

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 5  
 Calibrated by : P.F.Yeung  
 Date : 09/12/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 0816

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1014  
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.4	3.553	1.713	53	53.48
2   13 holes	10.0	3.190	1.539	48	48.43
3   10 holes	7.4	2.745	1.326	42	42.38
4   7 holes	4.6	2.164	1.048	34	34.31
5   5 holes	2.8	1.688	0.821	26	26.23

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 30.020 Intercept(b): 2.020 Correlation Coefficient(r): 0.9990

Checked by: Magnum Fan

Date: 15/12/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR10A  
 Calibrated by : P.F.Yeung  
 Date : 09/12/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 8162

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1014  
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.8	3.610	1.740	62	62.56
2   13 holes	10.6	3.285	1.585	55	55.49
3   10 holes	7.8	2.818	1.361	45	45.40
4   7 holes	5.0	2.256	1.093	34	34.31
5   5 holes	3.1	1.777	0.863	22	22.20

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 45.377 Intercept(b): -16.281 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan

Date: 15/12/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AQM1  
 Calibrated by : P.F.Yeung  
 Date : 09/12/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 1253

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1014  
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.8	3.610	1.740	52	52.47
2   13 holes	10.0	3.191	1.539	46	46.41
3   10 holes	7.4	2.745	1.326	39	39.35
4   7 holes	4.6	2.164	1.048	32	32.29
5   5 holes	2.9	1.718	0.835	25	25.22

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{dH(Pa/Pstd)(Tstd/Ta)}\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 29.770 Intercept(b): 0.512 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan

Date: 15/12/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 1  
 Calibrated by : P.F.Yeung  
 Date : 09/12/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 0146

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1014  
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	13.0	3.638	1.753	53	53.48
2   13 holes	10.2	3.222	1.555	46	46.41
3   10 holes	7.4	2.745	1.326	40	40.36
4   7 holes	4.9	2.234	1.082	31	31.28
5   5 holes	3.0	1.748	0.849	24	24.22

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.296 Intercept(b): -3.257 Correlation Coefficient(r): 0.9990

Checked by: Magnum Fan

Date: 15/12/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 6A  
 Calibrated by : P.F.Yeung  
 Date : 09/12/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 3957

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1014  
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.4	3.553	1.713	55	55.49
2   13 holes	9.7	3.142	1.516	49	49.44
3   10 holes	7.0	2.670	1.290	42	42.38
4   7 holes	4.5	2.140	1.037	34	34.31
5   5 holes	2.8	1.688	0.821	26	26.23

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.563 Intercept(b): 0.037 Correlation Coefficient(r): 0.9993

Checked by: Magnum Fan

Date: 15/12/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 5  
 Calibrated by : P.F.Yeung  
 Date : 09/10/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 0816

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1017  
 Ta(K) : 299

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.5	3.537	1.705	52	52.02
2   13 holes	9.7	3.115	1.503	45	45.01
3   10 holes	7.6	2.758	1.332	40	40.01
4   7 holes	4.7	2.169	1.051	31	31.01
5   5 holes	3.0	1.733	0.842	24	24.01

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.148 Intercept(b): -2.953 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 20/10/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR10A  
 Calibrated by : P.F.Yeung  
 Date : 15/10/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 8162

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1013  
 Ta(K) : 301

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	13.0	3.588	1.729	59	58.71
2   13 holes	10.4	3.209	1.548	52	51.74
3   10 holes	7.8	2.779	1.343	45	44.78
4   7 holes	5.0	2.225	1.078	36	35.82
5   5 holes	3.0	1.723	0.838	28	27.86

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 34.384 Intercept(b): 1.161 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 20/10/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AQM1  
Calibrated by : P.F.Yeung  
Date : 17/10/2013

Sampler

Model : TE-5170  
Serial Number : S/N 1253

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
Service Date : 26 Dec 2012  
Slope (m) : 2.09107  
Intercept (b) : -0.02838  
Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1017  
Ta(K) : 299

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	13.4	3.662	1.765	56	56.02
2   13 holes	9.4	3.067	1.480	47	47.01
3   10 holes	7.5	2.739	1.324	41	41.01
4   7 holes	5.0	2.237	1.083	33	33.01
5   5 holes	3.0	1.733	0.842	26	26.01

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{dH(Pa/Pstd)(Tstd/Ta)}\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.944 Intercept(b): -2.175 Correlation Coefficient(r): 0.9990

Checked by: Magnum Fan

Date: 20/10/2013



High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 1  
 Calibrated by : P.F.Yeung  
 Date : 17/10/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 0146

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1016  
 Ta(K) : 299

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	13.0	3.605	1.737	52	51.99
2   13 holes	10.4	3.224	1.555	46	45.99
3   10 holes	7.8	2.792	1.349	39	38.99
4   7 holes	5.0	2.236	1.083	30	29.99
5   5 holes	3.0	1.732	0.842	23	22.99

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.647 Intercept(b): -4.881 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan

Date: 20/10/2013

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 6A  
 Calibrated by : P.F.Yeung  
 Date : 17/10/2013

Sampler

Model : TE-5170  
 Serial Number : S/N 1059

Calibration Office and Standard Calibration Relationship

Serial Number : 2323  
 Service Date : 26 Dec 2012  
 Slope (m) : 2.09107  
 Intercept (b) : -0.02838  
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1017  
 Ta(K) : 299

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.5	3.537	1.705	56	56.02
2   13 holes	10.0	3.163	1.526	50	50.01
3   10 holes	8.0	2.829	1.367	44	44.01
4   7 holes	5.2	2.281	1.104	35	35.01
5   5 holes	2.8	1.674	0.814	26	26.01

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.148 Intercept(b): -2.953 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 20/10/2013



## Performance Check of Turbidity Meter

Equipment Ref. No. : ET/0505/010 Manufacturer : HACH

Model No. : 2100Q Serial No. : 11110 C 014260

Date of Calibration : 08/102013 Due Date : 07/01/2014

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5	5.23	4.50
10-100 NTU	50	52.1	4.11
100-1000 NTU	550	566	2.87

Acceptance Criteria

Difference : -5 % to 5%

The turbidity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Checked by : 

Approved by : 



### Internal Calibration & Performance Check of pH Meter

Equipment Ref. No. : ET/EW/007/003      Manufacturer : HANNA  
 Model No. : HI 8314      Serial No. : 674469  
 Date of Calibration : 09/11/2013      Calibration Due Date : 08/12/2013

#### Liquid Junction Error

Primary Standard Solution Used : Phosphate      Ref No. of Primary Solution: 003/5.2/001/16  
 Temperature of Solution : 20.2       $\Delta\text{pH}_{1/2} = \underline{+0.08}$   
 pH value of diluted buffer : 6.80      pH (S) = 6.881  
 $\Delta\text{pH} = \text{pH(S)} - \text{pH of diluted buffer} = \underline{0.081}$       (Observed Deviation)  
 Liquid Junction Error ( $\Delta\text{pH}_j$ ) =  $\Delta\text{pH} - \Delta\text{pH}_{1/2} = \underline{0.001}$

#### Shift on Stirring

pH of buffer solution (with stirring),  $\text{pH}_s = \underline{6.89}$   
 Shift on stirring,  $\Delta\text{pH}_s = \text{pH}_s - \text{pH(S)} - \Delta\text{pH}_j = \underline{0.008}$

#### Noise

Noise,  $\Delta\text{pH}_n =$  difference between max and min reading : 0.00

#### Verification of ATC

Ref. No. of reference thermometer used: ET/0521/008  
 Temperature record from the reference thermometer ( $T_R$ ): 20.2 °C  
 Temperature record from the ATC ( $T_{ATC}$ ): 19.8 °C  
 Temperature Difference,  $|T_R - T_{ATC}|$  : 0.4 °C

#### Acceptance Criteria

Performance Characteristic	Acceptable Range
Liquid Junction Error $\Delta\text{pH}_j$	$\leq 0.05$
Shift on Stirring $\Delta\text{pH}_s$	$\leq 0.02$
Noise $\Delta\text{pH}_n$	$\leq 0.02$
Verification of ATC      Temperature Difference	$\leq 0.5^\circ\text{C}$

The pH meter complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use. Measurements are traceable to national standards.

\* Delete as appropriate

Calibrated by : 

Checked by : 



### Internal Calibration & Performance Check of pH Meter

Equipment Ref. No. : ET/EW/007/003      Manufacturer : HANNA  
 Model No. : HI 8314      Serial No. : 674469  
 Date of Calibration : 10/12/2013      Calibration Due Date : 09/01/2014

#### Liquid Junction Error

Primary Standard Solution Used : Phosphate      Ref No. of Primary Solution: 003/5.2/001/16  
 Temperature of Solution : 20.1       $\Delta\text{pH}_{1/2} = \underline{+0.08}$   
 pH value of diluted buffer : 6.79       $\text{pH (S)} = \underline{6.881}$   
 $\Delta\text{pH} = \text{pH(S)} - \text{pH of diluted buffer} = \underline{0.091}$  (Observed Deviation)  
 Liquid Junction Error ( $\Delta\text{pH}_j$ ) =  $\Delta\text{pH} - \Delta\text{pH}_{1/2} = \underline{0.011}$

#### Shift on Stirring

pH of buffer solution (with stirring),  $\text{pH}_s = \underline{6.89}$   
 Shift on stirring,  $\Delta\text{pH}_s = \text{pH}_s - \text{pH(S)} - \Delta\text{pH}_j = \underline{-0.002}$

#### Noise

Noise,  $\Delta\text{pH}_n = \text{difference between max and min reading} : \underline{0.01}$

#### Verification of ATC

Ref. No. of reference thermometer used: ET/0521/008  
 Temperature record from the reference thermometer ( $T_R$ ): 20.2 °C  
 Temperature record from the ATC ( $T_{ATC}$ ): 19.9 °C  
 Temperature Difference,  $|T_R - T_{ATC}|$  : 0.3 °C

#### Acceptance Criteria

Performance Characteristic	Acceptable Range
Liquid Junction Error $\Delta\text{pH}_j$	$\leq 0.05$
Shift on Stirring $\Delta\text{pH}_s$	$\leq 0.02$
Noise $\Delta\text{pH}_n$	$\leq 0.02$
Verification of ATC      Temperature Difference	$\leq 0.5^\circ\text{C}$

The pH meter complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use. Measurements are traceable to national standards.

\* Delete as appropriate

Calibrated by :

Checked by :



### Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/EW/008/005</u>	Manufacturer : <u>YSI</u>
Model No. : <u>Pro 2030</u>	Serial No. : <u>12A 100353</u>
Date of Calibration : <u>29/10/2013</u>	Calibration Due Date : <u>28/01/2014</u>

**Temperature Verification**

Ref. No. of Reference Thermometer : ET/0521/008  
 Ref. No. of Water Bath : ---

		Temperature (°C)		
Reference Thermometer reading	Measured	20.3	Corrected	19.9
DO Meter reading	Measured	19.8	Difference	0.1

**Standardization of sodium thiosulphate (Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>) solution**

Reagent No. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> titrant	CPE/012/4.5/001/7	Reagent No. of 0.025N K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	CPE/012/4.4/001/22
		Trial 1	Trial 2
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		1.00	12.00
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		11.55	22.50
Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)		10.55	10.50
Normality of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02370	0.02381
Average Normality (N) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02376	
Acceptance criteria, Deviation		Less than ± 0.001N	

Calculation: Normality of Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, N = 0.25 / ml Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> used

**Lineality Checking**

**Determination of dissolved oxygen content by Winkler Titration \***

Purging Time (min)	2		5		10	
	1	2	1	2	1	2
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0.00	11.80	23.40	0.00	8.00	13.00
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.80	23.40	31.50	8.00	13.00	18.10
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	11.80	11.60	8.10	8.00	5.00	5.10
Dissolved Oxygen (DO), mg/L	7.53	7.40	5.17	5.10	3.19	3.25
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: DO (mg/L) = V x N x 8000/298

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.66	7.41	7.54	7.53	7.40	7.47	0.93
5	5.31	5.23	5.27	5.17	5.10	5.14	2.50
10	3.20	3.10	3.15	3.19	3.25	3.22	2.20
Linear regression coefficient				0.9987			



## Internal Calibration Report of Dissolved Oxygen Meter

### *Zero Point Checking*

DO meter reading, mg/L	0.00
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### *Salinity Checking*

Reagent No. of NaCl (10ppt)	CPE/012/4.7/002/11	Reagent No. of NaCl (30ppt)	CPE/012/4.8/002/11
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#### *Determination of dissolved oxygen content by Winkler Titration \*\**

Salinity (ppt)	10		30	
	1	2	1	2
Trial				
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0.00	12.40	24.50	35.80
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	12.40	24.50	35.80	47.00
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	12.40	12.10	11.30	11.20
Dissolved Oxygen (DO), mg/L	7.91	7.72	7.21	7.14
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation:                  DO (mg/L) = V x N x 8000/298

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.82	7.63	7.73	7.91	7.72	7.82	1.16
30	7.22	7.16	7.19	7.21	7.14	7.18	0.14

### *Acceptance Criteria*

- (1) Difference between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : >0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies # / does not comply # with the specified requirements and is deemed acceptable #  
/ unacceptable # for use.

# Delete as appropriate

Calibrated by

:

Approved by :



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/005      Manufacturer : YSI  
Model No. : Pro 2030      Serial No. : 12A 100353  
Date of Calibration : <sup>29/10/2013</sup> ~~29/08/2013~~ <sub>29/08/2013</sub>      Due Date : 28/01/2014

Ref. No. of Salinity Standard used (30ppt)

S/001/4

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30.0	30.8	2.63

Acceptance Criteria

Difference : <10 %

The salinity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Checked by : 

Approved by : 



## Product Test Report



**Product Tested:** MetPak  
**Part Number:** 1723-1B-2-111  
**Serial Number:** 13130002  
**Test Date:** 26/03/2013  
**Location:** Gill Instruments Ltd

GILL ensures that quality is inherent in all aspects of their activities and ensures that compliance with BS EN ISO9001: 2008 is maintained.

This report certifies that the above instrument has been tested in accordance with Gill internal procedures

### Results

Test	Limits	Results
Wind Still Air Test (Zero Wind Speed)	Pass/Fail	Pass
Wind Tunnel Test (12m/s nominal)	Pass/Fail	Pass
Pressure Sensor (Comparison DPI 142)	Pass/Fail	Pass
Temperature Sensor (Comparison HC2-S (SCS certified))	Pass/Fail	Pass
Humidity Sensor (Comparison HC2-S (SCS certified))	Pass/Fail	Pass

Wind sensor generic calibration is traceable to the University of Southampton wind tunnel and Gill instrumentation is maintained in accordance with UKAS.

Comparisons for Temperature, Humidity and Pressure are done against reference UKAS traceable instruments. The reference system numbers of these instruments are listed above.

All tests have been successfully completed

On behalf of Gill Instruments Ltd

Tony Raine  
Quality Control

2002-0396 Issue 1



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# Certification of Quality

This product has been tested in accordance with procedures established through Global Water Instrumentation's Quality Management System. This product meets or exceeds its manufacturing acceptance criteria.

<b>ITEM DESCRIPTION:</b>	Wind Direction
<b>MODEL NAME/ NUMBER:</b>	WE570
<b>PART NUMBER:</b>	ED0000
<b>SENSOR RANGE:</b>	0-360 °
<b>SENSOR OUTPUT:</b>	4.01-20.03 mA
<b>ACCURACY:</b>	1% of full scale
<b>POWER REQUIRED</b>	10-36 VDC
<b>SERIAL NUMBER:</b>	1337005143
<b>CABLE LENGTH:</b>	25 ft
<b>CERTIFICATES:</b>	CE Compliant

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Weather

Remote Monitoring

Control

**Technician:** *Wright, Jess*

**Date:** 9/12/2013

NOT Global Water Instrumentation warrants that its products are free from defects in material & workmanship under normal use & service for a period of one year from date of original shipment from factory. Repaired components are warranted for a period of 90 days from shipment. Contact us for complete warranty details.



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Our Service Address  
151 Graham Rd  
College Station, TX 77845

# WATER

## Certification of Quality

This product has been tested in accordance with procedures established through Global Water Instrumentation's Quality Management System. This product meets or exceeds its manufacturing acceptance criteria.

<b>ITEM DESCRIPTION:</b>	Wind Speed Sensor
<b>MODEL NAME/ NUMBER:</b>	WE550
<b>PART NUMBER:</b>	EC0000
<b>SENSOR RANGE:</b>	0-110 MPH
<b>SENSOR OUTPUT:</b>	4.00-19.91 mA
<b>ACCURACY:</b>	.2 MPH over the range 11 to 55 MPH
<b>POWER REQUIRED</b>	10-36 VDC
<b>SERIAL NUMBER:</b>	1337005099
<b>CABLE LENGTH:</b>	25 ft
<b>CERTIFICATES:</b>	CE Compliant

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Water Flow

Water Samplers

Water Quality

Weather

Remote Monitoring

Control

**Technician:** *Wright, Jess*

**Date:** 9/10/2013

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