

# CSIR- NATIONAL PHYSICAL LABORATORY

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From: Director, CSIR-NPL  
Tender No. 14-VI/VE(1113)22PB/T-53

Dated: 28.08.2023

## CORRIGENDUM

With reference to NPL's Global Tender ID: **2023\_CSIR\_719497\_1**, Pre-Bid Conference (PBC) was concluded on 01.08.2023 for "System for Primary pH Measurement". Consequent upon the outcome of PBC, **some changes have been made in the technical specification of captioned tender. Revised specifications are as follows:**

### Technical Specification of System for primary pH Measurement

#### 1: High Stability Cold Bath (One Number)

Range	-5 °C to 110 °C or better
Stability at 25 °C	±0.005 °C (water) ; ±0.001 °C (mineral oil) or better
Uniformity	±0.003 °C (water) ; ±0.004 °C °C (mineral oil) or better
Temperature Setting	Computer-controlled or front panel entry and Digital display
Set-Point Resolution	0.002 °C; high-resolution mode, 0.00003 °C
Display Resolution	0.01 °C or better
Digital Setting Repeatability	±0.01 °C
Access Opening	320 x 180 mm or better
Depth	330 mm or better
Wetted Parts	304 stainless steel
Power	230 VAC, 50 Hz (±10 %).
Volume	Minimum 40 liters

Automation Package	Using compatible software, the water bath should be controlled through an external PC and Interface.
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## 2. High Stability bath with a large access opening (One Number)

Range	0 °C to 50 °C or better
Stability at 25 °C	±0.005 °C (water) ; ±0.001 °C (mineral oil) or better
Uniformity	±0.003 °C (water) ; ±0.005 °C (mineral oil) or better
Temperature Setting	Computer-controlled or front panel entry and Digital display
Set-Point Resolution	0.001 °C; high-resolution mode, 0.00003 °C
Display Resolution	0.01 °C or better
Digital Setting Repeatability	± 0.01 °C
Access Opening	Min. 600 x 550 mm or better
Depth	330 mm or better
Wetted Parts	304 stainless steel
Power	230 VAC, 50 Hz (±10 %),
Volume	Minimum 100 liters
Automation Package	Using compatible software, the water bath should be controlled through an external PC and Interface.

## 3. Primary standard platinum resistance thermometer (Two Numbers)

Temperature Range	-200 deg. C to 660 deg. C or better
Nominal Resistance @ (TPW)	25.5 Ohms (+/- 0.5 ohms) or better
Excitation current (Max)	1.0 mA
Resistance Ratio	$W(234.315\text{ K}) \leq 0.844235$ ; $W(302.9146\text{ K}) \geq 1.11807$
Sensitivity	0.1 ohm/deg. C or better
Self heating @ TPW	< 0.002 °C under 1 mA current or lower

Drift Rate	< 0.006 °C/100 hours at max temperature or lower
Reproducibility	+/- 0.0015 deg. C or better
Protective sheath	Quartz Glass; Diameter: 7 mm (0.28 in); Length: 485 mm (19.1 in)
Lead wires	4 wires

#### 4. Specifications of Secondary PRT with Calibration Options (Four Numbers)

Temperature Range	-200 °C to 660 °C
Nominal $R_{TPW}$	100 $\Omega \pm 0.5 \Omega$
Temperature Coefficient	0.003925 W/W/°C
Accuracy	$\pm 0.025 \text{ }^\circ\text{C}$ to $\pm 0.03 \text{ }^\circ\text{C}$ at max temp
Drift	$\pm 0.01 \text{ }^\circ\text{C}$ to $\pm 0.02 \text{ }^\circ\text{C}$ max
Hysteresis	$\pm 0.01 \text{ }^\circ\text{C}$
Sensor Length	30 mm $\pm$ 5mm
Sheath Material	Inconel™ 600
Transition junction dimensions	71 mm x 12.5 mm (2.8 in x 0.49 in)
Minimum immersion length	100 mm
Maximum immersion length	300 mm
Self-heating (in 0 °C bath)	Not more than 50 mW/°C
Lead-wire cable type	Teflon,™ 24 AWG
Lead-wire length	At least 1.5 m

#### 5. Temperature reading device/Bridge (One Number)

Measurement capability	4-wire PRT, resistance, the resistance ratio
Input resistance range	0 to 500 k $\Omega$ or better
Ratio range	0 to 10
Internal reference resistors	1 $\Omega$ , 10 $\Omega$ , 25 $\Omega$ , 100 $\Omega$ , and 10 k $\Omega$ (NMI traceable certificate and data sheet)
Resistance accuracy	1year; 0.25 ppm to 5 ppm

Absolute accuracy	One year; 4 ppm to 80ppm
PRT conversion types	ITS-90, PT-100
Display units ratio	(RX/RS), K, °C, °F, Ω
Display resolution	0.1 to 0.000001
Front panel channels	Four PRT inputs
Statistics	Average, Std Dev, SE of Mean, Max, Min, Difference, Peak-Peak, Delta or more
Data logging to internal memory	At least 50,000 individual time and date stamped readings
Internal real-time clock	Yes
Computer communications	RS-232, USB, IEEE-488, Ethernet
Display type	Full VGA and LCD

**6. Multiplexer (One Number) to be attached with Temperature reading device/Bridge**

Channels	10 channel
Connector	4-wire plug, floating guard
Terminals	Gold-plated Connectors
Contact Resistance	Maximum 0.1Ω
Channel Selection	Manual or auto both
Channel Capability	At least 20 mA
Power	Compatible to main Temperature reading device

**7. High Precision digital multimeter (One Number)**

DC Voltage	Range: 100 mV to 300 V or better Accuracy: 2.7 μV/V (95 %) 3.5 μV/V (99 %)1 year Resolution: 8.5 Digit
Resistance	Range: 1Ω to 10 GΩ or better
Capacitance	Range: 1 nF to 100mF or better

Frequency	Voltage, up to 10 MHz Current, up to 100 kHz Accuracy: 0.5 $\mu$ Hz/Hz, 1 year
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### 8. High Precision Barometer (One Number)

Power	85 to 264 VAC, 50/60 Hz, 25 VA max and 12 VDC @ 9 Ahr
Battery/Charger	100 to 240 VAC, 50/60 Hz
Normal Operating Temperature Range	15 to 35 °C
Communications Ports	1/8 inch BSP, IEEE-488.2
Operating Modes	Absolute, gauge, compound gauge, differential
Pressure Reading	0.15 - 15,000 psi or better
Warm Up Time	30 minute
Resolution	To 1ppm
Stability	$\pm$ 0.01 % or better

### 9. Data acquisition storage and analysis system

Data acquisition, storage and analyzer system with printer and 5 KVA with 1 hour back up UPS, with latest OS, MS Office and measurement analysis software with perpetual license and backup for all soft wares. 16GB RAM, SSD 500GB, original MS WIN 10 PROF, graphic card, minimum 27" inch or more display	01
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### 10. Automation software for controlling the system

Data acquisition Software, single-user perpetual license; this will turn the thermometer into a real-time data logging system. it should calculate statistics and display customized graphs. Selectable alarm, display start time, and sample interval. It should measure barometric pressure, temperature, relative humidity and air density. Relative humidity is 5 % to 95%, pressure is a minimum of 700 mbar to 1000 mbar or better. Precision temp $\pm$ 0. 1deg.C, pressure $\pm$ 15 mbar, humidity $\pm$ 15mbar, interface with RS232and IEEE and data transferring software for all parameters to PCs.	01
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### 11. Specification for Harned cell system

Harned pH cell	Quartz glass, 8-14 Nos.
Cell Holding to fix pH cell	14 Nos.
Pt Counter electrode	14 Nos.
Silver/ Silver Chloride reference electrode	14 Nos.
Coaxial connector	25 Nos.
Electrode Cable	1 No.

### 12. Buffer Standard Requirements:(calibration certificate with temperature dependency, measurement uncertainty, traceability)

Potassium Hydrogen oxalate Dihydrate	pH 1.680 (25°C), U(k=2) = 0.003	250 g
Potassium Hydrogen Phthalate	pH 4.008 (25°C), U(k=2) = 0.003	250 g
Potassium dihydrogen Phosphate	pH 6.865 (25°C), U(k=2) = 0.003	250 g
Disodium hydrogen Phosphate	pH 6.865 (25°C), U(k=2) = 0.003	250 g
Sodium Tetra Borate decahydrate	pH 9.184 (25°C), U(k=2) = 0.003	250 g
Sodium Carbonate	pH 10.014 (25°C), U(k=2) = 0.003	250 g
Sodium Bicarbonate	pH 10.014 (25°C), U(k=2) = 0.003	250

13. All the equipment should be fitted in racks (2 numbers): (1). Electrical and Pressure items  
(2) Temperature and Bridge
14. Warranty: 2 years warranty after successful installation
15. Any additional accessories required for a complete installation should be provided in the supplier scope.
16. Installation and commissioning should be provided by the supplier.
17. Training should be arranged by the supplier for the operation of instruments, preparation and validation of pH CRM in NPL, India or in any other suitable place.

Therefore, following extension in due date of submission & date of opening of the said tender may be read exactly as follows:

**Due date & time of tender submission**

For : 29.08.2023 up to 3:00 PM (IST)  
**Read as: 14.09.2023 up to 3:00 PM (IST)**

**Date & Time of Tender Opening**

For : 30.08.2023 at 3:00 PM (IST)  
**Read as: 15.09.2023 at 3:00 PM (IST)**

All other terms & conditions of said tender will remain the same.



Sr. Controller of Stores & Purchase

**Minutes of the Meeting (MOM) of the Pre-Bid Conference (PBC) held on 01/08/2023 (Tuesday) at 3.00 PM in the Second Floor Conference Room, Main Building for the procurement of System of Primary pH Measurement**

Ref: (i) CSIR-NPL Tender No. # 14-VI/VE (1113)22PB/T-53 (CPP Portal Tender ID No. 2023\_CSIR\_719497\_1).  
(ii) CSIR-NPL Indent No. PR5021062022 dated. 22/02/2023

The Pre-Bid Conference for the procurement of 'System of Primary pH Measurement' was held on 01/08/2023 (Tuesday) at 3.00 PM in Second Floor, Conference Hall, Main Building CSIR-NPL. Following vendors & their representatives participated in Pre-Bid Conference.

1. Mr. Amiya Biswal, **FLUKE TECHNOLOGIES PVT. LTD.**, Brigade Opus 4<sup>th</sup> Floor, Office 'B' Sy. No. 44/1, 44/4, Kodigehalli Main Road, Sanjeevini Nagar, Bangalore - 560092, India
2. Mr. Deepak Kumar, **TOTAL SOLUTIONS**, C-923, 1<sup>st</sup> Floor, Palam Extension, New Ramphal Chowk, Sector-7, Dwaraka, New Delhi-110075
3. Mr. Gaurav Jain, **YANTRIKA INSTRUMENTS PVT. LTD.**, Plot No. 76, Udyog Vihar, Phase -6, Sec-37, Gurgaon-122004 (Haryana)

The following committee members were present:

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|---|-----------------|
| 1) Dr. H. K. Singh (CSIR-NPL)   | Chairman        |
| 2) Dr. Anjana Dogra (CSIR-NPL)  | Member          |
| 3) Dr. Sachchidananda Singh (CSIR-NPL)  | Member          |
| 4) Dr. D. Shivagan (CSIR-NPL)   | Internal Expert |
| 5) Dr. Safir Ahamad Hashmi<br>(Professor, Dept of Physics, University of Delhi) | External Expert |
| 6) Dr. V. Ezhilselvi  | Indenter        |

The IO presented the tendered specification to the pre-bid participants. Each point was discussed in detail by the committee members. The queries received from the vendor during the pre-bid meeting were discussed and clarified. The queries raised by the vendor and the response are given below:

Vendor's Name	Details given in the tendered Specifications	Content Requiring Clarification	Queries/Suggestions by vendor	Acceptance /Non Acceptance	Response
Fluke Technologies Pvt. Ltd.	S. No. 2 High Stability bath with a large access opening.	Volume of bath	1) Minimum of 40 liters is very low capacity for large volume bath	Accepted	Volume increased to a minimum of 100 litre
	S. No. 5. Temperature reading device/Bridge	Internal reference resistors	2) NMI traceable certificate and datasheet required to be included in the tendered specification	Accepted	NMI traceable certificate and data sheet should be provided by the vendor
	S. No. 6. High Precision	DC Voltage	3) Vendor suggested	Accepted	Resolution modified to

	digital multimeter		Resolution: 0.01 $\mu$ V is very low		8.5 Digit
Total Solutions	S. No. 7. High Precision Barometer	Pressure Ranges	1) Vendor asked for clarification on the pressure range: Vacuum to 280 MPa (40,000 psi) and suggested as a high range which may not be needed	Accepted	Modified to 0.15 - 15,000 psi or better
	S. No. 9. Automation software for controlling the system	Multi-user licensed	2. Vendor asked for clarification on the requirement of multi-user licensed software for the system	Accepted	Modified for a single-user perpetual license
	S. No 10. Gas Manifold system		3) Vendor requested detailed specifications and a drawing layout of the gas manifold system	Not Accepted	Suggested removing the Gas Manifold from the specification
Yantrika Instrument Pvt. Ltd.	S. No. 1: High Stability Cold Bath	Mineral Oil	1) Vendor requested to clarify the specification of mineral oil	Not Accepted	No requirement for mineral oil. In the given temperature range DI water can be used.

The TSC looked into those issues and agreed to modify the specifications without changing the required level of measurements etc. The committee suggested raising the separate indent for the items (1) Gas Manifold, (2) Refrigerator, (3) Steel Almirah, (4) Fume Hood and (5) Conductivity meter, etc. Accordingly, the specifications were modified by incorporating the suggestions given by the T&PC/TSC members. The approved technical specification is attached herewith as Annexure-1. The comparative statement of tendered and modified specifications is enclosed.

## Comparative Chart of Tendered and Modified Technical Specifications of System for Primary pH Measurement

### 1: High Stability Cold Bath (One Number)

Parameters	Tendered Specification	Modified Specification
Range	-5 °C to 110 °C or better	-
Stability at 25 °C	±0.005 °C (water) ; ±0.001 °C (mineral oil) or better	-
Uniformity	±0.003 °C (water) ; ±0.004 °C °C (mineral oil) or better	-
Temperature Setting	Computer-controlled or front panel entry and Digital display	-
Set-Point Resolution	0.002 °C; high-resolution mode, 0.00003 °C	-
Display Resolution	0.01 °C or better	-
Digital Setting Repeatability	± 0.01 °C	-
Access Opening	320 x 180 mm or better	-
Depth	330 mm or better	-
Wetted Parts	304 stainless steel	-
Power	230 VAC, 50 Hz (±10 %),	-
Volume	Minimum 40 liters	-
Automation Package	Using compatible software, the water bath should be controlled through an external PC and Interface.	-

### 2. High Stability bath with a large access opening (One Number)

Parameters	Tendered Specification	Modified Specification
Range	0 °C to 50 °C or better	-
Stability at 25 °C	±0.005 °C (water) ; ±0.001 °C (mineral oil) or better	-
Uniformity	±0.003 °C (water) ; ±0.005 °C °C (mineral oil) or better	-
Temperature Setting	Computer-controlled or front panel entry and Digital display	-
Set-Point Resolution	0.001 °C; high-resolution mode, 0.00003 °C	-
Display Resolution	0.01 °C or better	-
Digital Setting Repeatability	± 0.01 °C	-
Access Opening	Min. 600 x 550 mm or better	-
Depth	330 mm or better	-
Wetted Parts	304 stainless steel	-
Power	230 VAC, 50 Hz (±10 %),	-
Volume	Minimum 40 liters	Minimum 100 liters
Automation Package	Using compatible software, the water bath should be controlled through an external PC and Interface.	-

### 3. Primary standard platinum resistance thermometer (Two Numbers)

Parameters	Tendered Specification	Modified Specification
Temperature Range	-200 deg. C to 660 deg. C or better	-
Nominal Resistance @ (TPW)	25.5 Ohms (+/- 0.5 ohms) or better	-
Excitation current (Max)	1.0 mA	-
Resistance Ratio	$W(234.315 \text{ K}) \leq 0.844235$ ; $W(302.9146 \text{ K}) \geq 1.11807$	-
Sensitivity	0.1 ohm/deg. C or better	-
Self heating @ TPW	< 0.002 °C under 1 mA current or lower	-
Drift Rate	< 0.006 °C/100 hours at max temperature or lower	-
Reproducibility	+/- 0.0015 deg. C or better	-
Protective sheath	Quartz Glass; Diameter: 7 mm (0.28 in); Length: 485 mm (19.1 in)	-
Lead wires	4 wires	-

### 4. Specifications of Secondary PRT with Calibration Options (Four Numbers)

Parameters	Tendered Specification	Modified Specification
Temperature Range	-200 °C to 670 °C	-200 °C to 660 °C
Nominal $R_{TPW}$	100 $\Omega \pm 0.5 \Omega$	-
Temperature Coefficient	0.003925 W/W/°C	-
Accuracy	$\pm 0.025 \text{ °C}$ to $\pm 0.03 \text{ °C}$ at max temp	-
Drift	$\pm 0.01 \text{ °C}$ to $\pm 0.02 \text{ °C}$ max	-
Hysteresis	$\pm 0.01 \text{ °C}$	-
Sensor Length	30 mm $\pm$ 5mm	-
Sheath Material	Inconel™ 600	-
Transition junction dimensions	71 mm x 12.5 mm (2.8 in x 0.49 in)	-
Minimum immersion length	100 mm	-
Maximum immersion length	300 mm	-
Self-heating (in 0 °C bath)	Not more than 50 mW/°C	-
Lead-wire cable type	Teflon,™ 24 AWG	-
Lead-wire length	At least 1.5 m	-

### 5. Temperature reading device/Bridge (One Number)

Parameters	Tendered Specification	Modified Specification
Measurement capability	4-wire PRT, resistance, the resistance	-

	ratio	
Input resistance range	0 to 500 k $\Omega$ or better	-
Ratio range	0 to 10	-
Internal reference resistors	1 $\Omega$ , 10 $\Omega$ , 25 $\Omega$ , 100 $\Omega$ , and 10 k $\Omega$	1 $\Omega$ , 10 $\Omega$ , 25 $\Omega$ , 100 $\Omega$ , and 10 k $\Omega$ (NMI traceable certificate and data sheet)
Resistance accuracy	1 year; 0.25 ppm to 5 ppm	-
Absolute accuracy	One year; 4 ppm to 80ppm	-
PRT conversion types	ITS-90, PT-100	-
Display units ratio	(RX/RS), K, $^{\circ}$ C, $^{\circ}$ F, $\Omega$	-
Display resolution	0.1 to 0.000001	-
Front panel channels	Four PRT inputs	-
Statistics	Average, Std Dev, SE of Mean, Max, Min, Difference, Peak-Peak, Delta or more	-
Data logging to internal memory	At least 50,000 individual time and date-stamped readings	-
Internal real-time clock	Yes	-
Computer communications	RS-232, USB, IEEE-488, Ethernet	-
Display type	Full VGA and LCD	-

#### 6. Multiplexer (One Number) to be attached with Temperature reading device/Bridge

Parameters	Tendered Specification	Modified Specification
Channels	10 channel	-
Connector	4-wire plug, floating guard	-
Terminals	Gold-plated Connectors	-
Contact Resistance	Minimum 0.1 $\Omega$	Maximum 0.1 $\Omega$
Channel Selection	Manual or auto both	-
Channel Capability	At least 20 mA	-
Power	Compatible to the main Temperature reading device	-

#### 7. High Precision digital multimeter (One Number)

Parameters	Tendered Specification	Modified Specification
DC Voltage	Range: 100 mV to 300 V or better Accuracy: 2.7 $\mu$ V/V (95 %) 3.5 $\mu$ V/V (99 %)1 year Resolution: 0.01 $\mu$ V	Resolution: 8.5 Digit
Resistance	Range: 1 $\Omega$ to 10 G $\Omega$ or better	-
Capacitance	Range: 1 nF to 100mF or better	-
Frequency	Voltage, up to 10 MHz Current, up to 100 kHz Accuracy: 0.5 $\mu$ Hz/Hz, 1 year	-

#### 7. High Precision Barometer (One Number)

Parameters	Tendered Specification	Modified Specification
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Power	85 to 264 VAC, 50/60 Hz, 25 VA max and 12 VDC @ 9 Ahr	-
Battery/Charger	100 to 240 VAC, 50/60 Hz	-
Normal Operating Temperature Range	15 to 35 °C	-
Communications Ports	RS232 (COM1, COM2), IEEE-488.2	-
Operating Modes	Absolute, gauge, compound gauge, differential	-
Pressure Ranges	Vacuum to 280 MPa (40,000 psi)	0.15 - 15,000 psi or better
Warm Up Time	30 minute	-
Resolution	To 1ppm	-
Stability	± 0.01 %	-

### 8. Data acquisition storage and analysis system

<b>Tendered Specification</b>	<b>Modified Specification</b>	
Data acquisition, storage and analyzer system with printer and 5 KVA with 1 hour back up UPS, with latest OS, MS office and measurement analysis software with perpetual license and backup for all soft wares. 16GB RAM, SSD 500GB, original MS WIN 10 PROF, graphic card, minimum 21-28 inch or more display	27 inch or more display	01

### 9. Automation software for controlling the system

<b>Tendered Specification</b>	<b>Modified Specification</b>	
Data acquisition Software, Multi-user licensed this will turn the thermometer in to a real-time data logging system. it should calculate statistics and display customized graphs. Selectable alarm, display start time, and sample interval. It should measure barometric pressure, temperature, relative humidity and air density. Relative humidity is 5 % to 95%, pressure is a minimum of 700 mbar to 1000 mbar or better. Precision temp ± 0. 1deg.C, pressure ± 15 mbar, humidity ± 15mbar, interface with RS232and IEEE and data transferring software for all parameters to PCs.	single-user perpetual license	01

### 10. Gas Manifold system

1.	Tendered Specification		Modified Specification
	Gas Manifold system (2+2) cylinder for High pressure N <sub>2</sub> , H <sub>2</sub> , Air & Helium, Argon, Includes;	4 nos	Deleted due to different mode of purchase
	SS Header	1no	-
	Cylinder Valve	2nos	
	Tail Pipe	2nos	
	Thickness 2 mm mounted on MS channel; MOC: SS316	2nos	
2.	Gas control Out let Point Includes	4 nos	
	Pre-seated Regulator, SS Body, SS diaphragm	1no	
	Pressure guage, SS, 2" dia	1no	
	Tail Pipe	1no	
	MOC : SS 316 L, All mounted on SS panel		
3.	Gas Purification & Control Panel Includes :	1no	
	For : Nitrogen		
	Moisture trap	1no	
	Oxy Trap	1no	
	Mini Regulator	1no	
	Pressure Guage	2nos	
	On/Off Valve (all mounted on SS panel)	01no	
4.	For, Hydrogen, Zero air and Argon	3 nos	
	Moisture trap	01no	
	Oxy Trap	01no	
	Mini Regulator	01no	
	Pressure Guage	02no	
	On/Off Valve (all mounted on SS panel)	01no	
5.	SS Pipe, High pressure, seamless (/length form) Make : SS : 316, OD : 6 MM, ID : 4 MM, Indian Make		Approx 200mtr
6.	Wall mounted clamp with rail nut		200 nos
7	Fume Hood Requirement 4×6 Feet	01 no.	
8.	Hydrogen cabinet along with hydrogen sensor		Double cylinder

### 11. Specification for Harned cell system

Items	Tendered Specification	Modified Specification
Harned pH cell	Quartz glass, 8-14 Nos.	-
Cell Holding to fix pH cell	14 Nos.	-
Pt Counter electrode	14 Nos.	-
Silver/ Silver Chloride reference electrode	14 Nos.	-
Coaxial connector	25 Nos.	-
Electrode Cable	1 No.	-

**12. Buffer Standard Requirements:**(calibration certificate with temperature dependency, measurement uncertainty, traceability)

Chemicals	Tendered Specification		Modified Specification
Potassium Hydrogen oxalate Dihydrate	pH 1.680 (25°C), U(k=2) = 0.003	250 g	-
Potassium Hydrogen Phthalate	pH 4.008 (25°C), U(k=2) = 0.003	250 g	-
Potassium dihydrogen Phosphate	pH 6.865 (25°C), U(k=2) = 0.003	250 g	-
Disodium hydrogen Phosphate	pH 6.865 (25°C), U(k=2) = 0.003	250 g	-
Sodium Tetra Borate decahydrate	pH 9.184 (25°C), U(k=2) = 0.003	250 g	-
Sodium Carbonate	pH 10.014 (25°C), U(k=2) = 0.003	250 g	-
Sodium Bicarbonate	pH 10.014 (25°C), U(k=2) = 0.003	250 g	-

	Tendered Specification	Modified Specification
13	<b>Refrigerator (One Number):</b> Min. 560 L capacity	<b>Deleted due to different mode of purchase</b>
14	<b>Steel Almirah (Two Numbers):</b> 6 Feet ×2 feet, 2 doors with Locker	<b>Deleted due to different mode of purchase</b>
15	<b>Warranty:</b> 2 Years Warranty	<b>2 years warranty after successful installation</b>
16.	Any additional accessories required for a complete installation should be provided in the supplier scope.	-
17	Installation and commissioning should be provided by the supplier	-
18	Training should be arranged by the supplier for the operation of instruments, preparation and validation of pH CRM in NPL, India or in any other suitable place.	-

All the equipment should be fitted in power-coated steel racks (2 numbers): (1). Electrical and Pressure items, and (2) Temperature and Bridge