

FOSTERING AND ADVANCING SUSTAINABLE BUSINESS AND RESPONSIBLE INDUSTRIAL PRACTICES IN THE CLOTHING INDUSTRY IN ASIA

TRAINING PROGRAM FOR OPERATORS OF EFFLUENT TREATMENT PLANTS

PROGRAM - DAY 7

VISIT TO A BIOLOGICAL ETP

Theme: *“Now I understand how a good ETP is operated and maintained!”*

Name of the ETP: TBD

Name of the counterpart contact: TBA

Resource person & ETP contact person: TBA

Expected outcome from the day : Participants to observe in person the operation, maintenance & monitoring of a biological ETP, including sludge management and also interacting with ETP management.

Time	Topics	Responsibility
- 10.00 hrs	Arrival at the ETP	Trainers
10.00 -10.30	<p>Introduction by Factory personnel : Compliance manager, ETP manager</p> <ul style="list-style-type: none"> • Short overview about the ETP including year of establishment and supplier of ETP. • Salient information regarding the capacity, land requirement, aeration technology used and performance of the ETP. 	Resource person, ETP Compliance manager
10.30-10.45	Tea, Coffee	
10.40-12.45	<p>Walkthrough the ETP: First part</p> <p><u>Checklist: Locations to be visited, points to be noted</u></p> <ul style="list-style-type: none"> • Screening: Manual and, or mechanical, type, MoC, quantity of screenings removed, condition. • Raw effluent Pumps: type, numbers, quality, capacity, redundancy, MoC, condition • Equalization: Retention time, type of aeration system, Blower nos., type, capacity. • Equalized pumping: numbers, type, quality, capacity, redundancy, MoC, condition, flow control system • Neutralisation: Dosing control system, pH maintained, acid dilution, mixing uniformity • Cooling tower: System design, inlet & outlet temperature, blower speed, power 	Resource person, ETP in-charge

	<ul style="list-style-type: none"> • Aeration tank: HRT, Organic loading rate, Specific power, type of aeration system, diffuser material, any dead spots, coarse bubbles, foam-type, quantity, colour & spread, SV30, SPC, floc formation, MLSS- colour, formation and compactness, nutrient dosing-dosage, methodology & frequency, de-foaming system, signs of filaments. • Blowers: Blower nos, type, Enclosure, capacity, condition, VFD, DO control, Heating tendency, pressure, noise, redundancy • Secondary clarifier: colour removal agent-dosage, concentration and effect, System type, HRT, SRT, rotational speed , RAS-% rate, control, solids loading rate, surface loading rate, underflow concentration, overflow uniformity, clarity of overflow, sludge bulking, ashing, pinpoint, bubbling • Sludge return pumps: numbers, type, quality, capacity, redundancy, MoC, condition, flow control system • Tertiary treatment: Type, units and details. 	
13.00-14.00	Lunch	
14.00-15.30	<p>Walkthrough the ETP: Second part</p> <p><u>Checklist: Locations to be visited, points to be noted</u></p> <ul style="list-style-type: none"> • Thickener: System type, HRT, SRT, rotational speed (if circular) percentage of inlet sludge and thickened sludge • Sludge dewatering mechanism: Type of mechanism, inlet solids content, dewatered DSC, PE-dosage, slurry concentration & consumption, cycle time, Feed pump-pressure, VFD and rate, Filtrate or centrate clarity, solids content, qty of dewatered • Sludge maturation: Days stored, input DS, Output DS, method of disposal, qty • MCC room & controls: Control system, Isolators, SCADA, PBS, Indicators, Cooling system, meters, spare. • Laboratory : Tests conducted, background of chemists, glassware, reagents, instruments, lab standards. If possible, some Jar test demonstration in the lab. 	
	<p>Post visit meeting</p> <ul style="list-style-type: none"> • Concluding meet with ETP in charge: obtain additional information, clarifications as needed. • Vote of thanks to the ETP. 	
16.00	Departure from ETP	