

METHOD VALIDATION DATA SHEET

Analyte: As - Mass 75

Matrix: 0.5% Nitric Acid

Method Reference APHA 3125B

Study	IDL	MDL	Precision 1	Precision 2	Recovery		
Actual/Spike Conc.	-	0.05	2.0000	5.0000	-	1.000	
Unit	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	
n	Result	Result	Result	Result	Result	Result	Result
1	-0.0056	0.0440	2.150	4.900	-0.017	0.971	98.8
2	-0.0031	0.0390	2.182	4.703	-0.017	1.003	102.0
3	-0.0045	0.0482	2.163	4.903	-0.006	0.922	92.8
4	0.0001	0.0333	2.139	4.880	-0.015	0.949	96.3
5	-0.0056	0.0462	2.173	5.074	-0.025	0.998	102.4
6	-0.0073	0.0373	2.164	4.813	-0.015	0.980	99.5
7	-0.0049	0.0432	2.171	4.895	-0.014	0.977	99.1
8	-0.0034	0.0462	2.064	4.971	-0.004	1.032	103.6
9	-0.0036	0.0560	2.106	4.993	-0.014	0.995	100.9
10	-0.0060	0.0501	2.215	4.910	-0.013	0.994	103.0
Mean	-0.0044	0.0444	2.153	4.904	-0.014	0.982	99.5
Sn-1	0.0020	0.0066	0.0421	0.1004	0.0058	0.0305	3.3351
IDL or MDL	0.0058	0.0186					
% RSD		14.8870	1.9564	2.0470		3.1037	3.3521
% Recovery							99.5
% Bias							-0.5

IDL = t X S where S is the SD of replicate measurements of reagent water

MDL= t X S where S is the SD of replicate measurements of low level matrices or reagents balnks spiked with analyte at a level 3-5 times IDL

Student (t)	n	7	8	9	10
Values	t(99.0%)	3.143	2.998	2.896	2.821

METHOD VALIDATION DATA SHEET

Analyte: Cd - Mass 111

Matrix: 0.5% Nitric Acid

Method References APHA 3125B

Study	IDL	MDL	Precision 1	Precision 2	Recovery		
Actual/Spike Conc.	-	0.10	2.0000	5.0000	-	1.000	
Unit	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	
n	Result	Result	Result	Result	Result	Result	Result
1	-0.0126	0.0994	2.074	4.895	-0.003	1.002	100.5
2	-0.0162	0.0961	2.050	5.155	-0.005	0.962	96.7
3	-0.0150	0.1035	2.067	4.906	-0.007	0.997	100.4
4	-0.0170	0.0961	1.991	4.720	-0.003	0.999	100.2
5	-0.0105	0.0953	2.050	4.992	-0.003	0.974	97.6
6	-0.0155	0.1053	2.029	4.909	-0.003	0.984	98.7
7	-0.0113	0.1006	1.954	4.974	-0.003	0.952	95.5
8	-0.0156	0.1002	2.008	4.982	-0.005	1.008	101.3
9	-0.0143	0.0982	2.022	5.087	-0.003	1.027	103.0
10	-0.0150	0.1057	2.037	4.986	-0.003	0.980	98.3
Mean	-0.0143	0.1000	2.028	4.961	-0.004	0.988	99.3
Sn-1	0.0021	0.0038	0.0365	0.1173	0.0015	0.0225	2.2661
IDL or MDL	0.0060	0.0114					
% RSD		3.7892	1.7979	2.3650		2.2757	2.2817
% Recovery							99.3
% Bias							-0.7

IDL = t X S where S is the SD of replicate measurements of reagent water

MDL= t X S where S is the SD of replicate measuments of low level matrices or reagents balnks spiked with analyte at a level 3-5 times IDL

Student (t)	n	7	8	9	10
Values	t(99.0%)	3.143	2.998	2.896	2.821

METHOD VALIDATION DATA SHEET

Analyte: Cr- Mass 52

Matrix: 0.5% Nitric Acid

Test Code: APHA 3125B

Study	IDL	MDL	Precision 1	Precision 2	Recovery		
Actual/Spike Conc.	-	0.05	2.0000	5.0000	-	1.000	
Unit	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	
n	Result	Result	Result	Result	Result	Result	Result
1	-0.0069	0.0444	2.054	4.990	0.003	0.967	96.5
2	-0.0102	0.0489	2.013	4.998	0.002	0.984	98.2
3	-0.0063	0.0488	2.021	5.038	0.000	1.008	100.8
4	-0.0078	0.0421	2.034	4.853	0.004	0.949	94.5
5	-0.0054	0.0501	2.045	4.976	-0.001	0.952	95.3
6	-0.0061	0.0456	1.981	4.815	0.004	0.965	96.1
7	-0.0085	0.0416	2.032	4.992	0.004	0.953	94.9
8	-0.0083	0.0407	1.986	4.782	0.005	0.953	94.8
9	-0.0084	0.0446	1.976	5.032	0.000	0.943	94.3
10	-0.0092	0.0447	2.039	4.984	0.005	0.970	96.5
Mean	-0.0077	0.0452	2.018	4.946	0.003	0.964	96.2
Sn-1	0.0015	0.0032	0.0281	0.0929	0.0021	0.0196	2.0000
IDL or MDL	0.0043	0.0094					
% RSD		7.1907	1.3926	1.8782		2.0293	2.0800
% Recovery							96.2
% Bias							-3.8

IDL = t X S where S is the SD of replicate measurements of reagent water

MDL= t X S where S is the SD of replicate measurements of low level matrices or reagents balnks spiked with analyte at a level 3-5 times IDL

Student (t)	n	7	8	9	10
Values	t(99.0%)	3.143	2.998	2.896	2.821

METHOD VALIDATION DATA SHEET

Analyte: Pb - Mass 208

Matrix: 0.5% Nitric Acid

Method Reference APHA 3125B

Study	IDL	MDL	Precision 1	Precision 2	Recovery		
Actual/Spike Conc.	-	0.05	2.0000	5.0000	-	1.000	
Unit	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	
n	Result	Result	Result	Result	Result	Result	Result
1	-0.0041	0.0498	2.044	4.989	0.033	1.020	98.7
2	-0.0040	0.0468	2.009	5.074	0.034	1.020	98.7
3	-0.0041	0.0509	2.030	5.087	0.033	1.028	99.6
4	-0.0046	0.0478	2.013	4.990	0.039	1.023	98.4
5	-0.0049	0.0484	2.019	5.049	0.037	1.019	98.2
6	-0.0058	0.0501	2.006	5.039	0.037	1.010	97.4
7	-0.0034	0.0484	1.990	4.991	0.035	1.033	99.8
8	-0.0036	0.0472	1.968	5.021	0.037	1.027	99.0
9	-0.0038	0.0484	1.996	5.156	0.033	1.020	98.7
10	-0.0050	0.0493	2.008	5.051	0.042	1.004	96.2
Mean	-0.0043	0.0486	2.008	5.045	0.036	1.020	98.7
Sn-1	0.0007	0.0013	0.0211	0.0524	0.0029	0.0085	1.0347
IDL or MDL	0.0021	0.0038					
% RSD		2.6842	1.0495	1.0378		0.8305	1.0482
% Recovery							98.7
% Bias							-1.3

IDL = t X S where S is the SD of replicate measurements of reagent water

MDL= t X S where S is the SD of replicate measurements of low level matrices or reagents balnks spiked with analyte at a level 3-5 times IDL

Student (t)	n	7	8	9	10
Values	t(99.0%)	3.143	2.998	2.896	2.821

METHOD VALIDATION DATA SHEET

Analyte: Hg

Matrix: 2% Nitric Acid

Test Code: APHA 3112

Study	IDL	MDL	Precision 1	Precision 2	Recovery		
Actual/Spike Conc.	-	0.50	2.0000	5.0000	-	10.000	
Unit	ppb	ppb	ppb	ppb	mg/L	mg/L	
n	Result	Result	Result	Result	Result	Result	Result
1	-0.008	0.519	2.1200	5.0760	0.0000	9.800	98.0
2	-0.008	0.520	2.1370	5.1290	0.0000	10.100	101.0
3	-0.008	0.523	2.1250	5.0810	0.0000	9.950	99.5
4	-0.009	0.522	2.1480	5.1300	0.0000	9.324	93.2
5	-0.009	0.521	2.1270	5.1100	0.0000	9.725	97.3
6	-0.009	0.517	2.1380	5.0740	0.0000	9.125	91.3
7	-0.010	0.526	2.1250	5.0710	0.0000	10.100	101.0
8	-0.010	0.529	2.1210	5.1140	0.0000	9.840	98.4
9	-0.009	0.527	2.1130	5.1180	0.0000	9.645	96.5
10	-0.009	0.524	2.1120	5.0770			
Mean	-0.0089	0.5228	2.1266	5.0980	0.0000	9.7343	97.3
Sn-1	0.0007	0.0038	0.0114	0.0243	0.0000	0.3311	3.3112
IDL or MDL	0.0021	0.0113					
% RSD		0.7202	0.5372			3.4016	3.4016
% Recovery							97.3
% Bias							-2.7

$IDL = t X S$ where S is the SD of replicate measurements of reagent water

$MDL = t X S$ where S is the SD of replicate measurements of low level matrices or reagents blanks spiked with analyte at a level 3-5 times IDL

Student (t)	n	7	8	9	10
Values	t(99.0%)	3.143	2.998	2.896	2.821

METHOD VALIDATION DATA SHEET

Analyte: Hg - Mass 202

Matrix: 0.5% Nitric Acid

Method Reference APHA 3125B

Study	IDL	MDL	Precision 1	Precision 2	Recovery		
Actual/Spike Conc.	-	0.05	0.2000	5.0000	-	1.000	
Unit	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	
n	Result	Result	Result	Result	Result	Result	Result
1	0.0134	0.0551	0.207	4.779	0.000	0.995	99.5
2	0.0061	0.0523	0.188	4.764	-0.002	0.983	98.5
3	0.0077	0.0556	0.214	4.936	-0.006	0.986	99.2
4	0.0102	0.0488	0.205	5.018	-0.005	1.028	103.3
5	0.0074	0.0510	0.189	4.976	-0.008	1.032	104.0
6	0.0070	0.0519	0.201	4.877	-0.009	1.079	108.8
7	0.0102	0.0541	0.200	4.727	-0.007	1.079	108.6
8	0.0084	0.0537	0.207	4.963	-0.008	1.053	106.1
9	0.0080	0.0510	0.197	5.227	-0.008	1.037	104.5
10		0.0491	0.213	5.112	-0.005	1.015	102.0
Mean	0.0087	0.0528	0.202	4.938	-0.006	1.029	103.6
Sn-1	0.0022	0.0023	0.0089	0.1585	0.0029	0.0350	3.7200
IDL or MDL	0.0064	0.0068					
% RSD		4.2898	4.4223	3.2096		3.4048	3.5904
% Recovery							103.6
% Bias							3.6

IDL = t X S where S is the SD of replicate measurements of reagent water

MDL= t X S where S is the SD of replicate measuments of low level matrices or reagents balnks spiked with analyte at a level 3-5 times IDL

Student (t)	n	7	8	9	10
Values	t(99.0%)	3.143	2.998	2.896	2.821