ielab
Proficiency Testing Schemes

Atmospheric pollution – 2012

Additional information

Alicante, December 26th 2012

Dear participants,

According to the values reported for the 2012 Atmospheric pollution **ielab** Scheme, the results obtained for participant codes **0103**, **0261**, **0430**, **0601**, **4165**, **6016** and **6963** in each of the three rounds are shown as follows.

RESULTS PRESENTATION

➢ For each parameter the participants' results are shown in a table, including mean and standard deviation for each laboratory. The **consensus** value **X** with the standard deviation for proficiency assessment (SDPA σ_p) and the uncertainty are also included in this table. In order to evaluate the performance of the participants, Z-score value appears in the last column.

➢ The laboratories that have not reported results according the round instructions (less than three replicates, or non-numerical values) have not been included in the statistical treatment and appear shaded.

➢ The eliminated results after applying the statistical treatment are shown shaded. The laboratories, whose intra-laboratory deviation is higher than 0.5 times the standard deviation for proficiency assessment, appear with their deviation cell boxed.

METHODS COMPARISON TABLE

For each parameter and in addition to the general calculations, a study about interactions between methods and results has been developed. The methods comparison table is also annexed, where it is shown for each parameter:

➢ Method of reference.

➢ The number of laboratories with acceptable values that has been used that method.

➢ The robust mean and the robust standard deviation for those results.

The group of laboratories that declared the method "others methods" has not taken into consideration in this comparison table. Nor laboratories that declared methods not included for each parameter in the method sheet.

It has only been considered methods used for more than 5 laboratories.

Full information of the scheme can be found in the corresponding Round main report.

FILTERS – Round I

ARSENIC (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.18	D1	R2	12.2	11.4	11.9	11.83	0.40	11.43	12.24	0.23
0261	M32	0	D1	R1	11.28	11.18	8.9	10.45	1.35	9.11	11.80	-0.19
0430	M52	<0.25	D1	R1	9.29	9.65	10.2	9.71	0.46	9.26	10.17	-0.41
0601					13.2	13	13.1	13.10	0.10	13.00	13.20	0.61
4165												
6016												
6963	M52	0	D1	R1	9.8	10.1	10	9.97	0.15	9.81	10.12	-0.34

N	61

Consensus value	11.08	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	3.32	**M32**	5	10.45	0.95
Robust devest.	1.25	**M51**	32	11.22	1.02
Uncertainty	0.160	**M52**	23	11.00	1.37

COBALT (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.005	D1	R2	8.76	8.14	8.46	8.45	0.31	8.14	8.76	0.06
0261	M32	0	D1	R1	7.8	7.97	6	7.26	1.09	6.17	8.35	-0.42
0430	M52	0.32	D1	R1	7.46	7.7	7.97	7.71	0.26	7.45	7.97	-0.24
0601					9.4	9.2	9.3	9.30	0.10	9.20	9.40	0.40
4165	M25	0			7.5	7.9	7.5	7.63	0.23	7.40	7.86	-0.27
6016		<0.17			8.900	8.100	8.300	8.43	0.42	8.02	8.85	0.06
6963	M52	0	D1	R1	8.5	8.7	8.8	8.67	0.15	8.51	8.82	0.15

N	59

Consensus value	8.30	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	2.49	**M51**	31	8.37	0.73
Robust devest.	0.77	**M52**	24	8.22	0.68
Uncertainty	0.100				

MANGANESE (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	0.024	D1	R2	21.9	20.4	21.1	21.13	0.75	20.38	21.88	0.00
0261												
0430	M52	<0.004	D1	R1	19.9	20.6	20.97	20.49	0.54	19.95	21.03	-0.10
0601					24.2	23.3	23.9	23.80	0.46	23.34	24.26	0.42
4165	M25	0			20	20.4	20	20.13	0.23	19.90	20.36	-0.16
6016		0.143			21.929	20.464	21.036	21.14	0.74	20.40	21.88	0.00
6963	M52	0	D1	R1	21.1	21.6	21.9	21.53	0.40	21.13	21.94	0.06

N	59

Consensus value	21.13	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	6.34	**M51**	30	21.24	1.63
Robust devest.	1.26	**M52**	26	21.08	0.91
Uncertainty	0.164				

FILTERS – Round I

NICKEL (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	0.074	D1	R2	20.2	19	19.5	19.57	0.60	18.96	20.17	0.10
0261	M32	0.24	D1	R1	17.14	17.5	14.25	16.30	1.78	14.52	18.08	-0.47
0430	M52	<0.039	D1	R1	17.08	17.53	18.19	17.60	0.56	17.04	18.16	-0.24
0601					24.3	22.6	20.8	22.57	1.75	20.82	24.32	0.63
4165	M25	0			17.3	17.9	17.1	17.43	0.42	17.02	17.85	-0.27
6016		6.385			20.692	19.231	20.231	20.05	0.75	19.30	20.80	0.19
6963	M52	0	D1	R1	19.5	19.3	19.5	19.43	0.12	19.32	19.55	0.08

N	**64**

Consensus value	18.99	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	5.70	**M51**	33	19.15	1.41
Robust devest.	1.52	**M52**	25	18.86	1.29
Uncertainty	0.190				

## VANADIUM (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.018	D1	R2	9.89	9.3	9.56	9.58	0.30	9.29	9.88	0.02
0261												
0430	M52	<0.034	D1	R1	9.84	10.18	10.31	10.11	0.24	9.87	10.35	0.21
0601					8.3	7.7	8.5	8.17	0.42	7.75	8.58	-0.47
4165												
6016												
6963	M52	0	D1	R1	8.7	8.8	9.1	8.87	0.21	8.66	9.07	-0.23

N	**57**

Consensus value	9.51	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	2.85	**M51**	30	9.45	0.84
Robust devest.	0.82	**M52**	26	9.65	0.73
Uncertainty	0.109				

NOTE- In the first round, laboratory code 6016 results have not been considered in the general statistics because they were received after the results submission deadline.

Z-SCORE - FILTERS - ROUND I

Additional information
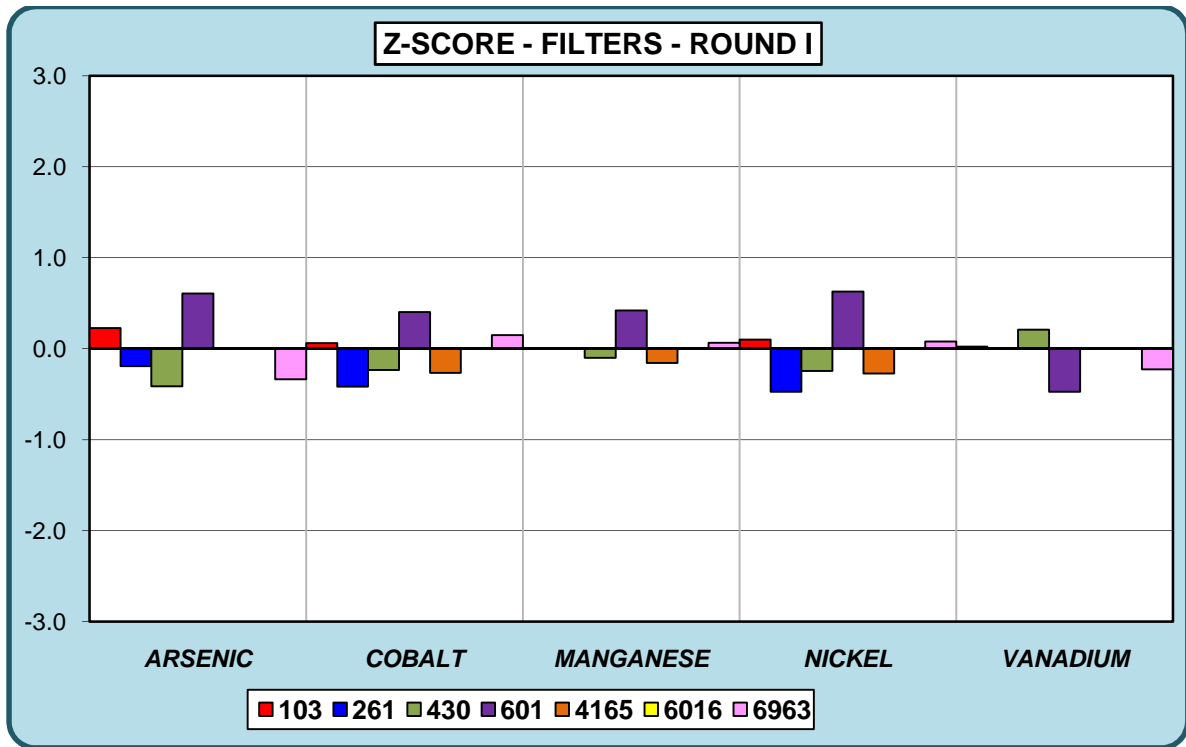
FILTERS – Round II

ANTIMONY (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	0.46	D1	R2	27.8	29.2	28.7	28.57	0.709	27.86	29.28	-0.23
0261												
0430	M52	0.38	D1	R3	20.11	19.13	19.34	19.53	0.516	19.01	20.04	-1.22
0601	M52	<1		R6	27.3	26.3	26.1	26.57	0.643	25.92	27.21	-0.45
4165												
6016												
6963	M52	0	D1	R3	23.5	25	24	24.17	0.764	23.40	24.93	-0.71

N	**56**

Consensus value	30.73	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	9.219	**M51**	27	32.40	3.386
Robust devest.	4.258	**M52**	25	29.61	3.902
Uncertainty	0.569				

CADMIUM (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.02	D1	R2	14.6	14.6	14.2	14.47	0.231	14.24	14.70	0.11
0261	M32	0.06	D1	R1	13.04	12.39	12.53	12.65	0.342	12.31	13.00	-0.32
0430	M52	<0.038	D1	R3	13.03	12.6	12.65	12.76	0.235	12.52	13.00	-0.30
0601	M52	<1		R6	12.5	12.2	12.2	12.30	0.173	12.13	12.47	-0.41
4165												
6016	M25	<0.05	D1	R1	12.78	12.97	11.55	12.43	0.771	11.66	13.20	-0.37
6963	M52	0	D1	R3	12.5	12.9	12.5	12.63	0.231	12.40	12.86	-0.33

N	**68**

Consensus value	14.00	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	4.200	**M51**	32	14.22	1.249
Robust devest.	1.301	**M52**	29	13.84	1.258
Uncertainty	0.158				

CHROMIUM (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	0.24	D1	R2	22	22	21.4	21.80	0.346	21.45	22.15	0.09
0261	M32	0.34	D1	R1	21.3	21.6	21.9	21.60	0.300	21.30	21.90	0.06
0430	M52	<0.042	D1	R3	21.65	19.68	19.92	20.42	1.075	19.34	21.49	-0.13
0601	M52	<1		R6	18.5	18.5	18.5	18.50	0.000	18.50	18.50	-0.43
4165												
6016	M25	6.36	D1	R1	19.51	20.25	19.93	19.90	0.371	19.53	20.27	-0.21
6963	M52	0	D1	R3	19.5	20.2	19.7	19.80	0.361	19.44	20.16	-0.22

N	**64**

Consensus value	21.22	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	6.366	**M51**	29	21.73	2.371
Robust devest.	1.944	**M52**	29	20.87	1.708
Uncertainty	0.243				

TIN (µg/filter)

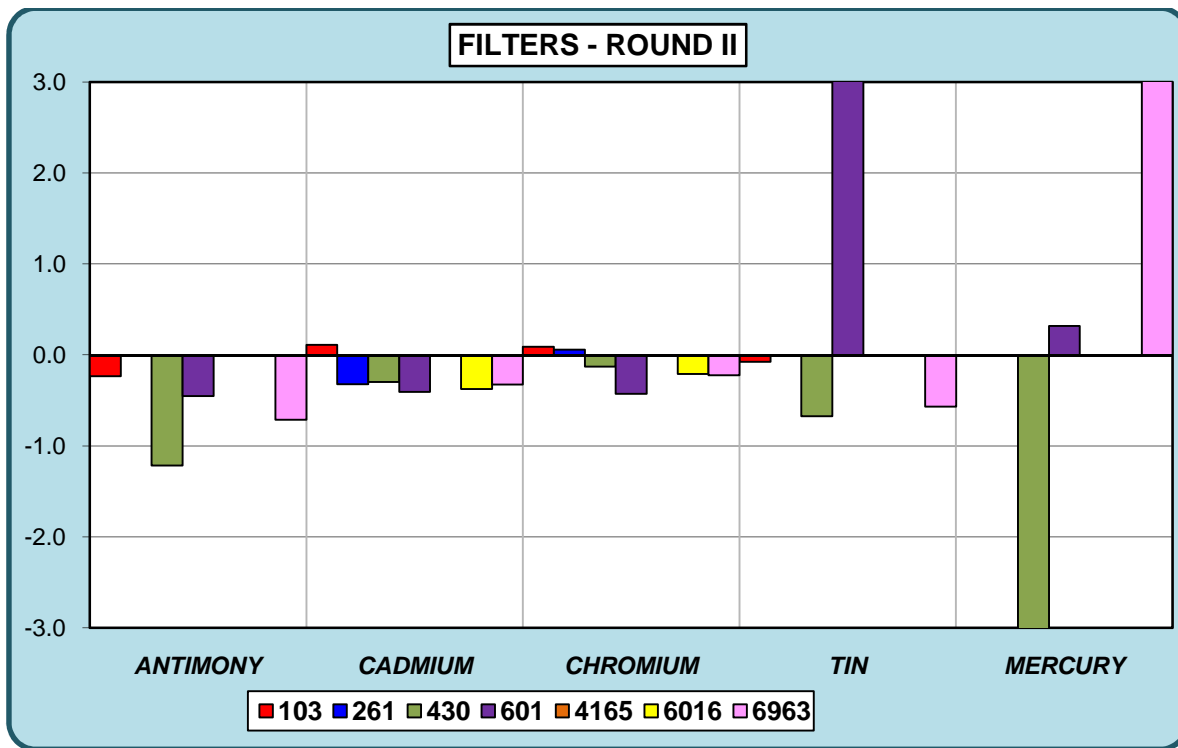| LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.02	D1	R2	17	16.7	16.3	16.67	0.351	16.32	17.02	-0.07
0261												
0430	M52	<0.028	D1	R3	14.31	13.43	13.09	13.61	0.630	12.98	14.24	-0.67
0601	M52	<1		R6	90	21.7	18.5	43.40	40.388	3.01	83.79	5.15
4165												
6016												
6963	M52	0	D1	R3	13.8	14.5	14.1	14.13	0.351	13.78	14.48	-0.57

N	49

Consensus value	17.05	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	5.115	M51	25	17.66	1.688
Robust devest.	1.935	M52	24	16.40	1.997
Uncertainty	0.276				

MERCURY (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103				R2								
0261												
0430	M52	0.03	D1	R3	0.73	0.67	0.69	0.70	0.031	0.67	0.73	-3.12
0601	M45			R2	10.4	12.9	12.4	11.90	1.323	10.58	13.22	0.32
4165												
6016												
6963	M45	no blank	D1	R1	10571	10266	10458	10431.67	154.196	10277.47	10585.86	3198.53

N	43

Consensus value	10.86	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	3.258	M45	7	11.88	2.362
Robust devest.	1.733	M48	5	11.58	1.008
Uncertainty	0.264	M51	11	10.77	1.698
		M76	12	10.32	1.453

Additional information

FILTERS – Round III

COPPER (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.03	D1	R2	27.4	28.5	29	28.30	0.819	27.48	29.12	-0.20
0261												
0430	M52	0	D1	R1	28.23	28.16	28.28	28.22	0.060	28.16	28.28	-0.21
0601	M52	<2	D1	R2	32.1	29.8	26.7	29.53	2.710	26.82	32.24	-0.07
4165												
6016	M25	<1	D1	R1	28.3	28	26.32	27.54	1.067	26.47	28.61	-0.29
6963	M52	0.1	D1	R1	24.6	26.7	23.7	25.00	1.539	23.46	26.54	-0.57

N	55

Consensus value	30.14	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	9.042	**M25**	3	29.25	1.726
Robust devest.	2.103	**M51**	26	30.20	2.357
Uncertainty	0.284	**M52**	24	30.12	1.767

LEAD (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	0.06	D1	R2	23.9	23.7	24.7	24.10	0.529	23.57	24.63	0.03
0261	M25	0	D1	R1	21.75	21.75	20.05	21.18	0.981	20.20	22.16	-0.37
0430	M52	0	D1	R1	21.6	21.47	21.79	21.62	0.161	21.46	21.78	-0.31
0601	M52	<2	D1	R2	20	23.2	23	22.07	1.793	20.27	23.86	-0.25
4165												
6016	M25	<3.2	D1	R1	19.4	19.15	17.18	18.58	1.216	17.36	19.79	-0.74
6963	M52	0	D1	R1	18.4	19.7	22.8	20.30	2.261	18.04	22.56	-0.50

N	61

Consensus value	23.86	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	7.158	**M51**	31	24.12	1.730
Robust devest.	2.191	**M52**	23	23.85	2.126
Uncertainty	0.280				

SELENIUM (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	0.3	D1	R2	31.9	33.4	34.2	33.17	1.168	32.00	34.33	0.25
0261												
0430	M52	0	D1	R1	24.04	24.4	24.12	24.19	0.189	24.00	24.38	-0.72
0601	M52	<2	D1	R2	27	32.7	30	29.90	2.851	27.05	32.75	-0.10
4165												
6016												
6963	M52	0.1	D1	R1	24.6	25.9	26.4	25.63	0.929	24.70	26.56	-0.56

N	50

Consensus value	30.84	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	9.252	**M51**	25	31.72	2.985
Robust devest.	4.597	**M52**	21	30.13	5.362
Uncertainty	0.650				

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THALLIUM (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.005	D1	R2	9.8	11.5	11.8	11.03	1.079	9.95	12.11	-1.38
0261												
0430	M52	0.15	D1	R1	16.52	16.32	16.25	16.36	0.140	16.22	16.50	-0.44
0601	M52	<2	D1	R2	15.6	18.2	19	17.60	1.778	15.82	19.38	-0.22
4165												
6016												
6963	M52	0.1	D1	R1	15.2	15.6	17.7	16.17	1.343	14.82	17.51	-0.47

N	54

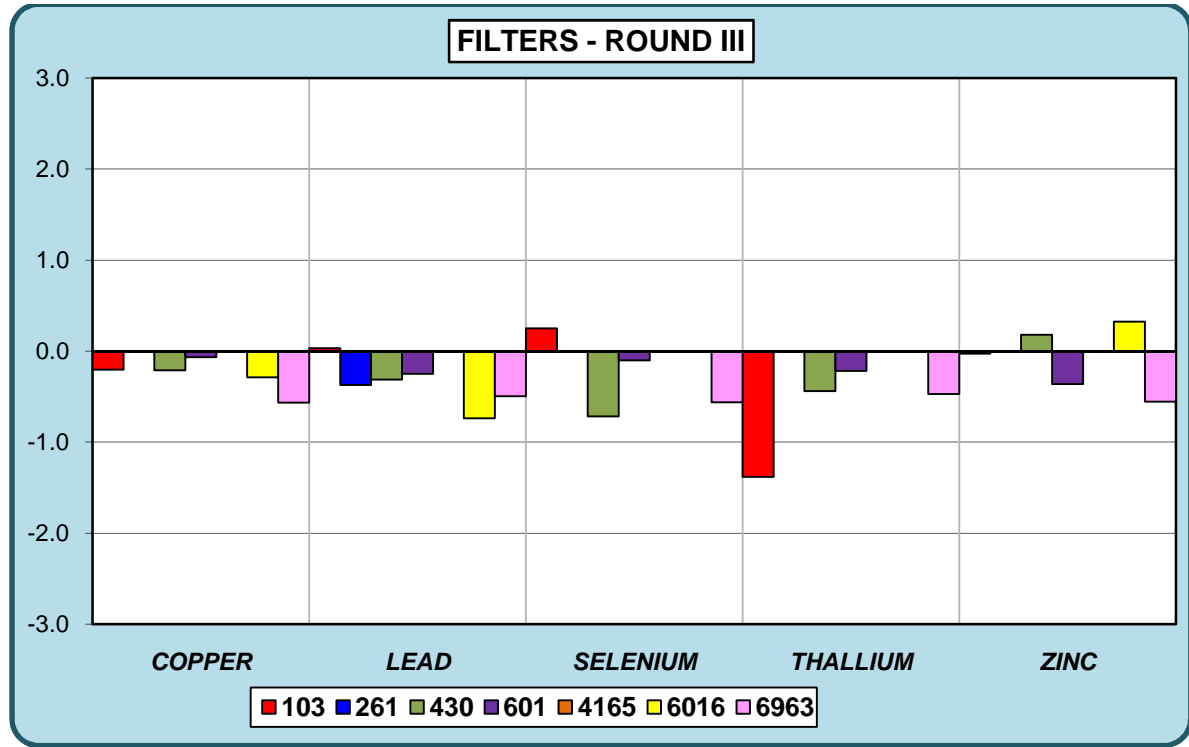| Consensus value	18.84	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	5.652	**M51**	29	18.97	1.497
Robust devest.	1.536	**M52**	22	18.81	1.302
Uncertainty	0.209				

ZINC (µg/filter)

LAB	MET	BLANK	DIG	TYPE	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.2	D1	R2	18.9	19.2	20	19.37	0.569	18.80	19.94	-0.03
0261												
0430	M52	1.58	D1	R1	21	20.3	20.43	20.58	0.372	20.20	20.95	0.18
0601	M52	<2	D1	R2	15.5	18.7	18	17.40	1.682	15.72	19.08	-0.36
4165												
6016	M25	2.37	D1	R1	21.96	22.07	20.26	21.43	1.015	20.42	22.44	0.33
6963	M52	0.3	D1	R1	15.4	16.5	16.9	16.27	0.777	15.49	17.04	-0.56

N	52

Consensus value	19.52	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	5.856	**M51**	22	19.41	2.687
Robust devest.	2.046	**M52**	24	19.49	1.427
Uncertainty	0.284				

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FILTERS - ROUND III

Additional information

ABSORTION SOLUTIONS – Round I

ANTIMONY (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<20	224	230	233	229	4.58	224	234	-0.32
0261										
0430	M52	12.4	200.7	199.4	200.1	200	0.65	199	201	-0.92
0601			83.9							
4165										
6016										
6963	M52	0	243	224	212	226	15.63	211	242	-0.37

N	52		Consensus value	244	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	48.31	**M51**	28	250	19.75
			Robust devest.	17.47	**M52**	24	239	17.13
			Uncertainty	2.4				

ARSENIC (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<2	94.1	102	94.2	97	4.53	92	101	0.13
0261	M32	0	128.8	123.5	118.4	124	5.20	118	129	1.43
0430	M52	<9.9	86.8	78.8	82.8	83	4.00	79	87	-0.54
0601			30.6							
4165										
6016										
6963	M52	0	75	79	75	76	2.31	74	79	-0.86

N	59		Consensus value	94	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	20.70	**M32**	5	89	25.37
			Robust devest.	8.22	**M51**	32	96	6.85
			Uncertainty	1.1	**M52**	22	93	7.88

CADMIUM (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.5	129	138	139	135	5.51	130	141	-0.18
0261	M32	0	245.2	245.6	201	231	25.64	205	256	2.97
0430	M52	<0.5	127.3	127.9	127.6	128	0.30	127	128	-0.43
0601			73.3							
4165	M25	0	140	143	140	141	1.73	139	143	0.01
6016		10.832	159.847	150.232	150.588	154	5.45	148	159	0.42
6963	M52	0	144	146	145	145	1.00	144	146	0.14

N	59		Consensus value	141	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	30.24	**M51**	31	141	6.41
			Robust devest.	7.91	**M52**	24	140	9.24
			Uncertainty	1.0				

COPPER (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<1	438	483	489	470	27.87	442	498	-0.24
0261										
0430	M52	<0.4	454.5	456.2	455.4	455	0.85	455	456	-0.41
0601			443.6							
4165										
6016										
6963	M52	0	507	513	501	507	6.00	501	513	0.18

N	58		**Consensus** value	491	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	87.41	**M51**	30	498	22.07
			Robust devest.	25.46	**M52**	25	485	27.09
			Uncertainty	3.3				

## HF (HYDROFLUORIC ACID) (mg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103										
0261										
0430										
0601		0.00	0.86							
4165										
6016										
6963	M41	0	0.922	0.926	0.949	0.93	0.015	0.92	0.95	-0.26

N	50		**Consensus** value	0.97	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	0.156	**M36**	22	0.96	0.10
			Robust devest.	0.075	**M41**	26	0.98	0.06
			Uncertainty	0.011				

NOTE- In the first round, laboratory code 6016 results have not been considered in the general statistics because they were received after the results submission deadline.

ABSORTION SOLUTIONS - ROUND I

Additional information
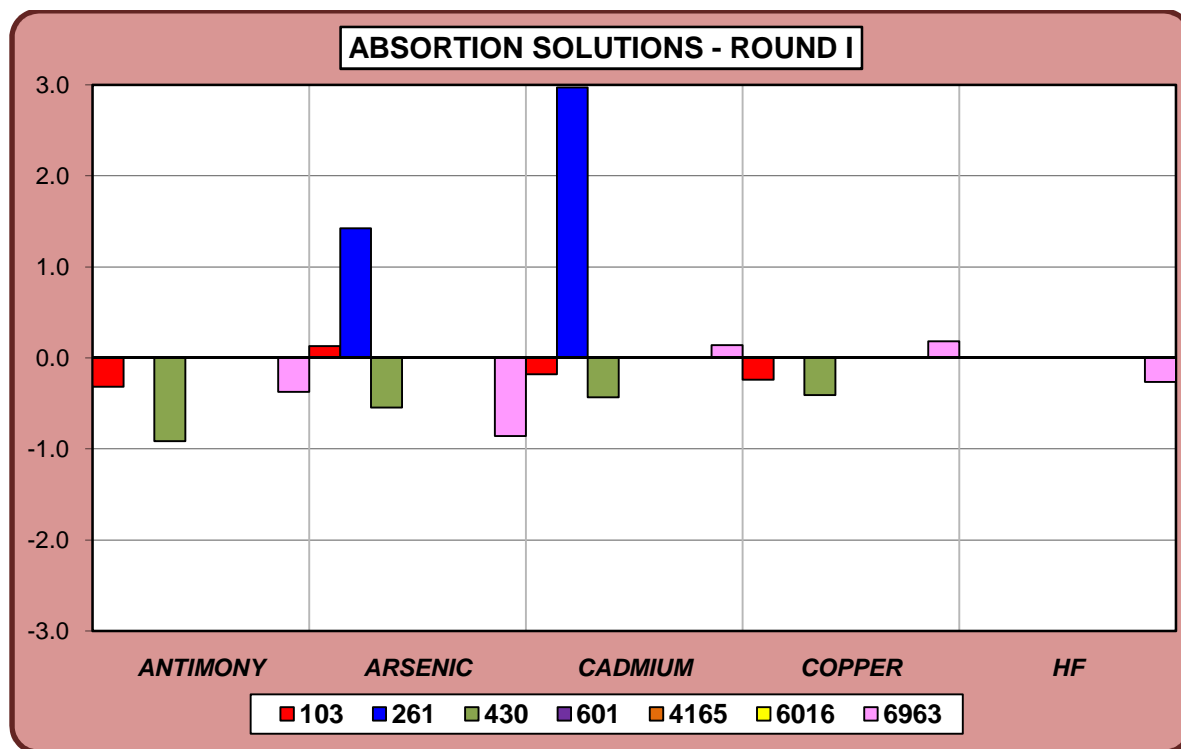
ABSORTION SOLUTIONS – Round II

CHROMIUM (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.2	285.2	285.8	288	286	1.5	285	288	-0.30
0261	M32	17.7	290.3	288.3	282.3	287	4.2	283	291	-0.29
0430	M52	<2.8	336.3	334.3	343.1	338	4.6	333	343	0.59
0601	M52	<0.01	0.32	0.31	0.33	0.32	0.01	0.31	0.33	-5.22
4165										
6016	M25	<0.3	253.33	263.53	240	252	11.8	240	264	-0.88
6963	M52	0	333	344	333	337	6.4	330	343	0.57

N	65		Consensus value	304	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	58.1	**M51**	29	308	14.9
			Robust devest.	16.8	**M52**	30	304	14.1
			Uncertainty	2.1				

MANGANESE (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.0	133.9	133.7	136.3	135	1.4	133	136	-0.28
0261										
0430	M52	<0.2	136.4	134.1	144.1	138	5.2	133	143	-0.16
0601	M52	<0.01	14	14	14	14	0.0	14	14	-4.21
4165										
6016	M25	<0.1	128.18	117.07	131.61	126	7.6	118	133	-0.57
6963	M52	0	157	163	158	159	3.2	156	163	0.53

N	62		Consensus value	143	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	30.7	**M51**	29	145	7.1
			Robust devest.	7.2	**M52**	30	142	5.8
			Uncertainty	0.9				

LEAD (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<1.3	183	178.7	182.2	181	2.3	179	184	-0.11
0261	M32	0	242	235	236	238	3.8	234	241	1.36
0430	M52	<8.8	204.3	207.6	202	205	2.8	202	207	0.49
0601	M52	<0.05	0.6	0.5	0.4	0.5	0.1	0.4	0.6	-4.84
4165										
6016										
6963	M52	0	206	203	189	199	9.1	190	208	0.36

N	63		Consensus value	186	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	38.3	**M51**	29	188	9.3
			Robust devest.	11.5	**M52**	29	183	11.8
			Uncertainty	1.4				

Additional information

VANADIUM (µg/L)

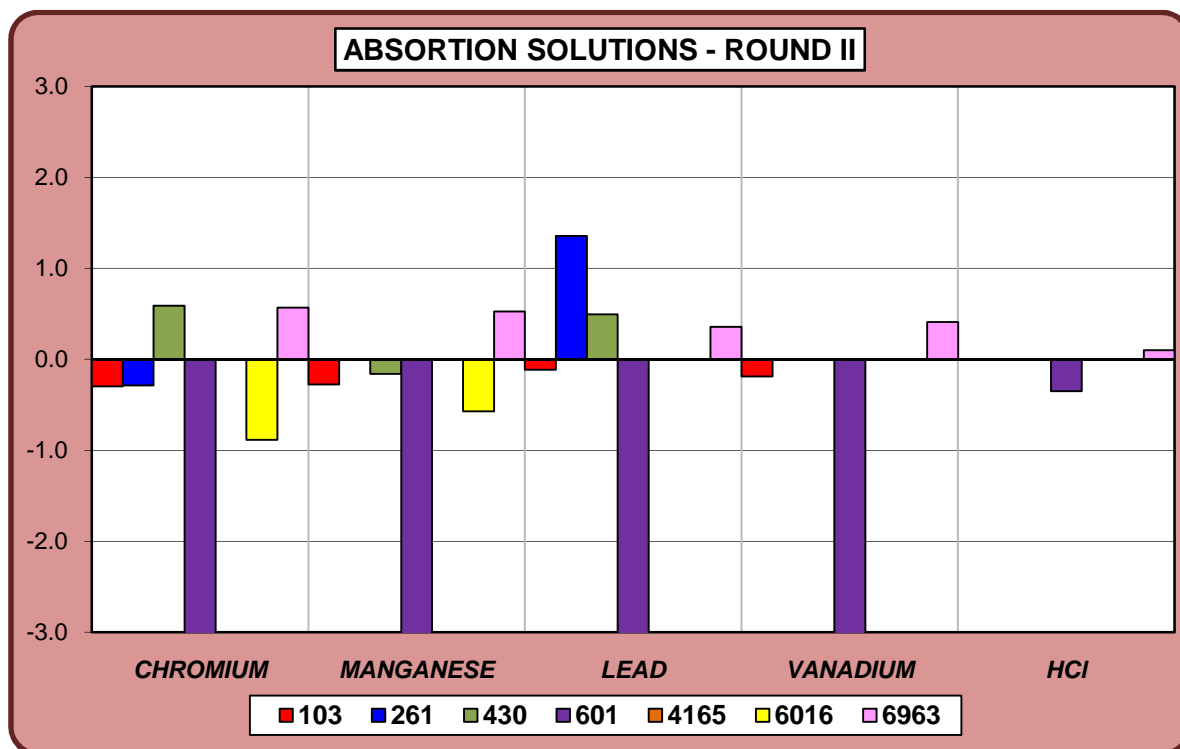| LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<0.2	77.7	77.1	79.1	78	1.0	77	79	-0.19
0261										
0430	M52	<2.2	80.8	80.1	82.8	81	1.4	80	83	0.00
0601	M52	<0.05	0.07	0.08	0.07	0.07	0.01	0.07	0.08	-4.54
4165										
6016										
6963	M52	0	88	91	87	89	2.1	87	91	0.41

N	58

Consensus value	81	METHOD	LAB No	ROB MEAN	ROB SD
SDPA σp	17.9	**M51**	28	82	3.9
Robust devest.	4.5	**M52**	30	80	4.6
Uncertainty	0.6				

HCl (HYDROCHLORIC ACID) (mg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103										
0261										
0430										
0601	M36	<1	100	100	100	100.0	0.00	100.0	100.0	-0.35
4165										
6016										
6963	M36	0	103	104	104	103.7	0.58	103.1	104.2	0.10

N	55

Consensus value	102.9
SDPA σp	8.19
Robust devest.	4.09
Uncertainty	0.55

ABSORTION SOLUTIONS - ROUND II

Legend: ■ 103 ■ 261 ■ 430 ■ 601 ■ 4165 ■ 6016 ■ 6963

Categories: CHROMIUM, MANGANESE, LEAD, VANADIUM, HCl

Additional information

ABSORTION SOLUTIONS – Round III

COBALT (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	37.5	295.2	294.2	298.6	296	2.3	294	298	0.16
0261	M25	35.0	296	288	281	288	7.5	281	296	0.02
0430	M52	25.4	337.9	344.1	340	341	3.2	338	344	0.97
0601	M52	34000	283000							
4165										
6016	M25	50.88			294.5					
6963	M52	23.5	292	280	277	283	7.9	275	291	-0.08

N	58		**Consensus** value	287	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	55.4	**M51**	26	284	33.0
			Robust devest.	30.5	**M52**	26	287	25.7
			Uncertainty	4.0				

TIN (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	<2.8	104	105.5	104.9	105	0.8	104	106	0.17
0261										
0430	M52	0	118.6	108.1	107.3	111	6.3	105	118	0.47
0601	M52	<1000	96000							
4165										
6016		<105			300.71					
6963	M52	0	113	104	118	112	7.1	105	119	0.48

N	46		**Consensus** value	101	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	22.2	**M51**	23	101	5.1
			Robust devest.	5.5	**M52**	21	102	6.8
			Uncertainty	0.8				

NICKEL (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	17.8	325.5	326.8	331.2	328	3.0	325	331	0.14
0261	M25	12.0	354	354	356	355	1.2	354	356	0.59
0430	M52	10.4	361.4	366.3	361.5	363	2.8	360	366	0.73
0601	M52	15000	310000							
4165										
6016	M25	<22			132.76					
6963	M52	15	337	320	320	326	9.8	316	335	0.11

N	58		**Consensus** value	319	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	60.6	**M51**	26	320	24.5
			Robust devest.	24.2	**M52**	25	316	17.6
			Uncertainty	3.2				

ZINC (µg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103	M52	3.6	436.1	439	439.9	438	2.0	436	440	0.06
0261										
0430	M52	55.4	510.4	547.6	500.1	519	25.0	494	544	1.09
0601	M52	<1000	423000							
4165										
6016	M25									
6963	M52	2	265	250	256	257	7.5	249	265	-2.24

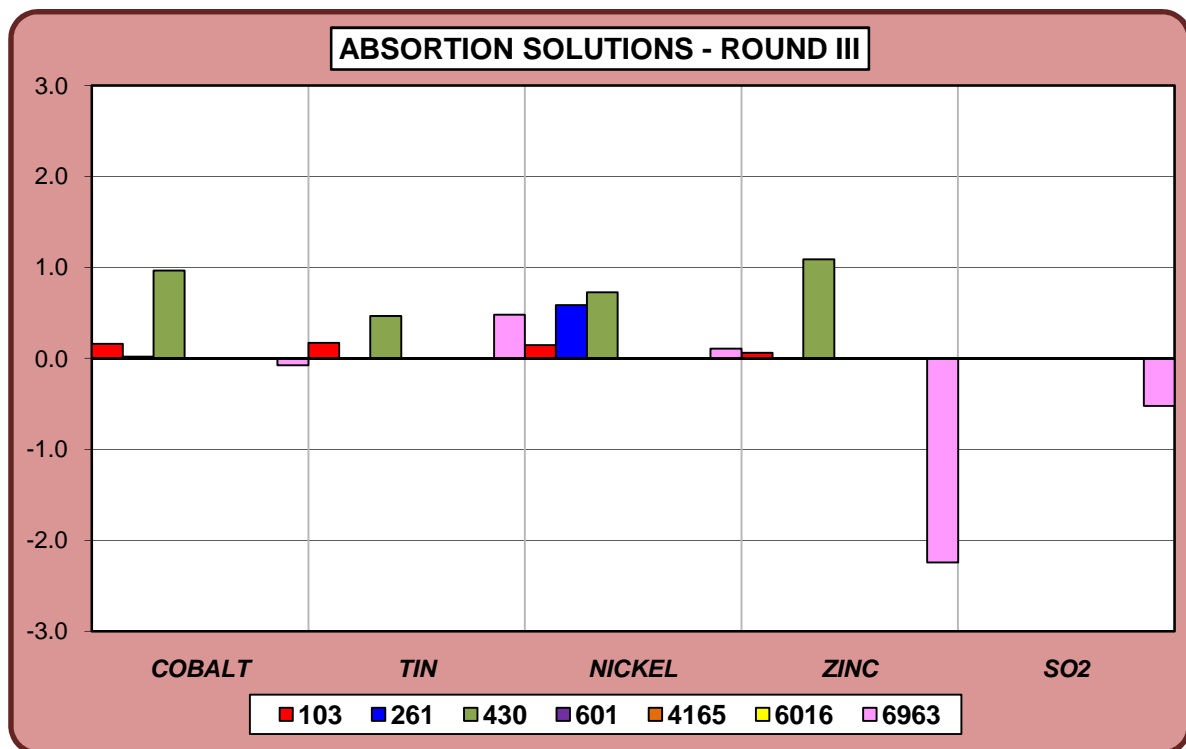| **N**	56		**Consensus** value	434	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	78.7	**M51**	26	430	45.4
			Robust devest.	33.9	**M52**	26	436	24.2
			Uncertainty	4.5				

SO₂ (SULPHUR DIOXIDE) (mg/L)

LAB	MET	BLANK	X1	X2	X3	MEAN	SD	INTERVAL		Z-SCORE
0103										
0261										
0430										
0601	M36	<0.01	500							
4165										
6016										
6963	M114	<0.1	436	423	432	430	6.7	424	437	-0.52

N	43		**Consensus** value	445	METHOD	LAB No	ROB MEAN	ROB SD
			SDPA σp	28.4	**M36**	31	450	24.7
			Robust devest.	26.5	**M114**	12	433	27.1
			Uncertainty	4.0				

Additional information

ABSORTION SOLUTIONS - ROUND III

Legend: 103, 261, 430, 601, 4165, 6016, 6963

Categories: COBALT, TIN, NICKEL, ZINC, SO2

To which the present document of additional information about the **ielab** Scheme Atmospheric Pollution 2012 is issued, for it to have its due effects, this day.

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