

Certificate No. 01981/CLAPAN

Date: March 17, 2020



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Jl. Raden Patah No. 61, Baloi, Batam Island 29432, Indonesia

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Email: cs.btm@sucofindo.co.id

REPORT OF SAMPLING AND ANALYSIS

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

SUBJECT : Ambient Air and Noise

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

DATE OF SAMPLING : 02/03/2020

DATE OF ANALYSIS : 02/03/2020 to 06/03/2020

REQUIREMENT : 1. Government Regulation PP No. 41/1999
National Standard Quality of Ambient Air
2. Minister of Environmental Decree No. KEP-48/MENLH/11/1996
Standard Quality of Ambient Noise at Industry Area
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 ₂)	µg/Nm ³	40.23	900	SNI19-7119.7 – 2017
- Nitrogen Dioxide (NO ₂)	µg/Nm ³	28.25	400	SNI19-7119.2 – 2017
- Carbon monoxide (CO)	µg/Nm ³	114.29	30,000	PO/OPS/19
- Ozone (O ₃)	µg/Nm ³	0.34	235	SNI 19-7119.8 – 2017
- Hydro Carbon	µg/Nm ³	8.49	160	SNI 7119.13 : 2009
- Dust (TSP)	µg/Nm ³	24.09	230	SNI19-7119.3 – 2017
- Lead (Pb)	µg/Nm ³	< 0.01	2	SNI19-7119.4 – 2017
- Noise	dB(A)	60.4	70	PO/OPS/02

2. Location of Sampling : Moulding Area Line B

Parameter	Unit	Result	Standard (Max)	Method
- Dust	mg/m ³	0.13	10.00	SNI 19-7119.3 – 2005
- Noise	dB(A)	84.5	85.0	SNI 7231 : 2009

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Rusman Ayadi

1901032000320

141/36.30/311/03/2020/2



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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 : 02/03/2020

DATE OF ANALYSIS : 02/03/2020 to 10/03/2020

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 N : 01° 03. 786' / E : 104° 01. 981'

The Attachment available is an integral part of this certificate.

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REPORT OF SAMPLING AND ANALYSIS

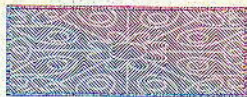
Parameter	Unit	Result	Requirement		Methods *
			I	II	
- Temperature	°C	28.7	38.00	40.00	APHA-2550-B
- Total Dissolved Solid (TDS)	mg/L	422	2,000	4,000	PO/LK/05
- Total Suspended Solid (TSS)	mg/L	12	200	400	PO/LK/22
- pH	-	6.73	6.0 -9.0	6.0 -9.0	APHA-4500-H ⁺ - B
- Iron Dissolved (Fe)	mg/L	< 0.07	5	10	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 ⁶⁺)	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 ₂ 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 ₂)	mg/L	< 0.02	1	2	PO/LK/26
- Ammonia-Nitrogen (NH ₃ -N)	mg/L	< 0.07	5	10	APHA-4500-NH ₃ -F
- Nitrate (NO ₃ -N)	mg/L	0.40	20	30	PO/LK/17
- Nitrite (NO ₂ -N)	mg/L	0.03	1	3	APHA-4500-NO ₂ -B
- Nitrogen Total	mg/L	0.45	30	60	APHA -4500-N-A
- BOD 5	mg/L	10.44	50	150	APHA-5210-B
- COD	mg/L	31.65	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	1,800	10,000	10,000	APHA-9222-B

*) Standard Methods for Water and Waste Water American Public Health Association, 23rd edition 2017



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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 : 02/03/2020

DATE OF ANALYSIS : 02/03/2020 to 10/03/2020

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 Toilet
2. Drinking Water Dispenser Depan Facility Room

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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Rusman Ayadi

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141/36.30/311/03/2020/2



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REPORT OF SAMPLING AND ANALYSIS

1. Drinking Water Dispenser Depan Toilet

Parameter	Unit	Result	Requirement	Methods *
Parameter I				
a). Microbiological				
Escherichia Coli	Colony/100 mL	0	0	9221-F
Total Coliform	Colony/100 mL	0	0	9222-B
b). Inorganic Chemical				
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 ₂	mg/L	< 0.004	3	4500 – NO ₂ – B
Nitrate as NO ₃	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
Parameter II				
a). Physical				
Odour	-	Odorless	Odorless	2150 B
Color	Pt-Co Scale	0	15	2120 C
Total Dissolved Solids	mg/L	33	500	PO/LK/05
Turbidity	NTU	0	5	2130 B
Taste	-	Tasteless	Tasteless	2160 B
Temperature	°C	28.1	Ambient Temp ± 3°C	2550 B
b). Chemical				
Aluminium	mg/L	< 0.02	0.2	3111 D
Iron	mg/L	< 0.07	0.3	3111 B
Total Hardness as CaCO ₃	mg/L	67.86	500	2340-Hard – B
Chloride	mg/L	36.70	250	4500 – Cl ⁻ – B
Manganese	mg/L	< 0.09	0.4	3111 B
pH	-	6.92	6.5 – 8.5	4500-H ⁺ – B
Zinc	mg/L	< 0.01	3	3111 B
Sulfate	mg/L	21.52	250	4500 – SO ₄ – E
Copper	mg/L	< 0.04	2	3111 B
Ammonia	mg/L	< 0.07	1.5	4500 – NH ₃ – 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 , 23rd edition 2017

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 Facility Room

Parameter	Unit	Result	Requirement	Methods *
Parameter I				
a). Microbiological				
Escherichia Coli	Colony/100 mL	0	0	9221-F
Total Coliform	Colony/100 mL	0	0	9222-B
b). Inorganic Chemical				
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 ₂	mg/L	< 0.004	3	4500 – NO ₂ – B
Nitrate as NO ₃	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
Parameter II				
a). Physical				
Odour	-	Odorless	Odorless	2150 B
Color	Pt-Co Scale	0.12	15	2120 C
Total Dissolved Solids	mg/L	95.2	500	PO/LK/05
Turbidity	NTU	0	5	2130 B
Taste	-	Tasteless	Tasteless	2160 B
Temperature	°C	28.2	Ambient Temp ± 3°C	2550 B
b). Chemical				
Aluminium	mg/L	< 0.02	0.2	3111 D
Iron	mg/L	< 0.07	0.3	3111 B
Total Hardness as CaCO ₃	mg/L	56.16	500	2340-Hard – B
Chloride	mg/L	36.70	250	4500 – Cl ⁻ – B
Manganese	mg/L	< 0.09	0.4	3111 B
pH	-	6.96	6.5 – 8.5	4500-H ⁺ – B
Zinc	mg/L	< 0.01	3	3111 B
Sulfate	mg/L	20.00	250	4500 – SO ₄ – E
Copper	mg/L	< 0.04	2	3111 B
Ammonia	mg/L	< 0.07	1.5	4500 – NH ₃ – 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 , 23rd edition 2017

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 there 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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