

Recommendation & Water Analysis Report
for
Centara Grand Mirage Beach Resort Pattaya

April, 2026

บริษัท เทสท์ เทค จำกัด

30, 32 ซอยพระรามที่ 2 ซอย 63 ถนนพระรามที่ 2 แขวงสามยุค เขตบางขุนเทียน กรุงเทพฯ 10150
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SRR NO. 69A1329

Messrs : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Factory Site : Centara Grand Pattaya Date : May 11, 2026

Recommendation For : Water Analysis of April, 2026

Report Reference : R09066-74/69, R08527-29/69, R08361-64/69, R08456-57/69, R08668/69

RECOMMENDATION

1. Raw Water

1.1 Storage Tank :

- Hardness was low.
- Iron was not found.
- Manganese was not found.
- Turbidity was low.
- Chloride was low.
- Coliform/E.coli was not found.

Note : - Storage Tank should be check and cleaned 1-2 time/month to reduce iron accumulation.

- Chlorine should be routine added into buied-water and feeding into raw water to prevent bacterial growth.

- Softener in next step treatment must be taken care.

1.2 Soft Water (Main Point) :

- Turbidity was low.
- Hardness was low.
- Iron was found.
- Manganese was not found.
- Coliform/E.coli was not found.

Note : The system should be operated.

- Water storage tank should be checked and cleaned if iron and bacteria accumulation.
- Softener should be flushing with low iron of raw water to reduce iron and bacteria accumulation, rinsing step must be checked before use.
- The regeneration with salt should be routine operation to control hardness.
- Chlorine should be added in storage tank and back wash softener/regeneration should be done with chlorinated-water to prevent bacteria growth and accumulation.

1.3 Hot Water System (Main Point) :

- Turbidity was low.
- Hardness was low.
- Iron was low.
- Manganese was not found.
- Coliform/E.coli was not found.

Note : The system should be checked.

- Raw water storage tank cleaning and flushing should be done increase of iron accumulation.
- Hot water unit should be flushing with low iron water.
- Metal type in hot water system and pipe line should be checked to prevent Galvanic Corrosion Problems.

1.4 Guest Room Usage Water (Cold Water) : (South A 410, South A 411)

- Total Hardness and Chloride was like raw water.
- Turbidity was low.
- Iron was not found.
- Manganese was not found.
- Coliform/E.coli was not found.

Note : In the room which not usually open, flushing pipe line before open should be done to reduce iron and bacteria accumulation.

- Chlorine should be routine added into water supply.

1.5 Guest Room Usage Water (Hot Water) : (South A 410, South A 414)

- Total Hardness was and Chloride like raw water.
- Turbidity was low.
- Iron was low.
- Manganese was not found.
- Coliform/E.coli was not found.

Note :

- Flushing of pipe-line before used should be done to reduce iron accumulation in pipe line.
- Soft water before hot water machine should be checked.

1.6 Cooling :

- 1) Conductivity was high. Hardness was high.
- 2) Iron was not found. Manganese was not found.
- 3) Antiscale and anticorrosion chemicals including with biocide should be adding into system.
- 4) Legionella spp. was not found.

Note :

- Bleed off should be controlled.
- Softener should be checked about regeneration cycle to control hardness < 20 ppm.
- Cooling water must be drained and adding new make up water to reduce TDS.

1.7 Chilled : Iron was in control. pH was high. Anti corrosion chemical (Nitrite) was low for control.
Anti corrosion chemical should be added after cleaning, incase of maintenance.

2. Drinking Water :

- 1) **Canteen** : Hardness was in standard. Iron and Manganese was not found.
Other water quality was in standard. Coliform/E.coli was not found.
- 2) **Oasis Kitchen** : Hardness was in standard. Iron and Manganese was not found.
Other water quality was in standard. Coliform/E.coli was not found.
- 3) **Guest Room (410)** : Hardness was in standard. Iron and Manganese was not found.
Other water quality was in standard. Coliform/E.coli was not found.

Note :

- Chlorine feeding into raw water should be done.
- Clean unit and Tank with chlorination water should be done.
- Drinking water treatment unit should be cleaned and regenerate to reduce hardness.

3. Swimming Water :

1) Main Pool : On used.

- pH was normal.
- Chlorine was found 0.81 ppm.
- Coliform/E.coli was not found.

2) Lab Pool : On used.

- pH was normal.
- Chlorine was found 0.77 ppm.
- Coliform/E.coli was not found.

3) Lazy Pool :

- pH was normal.
- Chlorine was found 0.81 ppm.
- Coliform/E.coli was not found.

4) 18th Flr Pool :

- pH was normal.
- Chlorine was found 0.79 ppm.
- Coliform/E.coli was not found.

Recommendation :

1. pH should be routine checked. If pH low, the feeding of NaOH or Na₂CO₃ should be done.
If pH high, the pH adjustment by HCl should be added.
2. Chlorine should be routine checked to control ~ 1-3 ppm.
3. Circulation water should be passed through filter for reduce bacteria accumulation.

4. Ice

1) Canteen (Cube) : Coliform/E.coli was not found.

2) Banquet (Flake) : Coliform/E.coli was not found.

3) Flames : Coliform/E.coli was not found.

4) Oasis Kitchen (Flake) : Coliform/E.coli was not found.

Recommendation : The ice machine should be disinfection by.

1. Flushing system by chlorine-added water should be done.
2. Scoop equipment should be cleaned without contamination.
3. Ice machine and filter system should be cleaned.
4. Ice box should be cleaned.

5. Waste Water : BOD of Effluent 383 mg/L was in Pattaya Regulation (≤ 1000 mg/L).

The owner should pay for treatment following regulation rate.

6. Sea Water : TSS was low. Coliform Bacteria was found 14 MPN/100 mL

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - May 2, 2026

Report Date : May 5, 2026

Report No. : R09066/69

Parameters	Unit	Method	TW07372 /69	TW07373 /69	TW07374 /69	Standard ^a
			Water in Storage Tank	Soft Water System (Main Point)	Hot Water System (Main Point)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.4	7.2	7.3	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	< 0.50	4
Conductivity [#]	uS/cm	SM 2023 (2510 B)	295	327	318	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	177	196	191	600
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	69	82	74	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	30	35	31	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	< 0.10	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	< 0.04	0.08
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	6.36	9.19	7.40	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	29.54	33.06	34.42	250
Sample Condition		Observation	Clear	Clear	Clear	

- Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023
2. Test marked "# " on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.
3. Test marked "@ " on this report are Accredited International Standard ISO/IEC 17025 by BLQS-DMSc.
4. Test marked " * " on this report are not included in scope of Accreditation
5. a : Specification for Water Supply Quality of Provincial Waterworks Authority (PWA)

Analyst

May 5, 2026

Technical Manager

May 5, 2026

Reported results refer to the sample as received only.

Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - May 2, 2026

Report Date : May 5, 2026

Report No. : R09067/69

Parameters	Unit	Method	TW07372 /69	TW07373 /69	TW07374 /69	Standard ^a
			Water in Storage Tank	Soft Water System (Main Point)	Hot Water System (Main Point)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	not found	not found	not found	not found
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	not found	not found
Sample Condition			Clear	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Specification for Water Supply Quality of Provincial Waterworks Authority (PWA)

3. Coliform Bacteria : not found เท่ากับ < 1.1 MPN/100 mL

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Analyst

May 5, 2026

Technical Manager

May 5, 2026

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - May 2, 2026

Report Date : May 5, 2026

Report No. : R09068/69

Parameters	Unit	Method	TW07375 /69	TW07376 /69	Standard ^a
			Guest Room Cold Water (South A 410)	Guest Room Cold Water (South A 414)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.5	7.8	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	4
Conductivity [#]	uS/cm	SM 2023 (2510 B)	294	294	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	176	176	600
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	75	74	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	31	29	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	0.08
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	6.86	6.16	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	30.08	29.81	250
Sample Condition		Observation	Clear	Clear	

- Remark :
1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023
 2. Test marked "# " on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.
 3. Test marked "@ " on this report are Accredited International Standard ISO/IEC 17025 by BLQS-DMSc.
 4. Test marked " * " on this report are not included in scope of Accreditation
 5. a : Specification for Water Supply Quality of Provincial Waterworks Authority (PWA)

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Analyst

May 5, 2026

Technical Manager

May 5, 2026

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sampling by : Test Tech Co., Ltd.

Sampling Date : April 20, 2026

Received Date : April 20, 2026

Report Date : May 5, 2026

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 11:00 AM

Analytical Date : April 20 - May 2, 2026

Report No. : R09069/69

Parameters	Unit	Method	TW07375 /69	TW07376 /69	Standard ^a
			Guest Room Cold Water (South A 410)	Guest Room Cold Water (South A 414)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	not found	not found	not found
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	not found
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Specification for Water Supply Quality of Provincial Waterworks Authority (PWA)

3. Coliform Bacteria : not found เท่ากับ < 1.1 MPN/100 mL

Analyst

May 5, 2026

Technical Manager

May 5, 2026

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Analysis/Test Report

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Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - May 2, 2026

Report Date : May 5, 2026

Report No. : R09070/69

Parameters	Unit	Method	TW07377 /69	TW07378 /69	Standard ^a
			Guest Room Hot Water (South A 410)	Guest Room Hot Water (South A 414)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.2	7.5	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	4
Conductivity [#]	uS/cm	SM 2023 (2510 B)	318	318	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	191	191	600
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	73	75	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	30	31	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	0.08
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	7.67	7.32	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	32.79	30.62	250
Sample Condition		Observation	Clear	Clear	

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May 5, 2026

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - May 2, 2026

Report Date : May 5, 2026

Report No. : R09071/69

Parameters	Unit	Method	TW07377 /69	TW07378 /69	Standard ^a
			Guest Room Hot Water (South A 410)	Guest Room Hot Water (South A 414)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	not found	not found	not found
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	not found
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Specification for Water Supply Quality of Provincial Waterworks Authority (PWA)

3. Coliform Bacteria : not found เท่ากับ < 1.1 MPN/100 mL

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - May 2, 2026

Report Date : May 5, 2026

Report No. : R09072/69

Parameters	Unit	Method	TW07379 /69	Standard ^a (Cooling Water)
			Cooling Water	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	8.9	8.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	3280	< 2500
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	1968	< 2000
* P-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	40	-
* M-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	270	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	450	< 100
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	440	< 400
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 1.0
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	-
* Sulfate	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	560	-
* Silica	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	129	-
* Total Phosphorus	mg/L as P	SM 2023 (4500-P D)	< 0.01	-
Sample Condition		Observation	Light Yellow, Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

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4. Test marked " * " on this report are not included in scope of Accreditation

5. a : เกณฑ์ควบคุมคุณภาพน้ำในระบบต่าง ๆ

Analyst

May 5, 2026

Technical Manager

May 5, 2026

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - May 2, 2026

Report Date : May 5, 2026

Report No. : R09073/69

Parameters	Unit	Method	TW07379 /69
			Cooling Water
Legionella spp.	/L	ISO 11731 : 2017	not detected
Sample Condition		Observation	Light Yellow, Clear

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May 5, 2026

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May 5, 2026

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ISO/IEC 17025
Accreditation No. 1201/54TESTING
NO.0001

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sampling by : Test Tech Co., Ltd.

Sampling Date : April 20, 2026

Received Date : April 20, 2026

Report Date : May 5, 2026

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 11:00 AM

Analytical Date : April 20 - May 2, 2026

Report No. : R09074/69

Parameters	Unit	Method	TW07380 /69	Standard ^a (Chilled Water)
			Chilled Water	
* pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	10.2	7.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	786	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	472	-
* P-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	90	-
* M-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	190	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	15	-
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	50	-
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.82	< 1.0
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	-
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	45.53	-
Silica [#]	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	3.81	-
* Nitrite	mg/L as NO ₂ ⁻	SM 2023 (4500-NO ₂ ⁻ B)	66.28	500 - 1000
Sample Condition		Observation	Light Yellow, a little bit Particles	

- Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023
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4. Test marked " * " on this report are not included in scope of Accreditation
5. a : เกณฑ์ควบคุมคุณภาพน้ำในระบบต่าง ๆ (Chilled Water)

MISS NUTSARIN SUKONPARDEE

Analyst

May 5, 2026



Technical Manager

May 5, 2026

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Drinking Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 24, 2026

Report Date : April 27, 2026

Report No. : R08527/69

Parameters	Unit	Method	TW07381 /69	TW07382 /69	TW07383 /69	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 410)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.6	7.6	7.7	≤ 8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	< 0.50	≤ 4
Conductivity [#]	uS/cm	SM 2023 (2510 B)	314	314	676	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	80	80	1 *	≤ 100
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	32	32	3 *	-
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	< 0.10	-
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	< 0.04	≤ 0.08
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	7.92	8.01	0.50	≤ 50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	32.25	31.98	37.40	-
Total Dissolved Solids [#]	mg/L	SM 2023 (2540 C)	180	163	412	≤ 500
Sample Condition		Observation	Clear	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. Test marked "# " on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.

3. Test marked "@ " on this report are Accredited International Standard ISO/IEC 17025 by BLQS-DMSc.

4. Test marked " * " on this report are not included in scope of Accreditation

5. a : อ้างอิงตามประกาศกระทรวงสาธารณสุข ฉบับที่ 462 (พ.ศ. 2568) ออกตามความในพระราชบัญญัติอาหาร พ.ศ. 2522

เรื่อง น้ำบริโภคในอาคารและโรงบำบัดน้ำ

บริษัท เทสท์ เทค จำกัด

Analyst

April 27, 2026

Technical Manager

April 27, 2026

Reported results refer to the sample as received only.

Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Drinking Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 24, 2026

Report Date : April 27, 2026

Report No. : R08528/69

Parameters	Unit	Method	TW07381 /69	TW07382 /69	TW07383 /69	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 410)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	< 1.1	< 1.1
<i>E. coli</i>	MPN/100 mL	SM 2023 (9221 F, MPN)	not found	not found	not found	< 1.1
Sample Condition		Observation	Clear	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 20232. a : อ้างอิงตามประกาศกระทรวงสาธารณสุข ฉบับที่ 462 (พ.ศ. 2568) ออกตามความในพระราชบัญญัติอาหาร พ.ศ. 2522
เรื่อง น้ำบริโภคในภาชนะบรรจุปิดสนิท3. *E. coli* : not found เท่ากับ < 1.1 MPN/100 mL

Analyst

April 27, 2026

Technical Manager

April 27, 2026

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 24, 2026

Report Date : April 25, 2026

Report No. : R08361/69

Parameters	Unit	Method	TW07384 /69	TW07385 /69	Standard ^a
			Main Pool	Lab Pool	
pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	7.6	7.8	7.2-8.4
Residual Chlorine	mg/L as Cl ₂	SM 2023 (4500-Cl G)	0.81	0.77	0.6-1.0
Sample Condition			Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14, B.E.2530 (1987)

บริษัท เทสท์ เทค จำกัด

Analyst

April 25, 2026

Technical Manager

April 25, 2026

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sampling by : Test Tech Co., Ltd.

Sampling Date : April 20, 2026

Received Date : April 20, 2026

Report Date : April 25, 2026

Sample Type : Swimming Water

Sampling Method : Grab

Sampling Time : 11:00 AM

Analytical Date : April 20 - 24, 2026

Report No. : R08362/69

Parameters	Unit	Method	TW07384 /69	TW07385 /69	Standard ^a
			Main Pool	Lab Pool	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.8	< 1.8	< 10
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	negative
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14, B.E.2530 (1987)

Analyst

April 25, 2026

Technical Manager

April 25, 2026

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 24, 2026

Report Date : April 25, 2026

Report No. : R08363/69

Parameters	Unit	Method	TW07386 /69	TW07387 /69	Standard ^a
			Lazy Pool	18 th Flr Pool	
pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	7.6	7.5	7.2-8.4
Residual Chlorine	mg/L as Cl ₂	SM 2023 (4500-Cl G)	0.81	0.79	0.6-1.0
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14, B.E.2530 (1987)

Analyst

April 25, 2026

Technical Manager

April 25, 2026

Reported results refer to the sample as received only.

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025



Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 24, 2026

Report Date : April 25, 2026

Report No. : R08364/69

Parameters	Unit	Method	TW07386 /69	TW07387 /69	Standard ^a
			Lazy Pool	18 th Flr Pool	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.8	< 1.8	< 10
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	negative
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14, B.E.2530 (1987)

บริษัท เทสท์ เทค จำกัด

Analyst

April 25, 2026

Technical Manager

April 25, 2026

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Ice

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 24, 2026

Report Date : April 25, 2026

Report No. : R08456/69

Parameters	Unit	Method	TW07388 /69	TW07389 /69	Standard ^a
			Canteen (Cube)	Banquet (Flake)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	< 1.1
<i>E. coli</i>	MPN/100 mL	SM 2023 (9221 F, MPN)	not found	not found	< 1.1
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 20232. a : อ้างอิงตามประกาศกระทรวงสาธารณสุข ฉบับที่ 463 (พ.ศ. 2568) ออกตามความในพระราชบัญญัติอาหาร พ.ศ. 2522
เรื่อง น้ำแข็ง3. *E. coli* : not found เท่ากับ < 1.1 MPN/100 mL

บริษัท เทสต์ เทค จำกัด

Analyst

April 25, 2026

Technical Manager

April 25, 2026

Reported results refer to the sample as received only.

Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Ice

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 24, 2026

Report Date : April 25, 2026

Report No. : R08457/69

Parameters	Unit	Method	TW07390 /69	TW07391 /69	Standard ^a
			Flames	Oasis Kitchen (Flake)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	< 1.1
<i>E. coli</i>	MPN/100 mL	SM 2023 (9221 F, MPN)	not found	not found	< 1.1
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 20232. a : อ้างอิงตามประกาศกระทรวงสาธารณสุข ฉบับที่ 463 (พ.ศ. 2568) ออกตามความในพระราชบัญญัติอาหาร พ.ศ. 2522
เรื่อง น้ำแข็ง3. *E. coli* : not found เท่ากับ < 1.1 MPN/100 mL

บริษัท เทสท์ เทค จำกัด

Analyst

April 25, 2026

Technical Manager

April 25, 2026

Reported results refer to the sample as received only.

Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Waste Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 27, 2026

Report Date : April 28, 2026

Report No. : R08668/69

Parameters	Unit	Method	TW07393 /69	Standard ^a
			Effluent	
pH	-	SM 2023 (4500-H ⁺ B)	6.4	-
BOD	mg/L	SM 2023 (5210 B, 4500-O G)	383	≤ 1000
Total Suspended Solids	mg/L	SM 2023 (2540 D)	108	-
Oil & Grease	mg/L	SM 2023 (5520 D)	48.3	-
Sample Condition		Observation	Light Yellow, Cloud	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 22 (พ.ศ. 2544) เรื่อง กำหนดอัตราค่าบริการบำบัดน้ำเสียของระบบบำบัดน้ำเสียรวมเมืองพัทยา

บริษัท เทสท์ เทค จำกัด

Analyst

April 28, 2026

Technical Manager

April 28, 2026

Reported results refer to the sample as received only.

Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Sea Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : April 20, 2026

Sampling Time : 11:00 AM

Received Date : April 20, 2026

Analytical Date : April 20 - 25, 2026

Report Date : April 27, 2026

Report No. : R08529/69

Parameters	Unit	Method	TW07392 /69
			Sea Water
Dissolved Oxygen	mg/L	DO - Meter	6.21
Total Suspended Solids	mg/L	Dried at 103 - 105 °C	8
Oil & Grease	mg/L	Soxhlet Extraction	< 3.0
Total Coliform Bacteria	MPN/100 mL	MPN	14
Temperature	°C	Laboratory and Field	29.6
Transparency	m	Secchi Disc	1.0
Sample Condition		Observation	Light Yellow, Clear

บริษัท เทสท์ เทค จำกัด

Analyst

April 27, 2026

Technical Manager

April 27, 2026

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