



Title: Operation of Effluent Treatment Plant (ETP)

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Effective Date:		Supersedes No.	Nil
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1.0 OBJECTIVE

1.1 To describe a procedure for the operation of Effluent treatment plant (ETP).

2.0 SCOPE

2.1 This procedure applies to the Engineering department.

3.0 RESPONSIBILITY

3.1 Mechanical Engineer - Engineering

4.0 ACCOUNTABILITY

4.1 Unit Head

5.0 REFERENCE (S)

5.1 In-house.

6.0 PROCEDURE

6.1 Procedure of prestart check up.

6.1.1 Check the level of sewage tank; the check valve should be dipped below the effluent level.

6.1.2 Check the effluent water level of the waste water tank.

6.1.3 Check the power supply in the panel.

6.2 Procedure of starting the ETP plant.

6.2.1 Start both the pumps i.e. sewage tank pump SP-1 & waste water pump WP-1. Simultaneously, so that both gets in mixing tank.

6.2.2 Check the valve v-1.it should be in open position. Close the valves v-2,v-3,v-4& v-5 of blower.

6.2.3 Start the blower by pressing the switch from the panel.

6.2.4 After 5 min close 75% of the valve v-1 and open 50% of the valves v-2, v-3, v-4 & v-5.

6.2.5 Start the main inlet feed pump P-1, for transferring the water from mixing tank into the primary clarifier of the ETP plant by opening the valve Wv-1 & closing the valve Wv-2.

6.2.6 Check the pH of the water supplied to the primary clarifier. The pH of the water should be between 6.5 to 7.5.

6.2.7 If the pH of the water is less than 6.5 treat the water by 2g/lit solution of caustic soda to bring the pH of water ranges between 6.5 to 7.5..

6.2.8 Now let the water flow itself by overflowing into the aeration chamber 1 & 2 for aeration.

6.2.9 Add 100gm of urea and 100 gm of DAP mixed in one liter of water to aeration chamber 1 and 2.

6.2.10 Check MLSS level by collecting the treated effluent from aeration chamber 1 or 2 in 1000 ml measuring jar. Keep it aside for 5 min and check the MLSS level (Settled sludge). The MLSS level should be more than 250 ml.

6.2.11 If the MLSS level is less than 250 ml then treat the treated water by 20g/lit solution of alum and by 1g/lit solution of polyelectrolyte in the secondary clarifier to bring the pH of the



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treated effluent in between 7-8 .Recirculate the treated effluent from the secondary clarifier (through sludge pump P-2 by opening the valve Sv-1, Sv-2 and closing the valve Sv-3) to primary clarifier. Also start the main inlet water feed pump(P-1) simultaneously and adjust the mixed water supply from the valve Wv-1 & Wv-2.

- 6.2.12 Recirculate the treated effluent and the mixed water until MLSS level reaches above 250 ml.
- 6.2.13 After the MLSS level is obtained in the aeration chamber 1 and 2, then take the sample of the treated water and check the pH. It should be between 6-8.
- 6.2.14 If the pH is between 6-8 the take the treated water in the storage tank.
- 6.2.15 Collect the sludge from sludge drying tank it utilize it as manure for plants.
- 6.2.16 Fill the readings as per the annexure-1.

7.0 HISTORY

7.1 Details are given below.

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8.0 ABBREVIATIONS: The abbreviations used in the SOP are:

- 8.1 SOP -Standard Operating Procedure
- 8.2 No -Number
- 8.3 QA -Quality Assurance
- 8.4 ETP -Effluent Treatment Plant
- 8.5 MLSS -Mixed liquor suspended solid
- 8.6 DAP -Di-ammonium phosphate



PHARMA DEVILS

ENGINEERING DEPARTMENT

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Annexure-1

DATE:.....

S.No.	TIME	PH PRIMARY CLARIFIER	2G/LT CAUSTIC SODA SOLUTION		PH PRIMARY CLARIFIER AFTER DOSING 6.5-7.5	UREA 100 gm	DAP 100 gm
			WATER	CAUSTIC SODA			

MLSS LEVEL NLT 250 ml	PH SECONDARY CLARIFIER	20 GM/LT ALUM SOLUTION		PH SECONDARY CLARIFIER AFTER DOSING 7-8	1GM/LT POLYELECTROLYTE SOLUTION		DONE BY
		WATER	ALUM		WATER	POLYELECTROLYTE	

Checked by.