At the 99% confidence level:
F_{crit} = 6.52 F_{calc} = 11.88 (2, 14 degrees of freedom)
$F_{crit} < F_{calc}$; therefore, a significant difference in results was noted across the humidity levels tested.

Table 8
Qualitative and Quantitative Detection Limit (IUPAC Method)

Sample No.	Rbl	0.05 µg/mL	0.10 µg/mL
	PA	PA	PA
1	1.07	6.32	13.66
2	1.14	5.91	13.04
3	0.87	6.39	13.79
4	1.24	5.98	13.1
5	1.25	5.81	13.3
6	1.21	6.38	13.96
N	6	6	6
Mean	1.13	6.13	13.42
Std Dev	0.14	0.26	0.34
CV	0.128	0.04	0.025

PA = Integrated Peak Area (SO_4^{2-})/1,000,000
Rbl = Reagent Blank

Using the equation: $C_{ld} = k(sd)/m$

Where:
C_{ld} = the smallest reliable detectable concentration an analytical instrument can determine at a given confidence level.
k = 3 (Qualitative Detection Limit, 99.86% Confidence)
= 10 (Quantitative Detection Limit, 99.99% Confidence)
sd = standard deviation of the reagent blank (Rbl) readings.
m = analytical sensitivity or slope as calculated by linear regression.
C_{ld} = 3(0.14)/22.45 = 0.0187 µg/mL as SO_4^{2-} for the qualitative limit.
C_{ld} = 10(0.14)/22.45 = 0.0624 µg/mL as SO_4^{2-} for the quantitative limit.

Qualitative detection limit = 0.187 µg SO_4^{2-} (10-mL sample volume) or
0.005 ppm SO_2 (12-L air volume).

Quantitative detection limit = 0.624 µg SO_4^{2-} (10-mL sample volume) or
0.016 ppm SO_2 (12-L air volume).

Table 9
Summary - Comparison of Methods for SO_2

Set #	Method	SO2 Concn (ppm)	N	Std Dev
1	THE	1.36		
	104M	1.36	6	0.156
	IABC	1.35	4	0.057
2	THE	2.40		
	104M	2.31	6	0.058
	IABC	2.34	6	0.088
3	THE	4.40		
	104M	4.16	5	0.358
	IABC	3.93	6	0.214
4	THE	5.32		
	104M	5.79	6	0.497
	IABC	5.35	4	0.152

Notes: (a) THE = Theoretical (Taken) value, calculated from certified SO_2 cylinder and gas generation system flows.
(b) 104M = Impinger samples taken using OSHA Method No. ID-10 (modified).
(c) IABC = Impregnated activated beaded carbon