	<i>Elkatothrix sp.</i>

25	<i>Eudorina elegans</i>
26	<i>Euglena acus</i>
27	<i>Euglena oxyuris</i>
28	<i>Eunotia sp.</i>
29	<i>Fragillaria sp</i>
30	<i>Frustulia sp.</i>
31	<i>Gloeotrichia sp.</i>
32	<i>Gomphonema sp</i>
33	<i>K. lunaris</i>
34	<i>Kirchneriella sp.</i>
35	<i>Lyngbya sp.</i>
36	<i>M.pseudofilamentosa</i>
37	<i>Melosira granulata</i>
38	<i>Merismopodia sp</i>
39	<i>Microcystis flos-aquae</i>
40	<i>Mougeotia sp.</i>
41	<i>Navicula sp.</i>
42	<i>Nitzschia sp.</i>
43	<i>Oocystis crassa</i>
44	<i>Phormidium sp.</i>
45	<i>Pinnularia sp</i>
46	<i>Scendesmus armata</i>

**ZOPLANKTON**

<b>S.No</b>	<b>Species recorded during April, 2022</b>
1	<i>Arcella vulgaris</i>
2	<i>Asplancha sp</i>
3	<i>Bosmina sp</i>
4	<i>Brachionus bidentata</i>
5	<i>Brachionus calyciflorus</i>
6	<i>Brachionus falcatus</i>
7	<i>Brachionus patalus</i>
8	<i>Centrocypris sp</i>
9	<i>Centropyxis aculeata</i>
10	<i>Ceriodaphnia sp</i>
11	<i>Keratella tropica</i>
12	<i>Lecane sp</i>
13	<i>Mesocyclops</i>
14	<i>Moina sp</i>
15	<i>Mytilina sp</i>
16	<i>Paramecium sp</i>

**List of Macrophyte species recorded during April, 2022**

1. *Hydrilla verticillata*
2. *Potamogeton natans*
3. *Potamogeton pectinatus*
4. *Vallisneria spiralis*
5. *Lymnophylla heterophyta*
6. *Potamogeton crispus*
7. *Spirodella polyrhiza*
8. *Ottelia sp*
9. *Ceratophyllum demersum*
10. *Myriophyllum spathulatum*
11. *Polygonum sp*



### Macrobenthos species recorded during April, 2022

S. No	Annelida	Arthropoda	Mollusca
1	<i>Tubifex</i> sp.	<i>Palaemonidae</i>	<i>Bellamya bengalensis</i>
2	<i>Tubifex albicola</i>	<i>Gammarus pulex</i>	<i>Bellamya crassa</i>
3	<i>Tubifex tubifex</i>	<i>Berosus</i> sp.	<i>Bellamya colairensis</i>
4	<i>Limnodrilus</i> sp.	<i>Enochrus</i> sp.	<i>Bellamya mandiensis</i>
5	<i>Branchura</i> sp.	<i>Paracymus</i> sp.	<i>Bellamya dissimilis</i>
6	<i>Stylaria lacustris</i>	<i>Tropisternus</i> sp.	<i>Filopaludina sumatrensis</i>
7	<i>Dero</i> sp.	<i>Psephenus herricki</i>	<i>Viviparus viviparus</i>
8	<i>Chaetogaster</i> sp.	<i>Cybister lateralimarginalis</i>	<i>Viviparus contectus</i>
9	<i>Glossiphonia complanata</i>	<i>Hydrovatus cuspidatus</i>	<i>Viviparus mamillatus</i>
10	<i>Hemiclepsis viridis</i>	<i>Laccophilus</i> sp.	<i>Thiara tuberculata</i>
11	<i>Batracobdella hardingi</i>	<i>Neoporus</i> sp.	<i>Thiara granifera</i>
12	<i>Hirudineria</i> sp.	<i>Agabus</i> sp.	<i>Thiara scabra</i>
13	<i>Poecilobdella granulosa</i>	<i>Haliphus</i> sp.	<i>Gibbia alticola</i>
14	<i>Lumbriculus variegatus</i>	<i>Chironomus</i> sp	<i>Bithynia tenticulata</i>
15		<i>Bezzia</i> sp.	<i>Bithynia forcarti</i>
16		<i>Chaoborus</i> sp.	<i>Bithynia pulchella</i>
17		<i>Culex</i> sp.	<i>Pila globosa</i>
18		<i>Tipula abdominalis</i>	<i>Physella acuta</i>
19		<i>Gomphus</i> sp.	<i>Indoplanrobis exustus</i>
20		<i>Progomphus</i> sp.	<i>Gyraulus convexiusculus</i>
21		<i>Hegenius</i> sp.	<i>Gyraulus gilberti</i>
22		<i>Anax junix</i>	<i>Lymnaea auricularia</i>
23		<i>Cordulegaster</i> sp.	<i>Lymnaea acuminata</i>
24		<i>Gerris</i> sp	<i>Lymnaea biacuminata</i>
25		<i>Notonecta</i> sp.	<i>Lymnaea ovate</i>
26		<i>Anisops breddire</i>	<i>Unio tigridis</i>
27		<i>Micronecta scholtzi</i>	<i>Parreysia occata</i>
28		<i>Sigara mekinstryi</i>	<i>Lamellidens consorbinus</i>
29		<i>Micronecta minutissima</i>	
30		<i>Micronecta quale</i>	
31		<i>Abedus herberti</i>	
32		<i>Nepa</i> sp.	
33		<i>Ranatra</i> sp.	
34		<i>Laccotrephes</i> sp.	
35		<i>Baetis</i> sp.	
36		<i>Caenis</i> sp.	
37		<i>Ephemerella</i> sp.	

38		<i>Ephemera sp.</i>	
39		<i>Helopicus sp.</i>	
40		<i>Polycentropodinae sp.</i>	
41		<i>Lepidostoma sp.</i>	
42			
<b>Total</b>	<b>14</b>	<b>41</b>	<b>28</b>

## Observation

### Designated Best Use Criteria for Surface Waters (Source: CPCB)

#### 1. Upper Lake

Parameters	Class of Criteria	Range Value	Present Status	Mean
pH	A	6.5-8.5		
	B	6.5-8.5		
	C	6-9	7.3-8.7	8.0
	D	6.5-8.5		
	E	6-8.5		
Dissolved Oxygen	A	6 mg/l or more		
	B	5 mg/l or more		
	C	4 mg/l or more	4.0-9.2	6.9
	D	4mg/l or more		
	E	-		
BOD	A	2 mg or less		
	B	3mg or less		
	C	3mg/l or less	3.2-10	5.99
	D	-		
	E	-		

#### 2. Lower Lake

Parameters	Class of Criteria	Range Value	Present Status	Mean
pH	A	6.5-8.5		
	B	6.5-8.5		
	C	6-9		
	D	6.5-8.5	7.3-8.5	7.7
	E	6-8.5		
Dissolved Oxygen	A	6 mg/l or more		
	B	5 mg/l or more		
	C	4 mg/l or more		
	D	4mg/l or more	1.6-9.2	5.2
	E	-		
BOD	A	2 mg or less		
	B	3mg or less		
	C	3mg/l or less	6-20	10.95
	D	-		
	E	-		



## Conclusion

Based on the analysis of various indicative parameters Upper Lake can be categorized under class C, i.e. Drinking water source after conventional treatment and disinfection as per the Designated Best Use Criteria for Surface Waters (Source: CPCB) while Lower Lake can be placed under Class –D i.e. Propagation of wild life and Fisheries .