

Village Ponds in Basdharma

KARNAL, HARYANA

The Problem

Based on the 2011 Census and records from the Public Health Engineering Department (PHED), the population of Basdharma village has grown over 40% in 3 years. Such growth of population in Rural Haryana has led to a gap in effluent treatment provisions. Village ponds and lakes which were once centres of the village (for water storage and ground water charging; domestic and farm animals water needs), are now recipients of grey water from these villages. As such the deposition of algae, excessive sludge and animal dung has caused the capacity of the water bodies to also decrease. At the Basdharma village site, the lake to be treated was 1.5 Acre in Surface Area with a depth of up to 10 feet. The lake water could not be used for agriculture due to heavy contamination as it could further impact the health of villagers adversely.

The Solution

Following the procedural assessment methodology Bio2pure® analysed the intensity of pollution in the lake. Based on this we recommended the client for dosing of Bio2pure® Aqua Culture Treatment® and Waste Water Treatment® Solutions in combination with our PAT® technology.

The Result

The test results below show the success of Bio2pure® Technology. Within two weeks of treatment the:

Mild smell of hydrogen sulphide and bad odour from waste reduced drastically within the 1st week of POC and by the consecutive week the smell had gone completely.

The colour of water changed and algae had vanished completely. However, there was a lot of plastic bottles and dry garbage being left on the bank of the lake which was eventually cleaned up after treatment to restore the health of its surroundings.

Visibility test conducted at 5 different locations of the lake with Secchi disk revealed an increase in visibility from 3 to 9 inches in 2 weeks and sludge too had settled down. Approximately 1,188,000m³ of sludge was removed in just 2 weeks.

Open drains carrying all waste into pond



Waste and plastic on the bank of pond



Figure: POC Village Ponds in Basdhara, Karnal, Haryana

Overview - Basdhara POC, Test Results			
Parameters	09.04.15 Before POC	28.04.15 During POC	11.05.15 End of POC
pH	6.5	8.4	7.1
TSS	240.0	130.0	75.0
TSS % Change	69%		
BOD	80.0	50.0	12.0
BOD % Change	85%		
COD	240.0	200.0	60.0
COD % Change	75%		
Phosphate	1.5	0.2	0.0
Phosphate % Change	100%		
Total Nitrogen	10.0	8.0	5.0
Nitrogen % Change	50%		
Algae	7.3	7.0	5.5
Algae % Change	24%		

Note: The percentage(%) change is calculated from Before POC to End of POC.

Figure: POC Village Ponds in Basdhara Karnal, Haryana (Water Quality)

Overview - Jarauli POC 2, Test Results

Parameters		15.06.15	22.06.15	27.06.15	02.07.15
		Before POC	During POC	During POC	End of POC
pH	Inlet	7.1	7.8	7.5	7.5
	Outlet	7.0	7.2	7.1	7.2
	% Change	1.4	7.7	5.3	4.0
TSS	Inlet	400.0	410.0	390.0	110.0
	Outlet	350.0	50.0	55.0	50.0
	% Change	12.5	87.8	85.9	54.5
BOD	Inlet	75.0	80.0	78.0	40.0
	Outlet	70.0	10.0	8.0	8.0
	% Change	6.7	87.5	89.7	80.0
COD	Inlet	400.0	450.0	410.0	250.0
	Outlet	380.0	70.0	65.0	60.0
	% Change	5.0	84.4	84.1	76.0
Phosphate	Inlet	0.0	5.5	5.0	2.2
	Outlet	0.0	0.0	0.0	0.0
	% Change	0.0	100.0	100.0	100.0
Total Nitrogen	Inlet	1.5	20.0	18.0	10.0
	Outlet	1.0	0.5	0.5	0.2
	% Change	33.3	97.5	97.2	98.0
Algae	Inlet	2.1	1.5	1.4	1.0
	Outlet	1.2	0.0	0.0	0.0
	% Change	42.9	100.0	100.0	100.0

Figure: Overview- Water Quality Results of Pond in Jarauli (POC 2)

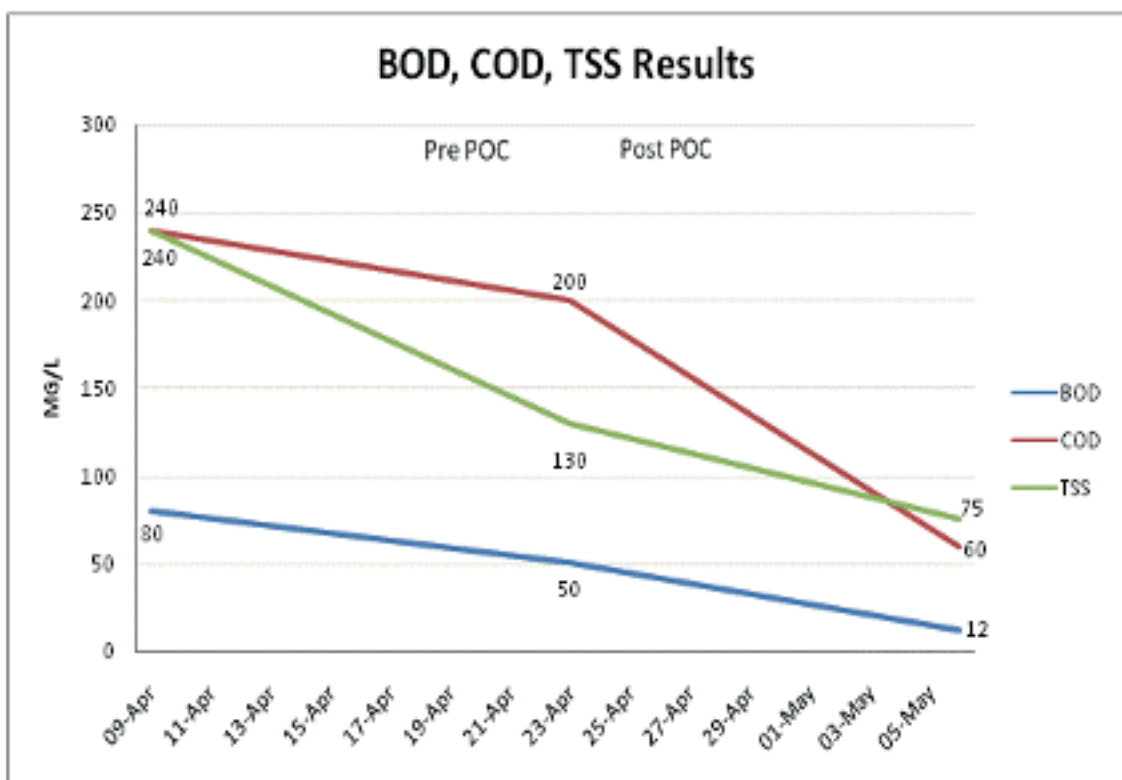
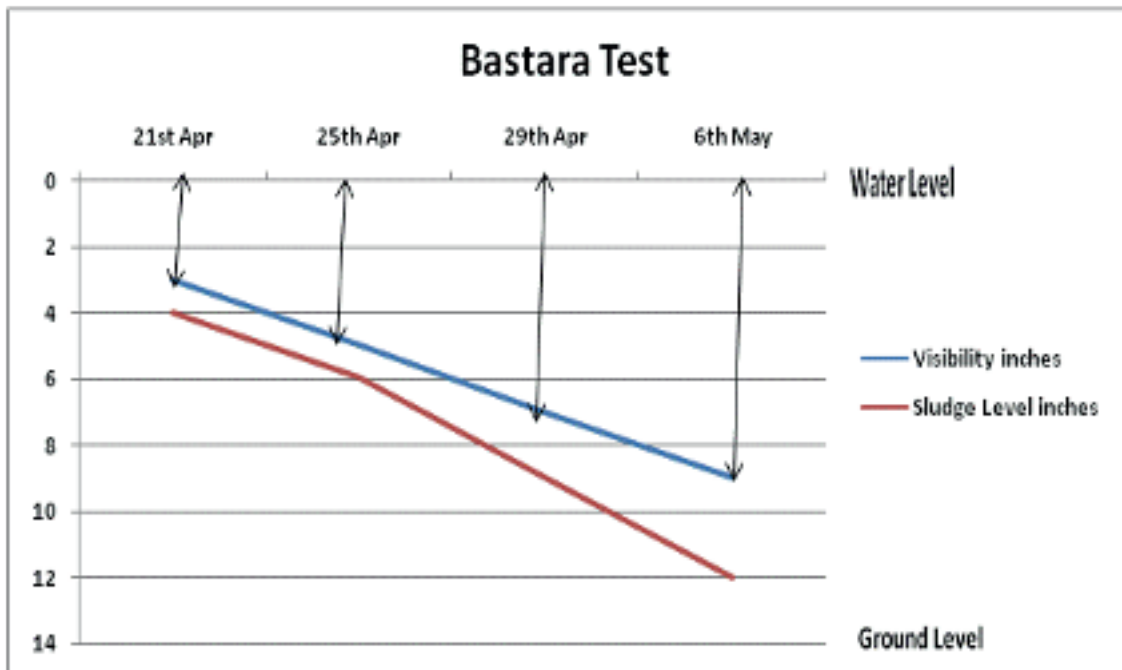


**Pond Before
treatment
as on
09th April 2015**

**Pond After
treatment
as on
11th May 2015**



Figure: POC Village Ponds in Basdhara, Karnal, Haryana



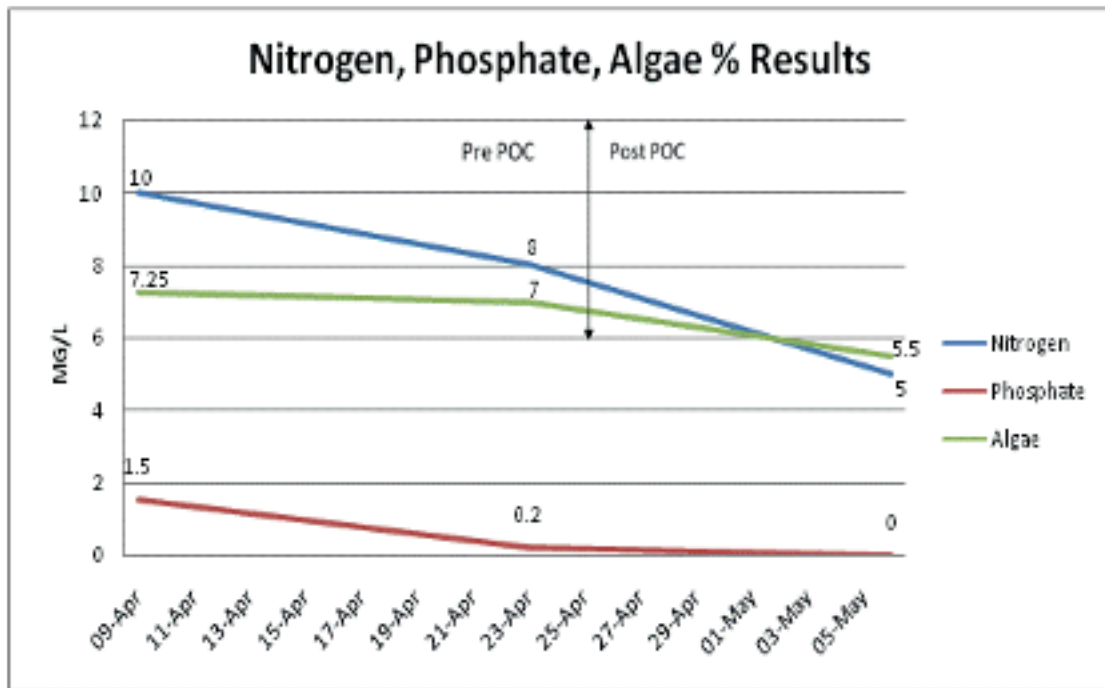


Figure: POC Village Ponds in Basdhara, Karnal, Haryana (Water Quality Tests)