

Certificate about effluent quality of AQUALOOP-Membrane Hlang River water treatment

Application: AL-Membrane Hlang River water treatment

Date of test: October 2015

Quantity of treated water: up to 2 m³/day

Water Source: Hlang River / Myanmar



Raw water (Hlang River:



LABORATORY

Laboratory Technical Consultant: U Saw Christopher Maung
 B.Sc Engg. (Civil), Dip S.E (Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)



WTL-RE-001

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WATER QUALITY TEST RESULTS FORM

Client Mingalar Myanmar
 Nature of Water River Water (Raw)
 Location မင်္ဂလာတောင်ညွန့်မြို့
 Date and Time of collection 7.10.2015
 Date and Time of arrival at Laboratory 7.10.2015
 Date and Time of commencing examination 8.10.2015
 Date and Time of completing 10.10.2015

Results of Water Analysis

WHO Drinking Water Guideline (Geneva - 1993)

pH	6.6		6.5 - 8.5
Colour (True)	180	TCU	15 TCU
Turbidity	375	NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness	50	mg/l as CaCO ₃	500 mg/l as CaCO ₃
Calcium Hardness		mg/l as CaCO ₃	
Magnesium Hardness		mg/l as CaCO ₃	
Total Alkalinity		mg/l as CaCO ₃	
Phenolphthalein Alkalinity		mg/l as CaCO ₃	
Carbonate (CaCO ₃)		mg/l as CaCO ₃	
Bicarbonate (HCO ₃)		mg/l as CaCO ₃	
Iron	5.72	mg/l	0.3 mg/l
Chloride (as CL)	4	mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO ₄)	Nil	mg/l	200 mg/l
Total Solids	345	mg/l	1500 mg/l
Suspended Solids		mg/l	
Dissolved Solids	58	mg/l	1000 mg/l
Manganese	Nil	mg/l	0.05 mg/l
Phosphate		mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature: Zaw Hein Oo

Name: B.Sc (Chemistry)

Chemist

Approved by

Signature: See Hui

Name: S.B (Civil) 1980

Technical Office

ISO TECH Laboratory

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WATER QUALITY TEST RESULTS FORM

Client Mingalar Myanmar
 Nature of Water River Water (Raw)
 Location ဝါးတံတားကန်
 Date and Time of collection 7.10.2015
 Date and Time of arrival at Laboratory 7.10.2015
 Date and Time of commencing examination 8.10.2015
 Date and Time of completing 10.10.2015

Results of Water Analysis

**WHO Drinking Water Guideline
(Geneva - 1993)**

Parameter	Result	Unit	Guideline
Temperature (°C)		°C	
Fluoride (F)		mg/l	1.5 mg/l
Lead (as Pb)		mg/l	0.01 mg/l
Arsenic (As)		mg/l	0.01 mg/l
Nitrate (N.NO ₃)	Nil	mg/l	50 mg/l
Chlorine (Residual)		mg/l	
Ammonia (NH ₃)		mg/l	
Ammonium (NH ₄)		mg/l	
Dissolved Oxygen (DO)		mg/l	
Chemical Oxygen Demand (COD)		mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)		mg/l	
Cyanide (CN)		mg/l	0.07 mg/l
Zinc (Zn)		mg/l	3 mg/l
Copper (Cu)		mg/l	2 mg/l
Silica (Si)		mg/l	

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Signature: *Zaw Hein Oo*
 Name: **Zaw Hein Oo**
B.Sc (Chemistry)
Chemist
ISO TECH Laboratory

Approved by

Signature: *Soe Tin*
 Name: **Soe Tin**
B.E (Civil) 1980
Technical Officer
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Treated water after installation of AL-Membrane



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WATER QUALITY TEST RESULTS FORM

Client _____ Mingalar Myanmar
 Nature of Water _____ River Water (Treated)
 Location _____ သီပေါမြစ်ဝကျွန်းပေါ်
 Date and Time of collection _____ 7.10.2015
 Date and Time of arrival at Laboratory _____ 7.10.2015
 Date and Time of commencing examination _____ 8.10.2015
 Date and Time of completing _____ 10.10.2015

Results of Water Analysis

WHO Drinking Water Guideline (Geneva - 1993)

pH	6.4		6.5 - 8.5
Colour (True)	Nil	TCU	15 TCU
Turbidity	2	NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness	46	mg/l as CaCO ₃	500 mg/l as CaCO ₃
Calcium Hardness		mg/l as CaCO ₃	
Magnesium Hardness		mg/l as CaCO ₃	
Total Alkalinity		mg/l as CaCO ₃	
Phenolphthalein Alkalinity		mg/l as CaCO ₃	
Carbonate (CaCO ₃)		mg/l as CaCO ₃	
Bicarbonate (HCO ₃)		mg/l as CaCO ₃	
Iron	0.05	mg/l	0.3 mg/l
Chloride (as CL)	3	mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO ₄)	Nil	mg/l	200 mg/l
Total Solids	56	mg/l	1500 mg/l
Suspended Solids		mg/l	
Dissolved Solids	53	mg/l	1000 mg/l
Manganese	Nil	mg/l	0.05 mg/l
Phosphate		mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

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Signature: _____

Name: Soc Hrit

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WATER QUALITY TEST RESULTS FORM

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 Location ဝါးတံင်ရာကန်ရွာ
 Date and Time of collection 7.10.2015
 Date and Time of arrival at Laboratory 7.10.2015
 Date and Time of commencing examination 8.10.2015
 Date and Time of completing 10.10.2015

Results of Water Analysis

**WHO Drinking Water Guideline
(Geneva - 1993)**

Temperature (°C)		°C	
Fluoride (F)	0.1	mg/l	1.5 mg/l
Lead (as Pb)	Nil	mg/l	0.01 mg/l
Arsenic (As)	Nil	mg/l	0.01 mg/l
Nitrate (N.NO ₃)	Nil	mg/l	50 mg/l
Chlorine (Residual)		mg/l	
Ammonia (NH ₃)		mg/l	
Ammonium (NH ₄)		mg/l	
Dissolved Oxygen (DO)		mg/l	
Chemical Oxygen Demand (COD)		mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)		mg/l	
Cyanide (CN)	Nil	mg/l	0.07 mg/l
Zinc (Zn)	Nil	mg/l	3 mg/l
Copper (Cu)	Nil	mg/l	2 mg/l
Silica (Si)		mg/l	

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Approved by

Signature: *Sue Lin*
 Name: **Sue Lin**
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