

CONTROL MEASURES FOR WASTE WATER REDUCTION AND QUALITY IMPROVEMENT

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Abstract

The sugar industry of Pakistan is of economic importance in terms of employment opportunities, government revenue and sugar production for export and domestic consumption.

However, there is a problem of environmental pollution due to its waste water disposal without proper treatment.

Introduction

Water is one of the renewable resources, essential for sustaining all forms of life, food production, economic development and general well-being. It is impossible to substitute for most of its use, difficult to de-pollute, expensive to transport and it is truly a unique gift to mankind from ALLAH Almighty.

- Water conservation has become essential in all regions even though water is abundant, that's because our water resources are finite, they are getting smaller day by day.
- The more water we have, the more waste water we generate. Water is the best means to collect and transport waste away.
- Sugar manufacturing process requires considerably the large amount of water.
- Waste water generated also is huge. Reducing the water consumption for sugar manufacturing process is a challenging task. Conservation of this resource is significant in the environmental and economic sustainability. Water conservation is possible by implementing the optimum water utilization techniques.

- The water we use never really goes away. In fact, there never will be any more or any less water on earth than there is right now, which means all the waste water generated by industries eventually returns to the environment to be used again. So, when waste water receives inadequate treatment of the overall quality of our water supply suffers.

MANAGING WASTE WATER AT SOURCE

- Water saving practices in and around the plant.
- How much water is being used, and can be reduced.
- What are the opportunities to re-use.
- At-sources separation of sweet water from waste water.
- The largest array of available options that can bring about a substantial reduction in sugar mill effluent with relatively minor financial investments and potential cost savings consists of in house pollution prevention measures that entail improved management, technical adjustment and recycling of resources.

Monitoring and maintenance

- Vigilant management practices are key starting point in reducing waste water problem.
- Prevention or minimization of spills and leaks through regularly inspecting and repairing various units (Pumps, conveyors, pipes and other vessels).
- Monitoring of quantity and quality of incoming water at the mill flow meter.
- Mill should be operated at optimum capacity with minimum stoppages.
- Hot water imbibitions at mill.
- Cooling water for mill bearings.
- Filter cake.
- Evaporators and juice heaters waste.
- Crystallization.
- Water for condenser.
- Caustic/acidic waste.
- Segregation of sweet water.
- Tanks overflow.
- Entrainment losses.

- Floor washing.
- Extra Condensate collection.
- Waste water channels.
- Milk of Lime.