



Activities of Wastewater Management

Ministry of Industry
Myanmar

Contents

1. Legislation, Order, Notifications Issued by Ministry of Industry
2. Scattered Distribution of Distilleries
3. Status on Wastewater Disposal of Distilleries Inspected by Ministry of Industry
4. Distilleries
5. Waste Treatment Routes for Distillery
6. National Environmental Quality (Emission) Guidelines
(Notification No. 615/2015, 29th Dec, 2015)
7. Water and Air Pollution Control Plan (Standing Order No.3)
21st Aug, 1995
8. Online Monitoring System for Wastewater Discharge
9. Sensors
10. Analytical Container

Legislation, Order, Notifications Issued by Ministry of Industry

- Water and Air Pollution Control Plan (Standing Order - 3) (August, 1995)
- Prevention of Hazard from Chemical and Related Substances Law (26.8.2013)
- Prevention of Hazard from Chemical and Related Substances Rules (12.1.2016)
- Notification on Restricted Chemical and Prohibited Chemicals (12.1.2016)
- Small and Medium Enterprise Development Law (9.4.2015)
- Small and Medium Enterprise Development Rules (13.10.2015)

Waste Treatment Routes for Distillery

- Biological Treatment : sure, the best option
 - more eco-friendly
 - end products acceptable to the nature
 - low expenditures
 - but slow, more uncertainly, affected by weather/temp
- Chemical Treatment : lesser quantities
- Thermal Treatment : usually costlier, probability of pollution, controversial but proof, not affected by weather / temperature, less uncertainty

Field Inspection Committee

- | | |
|---|------------------------|
| 1. Department of General Administration (District) | Chairperson |
| 2. Department of Fire Brigade | Member |
| 3. Department of Internal Revenue | Member |
| 4. Department of Health | Member |
| 5. Respective City Development Committee | Member |
| 6. Respective Industrial Management Committee | Member |
| Myanmar | |
| 7. Myanmar Liquor Association | |
| 8. Environmental Conservation Department | Secretary |
| 9. Directorate of Industrial Supervision and Inspection | Joint-Secretary |

Scattered Distributed of Distilleries

No.	Region/State	No. of Distillery	No. of Operating Distrillery	No. of Unoperating Distrillery
1	Sagaing Region	6	1	5
2	Bago Region	9	3	6
3	Magway Region	3	-	3
4	Mandalay Region	7	2	5
5	Mon State	5	-	5
6	Rakhine State	3	-	3
7	Yangon Region	16	2	14
8	Shan State	8	-	8
9	Ayeyarwaddy Region	11	1	10
10	Nay Pyi Taw	4	1	3
	Total	72	10	62

Distilleries

Operating with the Biological Wastewater Treatment System

- 7 Distilleries

(Yaung Ni, YD, AA Hermony, Kha Paung Shwe Ye, Shwe Myin Pyan, MDC, Shwe Bayin Ma)

Establishing the Biological Wastewater Treatment System

- 4 Distilleries

(Shwe Myanmar, Shwe Owe, Belin, Gyoe Phyu)

Normal Treatment

- 8 Distilleries

(Sein Toe, Taw Wun, Top One, SMT, PMG, Samalauk, Kyar Minn Gyi, Mandalay Shwe Ye)

Status on Wastewater Disposal of Distilleries Inspected by Ministry of Industry

No.	Region/State	Name of Distillery	Treatment System	Remark
1	Sagaing Region	Shwe Bayin Ma	Biological Treatment System (BTS)	
2	Yangon Region	YD	Biological Treatment System (BTS)	
3	Yangon Region	AA Harmony	Biological Treatment System (BTS)	
4	Yangon Region	PMG	-	
5	Yangon Region	Top One	-	
6	Yangon Region	Taw Wun	-	
7	Yangon Region	Shwe Owe	Establishing BTS	
8	Yangon Region	SMT	-	
9	Yangon Region	Kha Paung Shwe Ye	Biological Treatment System (BTS)	
10	Ayeyarwaddy Region	Yaung Ni	Biological Treatment System (BTS)	

Status on Wastewater Disposal of Distilleries Inspected by Ministry of Industry

No.	Region/State	Name of Distillery	Treatment System	Remark
11	Ayeyarwaddy Region	SML	-	
12	Mon State	Belin Industrial Alcohol Distillery	Establishing BTS	
13	Manadalay Region	Shwe Myin Pyan	Biological Treatment System (BTS)	
14	Manadalay Region	MDC	Biological Treatment System (BTS)	
15	Manadalay Region	Mandalay Shwe Yi	-	
16	Manadalay Region	Shwe Myanmar	Establishing BTS	
17	Manadalay Region	Kyar Minn Gyi	-	
18	Bago Region	Gyoe Phyu	Establishing BTS	
19	Bago Region	Sein Toe	-	

National Environmental Quality (Emission) Guidelines (Notification No. 615/2015, 29th Dec, 2015)

Parameter	Unit	Guide Line Value
5-day Biochemical Oxygen Demand	mg/L	50
Active Ingredients/ Antibiotics	To be determined on a case specific basis	
Chemical Oxygen Demand	mg/L	250
Oil and Grease	mg/L	10
pH	S.U. ^a	6~9
Temperature Increase	°C	< 3 ^b
Total Coliform Bacteria	100 ml	400
Total Nitrogen	mg/L	10
Total Phosphorus	mg/L	2
Total Nitrogen	mg/L	50

^a Standard unit

^b At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge

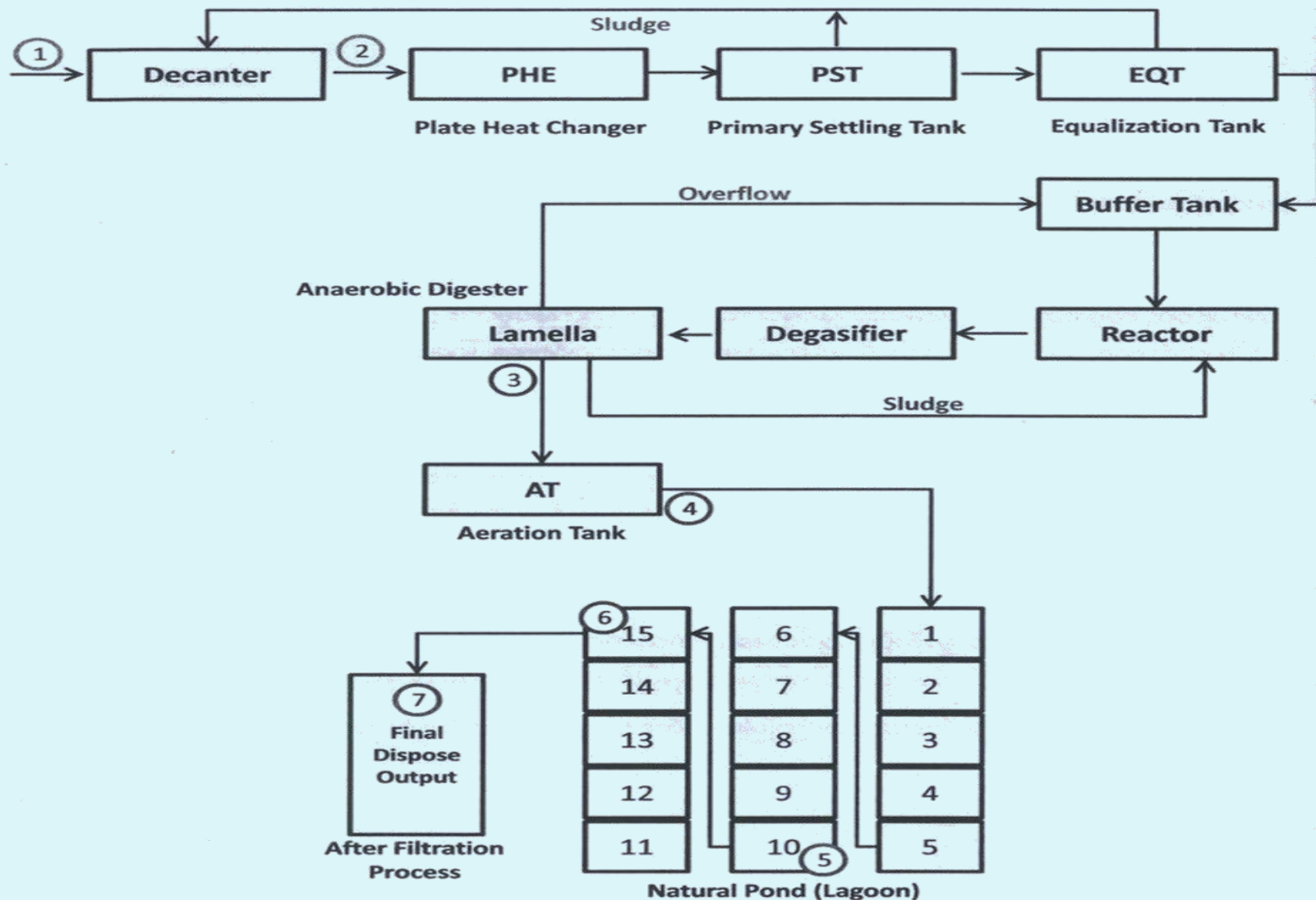
Water and Air Pollution Control Plan (Standing Order No.3)

- Issued on 21st Aug , 1995 by Ministry of Industry
- Dissolved solid max : 2000 ppm

Biological Wastewater Treatment Plant in Yaung Ni



Wastewater Treatment Plant Sketch Layout Diagram (Yaung Ni)



Waste Water Sampling Points

Sampling Wastewater



Sampling from Lagoon



Sampling from Lagoon



Sampling Bottles to Laboratories



Sampling from final Dispose



Sampling from Lagoon

Online Monitoring System for Wastewater Discharge

Final Dispose Water attached Panel including COD, BOD, TSS, TDS & pH Sensor



Endress + Hauser used in these monitoring stations:

- pH with CPF81D
- TSS (Total Suspended Solids) with CUS51D
- CODEq / BODEq / TOCEq with CAS51D

Technical proposal for Monitoring Station Slide



Liquiline connects up to 8 sensors in nearly any combination



Sensors

COD, BOD and TOC

Measuring range :

COD : 0.75 ~ 370 mg/l

BOD : 0.3 ~ 180 mg/l

TOC : 0.3 ~ 150 mg/l

pH Electrodes

Normal pH range
in wastewater : 5.5 ~ 8.5 pH

Measuring range : 0 ~ 11 pH ,
0 ~ 80 °C



Transmitter

TSS measurement

Measuring
Range : 0 ~ 4g/l ,
20 ~ 80 °C



Analytical Container





WM Water Co., Ltd

Kubota Johkasou Waste Water Treatment System



For Earth, For Life

Kubota

Kubota Johkasou Waste Water Treatment Plant

For Earth, For Life

Kubota

Kubota Johkasou Waste Water Treatment Plant

Function of Kubota Johkasou Wastewater Treatment System

- Jahkasou is not just septic tank but small waste water treatment package tank.
- Johkasou can treat various wastewater. (Kitchen, Toilet, Bath, Laundry. Etc.)
- There are many functions in one tank.
(anaerobic, aerobic, filtration, disinfection)
- Johkasou can treat wastewater as same quality of sewage systems.
(BOD removal ratio $\geq 90\%$, Effluent BOD $\leq 20\text{mg/L}$)

Places Installed Kubota Johkasou Wastewater Treatment System

- River View Condo (AMCD) – 100 m³ / d x 2sets (Yangon)
- Shwe Zabu Deik Condo 40m³/d x 2sets (Yangon)
- 68 Residence Project 80m³ /d & 45m³/d (Yangon)
- Strand Square Office Tower 150m³/d (Yangon)
- Strand Square Office Tower 150m³/d (Yangon)
- East & West Parami Hospital– 10 m³/d & 2 m³/d (Yangon)
- Nyaung Oo Hospital 25m³/d (Nyaung Oo)
- Victoria Hospital – 42 m³ / d (Yangon)
- Taung Gyi Business Center (1m³/day x 26sets,2m³/day x 1set,4.2m³/day x 19sets, 6m³,day x 2sets,8m³/day x 1set,15m³/day x 1set,25m³ x 2sets)
- Thukha Kabar Hospital Project 6m³/day (Yangon)
- Zfreeti Hotel – 25.0 m³ / Day (Bagan)

Shwe Zabu Deik Condo 40m³/d x 2sets (Yangon)



68 Residence Project 80m³ /d & 45m³/d (Yangon)



Strand Square Office Tower 150m³/d (Yangon)





*THANK YOU
FOR YOUR ATTENTION*