



Certificate No. 00022/CLAPAP

Date: January 4, 2022



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## REPORT OF SAMPLING AND ANALYSIS

PRINCIPAL : PT. Sanwa Engineering Batam  
Lot. 215 Jl. Beringin, Batamindo Industrial Park  
Muka Kuning, Batam

SUBJECT : Waste Water

DATE OF SAMPLING : 16/12/2021

DATE OF ANALYSIS : 16/12/2021 to 27/12/2021

TESTER FOR : Physical and Chemical Analysis  
(for Requirement : PERMENLH No. 5/ 2014 Attachment XLVII for  
Waste Water)

DESCRIPTION OF SAMPLE : 1 (One) Sample

LOCATION OF SAMPLING : Open Drain 1 (Left Post) N : 01° 03. 845' / E : 104° 01. 958'

The Attachment available is an integral part of this certificate.

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Dept. Of Commercial 3



Rusman Ayadi

19010321002208  
141/36.30/1764/12/2021/1



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## REPORT OF SAMPLING AND ANALYSIS

Parameter	Unit	Result	Requirement		Methods *
			I	II	
- Temperature	°C	30.6	38.00	40.00	APHA-2550-B
- Total Dissolved Solid (TDS)	mg/L	100	2,000	4,000	PO/LK/05**
- Total Suspended Solid (TSS)	mg/L	7	200	400	PO/LK/22**
- pH	-	6.3	6.0 - 9.0	6.0 - 9.0	APHA-4500-H <sup>+</sup> - B**
- Iron Dissolved (Fe)	mg/L	0.08	5	10	APHA-3111 B**
- Manganese Dissolved (Mn)	mg/L	< 0.09	2	5	APHA-3111 B**
- Barium (Ba)	mg/L	< 0.10	2	3	APHA-3111 D
- Copper (Cu)	mg/L	< 0.04	2	3	APHA-3111 B**
- Zinc (Zn)	mg/L	< 0.01	5	10	APHA-3111 B**
- Chrome Hex (Cr <sup>6+</sup> )	mg/L	< 0.02	0.1	0.5	APHA-3500-Cr-C
- Chrome Total (Cr)	mg/L	< 0.05	0.5	1	APHA-3111 B**
- Cadmium (Cd)	mg/L	< 0.005	0.05	0.1	APHA-3111 B**
- Mercury (Hg)	mg/L	< 0.0001	0.002	0.005	APHA-3112
- Lead (Pb)	mg/L	< 0.005	0.1	1	APHA-3111 B**
- Stanum (Sn)	mg/L	< 0.02	2	3	APHA-3111 B**
- Arsenic (As)	mg/L	< 0.0001	0.1	0.5	APHA-3114 B
- Selenium (Se)	mg/L	< 0.0001	0.05	0.5	APHA-3114 B
- Nickel (Ni)	mg/L	< 0.05	0.2	0.5	APHA-3111 B**
- Cobalt (Co)	mg/L	< 0.11	0.4	0.6	APHA-3111 B**
- Cyanide (CN)	mg/L	< 0.008	0.05	0.5	APHA-4500-CN-E
- Sulfide (H <sub>2</sub> S)	mg/L	< 0.02	0.5	1	APHA-4500-S-D
- Fluoride (F)	mg/L	< 0.06	2	3	APHA-3500-F-D**
- Free Chlorine (Cl <sub>2</sub> )	mg/L	< 0.02	1	2	PO/LK/26
- Ammonia-Nitrogen (NH <sub>3</sub> -N)	mg/L	5	5	10	APHA-4500-NH <sub>3</sub> -F**
- Nitrate (NO <sub>3</sub> -N)	mg/L	2	20	30	PO/LK/17**
- Nitrite (NO <sub>2</sub> -N)	mg/L	0.2	1	3	APHA-4500-NO <sub>2</sub> -B**
- Nitrogen Total	mg/L	7	30	60	APHA -4500-N-A
- BOD 5	mg/L	14	50	150	APHA-5210-B
- COD	mg/L	41	100	300	APHA-5220-B**
- Detergent LAS as MBAS	mg/L	< 0.05	5	10	APHA-5540-C
- Phenolic	mg/L	< 0.008	0.5	1	APHA-5530-CD
- Oil & Grease	mg/L	< 1.00	10	20	PO/LK/11**
- Total Coliform	MPN/100 mL	1,070	10,000	10,000	APHA-9222-B

\* ) Standard Methods for Water and Waste Water American Public Health Association, 23<sup>rd</sup> edition 2017

\*\* ) Akreditasi KAN No. LP-547-IDN



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## REPORT OF SAMPLING AND ANALYSIS

PRINCIPAL : PT. Sanwa Engineering Batam  
Lot. 215 Jl. Beringin, Batamindo Industrial Park  
Muka Kuning, Batam

SUBJECT : Drinking Water

DATE OF SAMPLING : 16/12/2021

DATE OF ANALYSIS : 16/12/2021 to 27/12/2021

TESTER FOR : Physical, Chemical and Microbiological Analysis  
(for Requirement : Republic of Indonesia Health Minister  
Decree No. 492/MENKES/SK/IV/2010), for Drinking Water

DESCRIPTION OF SAMPLE : 2 (Two) Samples

LOCATION OF SAMPLING : 1. Drinking Water Dispenser Depan Facility Room  
2. Drinking Water Dispenser Depan Toilet

### Conclusion :

Based on parameter analysis it is concluded that the sample is confirmed as Drinking Water

The Attachment available is an integral part of this certificate.

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## REPORT OF SAMPLING AND ANALYSIS

### 1. Drinking Water Dispenser Depan Facility Room

Parameter	Unit	Result	Standard Max	Methods *
<b>Parameter I</b>				
<b>a). Microbiological</b>				
Escherichia Coli	Colony/100 mL	0	0	9221-F
Total Coliform	Colony/100 mL	0	0	9222-B
<b>b). Inorganic Chemical</b>				
Arsenic	mg/L	< 0.0001	0.01	3114 B
Fluoride	mg/L	< 0.06	1.5	3500 – F – D**
Chromium Total	mg/L	< 0.05	0.05	3111 B**
Cadmium	mg/L	< 0.003	0.003	3111 B**
Nitrite as NO <sub>2</sub>	mg/L	< 0.004	3	4500 – NO <sub>2</sub> – B**
Nitrate as NO <sub>3</sub>	mg/L	< 0.05	50	PO/LK/17**
Cyanide	mg/L	< 0.008	0.07	4500 – CN – E
Selenium	mg/L	< 0.0001	0.01	3114 B
<b>Parameter II</b>				
<b>a). Physical</b>				
Odour	-	Odorless	Odorless	2150 B
Color	Pt-Co Scale	0	15	2120 C**
Total Dissolved Solids	mg/L	75	500	PO/LK/05**
Turbidity	NTU	0	5	2130 B**
Taste	-	Tasteless	Tasteless	2160 B
Temperature	°C	26.4	Ambient Temp ± 3°C	2550 B
<b>b). Chemical</b>				
Aluminium	mg/L	< 0.02	0.2	3111 D
Iron	mg/L	< 0.07	0.3	3111 B**
Total Hardness as CaCO <sub>3</sub>	mg/L	30	500	2340-Hard – B
Chloride	mg/L	25	250	4500 – Cl <sup>-</sup> – B**
Manganese	mg/L	< 0.09	0.4	3111 B**
pH	-	6.6	6.5 – 8.5	4500-H <sup>+</sup> – B**
Zinc	mg/L	< 0.01	3	3111 B**
Sulfate	mg/L	8	250	4500 – SO <sub>4</sub> – E**
Copper	mg/L	0.05	2	3111 B**
Ammonia	mg/L	< 0.07	1.5	4500 – NH <sub>3</sub> – F**

Parameter I is the parameter which have direct connection with human healthy

Parameter II is the parameter which have indirect connection with human healthy

\* ) Standard Methods for Water and Waste Water American Public Health Association , 23<sup>rd</sup> edition 2017

\*\* ) Akreditasi KAN No. LP-547-IDN

Note :

Based on attachment II of the regulation Health Minister Decree No. 492/MENKES/SK/IV/2010, All parameter above must be tested and reported according to requirements for Drinking Water Quality and ongoing quality Monitoring.

For another parameter of drinking water which are not mentioned in this test result, it should be tested especially if these is any suspected or indication of pollution substance i.e : Microbiological, Inorganic chemical, Organic chemical, Pesticides Compound and Radioactivity, as per attachment in appendix 1 of the regulation



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## REPORT OF SAMPLING AND ANALYSIS

### 2. Drinking Water Dispenser Depan Toilet

Parameter	Unit	Result	Standard Max	Methods *
<b>Parameter I</b>				
<b>a). Microbiological</b>				
Escherichia Coli	Colony/100 mL	0	0	9221-F
Total Coliform	Colony/100 mL	0	0	9222-B
<b>b). Inorganic Chemical</b>				
Arsenic	mg/L	< 0.0001	0.01	3114 B
Fluoride	mg/L	< 0.06	1.5	3500 – F – D**
Chromium Total	mg/L	< 0.05	0.05	3111 B**
Cadmium	mg/L	< 0.003	0.003	3111 B**
Nitrite as NO <sub>2</sub>	mg/L	< 0.004	3	4500 – NO <sub>2</sub> – B**
Nitrate as NO <sub>3</sub>	mg/L	< 0.05	50	PO/LK/17**
Cyanide	mg/L	< 0.008	0.07	4500 – CN – E
Selenium	mg/L	< 0.0001	0.01	3114 B
<b>Parameter II</b>				
<b>a). Physical</b>				
Odour	-	Odorless	Odorless	2150 B
Color	Pt-Co Scale	0	15	2120 C**
Total Dissolved Solids	mg/L	46	500	PO/LK/05**
Turbidity	NTU	0	5	2130 B**
Taste	-	Tasteless	Tasteless	2160 B
Temperature	°C	27.6	Ambient Temp ± 3°C	2550 B
<b>b). Chemical</b>				
Aluminium	mg/L	< 0.02	0.2	3111 D
Iron	mg/L	< 0.07	0.3	3111 B**
Total Hardness as CaCO <sub>3</sub>	mg/L	26	500	2340-Hard – B
Chloride	mg/L	16	250	4500 – Cl <sup>-</sup> – B**
Manganese	mg/L	< 0.09	0.4	3111 B**
pH	-	6.8	6.5 – 8.5	4500-H <sup>+</sup> – B**
Zinc	mg/L	< 0.01	3	3111 B**
Sulfate	mg/L	10	250	4500 – SO <sub>4</sub> – E**
Copper	mg/L	0.06	2	3111 B**
Ammonia	mg/L	< 0.07	1.5	4500 – NH <sub>3</sub> – F**

Parameter I is the parameter which have direct connection with human healthy

Parameter II is the parameter which have indirect connection with human healthy

\*) Standard Methods for Water and Waste Water American Public Health Association , 23<sup>rd</sup> edition 2017

\*\*) Akreditasi KAN No. LP-547-IDN

Note :

Based on attachment II of the regulation Health Minister Decree No. 492/MENKES/SK/IV/2010, All parameter above must be tested and reported according to requirements for Drinking Water Quality and ongoing quality Monitoring.

For another parameter of drinking water which are not mentioned in this test result, it should be tested especially if these is any suspected or indication of pollution substance i.e : Microbiological, Inorganic chemical, Organic chemical, Pesticides Compound and Radioactivity, as per attachment in appendix 1 of the regulation



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Certificate No. 00024/CLAPAP

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## REPORT OF SAMPLING AND ANALYSIS

PRINCIPAL : PT. Sanwa Engineering Batam  
Lot. 215 Jl. Beringin, Batamindo Industrial Park  
Muka Kuning, Batam

SUBJECT : Ambient Air, Indoor Air and Noise

DESCRIPTION OF WORK : 1. Sampling and Analysis of Ambient Air and Indoor Air  
2. Measurement Noise

DATE OF SAMPLING : 16/12/2021

DATE OF ANALYSIS : 16/12/2021 to 27/12/2021

REQUIREMENT : 1. Republic of Indonesia Government Regulation No. 22 of Year 2021 Attachment VII  
2. Minister of Environmental Decree No. KEP-48/MENLH/11/1996 Standard Quality of Ambient Noise  
3. PERMENAKER No. 5/2018, For Workplace Safety and Health

### Result :

#### 1. Location of Sampling : Front Side of Factory N : 01° 09' 840' / E : 104° 01.966'

Parameter	Unit	Result	Standard Max	Method
- Sulfur dioxide (SO <sub>2</sub> )	µg/Nm <sup>3</sup>	16.82	150	SNI19-7119.7 – 2017
- Carbon monoxide (CO)	µg/Nm <sup>3</sup>	50.50	10,000	PO/OPS/20
- Nitrogen Dioxide (NO <sub>2</sub> )	µg/Nm <sup>3</sup>	34.07	200	SNI19-7119.2 – 2017
- Ozone (O <sub>3</sub> )	µg/Nm <sup>3</sup>	1.55	150	SNI 19-7119.8 – 2017
- Hydro Carbon	µg/Nm <sup>3</sup>	3.80	160	SNI 7119.13 : 2009
- Dust (TSP)	µg/Nm <sup>3</sup>	29.00	230	SNI19-7119.3 – 2017
- Lead (Pb)	µg/Nm <sup>3</sup>	< 0.01	2	SNI19-7119.4 – 2017
- Noise	dB(A)	61.4	70	SNI 8427 – 2017

#### 2. Location of Sampling : Moulding Area Line B

Parameter	Unit	Result	Standard Max	Method
- Dust	mg/m <sup>3</sup>	0.10	10.00	SNI 19-7119.3 – 2005
- Noise	dB(A)	77.9	85.0	SNI 7231 : 2009

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