



# Sixty Years of Biological Wastewater Treatment

Presented by:

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**AquAeTer, Inc.**

**AAEE/AIChE Breakfast**

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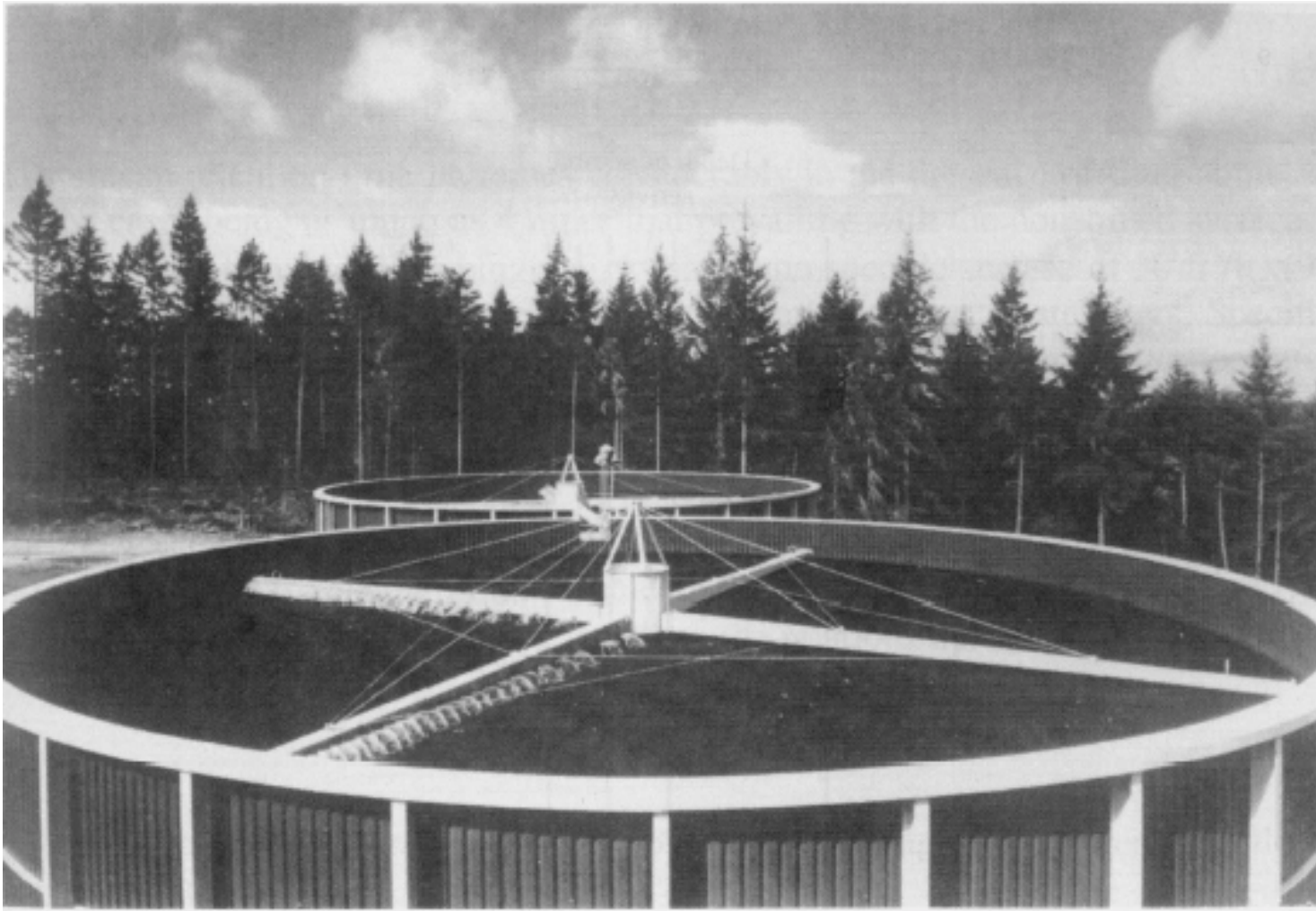
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# Trickling Filtration

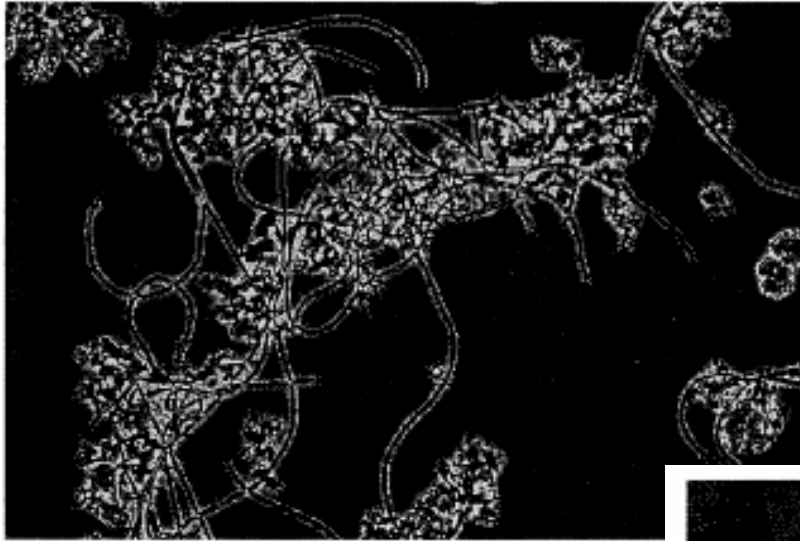




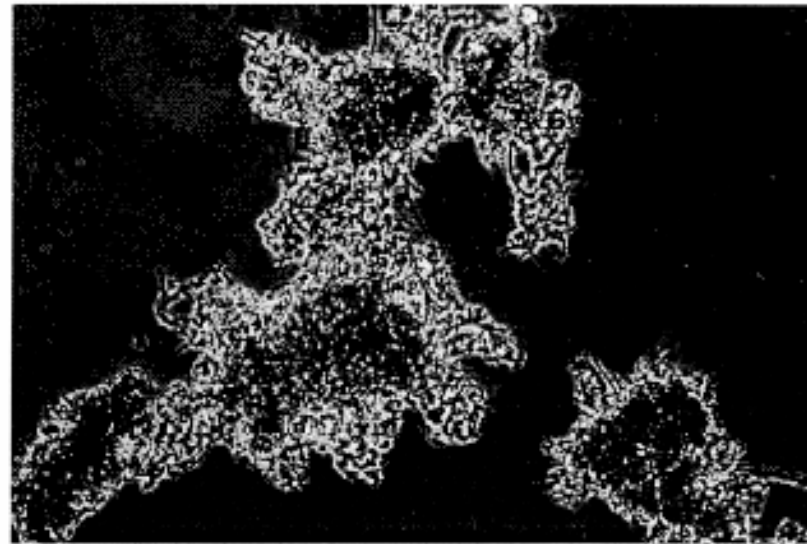
## Plug Flow Activated Sludge Process



## Flocculant and Filamentous Activated Sludge

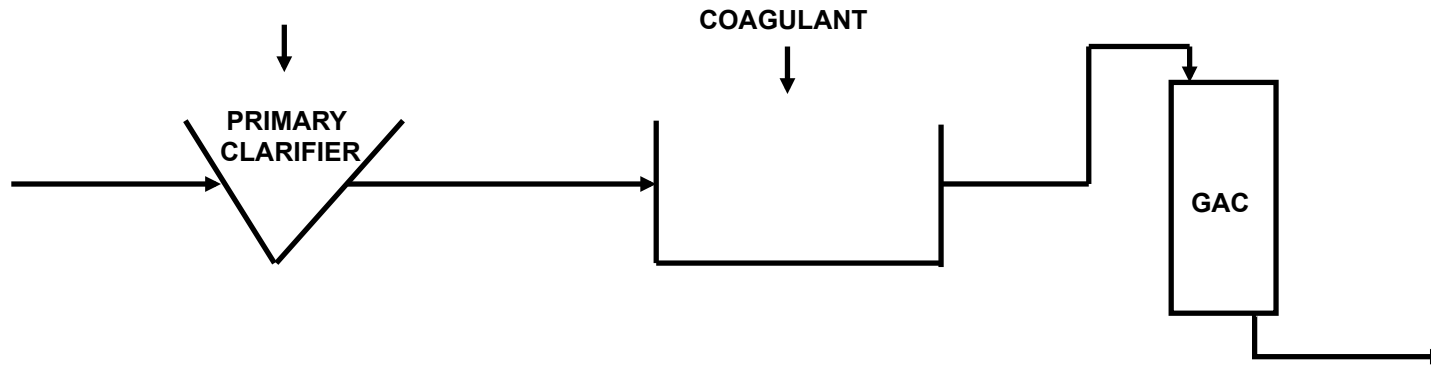


**Filamentous Activated Sludge**

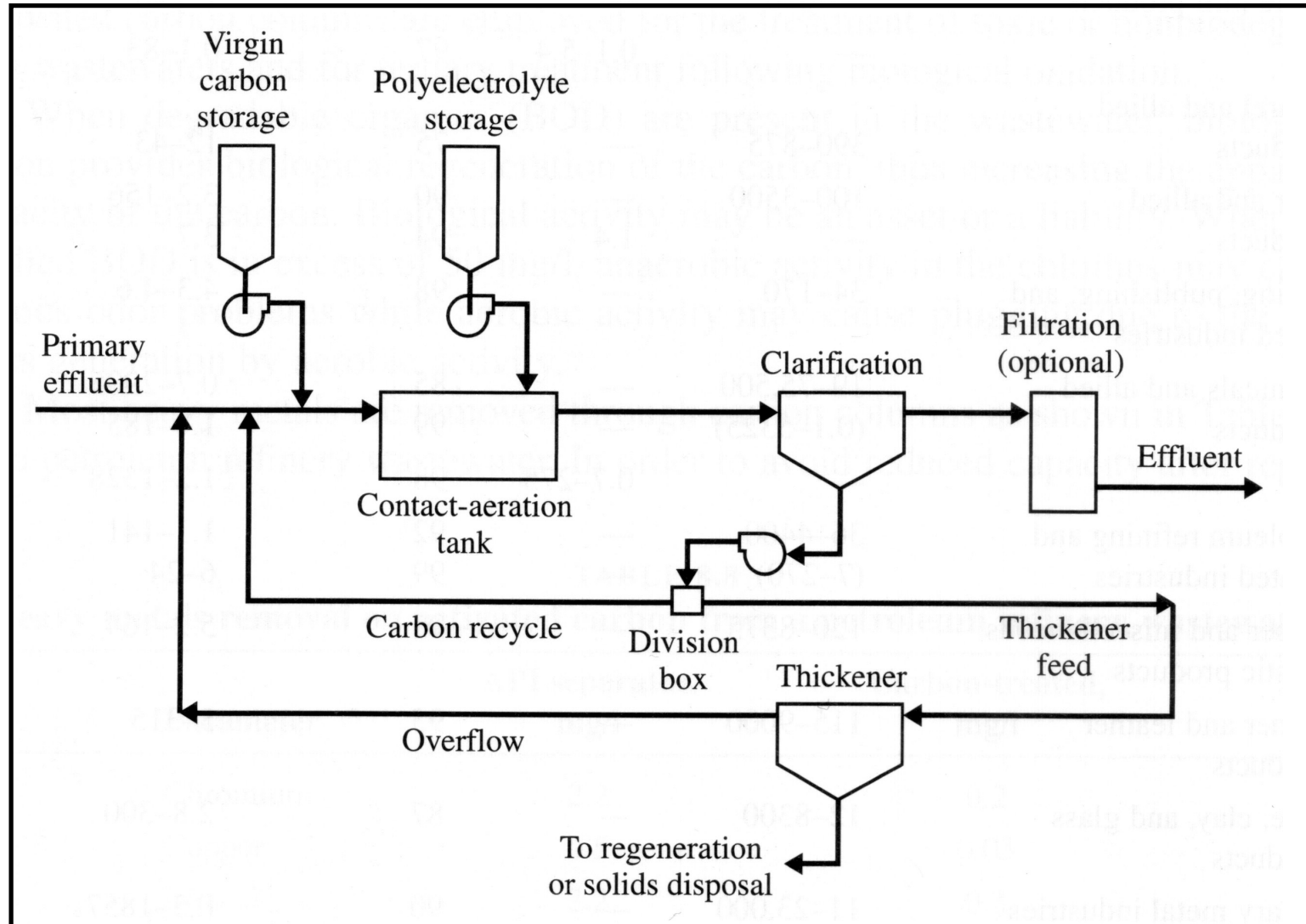


**Flocculant Activated Sludge**

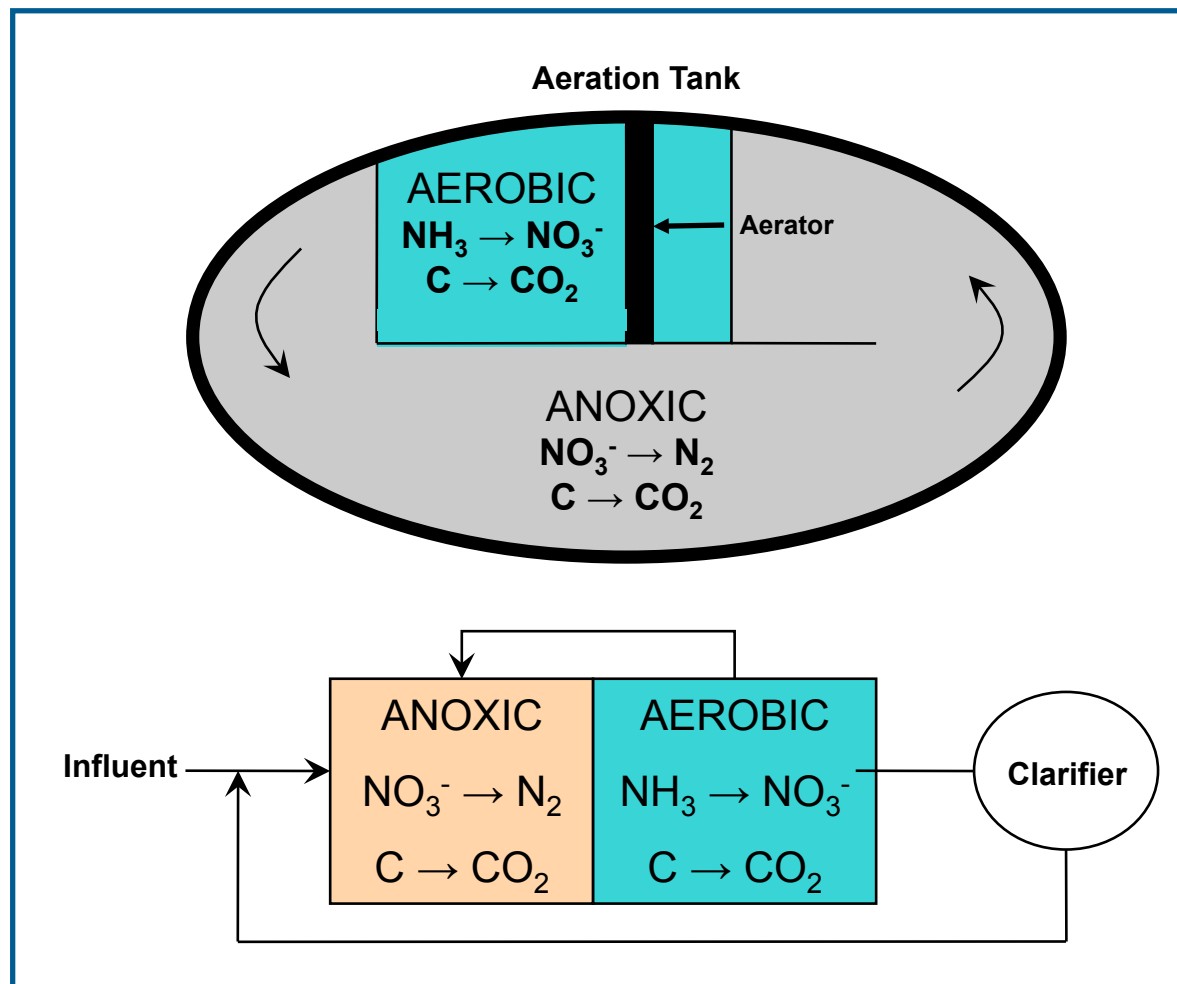
# Physical/Chemical Treatment



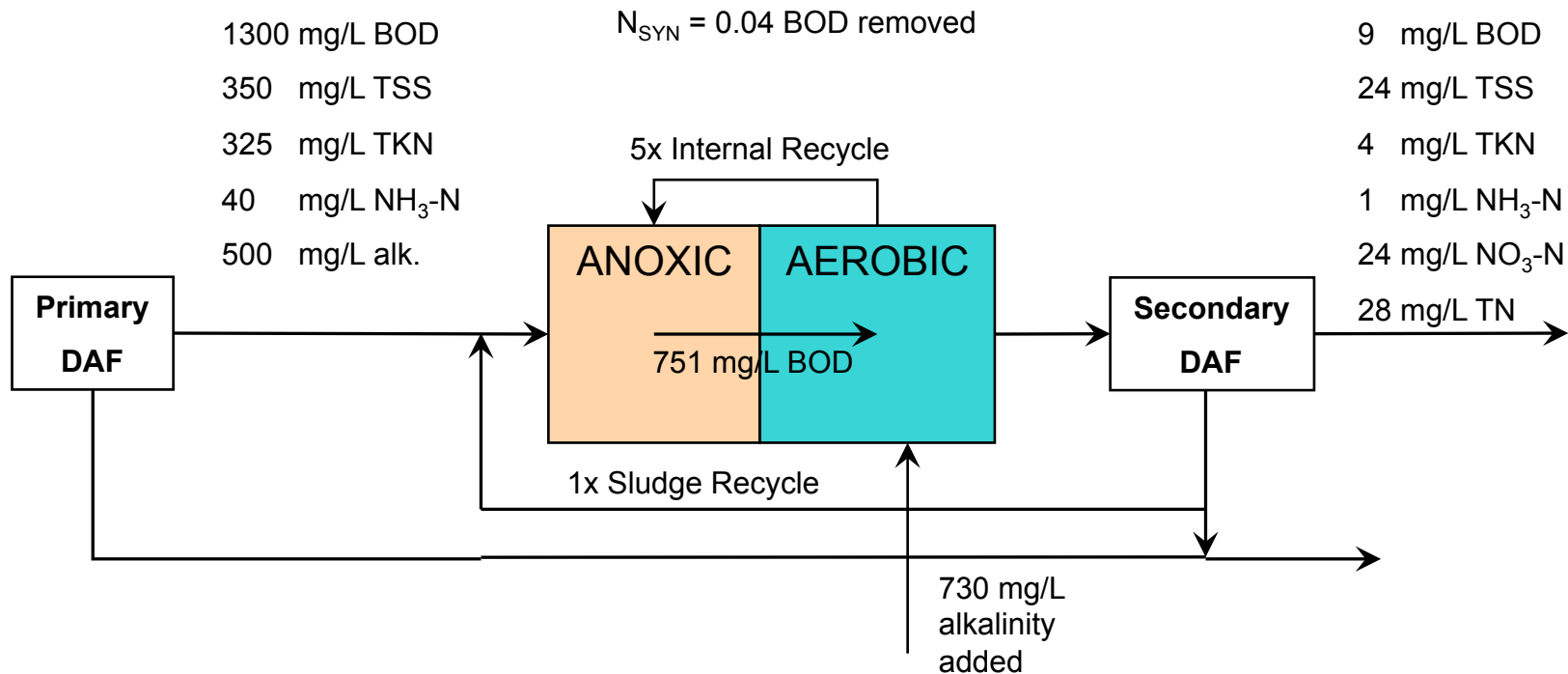
# PACT Wastewater Treatment System



# Nitrification/Denitrification Flow Sheets



# Sheung Shui Slaughterhouse – Hong Kong Wastewater Treatment Facility



Assume 20% Simultaneous Nitrification/Denitrification



表 12.3 工业废水的喷灌性能

废 水	喷灌面积/acre	投配率/[gal/ (min · acre)]	喷灌时间	平均负荷		参考文献
				lb BOD/(acre · d)	lb SS/(acre · d)	
烟草	5.63	178	7.5 h/d	413	364	[1]
	6.40	86	3.7 h/d	155	139	[1]
玉米	2.28	153.5	10 h/d	864	500	[1]
芦笋和豆	0.90	282.0	5.6 h/d	22.5	356	[1]
类	6.65	65	16 h/d	65	46	[1]
青豆	2.24	96.5	17 h/d	807	654	[1]
樱桃	1.30	77	3 h/5d			[8]
纸板	100	42	12 h/10 d			[8]
硬质纤维	300	24	18 h/10 d			
	1.5	94	6 h/3 d			[8]
草纸板	70	98	8 h/周			[8]
牛皮纸						



# AquAeTer, Inc.

optimizing environmental resources – water, air, earth

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