

Preliminary Field Tests Madrid - Arsenic

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C: VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|---------------------|-----|-----|------------------|---------|---------------------|---------|-------------------|-----|--|-----|-----|--------------------|-----|-----|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 2,8 | 2,4 | 4,6 | | | | | | | 3,5 | 3,5 | 3,6 | 3,8 | 3,8 | 4,1 | 3,6 | 18% |
| 21.12.2000 | 1,9 | 2,4 | | | | | | 2,9 | 2,6 | 2,4 | 2,4 | 2,2 | 2,4 | 2,5 | 2,5 | 2,4 | 10% |
| 03.01.2001 | 1,7 | 1,2 | | | | | | 2,0 | 1,9 | | | | | | | 1,7 | 21% |
| 04.01.2001 | 2,5 | 1,5 | 3,2 | | | | | 2,9 | 2,8 | 2,7 | 3,0 | 2,7 | 2,5 | 2,7 | 2,8 | 2,7 | 16% |
| 08.01.2001 | 1,8 | 3,1 | 3,6 | | | | | 4,3 | 4,2 | 4,0 | 4,0 | 3,8 | 4,0 | 4,0 | 4,0 | 3,7 | 20% |
| 09.01.2001 | 2,0 | 1,8 | 1,8 | | | | | 3,2 | | 3,5 | 3,3 | 3,2 | 3,7 | 3,5 | 3,1 | 2,9 | 25% |
| 10.01.2001 | 2,8 | 4,7 | 4,2 | | | | | 5,9 | 5,8 | 6,1 | 6,2 | 6,3 | 6,7 | 6,3 | 6,5 | 5,6 | 22% |
| Mean: | 2,2 | 2,5 | 3,5 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 3,6 | 3,5 | 3,7 | 3,7 | 3,6 | 3,8 | 3,8 | 3,8 | 3,22 | 19% |

Detection Limit

Field Blank 1,0 -0,4 0,7 0,2 0,4 0,2 0,0 Filter Bl.! 0,0 0,1 -0,2 -0,1 Filter Bl.!

Recovery NIST % 116,5+-2,2 n=4 112 111 104 112 110

Recovery NIES % 109,8+-11,7 n=4 134 137

NIST mass mg 10 10 10,1 10,1 102,2

NIES mass mg 80 80

Preparation of Field Test (N195 + N181) outlier corrected

Detection Limit

Filter Blank -0.18 +-0.48 0.010 +-0.16 0.24 +-0.04 -0.106 +-0.17 0.02 +-0.04

Recovery NIST % 128 +-16 % 115 +-15% 106 +-4% 96 +-3% 99 +-5%

Recovery NIES % 107 +-11 % 105 +-19% 129 +-2% 114 +-2% 114 +-6%

NIST mass mg 2 10 10 10

NIES mass mg 100 80 80 80

LFUG GFAAS

| QF | MF |
|---------|---------|
| 99 +-7% | 110+-5% |
| | |
| | |

101+-4%

200

Preliminary Field Tests Madrid - Cadmium

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C:VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|---------------------|------|------|------------------|---------|---------------------|---------|------------------|------|--|------|------|--------------------|------|------|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 0,76 | 0,70 | 0,65 | | | | | | | 0,58 | 0,61 | 0,63 | 0,61 | 0,60 | 0,61 | 0,64 | 9% |
| 21.12.2000 | 0,32 | 0,35 | | | | | | 0,32 | 0,38 | 0,28 | 0,31 | 0,31 | 0,31 | 0,34 | 0,33 | 0,32 | 8% |
| 03.01.2001 | 0,20 | 0,22 | | | | | | 0,16 | 0,28 | | | | | | | 0,21 | 23% |
| 04.01.2001 | 0,60 | 0,53 | 0,61 | | | | | 0,54 | 0,58 | 0,44 | 0,52 | 0,60 | 0,51 | 0,54 | 0,54 | 0,55 | 9% |
| 08.01.2001 | 0,89 | 0,97 | 1,00 | | | | | 0,91 | 0,87 | 0,87 | 0,86 | 0,85 | 0,89 | 0,88 | 0,88 | 0,90 | 5% |
| 09.01.2001 | 0,53 | 0,59 | 0,57 | | | | | 0,48 | | 0,50 | 0,61 | 0,48 | 0,52 | 0,52 | 0,52 | 0,53 | 8% |
| 10.01.2001 | 0,65 | 0,64 | 0,72 | | | | | 0,63 | 0,61 | 0,62 | 0,57 | 0,60 | 0,65 | 0,61 | 0,62 | 0,63 | 6% |
| Mean: | 0,56 | 0,57 | 0,71 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0,51 | 0,54 | 0,55 | 0,58 | 0,58 | 0,58 | 0,58 | 0,58 | 0,54 | 10% |

Detection L.

Field Blank

Recovery NIST %

Recovery NIES %

NIST mass mg

NIES mass mg

0,01 0,02 0,05 0,03

0,05

< 0,05 < 0,05 Filter Bl.!

0,05 0,03 0,000 0,026 Filter Bl.!

90 92

89 95

10 10

80 80

96 98 96

10,1 10,1 102,2

Preparation of Field Test (N195 + N181) outlier corrected

Detection Limit

Filter Blank

Recovery NIST %

Recovery NIES %

NIST mass mg

NIES mass mg

-0.004 +-0.024

98 +-10%

93 +-5%

2

100

0.060 +-0.030

99 +-4%

87 +-11%

0.09 +-0.03

91 +-4%

114 +-6%

10

80

0.037 +-0.036

95 +-4%

94 +-5%

10

80

0.008 +-0.005

93 +-2%

87 +-6%

10

80

LFUG GFAAS

| QF | MF |
|----------|----------|
| 102 +-7% | 107+-10% |
| | |
| | |

81 +-6%

200

Preliminary Field Tests Madrid - Nickel

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C: VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|---------------------|-----|-----|------------------|---------|---------------------|---------|-------------------|-----|--|-----|-----|--------------------|-----|-----|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 4,9 | 4,3 | 3,8 | | | | | | | 2,9 | 3,2 | 4,5 | 4,4 | 5,0 | 6,2 | 4,3 | 23% |
| 21.12.2000 | 3,5 | 2,0 | | | | | | 3,2 | 2,8 | 2,4 | 3,5 | 3,1 | 4,6 | 5,7 | 4,9 | 3,6 | 33% |
| 03.01.2001 | 1,9 | 2,3 | | | | | | 1,1 | 8,0 | | | | | | | 3,3 | 95% |
| 04.01.2001 | 2,4 | 2,3 | 2,4 | | | | | 2,3 | 2,4 | 2,2 | 3,9 | 2,9 | 3,9 | 3,8 | 4,4 | 3,0 | 28% |
| 08.01.2001 | 3,6 | 4,0 | 4,1 | | | | | 4,6 | 5,1 | 3,6 | 3,6 | 6,6 | 5,1 | 5,3 | 7,7 | 4,8 | 27% |
| 09.01.2001 | 3,6 | 3,4 | 3,2 | | | | | 3,5 | | 3,7 | 3,3 | 2,8 | 4,8 | 4,8 | 4,7 | 3,8 | 19% |
| 10.01.2001 | 5,1 | 4,2 | 4,2 | | | | | 5,3 | 4,5 | 2,5 | 3,0 | 2,4 | 4,6 | 5,0 | 4,2 | 4,1 | 25% |
| Mean: | 3,6 | 3,2 | 3,5 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 3,3 | 4,6 | 2,9 | 3,4 | 3,7 | 4,6 | 4,9 | 5,3 | 3,8 | 36% |

Detection Limit

Field Blank

Recovery NIST %

Recovery NIES %

NIST mass mg

NIES mass mg

| | | | | | | | | | | | | | | | | | |
|--|-----------|-----|-----|---------|--|----|--|-------|-----|-------------|------|-----|------|-----|-------------|--|--|
| | | | | | | | | | | | | | | | | | |
| | 1,9 | 0,6 | 1,0 | 0,1 | | | | < 0,6 | 1,7 | Filter Bl.! | 1,0 | 0,9 | 1,5 | 2,0 | Filter Bl.! | | |
| | 93,7+-4,3 | | n=4 | | | | | 100 | 105 | | 105 | | 111 | 92 | | | |
| | 93,9+-7,7 | | n=4 | 87 (93) | | 92 | | 99 | 103 | | | | | | | | |
| | | 10 | | | | | | 10 | | | 10,1 | | 10,1 | | | | |
| | | 80 | | | | | | 80 | | | | | | | | | |

NIES ICP-MS: 92% +-5% (n=14)
recovery / CEM Mars 5 redigestion
NIES AAS Varian Z400, 232 nm: 87+-6%, 350 nm: 93+-6,8% (n=5)

Preparation of Field Test (N195 + N181) outlier corrected

Detection Limit

Filter Blank

Recovery NIST %

Recovery NIES %

NIST mass mg

NIES mass mg

| | | | | |
|-------------|--------------|-------------|-------------|-------------|
| 0.35 +-0.17 | -0.70 +-0.21 | 0.49 +-0.13 | 0.49 +-0.35 | 0.61 +-0.18 |
| 101 +-14% | 82 +-9% | 79 +-3% | 100 +-4% | 86 +-6% |
| 94 +-4% | 87 +-6% | 92 +-5% | 98 +-3% | 91 +-12% |
| 2 | | 10 | 10 | 10 |
| 100 | | 80 | 80 | 80 |

LFUG GFAAS

| QF | MF |
|----------|--------|
| 104 +-9% | 93+-9% |
| | |
| | |

91+-9%

200

Preliminary Field Tests Madrid - Lead

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C: VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|---------------------|-----|-----|------------------|---------|---------------------|---------|-------------------|-----|--|-----|-----|--------------------|-----|-----|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 121 | 109 | 111 | | | | | 49 | 44 | 82 | 109 | 112 | 75 | 109 | 125 | 106 | 16% |
| 21.12.2000 | 54 | 53 | | | | | | 41 | 20 | 45 | 44 | 43 | 45 | 45 | 47 | 47 | 8% |
| 03.01.2001 | 32 | 29 | | | | | | 21 | 20 | | | | | | | 26 | 22% |
| 04.01.2001 | 51 | 44 | 51 | | | | | 41 | 39 | 37 | 40 | 40 | 39 | 42 | 42 | 42 | 11% |
| 08.01.2001 | 106 | 110 | 127 | | | | | 115 | 109 | 111 | 108 | 107 | 113 | 116 | 114 | 112 | 5% |
| 09.01.2001 | 95 | 101 | 110 | | | | | 99 | | 103 | 100 | 187 | 106 | 107 | 197 | 120 | 32% |
| 10.01.2001 | 83 | 84 | 92 | | | | | 84 | 82 | 84 | 80 | 80 | 87 | 88 | 85 | 84 | 4% |
| Mean: | 77 | 76 | 98 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 68 | 59 | 77 | 80 | 95 | 78 | 84 | 102 | 77 | 14% |

| | | | | | | | | | | | | | |
|-----------------|----------------|-----|-----|------|-----------------------|-----|----|--|-----|-----|-----|-----|-------------|
| Detection Limit | | | | | 0,6 | | | | | | | | |
| Field Blank | 0,2 | 0,6 | 0,1 | -0,1 | < 0,6 0,7 Filter Bl.! | | | | 0,3 | 0,5 | 0,6 | 0,3 | Filter Bl.! |
| Recovery NIST % | 103,1+-6,7 n=4 | | | | 101 | 101 | 96 | | | 95 | 92 | | |
| Recovery NIES % | 106,4+-5,4 n=4 | | | 98 | 101 | 99 | | | | | | | |
| NIST mass mg | 10 | | | | 10 | | 10 | | | 10 | 102 | | |
| NIES mass mg | 80 | | | | 80 | | | | | | | | |

NIES ICP-MS: 98+-4% (n=6)
recovery with redigestion

Preparation of Field Test (N195 + N181) outlier corrected

| | | | | | |
|-----------------|-------------|--------------|-------------|-------------|-------------|
| Detection Limit | | | | | |
| Filter Blank | 0.41 +-0.25 | -0.15 +-0.23 | 0.27 +-0.05 | 0.23 +-0.89 | 0.26 +-0.15 |
| Recovery NIST % | 102 +-8% | 103 +-6% | 84 +-4% | 105 +-4% | 99 +-2% |
| Recovery NIES % | 103 +-4% | 102 +-3% | 98 +-4% | 98 +-2% | 100 +-2% |
| NIST mass mg | 2 | | 10 | 10 | 10 |
| NIES mass mg | 100 | | 80 | 80 | 80 |

LFUG GFAAS

| QF | MF | |
|----------|---------|--------|
| 102 +-7% | 108+-8% | 97+-6% |
| | | 200 |

Preliminary Field Tests Madrid - Arsenic

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF (ISC III method) | | | Lab B: UK AAS MF | | Lab B: UK ICP- MS MF | | Lab C: VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|---|-----|-----|---------------------|---------|-------------------------|---------|----------------------|-----|---|-----|-----|--------------------|-----|-----|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 3,6 | 3,8 | 4,3 | | | | | | | 3,5 | 3,5 | 3,6 | 3,8 | 3,8 | 4,1 | 3,8 | 7% |
| 21.12.2000 | 2,8 | 2,7 | | | | | | 2,9 | 2,6 | 2,4 | 2,4 | 2,2 | 2,4 | 2,5 | 2,5 | 2,5 | 8% |
| 03.01.2001 | 2,4 | 2,0 | | | | | | 2,0 | 1,9 | | | | | | | 2,1 | 11% |
| 04.01.2001 | 2,5 | 3,0 | 3,2 | | | | | 2,9 | 2,8 | 2,7 | 3,0 | 2,7 | 2,5 | 2,7 | 2,8 | 2,8 | 7% |
| 08.01.2001 | 3,8 | 3,9 | 4,1 | | | | | 4,3 | 4,2 | 4,0 | 4,0 | 3,8 | 4,0 | 4,0 | 4,0 | 4,0 | 4% |
| 09.01.2001 | 3,1 | 3,6 | 3,8 | | | | | 3,2 | | 3,5 | 3,3 | 3,2 | 3,7 | 3,5 | 3,1 | 3,4 | 7% |
| 10.01.2001 | 6,1 | 6,1 | 6,2 | | | | | 5,9 | 5,8 | 6,1 | 6,2 | 6,3 | 6,7 | 6,3 | 6,5 | 6,2 | 4% |
| Mean: | 3,5 | 3,6 | 4,3 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 3,6 | 3,5 | 3,7 | 3,7 | 3,6 | 3,8 | 3,8 | 3,8 | 3,5 | 7% |

Detection Limit

Field Blank 0,2 0,3 0,2 0,1 0,4 0,2 0,0 Filter Bl.! 0,0 0,1 -0,2 -0,1 Filter Bl.!

Recovery NIST % 89 +-8% n=4 Filter Bl.! 111,9 111,4 104 111,6 110,1

Recovery NIES % 105 +-4% n=4 134,2 136,5

NIST mass mg 2,4 10 10,1 10,1 102,2

NIES mass mg 100 80

Preparation of Field Test (N195 + N181) outlier corrected

Detection Limit

Filter Blank -0.18 +-0.48 0.010 +-0.16 0.24 +-0.04 -0.106 +-0.17 0.02 +-0.04

Recovery NIST % 128 +-16 % 115 +-15% 106 +-4% 96 +-3% 99 +-5%

Recovery NIES % 107 +-11 % 105 +-19% 129 +-2% 114 +-2% 114 +-6%

NIST mass mg 2 10 10 10

NIES mass mg 100 80 80 80

LFUG GFAAS

| QF | MF |
|---------|---------|
| 99 +-7% | 110+-5% |
| | |
| | |

101+-4%

200

Preliminary Field Tests Madrid - Cadmium

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF (ISC III method) | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C:VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|--------------------------------------|------|------|------------------|---------|---------------------|---------|------------------|------|--|------|------|--------------------|------|------|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 0,62 | 0,57 | 0,53 | | | | | | | 0,58 | 0,61 | 0,63 | 0,61 | 0,60 | 0,61 | 0,60 | 5% |
| 21.12.2000 | 0,28 | 0,29 | | | | | | 0,32 | 0,38 | 0,28 | 0,31 | 0,31 | 0,31 | 0,34 | 0,33 | 0,31 | 9% |
| 03.01.2001 | 0,17 | 0,19 | | | | | | 0,16 | 0,28 | | | | | | | 0,20 | 27% |
| 04.01.2001 | 0,52 | 0,48 | 0,50 | | | | | 0,54 | 0,58 | 0,44 | 0,52 | 0,60 | 0,51 | 0,54 | 0,54 | 0,52 | 9% |
| 08.01.2001 | 0,79 | 0,83 | 0,83 | | | | | 0,91 | 0,87 | 0,87 | 0,86 | 0,85 | 0,89 | 0,88 | 0,88 | 0,86 | 4% |
| 09.01.2001 | 0,48 | 0,48 | 0,49 | | | | | 0,48 | | 0,50 | 0,61 | 0,48 | 0,52 | 0,52 | 0,52 | 0,51 | 8% |
| 10.01.2001 | 0,64 | 0,58 | 0,56 | | | | | 0,63 | 0,61 | 0,62 | 0,57 | 0,60 | 0,65 | 0,61 | 0,62 | 0,61 | 5% |
| Mean: | 0,50 | 0,49 | 0,58 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0,51 | 0,54 | 0,55 | 0,58 | 0,58 | 0,58 | 0,58 | 0,58 | 0,52 | 9% |

Detection L.

0,05

Field Blank

< 0,05 < 0,05 Filter Bl.!

Recovery NIST %

90

92

96

98

96

Recovery NIES %

89

95

NIST mass mg

10

10,1

10,1

102,2

NIES mass mg

80

Preparation of Field Test (N195 + N181) outlier corrected

Detection Limit

Filter Blank

-0.004 +-0.024

0.060 +-0.030

0.09 +-0.03

0.037 +-0.036

0.008 +-0.005

Recovery NIST %

98 +-10%

99 +-4%

91 +-4%

95 +-4%

93 +-2%

Recovery NIES %

93 +-5%

87 +-11%

114 +-6%

94 +-5%

87 +-6%

NIST mass mg

2

10

10

10

NIES mass mg

100

80

80

80

LFUG GFAAS

| QF | MF |
|----------|----------|
| 102 +-7% | 107+-10% |
| | |
| | |

81 +-6%

200

Preliminary Field Tests Madrid - Lead

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF (ISC III method) | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C: VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|--------------------------------------|-----|-----|------------------|---------|---------------------|---------|-------------------|-----|--|-----|-----|--------------------|-----|-----|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 104 | 101 | 106 | | | | | | | 82 | 109 | 112 | 75 | 109 | 125 | 103 | 15% |
| 21.12.2000 | 41 | 41 | | | | | | 49 | 44 | 45 | 44 | 43 | 45 | 45 | 47 | 44 | 6% |
| 03.01.2001 | 21 | 21 | | | | | | 21 | 20 | | | | | | | 21 | 3% |
| 04.01.2001 | 40 | 39 | 38 | | | | | 41 | 39 | 37 | 40 | 40 | 39 | 42 | 42 | 40 | 4% |
| 08.01.2001 | 102 | 108 | 104 | | | | | 115 | 109 | 111 | 108 | 107 | 113 | 116 | 114 | 110 | 4% |
| 09.01.2001 | 91 | 95 | 92 | | | | | 99 | | 103 | 100 | 187 | 106 | 107 | 197 | 118 | 34% |
| 10.01.2001 | 74 | 75 | 76 | | | | | 84 | 82 | 84 | 80 | 80 | 87 | 88 | 85 | 81 | 6% |
| Mean: | 68 | 68 | 83 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 68 | 59 | 77 | 80 | 95 | 78 | 84 | 102 | 74 | 10% |

| | | | | | | | | | | | | | | | | | |
|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Detection Limit | 0,6 | | | | | | | | | | | | | | | | |
| Field Blank | < 0,6 0,7 Filter Bl.! 0,3 0,5 0,593 0,28 Filter Bl.! | | | | | | | | | | | | | | | | |
| Recovery NIST % | 101 101 96 95 92 | | | | | | | | | | | | | | | | |
| Recovery NIES % | 98 101 99 | | | | | | | | | | | | | | | | |
| NIST mass mg | 10 10 10 | | | | | | | | | | | | | | | | |
| NIES mass mg | 80 | | | | | | | | | | | | | | | | |

NIES ICP-MS: 98+-4% (n=6)
recovery with redigestion

Preparation of Field Test (N195 + N181) outlier corrected

| | | | | | |
|-----------------|-------------|--------------|-------------|-------------|-------------|
| Detection Limit | | | | | |
| Filter Blank | 0.41 +-0.25 | -0.15 +-0.23 | 0.27 +-0.05 | 0.23 +-0.89 | 0.26 +-0.15 |
| Recovery NIST % | 102 +-8% | 103 +-6% | 84 +-4% | 105 +-4% | 99 +-2% |
| Recovery NIES % | 103 +-4% | 102 +-3% | 98 +-4% | 98 +-2% | 100 +-2% |
| NIST mass mg | 2 | | 10 | 10 | 10 |
| NIES mass mg | 100 | | 80 | 80 | 80 |

LFUG GFAAS

| QF | MF | |
|----------|---------|--------|
| 102 +-7% | 108+-8% | 97+-6% |
| | | 200 |

Furnace Programme As + Ni
Microwave Digestion with HNO3 and H2O2

| | UBA Austria - SIMA 6000 - for As and Ni | | | | VMM - SIMA 6000 - for As and Ni | | | | UK - Varian Z400 - for Ni | | | | ISCI - PE Analyst 100 - for Ni doc166 | | | | ISCI - PE Analyst 100 - for As ISCI | | | |
|------|---|---------------|---------------|------------------------|---------------------------------|---------------|---------------|------------------------|---------------------------|---------------|---------------|------------------------|---------------------------------------|---------------|---------------|------------------------|-------------------------------------|---------------|---------------|------------------------|
| | Modifier: Pd(NO3)2 / Mg(NO3)2 | | | | Modifier: Pd / Mg(NO3)2 | | | | Modifier ? | | | | Modifier ? | | | | Modifier: Pd / Mg(NO3)2 | | | |
| Step | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) |
| 1 | 110 | 1 | 30 | 250 | 110 | 1 | 30 | 250 | 85 | 3 | 0 | | | | | | 110 | 20 | 20 | 250 |
| 2 | 130 | 20 | 30 | 250 | 130 | 15 | 30 | 250 | 95 | 20 | 0 | | | | | | 800 | 20 | 10 | 250 |
| 2a | | | | | | | | | 120 | 15 | 30 | | | | | | 20 | 1 | 5 | 250 |
| 3 | 1250 | 10 | 20 | 250 | 1250 | 10 | 20 | 250 | 800 | 5 | 5 | | | | | | | | | |
| 4 | 2300 | 0 | 6 | 0 | 2300 | 0 | 5 | 0 | 2400 | 0 | 4 | | | | | | 2300 | 0 | 5 | 0 |
| 5 | 2500 | 1 | 7 | 250 | 2600 | 1 | 5 | 250 | 2600 | 2 | 0 | | | | | | 2500 | 1 | 5 | 250 |
| | | 32 | 93 | | | | 27 | 90 | | | 45 | 39 | | | 0 | 0 | | | 42 | 45 |
| | | Sum (s): | 125 | | | | Sum (s): | 117 | | | Sum (s): | 84 | | | Sum (s): | 0 | | | Sum (s): | 87 |

Element: As
Wavelength (Slit) nm 193.7 (0,5)
Lamp - Current mA EDL 400
Linear Range: 1-20 ppb
Calibration curve: y=0.0040 x -0.0003 (r=0.99990)
Graphite Tube End Cap TUBE
BackgroundCor. Zeeman
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area
Element: Ni
Wavelength (Slit) nm 232.0 (0.2)
Lamp - Current mA EDL 25
Linear Range: 1-20 ppb
Calibration curve: y = 0.0054x +0.0001 (r=0.99998)
Graphite Tube End Cap TUBE
BackgroundCor. Zeeman
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area

As
193,7
EDL 400
2-20 ppb
y=0.0040 x +0.0001 (2.34%)
End Cap TUBE
Zeeman
20
5
Area
Ni
232
HCL 25
2-20 ppb
y = 0.0044x +0.0006 (0.83%)
End Cap TUBE
Zeeman
20
5
Area

Ni
232 (earlier: 352 nm)
0-30 ppb
y = 0.0071x + 0.005 (r=0.993)
Zeeman

Ni
232

As
193,7
EDL 300
1-20 ppb
pyrocoated Tube with L`vov Platform
Deuterium
20
5
Area

Furnace Programme Cd + Pb

Microwave Digestion with HNO3 and H2O2

| | UBA Austria - SIMA 6000 - for Cd and Pb | | | | VMM - SIMA 6000 - for Cd and Pb | | | | UK - Varian Z400 - for Pb | | | | ISCIII - PE Analyst 100 - for Pb ISCIII | | | | ISCIII - PE Analyst 100 - for Cd ISCIII | | | |
|------|--|---------------|---------------|------------------------|--|---------------|---------------|------------------------|---|---------------|---------------|------------------------|---|---------------|---------------|------------------------|---|---------------|---------------|------------------------|
| | Modifier: NH4H2PO4 / Mg(NO3)2 | | | | Modifier: NH4H2PO4 / Mg(NO3)2 | | | | Modifier ? | | | | Modifier: NH4H2PO4 / Mg(NO3)2 | | | | Modifier: NH4H2PO4 / Mg(NO3)2 | | | |
| Step | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) | Temp. °C | Ramp Time (s) | Hold Time (s) | internal Flow (ml/min) |
| 1 | 110 | 1 | 40 | 250 | 110 | 1 | 30 | 250 | | | | | 120 | 10 | 50 | 250 | 110 | 20 | 20 | 250 |
| 2 | 130 | 30 | 30 | 250 | 130 | 15 | 30 | 250 | | | | | 600 | 1 | 30 | 250 | 250 | 20 | 10 | 250 |
| 3 | 200 | 10 | 10 | 250 | | | | | | | | | 20 | 1 | 15 | 250 | 20 | 1 | 15 | 250 |
| 4 | 600-700 | 20 | 30 | 250 | 750 | 10 | 20 | 250 | | | | | | | | | | | | |
| 5 | 1700 | 0 | 5 | 0 | 1700 | 0 | 5 | 0 | | | | | 1700 | 0 | 5 | 0 | 1700 | 0 | 5 | 0 |
| 6 | 2500 | 1 | 5 | 250 | 2450 | 1 | 5 | 250 | | | | | 2500 | 1 | 5 | 250 | | | | |

62
Sum (s):

120
182

27
Sum (s):

90
117

0
Sum (s):

0
0

13
Sum (s):

105
118

41
Sum (s):

50
91

Element:

Cd

Wavelength (Slit) nm 228.8 (0.5)
Lamp - Current mA EDL 240
Linear Range: 0.1-2 ppb
Calibration curve: $y = 0.0680x - 0.0001$ ($r=0.99985$)
Graphite Tube End Cap TUBE
BackgroundCor. Zeeman
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area

Cd

Wavelength (Slit) nm 228.8
Lamp - Current mA EDL 240
Linear Range: 0.2-2 ppb
Calibration curve: $y = 0.0645x - 0.0005$ (6.7%)
THGA Tube with L'vov Platform
Zeeman
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area

Pb

Pb

Cd

Wavelength (Slit) nm 228.8
Lamp - Current mA EDL 170
Linear Range: 0.1-2 ppb
pyrocoated Tube with L'vov Platform
Deuterium
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area

Element:

Pb

Wavelength (Slit) nm 283.3 (0.5)
Lamp - Current mA EDL 450
Linear Range: 1-20 ppb
Calibration curve: $y = 0.0030x - 0.0001$ ($r=0.99990$)
Graphite Tube End Cap TUBE
BackgroundCor. Zeeman
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area

Pb

Wavelength (Slit) nm 283.3
Lamp - Current mA EDL 450
Linear Range: 2-20 ppb
Calibration curve: $y = 0.00265x + 0.0003$ (2.61%)
THGA Tube with L'vov Platform
Zeeman
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area

Zeeman

pyrocoated Tube with L'vov Platform
Deuterium
Sample Vol µl 20
Modifier Vol µl 5
Signal: Area

Preliminary Field Tests Madrid - Arsenic (reduced data set)

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| Start Date | Lab A: Spain AAS QF (ISC III method) | | | Lab B: UK AAS MF | | Lab B: UK ICP- MS MF | | Lab C:VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|---|-----|-----|---------------------|----|-------------------------|----|---------------------|-----|---|-----|-----|--------------------|-----|-----|------------|------|
| | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 3,6 | 3,8 | 4,3 | | | | | | | 3,5 | 3,5 | 3,6 | 3,8 | 3,8 | 4,1 | 3,8 | 7% |
| 21.12.2000 | 2,8 | 2,7 | | | | | | 2,9 | 2,6 | 2,4 | 2,4 | 2,2 | 2,4 | 2,5 | 2,5 | 2,5 | 8% |
| 04.01.2001 | 2,5 | 3,0 | 3,2 | | | | | 2,9 | 2,8 | 2,7 | 3,0 | 2,7 | 2,5 | 2,7 | 2,8 | 2,8 | 7% |
| 08.01.2001 | 3,8 | 3,9 | 4,1 | | | | | 4,3 | 4,2 | 4,0 | 4,0 | 3,8 | 4,0 | 4,0 | 4,0 | 4,0 | 4% |
| 09.01.2001 | 3,1 | 3,6 | 3,8 | | | | | 3,2 | | 3,5 | 3,3 | 3,2 | 3,7 | 3,5 | 3,1 | 3,4 | 7% |
| 10.01.2001 | 6,1 | 6,1 | 6,2 | | | | | 5,9 | 5,8 | 6,1 | 6,2 | 6,3 | 6,7 | 6,3 | 6,5 | 6,2 | 4% |
| Mean: | 3,6 | 3,8 | 4,3 | | | | | 3,9 | 3,8 | 3,7 | 3,7 | 3,6 | 3,8 | 3,8 | 3,8 | 3,8 | 6% |

Detection Limit

Field Blank

Recovery NIST %

Recovery NIES %

NIST mass mg

NIES mass mg

| | | | | | | | | | | | | | | | |
|----------|-----|-----|-------------|--|--|--|--|-------|-------|-------------|------|-----|-------|-------|-------------|
| 0,2 | 0,3 | 0,2 | 0,1 | | | | | 0,2 | 0,0 | Filter Bl.! | 0,0 | 0,1 | -0,2 | -0,1 | Filter Bl.! |
| 89 +-8% | | n=4 | Filter Bl.! | | | | | 111,9 | 111,4 | | 104 | | 111,6 | 110,1 | |
| 105 +-4% | | n=4 | | | | | | 134,2 | 136,5 | | | | | | |
| | 2,4 | | | | | | | 10 | | | 10,1 | | 10,1 | 102,2 | |
| | 100 | | | | | | | 80 | | | | | | | |

Preparation of Field Test (N195 + N181) outlier corrected

Detection Limit

Filter Blank

Recovery NIST %

Recovery NIES %

NIST mass mg

NIES mass mg

| | | | | |
|--------------|--------------|-------------|---------------|-------------|
| -0.18 +-0.48 | 0.010 +-0.16 | 0.24 +-0.04 | -0.106 +-0.17 | 0.02 +-0.04 |
| 128 +-16 % | 115 +-15% | 106 +-4% | 96 +-3% | 99 +-5% |
| 107 +-11 % | 105 +-19% | 129 +-2% | 114 +-2% | 114 +-6% |
| 2 | | 10 | 10 | 10 |
| 100 | | 80 | 80 | 80 |

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| QF | MF |
|---------|---------|
| 99 +-7% | 110+-5% |
| | |
| | |

101+-4%

200

Preliminary Field Tests Madrid - Cadmium (reduced data set)

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF (ISC III method) | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C:VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|-----------------|--------------------------------------|------|------|------------------|----|---------------------|----|------------------|--------|--|------|------|--------------------|-------|-------------|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 0,62 | 0,57 | 0,53 | | | | | | | 0,58 | 0,61 | 0,63 | 0,61 | 0,60 | 0,61 | 0,60 | 5% |
| 21.12.2000 | 0,28 | 0,29 | | | | | | 0,32 | 0,38 | 0,28 | 0,31 | 0,31 | 0,31 | 0,34 | 0,33 | 0,31 | 9% |
| 04.01.2001 | 0,52 | 0,48 | 0,50 | | | | | 0,54 | 0,58 | 0,44 | 0,52 | 0,60 | 0,51 | 0,54 | 0,54 | 0,52 | 9% |
| 08.01.2001 | 0,79 | 0,83 | 0,83 | | | | | 0,91 | 0,87 | 0,87 | 0,86 | 0,85 | 0,89 | 0,88 | 0,88 | 0,86 | 4% |
| 09.01.2001 | 0,48 | 0,48 | 0,49 | | | | | 0,48 | | 0,50 | 0,61 | 0,48 | 0,52 | 0,52 | 0,52 | 0,51 | 8% |
| 10.01.2001 | 0,64 | 0,58 | 0,56 | | | | | 0,63 | 0,61 | 0,62 | 0,57 | 0,60 | 0,65 | 0,61 | 0,62 | 0,61 | 5% |
| Mean: | 0,56 | 0,54 | 0,58 | | | | | 0,57 | 0,61 | 0,55 | 0,58 | 0,58 | 0,58 | 0,58 | 0,58 | 0,57 | 7% |
| Detection L. | | | | | | | | 0,05 | | | | | | | | 3% | |
| Field Blank | | | | | | | | < 0,05 | < 0,05 | Filter Bl.! | 0,05 | 0,03 | 0,000 | 0,026 | Filter Bl.! | | |
| Recovery NIST % | | | | | | | | 90 | 92 | | 96 | | 98 | 96 | | | |
| Recovery NIES % | | | | | | | | 89 | 95 | | | | | | | | |
| NIST mass mg | | | | | | | | 10 | | | 10,1 | | 10,1 | 102,2 | | | |
| NIES mass mg | | | | | | | | 80 | | | | | | | | | |

Preparation of Field Test (N195 + N181) outlier corrected

| | | | | | |
|-----------------|----------------|---------------|-------------|---------------|---------------|
| Detection Limit | | | | | |
| Filter Blank | -0.004 +-0.024 | 0.060 +-0.030 | 0.09 +-0.03 | 0.037 +-0.036 | 0.008 +-0.005 |
| Recovery NIST % | 98 +-10% | 99 +-4% | 91 +-4% | 95 +-4% | 93 +-2% |
| Recovery NIES % | 93 +-5% | 87 +-11% | 114 +-6% | 94 +-5% | 87 +-6% |
| NIST mass mg | 2 | | 10 | 10 | 10 |
| NIES mass mg | 100 | | 80 | 80 | 80 |

LFUG GFAAS

| QF | MF | |
|----------|----------|---------|
| 102 +-7% | 107+-10% | 81 +-6% |
| | | 200 |

Preliminary Field Tests Madrid - Lead (reduced data set)

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| | Lab A: Spain AAS QF (ISC III method) | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C:VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|-----------------|--------------------------------------|-----|-----|------------------|----|---------------------|----|------------------|-----|--|-----|-----|--------------------|------|-------------|------------|------|
| Start Date | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 104 | 101 | 106 | | | | | | | 82 | 109 | 112 | 75 | 109 | 125 | 103 | 15% |
| 21.12.2000 | 41 | 41 | | | | | | 49 | 44 | 45 | 44 | 43 | 45 | 45 | 47 | 44 | 6% |
| 04.01.2001 | 40 | 39 | 38 | | | | | 41 | 39 | 37 | 40 | 40 | 39 | 42 | 42 | 40 | 4% |
| 08.01.2001 | 102 | 108 | 104 | | | | | 115 | 109 | 111 | 108 | 107 | 113 | 116 | 114 | 110 | 4% |
| 10.01.2001 | 74 | 75 | 76 | | | | | 84 | 82 | 84 | 80 | 80 | 87 | 88 | 85 | 81 | 6% |
| Mean: | 72 | 73 | 81 | | | | | 72 | 68 | 72 | 76 | 77 | 72 | 80 | 83 | 75 | 7% |
| Detection Limit | | | | | | | | 0,6 | | | | | | | | | 6% |
| Field Blank | | | | | | | | < 0,6 | 0,7 | Filter Bl.! | 0,3 | 0,5 | 0,593 | 0,28 | Filter Bl.! | | |
| Recovery NIST % | | | | | | | | 101 | 101 | | 96 | | 95 | 92 | | | |
| Recovery NIES % | | | | | | 98 | | 101 | 99 | | | | | | | | |
| NIST mass mg | | | | | | | | 10 | | | 10 | | 10 | 102 | | | |
| NIES mass mg | | | | | | | | 80 | | | | | | | | | |

NIES ICP-MS: 98+-4% (n=6)
recovery with redigestion

Preparation of Field Test (N195 + N181) outlier corrected

| | | | | | |
|-----------------|-------------|--------------|-------------|-------------|-------------|
| Detection Limit | | | | | |
| Filter Blank | 0.41 +-0.25 | -0.15 +-0.23 | 0.27 +-0.05 | 0.23 +-0.89 | 0.26 +-0.15 |
| Recovery NIST % | 102 +-8% | 103 +-6% | 84 +-4% | 105 +-4% | 99 +-2% |
| Recovery NIES % | 103 +-4% | 102 +-3% | 98 +-4% | 98 +-2% | 100 +-2% |
| NIST mass mg | 2 | | 10 | 10 | 10 |
| NIES mass mg | 100 | | 80 | 80 | 80 |

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| QF | MF | |
|----------|---------|--------|
| 102 +-7% | 108+-8% | 97+-6% |
| | | 200 |

Preliminary Field Tests Madrid - Nickel (reduced data set)

Concentration values in ng/m³ MF = membrane filter Sartorius Cellulose-Acetate 3µm, QF = Quartz fibre filter Munktell MK 360 (50 mm diameter)

| Start Date | Lab A: Spain AAS QF | | | Lab B: UK AAS MF | | Lab B: UK ICP-MS MF | | Lab C:VMM AAS MF | | Lab D: UBA BRD ICP-MS QF bl.corrected! | | | UBA Austria AAS QF | | | Mean Value | Std% |
|------------|---------------------|-----|-----|------------------|----|---------------------|----|------------------|-----|--|-----|-----|--------------------|-----|-----|------------|------|
| | SP5 | SP6 | SP3 | SP | SP | SP | SP | SP7 | SP8 | SP1 | SP2 | SP4 | SP1 | SP2 | SP4 | | |
| 18.12.2000 | 4,9 | 4,3 | 3,8 | | | | | | | 2,9 | 3,2 | 4,5 | 4,4 | 5,0 | 6,2 | 4,3 | 23% |
| 21.12.2000 | 3,5 | 2,0 | | | | | | 3,2 | 2,8 | 2,4 | 3,5 | 3,1 | 4,6 | 5,7 | 4,9 | 3,6 | 33% |
| 04.01.2001 | 2,4 | 2,3 | 2,4 | | | | | 2,3 | 2,4 | 2,2 | 3,9 | 2,9 | 3,9 | 3,8 | 4,4 | 3,0 | 28% |
| 08.01.2001 | 3,6 | 4,0 | 4,1 | | | | | 4,6 | 5,1 | 3,6 | 3,6 | 6,6 | 5,1 | 5,3 | 7,7 | 4,8 | 27% |
| 09.01.2001 | 3,6 | 3,4 | 3,2 | | | | | 3,5 | | 3,7 | 3,3 | 2,8 | 4,8 | 4,8 | 4,7 | 3,8 | 19% |
| 10.01.2001 | 5,1 | 4,2 | 4,2 | | | | | 5,3 | 4,5 | 2,5 | 3,0 | 2,4 | 4,6 | 5,0 | 4,2 | 4,1 | 25% |
| Mean: | 3,8 | 3,4 | 3,5 | | | | | 3,8 | 3,7 | 2,9 | 3,4 | 3,7 | 4,6 | 4,9 | 5,3 | 3,9 | 26% |

| | | | | | | | | | | | | | | | | | |
|-----------------|---------------|-----|-----|---------|--|----|--|-------|-----|-------------|------|-----|------|-----|-------------|--|-----|
| Detection Limit | | | | | | | | 0,6 | | | | | | | | | 19% |
| Field Blank | 1,9 | 0,6 | 1,0 | 0,1 | | | | < 0,6 | 1,7 | Filter Bl.! | 1,0 | 0,9 | 1,5 | 2,0 | Filter Bl.! | | |
| Recovery NIST % | 93,7+-4,3 n=4 | | | | | | | 100 | 105 | | 105 | | 111 | 92 | | | |
| Recovery NIES % | 93,9+-7,7 n=4 | | | 87 (93) | | 92 | | 99 | 103 | | | | | | | | |
| NIST mass mg | | 10 | | | | | | 10 | | | 10,1 | | 10,1 | | | | |
| NIES mass mg | | 80 | | | | | | 80 | | | | | | | | | |

NIES ICP-MS: 92% +-5% (n=14)
recovery / CEM Mars 5 redigestion
NIES AAS Varian Z400, 232 nm: 87+-6%, 350 nm: 93+-6,8% (n=5)

Preparation of Field Test (N195 + N181) outlier corrected

| | | | | | |
|-----------------|-------------|--------------|-------------|-------------|-------------|
| Detection Limit | | | | | |
| Filter Blank | 0.35 +-0.17 | -0.70 +-0.21 | 0.49 +-0.13 | 0.49 +-0.35 | 0.61 +-0.18 |
| Recovery NIST % | 101 +-14% | 82 +-9% | 79 +-3% | 100 +-4% | 86 +-6% |
| Recovery NIES % | 94 +-4% | 87 +-6% | 92 +-5% | 98 +-3% | 91 +-12% |
| NIST mass mg | 2 | | 10 | 10 | 10 |
| NIES mass mg | 100 | | 80 | 80 | 80 |

LFUG GFAAS

| QF | MF | |
|----------|--------|--------|
| 104 +-9% | 93+-9% | 91+-9% |
| | | 200 |

Preliminary Field Tests Madrid - Draft summary with reduced data set

(Results from ISC III, VMM, UBA Austria and UBA Germany)

All concentrations in ng/m³ (sampling conditions)

| Start Date | n sampler | m results | Arsenic | | Cadmium | | Lead | | N Mean |
|-------------|--------------|--------------|---------|-----------|---------|-----------|------|-----------|-----------|
| | | | Mean | Std.Dev.% | Mean | Std.Dev.% | Mean | Std.Dev.% | |
| 18.12.2000 | 6 | 9 | 3,8 | 7 | 0,60 | 5 | 103 | 15 | 4,3 |
| 21.12.2000 | 7 | 10 | 2,5 | 8 | 0,31 | 9 | 44 | 6 | 3,6 |
| 04.01.2001 | 8 | 11 | 2,8 | 7 | 0,52 | 9 | 40 | 4 | 3,0 |
| 08.01.2001 | 8 | 11 | 4,0 | 4 | 0,86 | 4 | 110 | 4 | 4,8 |
| 09.01.2001 | 7 | 10 | 3,4 | 7 | 0,51 | 8 | | | 3,8 |
| 10.01.2001 | 8 | 11 | 6,2 | 4 | 0,61 | 5 | 81 | 6 | 4,1 |
| Mean Value: | | | 3,8 | 5 | 0,57 | 3 | 75 | 6 | 3,9 |

| | | | | |
|-----------------|-------------|-------------|------------|------|
| Filter Blank | 0,0 - 0,3 | 0,00 - 0,05 | 0,1 - 0,7 | 0,6 |
| Recovery NIST % | 89 - 112 % | 91 - 98 % | 92 - 103 % | 92 - |
| Recovery NIES % | 105 - 137 % | 89 - 95 % | 99 - 106 % | 94 - |

| <i>ickel</i> |
|------------------|
| <i>Std.Dev.%</i> |
| 23 |
| 33 |
| 28 |
| 27 |
| 19 |
| 25 |
| 19 |

5 - 2,0
 · 111 %
 · 103 %