

Appendix A – Air Quality and Water Quality Monitoring Equipment Calibration Certificates

Aerocet 831 K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date: 27-Jun-21 to 1-Jul-21
Next Verification Test Date: 1-Jul-22
Unit-under-Test- Model No. Aerocet 831
Unit-under-Test Serial No. A14259
Our Report Reference No. RPT-21-HVS-0001

Standard Equipment Information

Verification Equipment Type	Tisch's TSP HVS	Tish HVS Calibrator
Standard Equipment Model No.	TE-5170X	TE-5028
Equipment serial no.	MFC 1049	1050
Last Calibration Date	17-Jun-21	24-Sep-20
Next Calibration Date	17-Aug-21	24-Sep-21

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	27/6/2021	1254.37	1257.37	180.00	0.00109	30.67	5520	R210872/1	33.33
2	27/6/2021	1258.44	1261.44	180.00	0.00103	57.33	10320	R210872/2	59.26
3	27/6/2021	1262.31	1265.31	180.00	0.00243	4.00	720	R210872/3	9.72
4	1/7/2021	1265.84	1268.84	180.00	0.00120	61.00	10980	R210887/1	73.15
5	1/7/2021	1269.10	1272.10	180.00	0.00091	15.33	2760	R210887/2	13.89
6	1/7/2021	1272.50	1275.50	180.00	0.00053	45.00	8100	R210887/3	24.07
					0.00120				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.2

By Linear Regression of y on x:

slope, mh= 0.9958

intercept, ch= 0.1634

*Correlation Coefficient, R= 0.8976

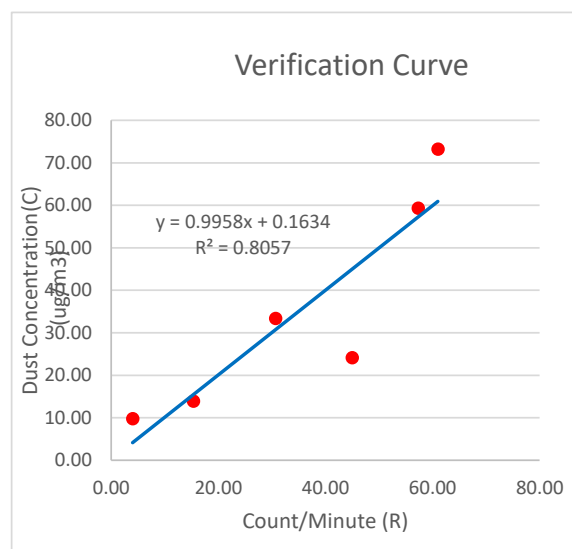
Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.

Verified By:


Technical Manager

Date: 20-07-2021



Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date: 12-Sep-21 to 19-Sep-21
Next Verification Test Date: 20-Sep-22
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 851816
Our Report Reference No. RPT-21-HVS-0014

Standard Equipment Information

Verification Equipment Type	Tisch's TSP HVS	Tish HVS Calibrator
Standard Equipment Model No.	TE-5170X	TE-5028
Equipment serial no.	MFC 1049	1050
Last Calibration Date	4-Sep-21	24-Sep-20
Next Calibration Date	4-Nov-21	24-Sep-21

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	12/9/2021	4012.12	4014.84	163.20	0.00243	40.33	6582.4	R211363/1	98
2	12/9/2021	4014.84	4018.16	199.20	0.00278	41.67	8300	R211363/2	116
3	12/9/2021	4018.16	4021.16	180.00	0.00226	39.67	7140	R211363/3	89
4	19/9/2021	4046.44	4049.65	192.60	0.00077	33.33	6420	R211364/1	26
5	19/9/2021	4049.65	4052.95	198.00	0.00079	34.00	6732	R211364/2	27
6	19/9/2021	4052.95	4055.56	156.60	0.00101	38.67	6055.2	R211364/3	39
					0.00167				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.7

By Linear Regression of y on x:

slope, mh= 10.4180
intercept, ch= -329.4714

*Correlation Coefficient, R= 0.9029

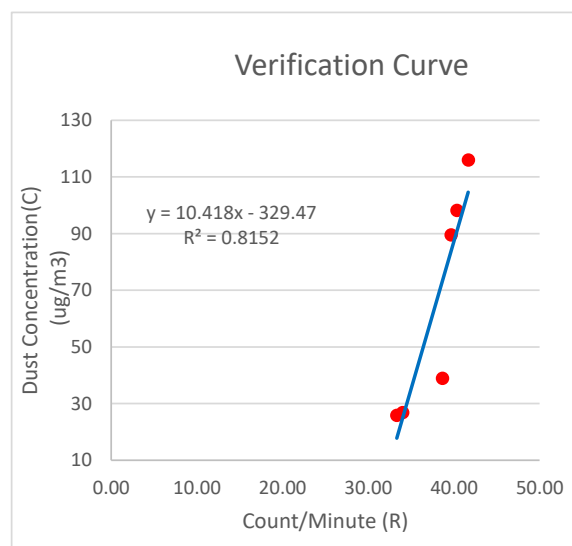
Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.

Verified By:


Technical Manager

Date: 09-10-2021



Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date: 12-Sep-21 to 19-Sep-21
 Next Verification Test Date: 20-Sep-22
 Unit-under-Test- Model No. Sibata LD-5R
 Unit-under-Test Serial No. 851820
 Our Report Reference No. RPT-21-HVS-0015

Standard Equipment Information

Verification Equipment Type	Tisch's TSP HVS	Tish HVS Calibrator
Standard Equipment Model No.	TE-5170X	TE-5028
Equipment serial no.	MFC 1049	1050
Last Calibration Date	4-Sep-21	24-Sep-20
Next Calibration Date	4-Nov-21	24-Sep-21

Verification Test No.	Date	Time			K-Factor	Counts/Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)		x-axis			y axis
1	12/9/2021	4012.12	4014.84	163.20	0.00157	62.67	10227	R211363/1	98
2	12/9/2021	4014.84	4018.16	199.20	0.00177	65.33	13014	R211363/2	116
3	12/9/2021	4018.16	4021.16	180.00	0.00169	53.00	9540	R211363/3	89
4	19/9/2021	4046.44	4049.65	192.60	0.00067	38.33	7383	R211364/1	26
5	19/9/2021	4049.65	4052.95	198.00	0.00062	43.00	8514	R211364/2	27
6	19/9/2021	4052.95	4055.56	156.60	0.00085	45.67	7151.4	R211364/3	39
					0.00120				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.2

By Linear Regression of y on x:

slope, mh= 3.5236
 intercept, ch= -115.0408

*Correlation Coefficient, R= 0.9649

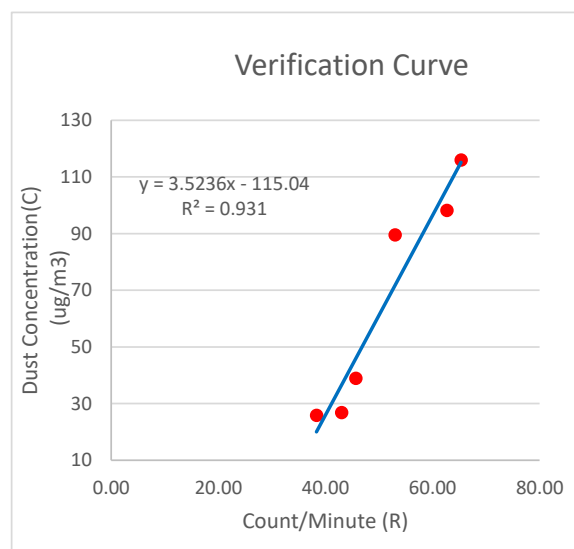
Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.

Verified By:


 Technical Manager

Date: 09-10-2021



Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Verification Test Date: 12-Sep-21 to 19-Sep-21
Next Verification Test Date: 20-Sep-22
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 992818
Our Report Reference No. RPT-21-HVS-0016

Standard Equipment Information

Verification Equipment Type	Tisch's TSP HVS	Tish HVS Calibrator
Standard Equipment Model No.	TE-5170X	TE-5028
Equipment serial no.	MFC 1049	1050
Last Calibration Date	4-Sep-21	24-Sep-20
Next Calibration Date	4-Nov-21	24-Sep-21

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	12/9/2021	4012.12	4014.84	163.20	0.00182	54.00	8812.8	R211363/1	98
2	12/9/2021	4014.84	4018.16	199.20	0.00213	54.33	10823	R211363/2	116
3	12/9/2021	4018.16	4021.16	180.00	0.00172	52.00	9360	R211363/3	89
4	19/9/2021	4046.44	4049.65	192.60	0.00054	48.00	9244.8	R211364/1	26
5	19/9/2021	4049.65	4052.95	198.00	0.00055	48.67	9636	R211364/2	27
6	19/9/2021	4052.95	4055.56	156.60	0.00076	51.33	8038.8	R211364/3	39
					0.00125				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): **1.3**

By Linear Regression of y on x:

slope, mh= 14.0955
intercept, ch= -658.5163

*Correlation Coefficient, R= 0.9308

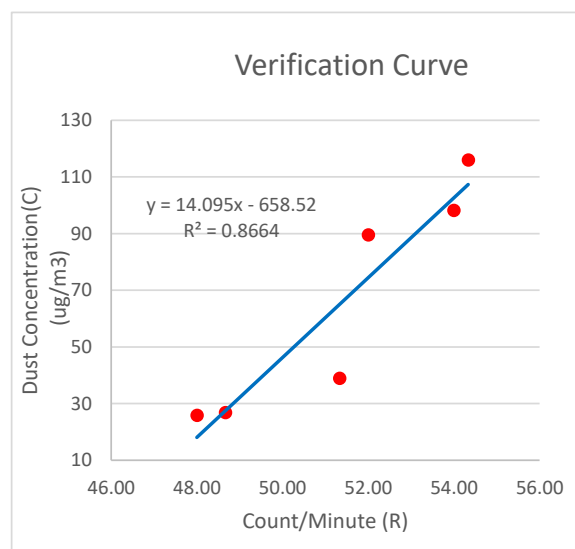
Verification Test Result: Strong Correlation, Results were accepted.

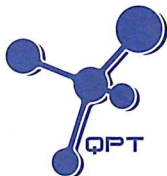
* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.

Verified By:


Technical Manager

Date: 09-10-2021





專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB030083
Date of Issue : 21 March 2022
Page No. : 1 of 2

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing
Hong Street, Cheung Sha Wan
Kowloon (HK) Hong Kong
Attn :

PART B - SAMPLE INFORMATION

Name of Equipment : HORIBA U-53
Manufacturer : HORIBA
Serial Number : THAUKESE
Date of Received : 15 March 2022
Date of Calibration : 21 March 2022
Date of Next Calibration : 20 June 2022

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
Turbidity	APHA 21e 2130B
Dissolved oxygen	APHA 21e 4500 O
pH value	APHA 21e 4500 H+
Salinity	APHA 21e 2520B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure

PART D - CALIBRATION RESULT

(1) Turbidity

EXPECTED READING (NTU)	DISPLAY READING (NTU)	TOLERANCE (%)	RESULT
0	0.01	--	Satisfactory
10	10.0	0.00	Satisfactory
20	19.9	-0.50	Satisfactory
100	104.5	4.50	Satisfactory
800	829	3.63	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

(2) Dissolved oxygen

EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
7.40	7.41	0.01	Satisfactory
3.71	3.65	-0.06	Satisfactory
1.34	1.11	-0.23	Satisfactory
0.42	0.81	0.39	Satisfactory

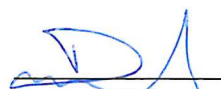
Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(3) pH value

TARGET (PH UNIT)	DISPLAY READING (PH UNIT)	TOLERANCE	RESULT
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SIGNATORY:


LEE Chun-ning
Assistant Manager (Chemical Testing)



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QUALITY PRO TEST-CONSULT LIMITED

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Date of Issue : 21 March 2022

Page No. : 2 of 2

TARGET (PH UNIT)	DISPLAY READING (PH UNIT)	TOLERANCE	RESULT
4.00	4.09	0.09	Satisfactory
7.42	7.43	0.01	Satisfactory
10.01	9.86	-0.15	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(4) Salinity

EXPECTED READING (G/L)	DISPLAY READING (G/L)	TOLERANCE (%)	RESULT
10	10.20	2.00	Satisfactory
20	19.58	-2.10	Satisfactory
30	29.84	-0.53	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

(5) Temperature

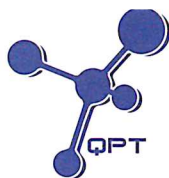
READING OF REF. THERMOMETER (°C)	DISPLAY READING (°C)	TOLERANCE (°C)	RESULT
14.5	14.96	0.46	Satisfactory
24.5	24.60	0.10	Satisfactory
40.5	39.07	-1.43	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.
- The results relate only to the calibrated equipment as received
- The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

--- END OF REPORT ---



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB040025

Date of Issue : 12 April 2022

Page No. : 1 of 2

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing
Hong Street, Cheung Sha Wan
Kowloon (HK) Hong Kong
Attn :

PART B - SAMPLE INFORMATION

Name of Equipment : HORIBA U-53
Manufacturer : HORIBA
Serial Number : S2A98W8H
Date of Received : 08 April 2022
Date of Calibration : 11 April 2022
Date of Next Calibration : 10 July 2022

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
Turbidity	APHA 21e 2130B
Dissolved oxygen	APHA 21e 4500 O
pH value	APHA 21e 4500 H+
Salinity	APHA 21e 2520B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure

PART D - CALIBRATION RESULT

(1) Turbidity

EXPECTED READING (NTU)	DISPLAY READING (NTU)	TOLERANCE (%)	RESULT
0	0.00	--	Satisfactory
10	11.0	10.0	Satisfactory
20	19.5	-2.5	Satisfactory
100	108	8.0	Satisfactory
800	795	-0.6	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

(2) Dissolved oxygen

EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
8.23	8.39	0.16	Satisfactory
5.61	5.79	0.18	Satisfactory
4.20	4.36	0.16	Satisfactory
0.15	0.40	0.25	Satisfactory

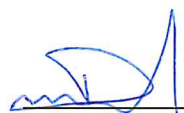
Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

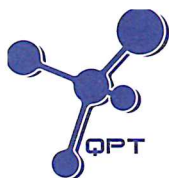
(3) pH value

TARGET (PH UNIT)	DISPLAY READING (PH UNIT)	TOLERANCE	RESULT
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AUTHORIZED
SIGNATORY:


LEE Chun-ning
Assistant Manager (Chemical Testing)



REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB040025
Date of Issue : 12 April 2022
Page No. : 2 of 2

TARGET (PH UNIT)	DISPLAY READING (PH UNIT)	TOLERANCE	RESULT
4.00	3.99	-0.01	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.03	0.02	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(4) Salinity

EXPECTED READING (G/L)	DISPLAY READING (G/L)	TOLERANCE (%)	RESULT
10	10.19	1.90	Satisfactory
20	19.96	-0.20	Satisfactory
30	28.49	-5.03	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

(5) Temperature

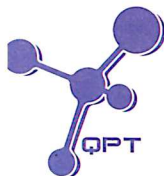
READING OF REF. THERMOMETER (°C)	DISPLAY READING (°C)	TOLERANCE (°C)	RESULT
10	10.0	0.0	Satisfactory
20	19.9	-0.1	Satisfactory
48	48.0	0.0	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.
- The results relate only to the calibrated equipment as received
- The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

--- END OF REPORT ---



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB110035
Date of Issue : 17 November 2022
Page No. : 1 of 2

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited

Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

PART B - SAMPLE INFORMATION

Name of Equipment : HORIBA U-53
Manufacturer : HORIBA
Serial Number : PPHNOMXY
Date of Received : 16 November 2022
Date of Calibration : 16 November 2022
Date of Next Calibration : 16 February 2023
Request No. : D-BB110035

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500 H ⁺
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 21e 4500 O
Turbidity	APHA 21e 2130 B

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.15	0.15	Satisfactory
7.42	7.34	-0.08	Satisfactory
10.01	9.92	-0.09	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
14	15.45	1.45	Satisfactory
21	21.44	0.44	Satisfactory
34	34.68	0.68	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

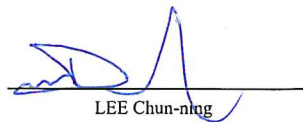
(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	9.61	-3.90	Satisfactory
20	21.04	5.20	Satisfactory
30	32.03	6.77	Satisfactory

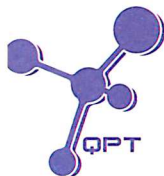
Tolerance of Salinity should be less than ± 10.0 (%)

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AUTHORIZED
SIGNATORY:


LEE Chun-ning

Assistant Manager (Chemical Testing)



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QUALITY PRO TEST-CONSULT LIMITED

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB110035
Date of Issue : 17 November 2022
Page No. : 2 of 2

(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
7.88	7.70	-0.18	Satisfactory
4.52	5.00	0.48	Satisfactory
1.43	1.00	-0.43	Satisfactory
0.00	0.03	0.03	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)	Result
0	0.00	--	Satisfactory
10	9.80	-2.0	Satisfactory
20	19.5	-2.5	Satisfactory
100	104	4.0	Satisfactory
800	811	1.4	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.
- The results relate only to the calibrated equipment as received
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--- END OF REPORT ---