



SOUTHWEST RESEARCH INSTITUTE®

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Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-4834



Calibration Laboratory
Certificate #0972-01

Certificate of Calibration

Cost Center: DIV20

Mail Stop: B51

Customer: DON BANNON

Manufacturer/Model: ORION / 720A

Description: PH/ION METER

Serial Number: 003368

Asset Number: 001441

Procedure: PH METERS MV ONLY - 11 SEP 07

Work Order: 303085949

Date Issued: 10-Feb-2009

Date Calibrated: 10-Feb-2009

***Date Due :** 10-Feb-2010

****Results:** FOUND-LEFT

Temperature: 71°F

Humidity: 37 %

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 2005, ANSI/NCSL Z540-1-1994 and relevant requirements of the ISO 9000-2000 standard. This certificate shall not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. This certificate shall not be used to claim product endorsement by Southwest Research Institute, American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government. Results of this calibration relate only to the instrument described above at the time of calibration and does not imply any long term stability of the instrument.

*Determined by the customer, does not imply the instrument will remain within tolerance as any number of factors may cause an out-of-tolerance condition before this date. **Found/Left = adjustment and/or repair was not required, As Left = adjusted and/or repaired was required. The customer has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance. See Remarks or attached Measurement Report with the same Work Order number for data.

Reported uncertainty calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM) and represents an expanded uncertainty with a coverage factor of k=2 to approximate a 95% confidence level.

Remarks: Millivolts calibrated only.

Standards Used

<u>Asset #</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Description</u>	<u>Cal Date</u>	<u>Due Date</u>
000182	FLUKE	5700A/EP	CALIBRATOR	3-Feb-2009	3-May-2009

Reviewed By: () srk () mar () wgh

Laboratory Quality Manager

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Calibrated By: Carlos Mendoza

Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303085949	Mfr.	Orion	Technician	COM
Asset No.	001441	Model	720A	Cal Date.	10-Feb-09
Serial No.	003368	Type.	pH Meter		
Remarks:					
LIMITED CAL: Millivolts Only					

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left
Relative	m Volts	m Volts	m Volts	m Volts	m Volts	Result
Input 1	0.0	0.1	0.1	0.2	0.13	Pass
	1000.0	1000.1	0.1	0.5	0.13	Pass
	-1000.0	-999.9	0.1	0.5	0.13	Pass
m Volts	m Volts	m Volts	m Volts	m Volts	m Volts	
Input 2	0.0	0.0	0.0	0.2	0.13	Pass
	1000.0	999.9	-0.1	0.5	0.13	Pass
	-1000.0	-1000.1	-0.1	0.5	0.13	Pass
Absolute	m Volts	m Volts	m Volts	m Volts	m Volts	
Input 1	0.0	0.1	0.1	0.2	0.13	Pass
	1000.0	1000.0	0.0	0.5	0.13	Pass
	-1000.0	-1000.0	0.0	0.5	0.13	Pass
m Volts	m Volts	m Volts	m Volts	m Volts	m Volts	
Input 2	0.0	-0.1	-0.1	0.2	0.13	Pass
	1000.0	999.9	-0.1	0.5	0.13	Pass
	-1000.0	-1000.1	-0.1	0.5	0.13	Pass

END OF REPORT