Reg/Area/ - C28359

Jun 15 Anyth P1 8/15/86 8/28/86

8/24/86 Rest of Samples.

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM METALS

DIVISION/BRANCH EDC/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 *PRIORITY #1 8/18/86

OU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Found PRIORITY / * CONTRACTOR N

| CRL LOG NUMBER 86EF0 | SAMPLE DESCRIPTION | EP TOX EXTRACT ICP METALS MG/L MET19369 | EP TOX EXTRACT SE MG/L MET19109 | EP TOX EXTRACT AS MG/L MET1989 | EP TOX EXTRACT Pb MG/L | EP TOX EXTRACT Cr MG/L |
|---|---|---|---|---|---|---|
| S01 | 590240 | X | <0.02 | <0.002 | X | X |
| S02 | 590241 | X | <0.02 | <0.002 | X | X |
| S03 | 590242 | X | <0.02 | <0.002 | X | X |
| S04 | 590243 | X | <0.02 | <0.002 | X | X |
| S05 | 590244 | X | <0.02 | <0.002 | X | X |
| S06 | 590245 | X | <0.02 | <0.002 | X | X |
| S07 | 590229 | X | <0.02 | 0.004 | X | X |
| * S08 | 590246 | X | <.002 | <.002 | X | X |
| D09 | 590247 | X | <0.02 | <0.002 | X | X |
| * S10 | 590248 | X | 0.040 | < 0.002 | X | X |
| * S11 | 590249 | X | 0.007 | < 0.002 | X | X |
| * S12 | 590127 | X | <0.002 | < 0.002 | X | X |
| S13 | 590226 | X | <0.02. | <0.002 | X | X |
| S14 | 590250 | X | <0.02 | <0.002 | X | X |
| RIS | 590227 | X | <0.002 | <0.002 | X | X |
| | | | PM 8-14-86 | JCR 8/15/86 | X | X |
| | | | PM 8-27-86 | PM 8-28-86 | X | X |
| | | | MS 2-28-86 | MS 8-28-86 | X | X |

JRM Priority 2 28 Aug 86 8/9/89

TRANSMITTED BY
SEP 08 1986
U.S. EPA CENTRAL REGIONAL LAB

*CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

Jm
28 Aug 86

---

* FLAMELESS * CSC VERSION 1.00 *

---

NAME OF ANALYST ---: MS
DATE OF ANALYSIS --: 08-28-1986
PARAMETER NAME ----: AS
DATA SET # --------: 3424

---

| SAMPLE NO. | CONC. | R VALUE | SLOPE |
|---|---|---|---|
| BLANK | -.352866 | .9994937 | 3.004001E-02 |
| AQC | 23.59209 | .9973074 | 2.872998E-02 0% |
| ~~AQC~~ | ~~5.428585~~ | ~~.9516341~~ | ~~.045697~~ error |
| S07 | 3.650796 | .9987157 | .01386 |
| ~~AQC~~ | ~~-1.701412E+38~~ | ~~1.701412E+38~~ | 0 entry error |
| AQC | 22.96998 | .9990457 | 2.899001E-02 -2.2 |
| S09 | -.3411505 | .9995441 | .01407 |
| S13 | -.5729481 | .9985159 | .01693 |
| S14 | .515464 | .9981558 | .01455 |
| BLANK | -5.033557E-02 | .999855 | .0298 |
| AQC | 22.19978 | .9998639 | 3.123003E-02 -5.5 |

---

BLANK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.001 | -.0106001 | -9.600098E-03 | 90.56612 % |
| 10 | .272 | .2898 | 1.779994E-02 | 6.142149 % |
| 20 | .597 | .5902 | -6.799996E-03 | -1.152151 % |
| 30 | .892 | .8906001 | -1.399934E-03 | -.15719 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .652 | .6778003 | 2.580029E-02 | 3.806473 % |
| 10 | 1.001 | .9651001 | -3.589994E-02 | -3.719815 % |
| 20 | 1.258 | 1.2524 | -5.600095E-03 | -.4471491 % |
| 30 | 1.524 | 1.5397 | 1.569974E-02 | 1.019663 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .0681 | .2480701 | .1799701 | 72.54808 % |
| 10 | .933 | .7050401 | -.2279599 | -32.33291 % |
| 20 | 1.246 | 1.16201 | -8.398998E-02 | -7.227991 % |
| 30 | 1.487 | 1.61898 | .1319799 | 8.152043 % |

S07

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 10 | .167 | .1892 | 2.200037E-03 | 1.16281 % |
| 20 | .316 | .3278 | 1.180002E-02 | 3.599762 % |
| 30 | .475 | .4664001 | -8.599967E-03 | -1.843904 % |

Jun 28 Aug 86

AI

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| .681 | 0 | 0 | 0 | 1.701412E+38 % |
| 0 | 0 | 0 | 0 | 1.701412E+38 % |
| 0 | 0 | 0 | 0 | 1.701412E+38 % |
| 0 | 0 | 0 | 0 | 1.701412E+38 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .681 | .6658999 | -1.510012E-02 | -2.267626 % |
| 10 | .933 | .9557999 | 2.279991E-02 | 2.385427 % |
| 20 | 1.246 | 1.2457 | -3.000498E-04 | -2.408684E-02 % |
| 30 | 1.543 | 1.5356 | -7.399917E-03 | -.4818909 % |

S09

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | -4.799988E-03 | -4.799988E-03 | 100 % |
| 10 | .131 | .1359 | 4.900009E-03 | 3.605599 % |
| 20 | .272 | .2766 | 4.599989E-03 | 1.663047 % |
| 30 | .422 | .4173 | -4.700005E-03 | -1.126289 % |

S13

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | -9.700012E-03 | -9.700012E-03 | 100 % |
| 10 | .151 | .1596 | 8.600011E-03 | 5.388479 % |
| 20 | .317 | .3289001 | 1.190004E-02 | 3.618132 % |
| 30 | .509 | .4982001 | -1.079995E-02 | -2.167793 % |

S14

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .018 | .0075 | -.0105 | -140 % |
| 10 | .137 | .153 | 1.599999E-02 | 10.45751 % |
| 20 | .299 | .2985 | -5.000234E-04 | -.167512 % |
| 30 | .449 | .444 | -5.000025E-03 | -1.126132 % |

ANK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.003 | -.0015 | .0015 | -100 % |
| 10 | .294 | .2965 | 2.499998E-03 | .8431695 % |
| 20 | .604 | .5945 | -9.499967E-03 | -1.597976 % |
| 30 | .887 | .8925 | 5.499959E-03 | .616242 % |

ADC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .694 | .6932998 | -7.002354E-04 | -.1010004 % |
| 10 | 1 | 1.0056 | 5.599976E-03 | .5568791 % |
| 20 | 1.327 | 1.3179 | -9.099722E-03 | -.6904712 % |
| 30 | 1.626 | 1.630201 | 4.200578E-03 | .2576724 % |

Jim
Stright

BEGIN DATA FILE: AS828.DF

Jun 28 Aug 84

Begin Element - AS
0.100
0.000 AZ
-0.100
-0.116
0.000 AZ
0.005

BEGIN DATA FILE: AS828.DF

Begin Element - AS
0.002
0.000 AZ
0.004
0.145
0.299
0.418
0.567
0.599
0.708
0.798
0.516
0.542
0.739
0.790
0.393
0.556
0.523
0.752
0.460
-0.001
0.000 AZ
0.001
0.006
0.000 AZ
-0.001
0.272
0.597
0.892
0.652
1.001
1.258
1.524
0.681
0.933
1.246
1.487

Bad tube or alignment of tube

Blower sets

AQC

AQC

bad injection igniter

1.543 repeat of last exp
0.056
0.187
0.316
0.475
0.000
0.131
0.272
0.422

507

509

JVM
8 Aug 91

1.543 repeat of last exp
0.056
0.187 507
0.316
0.475
0.000
0.131 509
0.272
0.422
0.000
0.151 513
0.317
0.509

0.018
0.137 514
0.299
0.449
-0.003
0.294 5
0.604
0.887
0.694
1.000
1.327 AQC
1.626
0.001
0.166 ext
0.355 B.
0.567
-0.002
0.177 Dup
0.386 B
0.579
0.002
0.174 501
0.334 Dup
0.493
0.157
0.313 501
0.478 Spike
0.636
0.008
0.174
0.323 501
0.478
0.004
0.256 502
0.500
0.738
0.002
0.167 505
0.351
0.512
0.692
1.016
1.348 AQC last
1.689 Q.C. out
rerun

Activity # C28359

11/7/86

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

8/29/86 remainder

DIVISION/BRANCH ESD/EDO SAMPLING DATE 8/6/86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 * priority 1

DU NUMBER D307 DATASET NUMBER 3424 STUDY American Steel Foundry PRIORITY 1* CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | EP TOX EXTRACT MERCURY MG/L MIN19309 | FISH HG MG/KG (WET) MIN520168 |
|---|---|---|---|
| 86EF10501 | 5-90240 | X K0.0001 | |
| 86EF10502 | 5-90241 | X K0.0001 | |
| 86EF10503 | 5-90242 | X K0.0001 | |
| 86EF10504 | 5-90243 | X K0.0001 | |
| 86EF10505 | 5-90244 | X K0.0001 | |
| 86EF10506 | 5-90245 | X K0.0001 | |
| 86EF10507 | 5-90229 | X K0.0001 | |
| *86EF10508 | 5-90246 | X K0.0001 | |
| 86EF10D09 | 5-90247 | X 0.0005 | |
| *86EF10510 | 5-90248 | X 0.0004 | |
| *86EF10511 | 5-90249 | X 0.0004 | |
| *86EF10512 | 5-90127 | X K0.0001 | |
| 86EF10513 | 5-90226 | X K0.0001 | |
| 86EF10514 | 5-90250 | X 0.0036 | |
| 86EF10R15 | 5-90227 | X no sample Empty Jar | |
| | | P. Pandey 11/6/86 | |

OK-BB
11/6/86

TRANSMITTED BY
NOV 07 1986
U.S. EPA CENTRAL
REGIONAL LAB

NOTE: These samples were screened using
(1) CRL automated Hg method. They are well below RCRA limit 0.2 mg/L Hg. P. Pandey

(2) Sample #s S06, S07, D09, S13, & S14 are extracted 2nd time. Values reported are based on 2nd extraction

CRL V.2: 3/85 *priority 1

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: PM
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: 11-04-1986

DATA SET NUMBER ---: WSB 3569, 3570, 3562 ED03424
DU NUMBER ---------: C215, D307

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -5.71966E-03
+6.53065E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .9991914

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION ug/L | CALCULATED |
|---|---|---|---|
| 1 | +0.500 | +0.000 | +0.026 |
| 2 | +7.500 | +0.500 | +0.484 |
| 3 | +15.000 | +1.000 | +0.973 |
| 4 | +23.000 | +1.500 | +1.496 |
| 5 | +31.000 | +2.000 | +2.018 |

T-A-B-L-E O-F S-A-M-P-L-E-S

| | SAMPLE I.D. | SIGNAL | CONCENTRATION | |
|---|---|---|---|---|
| | BLANK | +0.000 | -0.006 | limit 0 ± 0.1 |
| | CS1 | +25.000 | +1.626 | limit 1.5 ± 0.2 |
| | CS2 | +23.000 | +1.496 | limit 1.5 ± 0.2 |
| ED03424 | EXT BLANK | +0.000 | -0.006 | |
| | S06 | +0.000 | -0.006 | |
| | S07 | +1.000 | +0.059 | |
| | D09 | +7.000 | +0.451 | |
| | S13 | +0.000 | -0.006 | |
| | S14 | +53.000 | +3.455 | |
| | PE1 | +6.000 | +0.386 | |
| | PE2 | +5.500 | +0.353 | |
| | D09DUP | +6.000 | +0.386 | limit Δ ≤ 0.15 |
| | S07 SPIKE | +17.000 | +1.104 | 1.104 - .059 = 1.045 limit 1.0 ± 0.15 |
| | S14 1/5 | +11.000 | +0.712 | 3.56 |
| | CS1 | +22.500 | +1.463 | limit 1.5 ± 0.2 |
| | CS2 | +21.000 | +1.365 | limit 1.5 ± 0.2 |
| WSB 3570 | S23 | +1.500 | +0.092 | |
| | S24 | +0.500 | +0.026 | |
| | S25 | +2.500 | +0.157 | |
| | S26 | +1.000 | +0.059 | |
| | S27 | +1.500 | +0.092 | |
| WSB 3562 | S07 | +1.000 | +0.059 | |
| | S08 1/100 | +16.500 | +1.071 | 107 |
| | S09 | +2.500 | +0.157 | |
| | S10 | +0.000 | -0.006 | |
| | S11 | +0.000 | -0.006 | |
| | S12 | +0.000 | -0.006 | |
| | S08 DUP 1/100 | +17.000 | +1.104 | 110 limit Δ ≤ 0.15 |
| | S11 SP | +18.000 | +1.169 | 1.169 - .006 1.175 limit 1.0 ± 0.15 just above limit |
| | S13 | +1.500 | +0.092 | |
| | S18 | +1.000 | +0.059 | |
| WSB 3569 | CS1 | +23.000 | +1.496 | limit 1.5 ± 0.2 |
| | CS2 | +23.000 | +1.496 | limit 1.5 ± 0.2 |
| | S14 | +1.500 | +0.092 | reconfirm previous values |
| | S15 | +1.000 | +0.059 | |
| | S16 | +1.000 | +0.059 | |
| | S17 | +0.800 | +0.046 | |
| | S18 | +0.500 | +0.026 | |
| | 20 | +0.500 | +0.026 | |

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: PP
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: 08-29-1986

DATA SET NUMBER ---:
DU NUMBER ---------:

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +3.66893E-02
+3.50295E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .9983404

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | -1.000 | +0.000 | +0.001 |
| 2 | +12.500 | +0.500 | +0.474 |
| 3 | +28.000 | +1.000 | +1.017 |
| 4 | +43.000 | +1.500 | +1.542 |
| 5 | +55.000 | +2.000 | +1.963 |

T-A-B-L-E O-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION ug/L | |
|---|---|---|---|
| BLK | -1.000 | +0.001 | Δ ≤ 0.1 |
| CS1 | +40.000 | +1.437 | " = 1.5±0.2 |
| CS2 | +42.000 | +1.507 | " = 1.5±0.2 |
| 86EF10S01 | -1.000 | +0.001 | |
| S02 | -2.000 | -0.034 | |
| S03 | -2.000 | -0.034 | |
| S04 | -2.000 | -0.034 | |
| S05 | -2.000 | -0.034 | |
| S06 | -2.000 | -0.034 | |
| S07 | -2.000 | -0.034 | |
| (PP) ~~S08~~ D09 | +12.000 | +0.457 | |
| BLK | -2.000 | -0.034 | |
| S13 | -2.000 | -0.034 | |
| S14 | +39.000 | +1.402 | |
| CS1 | +39.000 | +1.402 | |
| CS2 | +42.500 | +1.525 | |
| 86EF10D09DUP | +15.000 | +0.562 | Δ ≤ 0.1 |
| 86RA01S44 | +0.000 | +0.036 | |
| S46 | -1.000 | +0.001 | |
| S47 | -1.000 | +0.001 | |
| S48 | -1.000 | +0.001 | |
| D48 | -1.000 | +0.001 | |
| R53 | -1.000 | +0.001 | |
| EF10SD1SPK (M.O) | +28.000 % rec = 101 | +1.017 | % = 100 ± 15 % |
| CS1 | +40.500 | +1.455 | |
| CS2 | +41.000 | +1.472 | |
| EF10S14DUP | +40.000 | +1.437 | Δ ≤ 0.1 |
| S44DUP | +0.000 | +0.036 | Δ ≤ 0.1 |

EDO 3424

SF 3453

1st extraction

DO NOT USE data for S06, S07, D09, S13 & S14 from this run. Use from 2nd extraction

[signature] 11/6/86

NAME OF ANALYST ---: PP
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: 08-13-1986

DATA SET NUMBER ---: ED03424 / RCRA 3371 / WSB 3398 / SF 3407 / SF 3413
DU NUMBER ---------:

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -4.52654E-02
+5.09886E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .9993744

T-A-B-L-E D-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | +0.500 | +0.000 | -0.020 |
| 2 | +11.000 | +0.500 | +0.515 |
| 3 | +21.000 | +1.000 | +1.025 |
| 4 | +30.000 | +1.500 | +1.484 |
| 5 | +40.000 | +2.000 | +1.994 |

T-A-B-L-E D-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION | |
|---|---|---|---|
| BLK | +0.500 | -0.020 | Δ ≤ 0.1 |
| CS1 | +30.000 | +1.484 | Limit 1.5 ± 0.2 |
| CS2 | +30.000 | +1.484 | " 1.5 ± 0.2 |
| EPBLK | +0.500 | -0.020 | |
| S08 86EF10S08 | +1.000 | +0.005 | |
| S10 " | +9.000 | +0.413 | ED03424 (Primary I) |
| S11 " | +9.000 | +0.413 | |
| S12 " | +2.000 | +0.056 | |
| RCRA0C | +11.000 | +0.515 | |
| " | +11.000 | +0.515 | DS # RCRA 3371 |
| " | +9.000 | +0.413 | |
| " | +11.000 | +0.515 | |
| CS1 | +31.000 | +1.535 | |
| CS2 | +29.000 | +1.433 | |
| S10 DUP Extraction | +10.000 | +0.464 | Δ ≤ 0.1 |
| S10SPK (+10) | +32.000 | +1.586 | Limits 100 ± 15% |
| 86PB01S20 | +0.000 | -0.046 | |
| S21 | +0.000 | -0.046 | |
| S22 | +0.000 | -0.046 | WSB 3398 |
| S23 | +1.000 | +0.005 | |
| S24 | +0.500 | -0.020 | |
| S25 | +3.000 | +0.107 | |
| S26 | +0.000 | -0.046 | |
| S27 | +0.000 | -0.046 | |
| 86SB4101S01 | +0.000 | -0.046 | |
| S02 | +0.000 | -0.046 | SF 3407 |
| S03 | +0.000 | -0.046 | |
| S04 | +0.000 | -0.046 | |
| D04 | +0.000 | -0.046 | |
| 86PB01S20DUP | +0.000 | -0.046 | Δ ≤ 0.1 |
| 86SS01S01 | +0.000 | -0.046 | |
| S02 | +0.000 | -0.046 | |
| S03 | +0.000 | -0.046 | SF 3413 |
| S04 | +0.000 | -0.046 | |
| S05 | +0.000 | -0.046 | |
| D01 | +0.000 | -0.046 | |
| R01 | +0.000 | -0.046 | |
| S5D1S01DUP | +0.000 | -0.046 | |
| S5D1S01SPK | +23.000 | +1.127 | |
| CS1 | +30.000 | +1.484 | |
| CS2 | +30.000 | +1.484 | |

C28359 11/7/86

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM METALS

DIVISION/BRANCH EDO SAMPLING DATE _____ LAB ARRIVAL DATE _____ DUE DATE _____

DU NUMBER D307 DATASET NUMBER EDO3424 STUDY AMERICAN STEEL PRIORITY _____ CONTRACTOR _____

| CHL LOG NUMBER | SAMPLE DESCRIPTION | EP TOX EXTRACT ICP METALS MG/L MET19364 | EP TOX EXTRACT SE MG/L MET19109 | EP TOX EXTRACT AS MG/L MET1989 |
|---|---|---|---|---|
| EF10S06 | | | <0.002 | <0.002 |
| S07 | | | <0.002 | 5.5 .006 |
| D09 | | | 0.012 ~~<0.002~~ | ~~<0.002~~ <0.002 |
| S13 | | | <0.002 ~~<0.002~~ | ~~<0.002~~ <0.002 |
| S14 | | | 0.025 | ~~<0.002~~ <0.002 |
| | | | A Quirk 11/6/86 | [illegible] 11/5/86 |

11/12/86

TRANSMITTED BY [illegible]
NOV 12 1986
U.S. EPA CENTRAL REGIONAL LAB

11/7/86

Activity # C28554

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM MINERALS-NUTRIENTS

8/29/86 remainder

DIVISION/BRANCH LSD/EDO SAMPLING DATE 8/6/86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86* priority

DU NUMBER D307 DATASET NUMBER 3424 STUDY American Steel Foundries PRIORITY 1* CONTRACTOR N

all ok Pm - PP

all ok Pm PP
11/6/86

| CRL LOG NUMBER | SAMPLE DESCRIPTION | EP TOX EXTRACT MERCURY MG/L MIN19309 | Second Extraction HG mg/l |
|---|---|---|---|
| 86EF10501 | 5-90240 | X <0.0001 | |
| 86EF10502 | 5-90241 | X <0.0001 | |
| 86EF10503 | 5-90242 | X <0.0001 | |
| 86EF10504 | 5-90243 | X <0.0001 | |
| 86EF10505 | 5-90244 | X <0.0001 | |
| 86EF10506 | 5-90245 | X <0.0001 | <0.0001 |
| 86EF10507 | 5-90229 | X <0.0001 | <0.0001 |
| * 86EF10508 | 5-90246 | X <0.0001 ** | |
| 86EF10509 | 5-90247 | X (PP) 0.0005 | 0.0005 |
| * 86EF10510 | 5-90248 | X 0.0004 ** | |
| * 86EF10511 | 5-90249 | X 0.0004 ** | |
| * 86EF10512 | 5-90127 | X <0.0001 ** | |
| 86EF10513 | 5-90226 | X <0.0001 | <0.0001 |
| 86EF10514 | 5-90250 | X 0.0014 | 0.0036 |
| 86EF10515 | 5-90227 | X No sample Empty Jar | |
| | | | PM 11-5-86 |
| | | PP 8/14/86 | these samples were reextracted and rerun. PM |
| | | PP 8/29/86 | |

** These samples were screened using CRL automated Hg method. They are well below action limit 0.2 mg/L Hg

Raj

NOTE: Rest of the sample analysis results will be submitted later on as soon as analysis is done

Raj

Remaining samples done on 8/29/86

Raj

* priority 1

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF:

MEMORANDUM

TRANSMITTED BY
NOV 06 1986
U.S. EPA CENTRAL REGIONAL LAB

DATE: November 5, 1986

SUBJECT: EDO 3424 - EP TOX Results

FROM: Andrea Jirka
Inorganic Section Chief

TO: Files

CRL analyzed a group of samples from American Steel Foundry for EP TOX metals during August, 1986. Of these, four samples were analyzed on a priority 1 basis and the remaining 11 samples were analyzed on a priority 2 basis.

In October Joe Friedle of EDO contacted me and indicated that samples 86EF10S10 (priority 1) and 86EF10D09 (priority 2) were field duplicates. The results for these two samples were significantly different. We reviewed the case and determined that it was possible that a sample mix-up had occurred in the laboratory. In order to clarify this question, we reanalyed the entire group of samples that was run along with sample D09. The results indicated that an error may have occurred. Therefore, we are substituting the attached results for samples 86EF10S06, S07, D09, S13, and S14. The original results should be disregarded and/or discarded.

For information purposes, it is noted that the CRL rcently received the results of a blind round-robin study for EP TOX. Results of this study indicated a low bias for Pb. The round-robin sample was of a matrix that is unrelated to the American Steel Foundry samples. Moreover, CRl has reported acceptable results on previous studies where the samples more closely matched the subject samples. however, as a precaution, the data-user should be aware of the possibility that the reported EP TOX Pb results could be biased low.

Based upon the analytical results, samples EF10D09, EF10S10 and EF10S14 have cadmium (Cd) values in excess of 1 mg/L and lead (Pb) values in excess of 5 mg/L.

Attachment

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF:

MEMORANDUM

DATE: November 5, 1986

SUBJECT: EP TOX Results for EDO 3424
American Steel Foundries

FROM: Steve Parker
CRL Quality Control Coordinator

TO: Data Users

Samples EF10S06, EF10S07, EF10D09, EF10S13 and EF10S14 from American Steel Foundries (EDO 3424) were rerun to confirm the initial results. The samples were analyzed using the extraction procedure in SW-846, "Test Methods for Evaluating Solid Wastes," 2nd edition. The method performance for the 8 EP TOX metals in the blanks, spikes and duplicates was satisfactory. Based on the attached memo, the data user should be cautioned that the laboratory did experience a low bias for Pb on a sample of a different matrix.

Attachment

8/29/86

Activity # C28359

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM MINERALS-NUTRIENTS

8/29/86 reminder

DIVISION/BRANCH ESD/EDO SAMPLING DATE 8/6/86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 * priority 1

DU NUMBER D307 DATASET NUMBER 3424 STUDY American Steel Foundries PRIORITY 1* CONTRACTOR N

all oe P — 8/8
9/4/86

TRANSMITTED BY
Griffin
SEP 08 1986
U.S. EPA CENTRAL
REGIONAL LAB

| CRL LOG NUMBER | SAMPLE DESCRIPTION | EP TOX EXTRACT MERCURY MG/L MIN19309 | FISH HG MG/KG (WET) MIN520168 |
|---|---|---|---|
| 86EF10501 | 5-90240 | X K0.0001 | |
| 86EF10502 | 5-90241 | X K0.0001 | |
| 86EF10503 | 5-90242 | X K0.0001 | |
| 86EF10504 | 5-90243 | X K0.0001 | |
| 86EF10505 | 5-90244 | X K0.0001 | |
| 86EF10506 | 5-90245 | X K0.0001 | |
| 86EF10507 | 5-90229 | X K0.0001 | |
| * 86EF10508 | 5-90246 | X K0.0001 ** | |
| 86EF10509 | 5-90247 | X (PP) 0.0005 | |
| * 86EF10510 | 5-90248 | X 0.0004 ** | |
| * 86EF10511 | 5-90249 | X 0.0004 ** | |
| * 86EF10512 | 5-90127 | X K0.0001 ** | |
| 86EF10513 | 5-90226 | X K0.0001 | |
| 86EF10514 | 5-90250 | X 0.0014 | |
| 86EF10R15 | 5-90227 | X No sample Empty Jar | |
| | | P. Panicle 8/14/86 | |
| | | P. Panicle 8/29/86 | |

** These samples were screened using CRL automated Hg method. They are well below action limit 0.2 mg/L Hg

Note: Rest of the sample analysis results will be submitted later on as soon as analysis is done

Remaining samples done on 8/29/86

* priority 1

CRL V.2: 3/85

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: PP
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: 08-29-1986

DATA SET NUMBER ---:
DU NUMBER ---------:

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +3.66893E-02
+3.50295E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .9983404

T-A-B-L-E D-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | -1.000 | +0.000 | +0.001 |
| 2 | +12.500 | +0.500 | +0.474 |
| 3 | +28.000 | +1.000 | +1.017 |
| 4 | +43.000 | +1.500 | +1.542 |
| 5 | +55.000 | +2.000 | +1.963 |

T-A-B-L-E D-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION ug/L | |
|---|---|---|---|
| BLK | -1.000 | +0.001 | Limit ≤ 0.1 |
| CS1 | +40.000 | +1.437 | " = 1.5±0.2 |
| CS2 | +42.000 | +1.507 | " = 1.5±0.2 |
| B6EF10S01 | -1.000 | +0.001 | |
| S02 | -2.000 | -0.034 | |
| S03 | -2.000 | -0.034 | |
| S04 | -2.000 | -0.034 | |
| S05 | -2.000 | -0.034 | |
| S06 | -2.000 | -0.034 | |
| S07 | -2.000 | -0.034 | |
| (PP) ~~S08~~ D09 | +12.000 | +0.457 | |
| BLK | -2.000 | -0.034 | |
| S13 | -2.000 | -0.034 | |
| S14 | +39.000 | +1.402 | |
| CS1 | +39.000 | +1.402 | |
| CS2 | +42.500 | +1.525 | |
| B6EF10D09DUP | +15.000 | +0.562 | Δ ≤ 0.1 |
| B6RA01S44 | +0.000 | +0.036 | |
| S46 | -1.000 | +0.001 | |
| S47 | -1.000 | +0.001 | |
| S48 | -1.000 | +0.001 | |
| D48 | -1.000 | +0.001 | |
| R53 | -1.000 | +0.001 | |
| EF10S01SPK (H.O) | +28.000 % rec = 101 | +1.017 | Lim = 100 ± 15 % |
| CS1 | +40.500 | +1.455 | |
| CS2 | +41.000 | +1.472 | |
| EF10S14DUP | +40.000 | +1.437 | Δ ≤ 0.1 |
| S44DUP | +0.000 | +0.036 | Δ ≤ 0.1 |

BDO 3424

SF 3453

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: FP
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: 08-13-1986

DATA SET NUMBER ---: ED03424 / RCRA 3371 / WSB3398 / SF3407 / SF3413
DU NUMBER ---------:

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -4.52654E-02
+5.09886E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .9993744

T-A-B-L-E 0-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | +0.500 | +0.000 | -0.020 |
| 2 | +11.000 | +0.500 | +0.515 |
| 3 | +21.000 | +1.000 | +1.025 |
| 4 | +30.000 | +1.500 | +1.484 |
| 5 | +40.000 | +2.000 | +1.994 |

T-A-B-L-E 0-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION | |
|---|---|---|---|
| BLK | +0.500 | -0.020 | LL = ± ≤ 0.1 |
| CS1 | +30.000 | +1.484 | Limit 1.5 ± 0.2 |
| CS2 | +30.000 | +1.484 | " 1.5 ± 0.2 |
| EPBLK | +0.500 | -0.020 | |
| S09 86EF10508 | +1.000 | +0.005 | |
| S10 " | +9.000 | +0.413 | ED03424 (Primary I) |
| S11 " | +9.000 | +0.413 | |
| S12 " | +2.000 | +0.056 | |
| RCRABC | +11.000 | +0.515 | |
| " | +11.000 | +0.515 | DS * RCRCRA 3371 |
| " | +9.000 | +0.413 | |
| " | +11.000 | +0.515 | |
| CS1 | +31.000 | +1.535 | |
| CS2 | +29.000 | +1.433 | |
| S10 DUP Extraction | +10.000 | +0.464 | d ≤ 0.1 |
| S10SPK (+10) | +32.000 ~ 112 | +1.586 | Limits 100 ± 15% |
| 86PG01S20 | +0.000 | -0.046 | |
| S21 | +0.000 | -0.046 | |
| S22 | +0.000 | -0.046 | WSB 3398 |
| S23 | +1.000 | +0.005 | |
| S24 | +0.500 | -0.020 | |
| S25 | +3.000 | +0.107 | |
| S26 | +0.000 | -0.046 | |
| S27 | +0.000 | -0.046 | |
| 86SB4101S01 | +0.000 | -0.046 | |
| S02 | +0.000 | -0.046 | SF3407 |
| S03 | +0.000 | -0.046 | |
| S04 | +0.000 | -0.046 | |
| D04 | +0.000 | -0.046 | |
| B6PG01S20DUP | +0.000 | -0.046 | Δ ≤ 0.1 |
| 86SS01S01 | +0.000 | -0.046 | |
| S02 | +0.000 | -0.046 | |
| S03 | +0.000 | -0.046 | SF3413 |
| S04 | +0.000 | -0.046 | |
| S05 | +0.000 | -0.046 | |
| D01 | +0.000 | -0.046 | |
| R01 | +0.000 | -0.046 | |
| S5D1S01DUP | +0.000 | -0.046 | |
| S5D1S01SPK(+1.0) | +23.000 ≈ 116% | +1.127 | LL = 100 ± 15 little high on spike |
| CS1 | +30.000 | +1.484 | |
| CS2 | +30.000 | +1.484 | |

9/4/86

8/27/86

JVM 27 Aug 86

C 28359
D307

DL13L001.054IRUN541.BRN 26-AUG-86 14:25:17 PAGE 3

DATA SET : ED03424 American Steel Foundries

| ELEMENT | | EF10S02 | EF10S01 | EF10S03 | EF10S04 |
|---|---|---|---|---|---|
| AG | ug/l | < 6.00 | < 6.00 | < 6.00 | < 6.00 |
| AL | | < 80. | 135. | < 80. | 874. |
| B | | 109. | 289. | 177. | 4900. |
| BA | | 58. | 47. | 28. | 150. |
| BE | | < 1.00 | < 1.00 | < 1.00 | < 1.00 |
| CD | | < 10.0 | < 10.0 | < 10.0 | < 10.0 |
| CO | | 22.3 | < 6.0 | < 6.0 | 58.9 |
| CR | | < 8.00 | < 8.00 | < 8.00 | < 8.00 |
| CU | | < 6.0 | < 6.0 | < 6.0 | 11.6 |
| FE | | 43300. | 121. | 2700. | < 90.0 |
| LI | | 10. | 21. | < 10. | 192. |
| MN | | 5470. | 126. | 2660. | 1130. |
| MO | | < 15.0 | < 15.0 | < 15.0 | 76.6 |
| NI | | 259. | 24. | 82. | 277. |
| PB | | < 70.0 | < 70.0 | < 70.0 | < 70.0 |
| SN | | < 40.0 | < 40.0 | < 40.0 | < 40.0 |
| SR | | 480. | 317. | 552. | 2960. |
| TI | | < 25.0 | < 25.0 | < 25.0 | < 25.0 |
| V | | < 5.00 | < 5.00 | < 5.00 | < 5.00 |
| Y | | < 5.00 | < 5.00 | < 5.00 | < 5.00 |
| ZN | | < 40. | 53. | < 40. | 145. |
| CA | mg/l | 14. | 10. | 16. | |
| CA | | | | | 87.8 |
| K | | < 2.00 | < 2.00 | < 2.00 | 2.68 |
| MG | | 3.8 | 2.7 | 3.8 | 30.5 |
| NA | | 3.6 | 23.9 | 4.0 | 39.3 |

MS 8/27/86

TRANSMITTED BY
Griffin
SEP 08 1986
U.S. EPA CENTRAL REGIONAL LAB

8/27/86
Jvm 27Aug86
9/4/86

C 28359
D307



DATA SET : ED03424 American Steel Foundries

| ELEMENT | | EF10S05 | EF10S06 | EF10S07 | EF10S09 |
|---|---|---|---|---|---|
| AG | ug/l | < 6.00 | < 6.00 | < 6.00 | < 6.00 |
| AL | | < 80.0 | < 80.0 | 905. | < 80.0 |
| B | | 108. | 102. | 1950. | 741. |
| BA | | 49. | 37. | 112. | 255. |
| BE | | < 1.00 | < 1.00 | < 1.00 | < 1.00 |
| CD | | < 10. | < 10. | < 10. | 1410. |
| CO | | < 6.00 | 129. | < 6.00 | < 6.00 |
| CR | | < 8.0 | < 8.0 | < 8.0 | 11.2 |
| CU | | 6.5 | < 6.0 | 11.6 | 25.2 |
| FE | | 21500. | 120000. | 173. | 172. |
| LI | | < 10.0 | 14.7 | 79.0 | 76.1 |
| MN | | 4100. | 11300. | 672. | |
| MO | | < 15.0 | < 15.0 | 21.0 | < 15.0 |
| NI | | 85.0 | 2020. | 29.3 | 41.5 |
| PB | | < 70. | < 70. | < 70. | 1260. |
| SN | | < 40.0 | < 40.0 | < 40.0 | < 40.0 |
| SR | | 198. | 174. | 2320. | 267. |
| TI | | < 25.0 | < 25.0 | < 25.0 | < 25.0 |
| V | | < 5.00 | < 5.00 | < 5.00 | < 5.00 |
| Y | | < 5.00 | < 5.00 | < 5.00 | < 5.00 |
| ZN | | < 40. | 60. | 66. | |
| CA | mg/l | 26. | 19. | 72. | 218. |
| K | | < 2. | < 2. | 7. | 132. |
| MG | | 1.9 | 2.4 | 16.9 | |
| NA | | 2. | 3. | 136. | |

MS 8/27/86

8/27/86 AT

C28359 D307

DATA SET : EDO3424 American Steel Foundries

Jm 27Aug86

9/4/86

| ELEMENT | | EF10S09 1:10 dilution | EF10S13 | EF10S14 | EF10S14 1:10 Dilution |
|---|---|---|---|---|---|
| AG | ug/l | < | < 6.00 | < 6.00 | |
| AL | | < | 88.5 | < 80.0 | |
| B | | | 197. | 1040. | |
| BA | | | 68. | 334. | |
| BE | | | < 1.00 | < 1.00 | |
| CD | | | < 10. | 1260. | |
| CO | | < | < 6.00 | < 6.00 | |
| CR | | < | 12.3 | 10.8 | |
| CU | | | < 6.0 | 36.0 | |
| FE | | | 211. | 212. | |
| LI | | | 17.0 | 102. | |
| MN | | 22700. | 250. | | 31800. |
| MO | | | < 15.0 | 30.1 | |
| NI | | | < 15.0 | 48.8 | |
| PB | | | 84. | 1260. | |
| SN | | | < 40.0 | < 40.0 | |
| SR | | | 498. | 401. | |
| TI | | | < 25.0 | < 25.0 | |
| V | | | < 5.00 | < 5.00 | |
| Y | | | < 5.00 | < 5.00 | |
| ZN | | 91900. | 184. | | 107000. |
| CA | mg/l | | 21. | 316. | |
| K | | | 2. | 163. | |
| MG | | 54.5 | 5.2 | | 67.5 |
| NA | | 241. | 11. | | 288. |

MS 8/27/86

Restrack C28359

an oe 9/4/86 PB 8/21/86

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES & PCB'S

8/29/86 REST OF SAMPLES

DIVISION/BRANCH EDO/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 * PRIORITY #1

DU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Foundry PRIORITY 1 * CONTRACTOR N

| CRL LOG NUMBER 35EF19 | SAMPLE DESCRIPTION | MATRIX Soil<br>TEST Fluoride<br>UNITS mg/kg<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | CRLTM |
|---|---|---|---|---|---|---|---|
| S01 | Soil | X 0.04 * | | | | | 5-902 |
| S02 | | X 0.07 * | | | | | 5-902 |
| S03 | | X ~~0.12~~ 0.1 * | | | | | 5-9024 |
| S04 | | X ~~0.13~~ 0.13 * | | | | | 5-902 |
| S05 | | X ~~0.21~~ 0.2 * | | | | | 5-9024 |
| S06 | | X ~~0.10~~ 0.1 * | | | | | 5-9024 |
| S07 | | X ~~0.17~~ 0.2 * | | | | | 5-9025 |
| * S08 | | X 0.2 | | | | | 5-9024 |
| D09 | | X ~~7.94~~ 2.0 * | | | | | 5-9024 |
| * S10 | | X 1.5 | | | | | 5-9024 |
| * S11 | | X 1.0 | | | | | 5-9024 |
| * S12 | | X 0.28 | | | | | 5-9012 |
| S13 | | X ~~0.22~~ 0.2 * | | | | | 5-9022 |
| S14 | | X 2.0 AS | | | | | 5-9025 |
| R15 | | X | | | | | 5-9025 |
| | | P. Parish 8.15.86 | | | | | |

TRANSMITTED BY
SEP 08 1986
U.S. EPA CENTRAL REGIONAL LAB

NOTE: Rest of the sample analysed report will be submitted later on as soon as samples are done - Pa Lay

R.A. Pano 8-15-86

* SAMPLES DONE LATER IN THE DAY.

R.A. Pano

CRL NUMBERED SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

# COMPUTATION SHEET

| OFFICE | | FILE NO. |
|---|---|---|
| SUBJECT | ED03424 | |
| COMPUTATION | F (mg/Kg) Sediment Calculation. | |
| COMPUTED BY | Bailey Reid | CHECKED BY |
| DATE | 8/15/86 | PAGE 1 OF 1 PAGES |

| (1) Sample # | (2) % solids | (3) Final vol. of sample distillate | (4) wet wt. (GMS) | (5) Dry wt. (GMS/L) | (6) Sed Conc. (mg/L) | (7) F sed conc (mg/Kg) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| 508 | 25 | 100 | 3.61 | 9.025 | 2.1 | 0.23 | | | |
| 510 | 100 | 115 | 2.78 | 24.17 ~~11.48~~ | 36 | 1.49 | | | |
| 511 | 41 | 115 | 3.12 | 11.12 | 11 | 0.99 | | | |
| 512 | 28 | 115 | 2.95 | 7.18 | 2.0 | 0.28 | | | |
| 514 | 95 | 115 | 2.65 | 21.89 | 44 | 2.01 | | | |
| 510DUP | 100 | 125 | 2.96 | 23.68 | 40 | 1.69 | | | |

# COMPUTATION SHEET

| OFFICE | | | | | | | | | FILE NO. |
|---|---|---|---|---|---|---|---|---|---|
| SUBJECT | EDO 3424 | | | | | | | | |
| COMPUTATION | F (mg/L) | | | | | | | | |
| COMPUTED BY Barlay | | CHECKED BY | | DATE 8/15/88 | | | | PAGE 1 OF 1 PAGES | |

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| | ~~mg/L~~ | mg/L | | | | | | | |
| Cal std - 0.4 | | | | | | | | | |
| " " 4.0 | | | | | | | | | |
| 1.0 (Read) | | 0.96 | | | | | | | |
| CS-LO | | 0.42 | Limit = 0.4 ± 0.1 | | | | | | |
| CS-Hi | | 0.92 | " = ~~1.0~~ 1.0 ± 0.1 | | | | | | |
| BLK | | 0.05 | ≤ 0.1 | | | | | | |
| DIST BLK | | 0.08 | ≤ 0.1 | | | | | | |
| " STD (TV=1.0) | | 0.92 | % rec = 92 (Limit = 94 ± 16%) | | | | | | |
| S08 | | 2.1 | | | | | | | |
| 115 S10 | | 46.6 | | | | | | | |
| 115 S11 | | 13.2 | | | | | | | |
| 115 S12 | | 2.0 | | | | | | | |
| S14 | | 56.3 | | | | | | | |
| 125 S10DUP | | over cal range | | | | | | | |
| S14SPK (+1.0) | | over cal range | | | | | | | |
| ~~CS-LO~~ | | | | | | | | | |
| ~~CS-Hi~~ | | | | | | | | | |
| S10 (1:20 DIL) | | 1.76 x 20 ≈ 36 | | | | | | | |
| S14 (1:10 DIL) | | 1.13 x 10 ≈ 11 | | | | | | | |
| S14 (1:40 DIL) | | 1.06 x 40 ≈ 44 | | | | | | | |
| S14SPK (1:40 DIL) | | 0.99 | Invalid spike | | | | | | |
| S10DUP (1:20 DIL) | | 1.98 x 20 ≈ 40 | | | | | | | |
| CS-LO | | 0.39 | | | | | | | |
| CS-Hi | | 0.92 | | | | | | | |

# COMPUTATION SHEET

| OFFICE | | | | | | | | | FILE NO. |
|---|---|---|---|---|---|---|---|---|---|
| SUBJECT | F (mg/kg) | | | | | | | | |
| COMPUTATION | EDO 3424 | | | | | | | | |
| COMPUTED BY R.G. Pans | | CHECKED BY | | | DATE 8-15-86 | | | PAGE OF PAGES | |

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| | % SOLIDS | FINAL VOL. OF SAMPLE DISTILLATE | WET WT (GM) | DRY WT (GM/L) | SED. CONC. (mg/L) | F SED. CONC (mg/kg) | | | |
| CS-1 | | | | | 0.37 | | | | |
| CS-2 | | | | | 0.98 | | | | |
| BL | | | | | 0.10 | | | | |
| EF10S01 | ~~2.0~~ 98 | 115 | 2.00 | 17.0 | 0.65 | 0.04 | | | |
| S02 | 98 | 120 | 2.69 | 21.9 | 1.60 | 0.07 | | | |
| S03 | 98 | 110 | 2.34 | 20.8 | 2.40 | 0.12 | | | |
| S04 | 99 | 120 | 2.09 | 20.7 | 2.59 | 0.13 | | | |
| S05 | 96 | 100 | 3.96 | 23.7 | 4.96 | 0.21 | (1:1 dil - 2.48 x 2 = 4.96) | | |
| S06 | ~~96~~ 100 | 110 | 3.37 | 30.6 | 3.12 | 0.10 | | | |
| S07 | 97 | 100 | 2.31 | 22.4 | 3.89 | 0.17 | | | |
| D09 | 100 | 105 | 2.12 | 20.2 | 40.2 | 1.99 | (1:20 dil - 2.01 x 20 = ~~9.99~~ 40.2) | | |
| S13 | 27 | 100 | 5.10 | 13.8 | 3.06 | 0.22 | | | |
| CS1 | | | | | 0.40 | | | | |
| CS2 | | | | | 1.02 | | | | |
| D09 | | | | | 46.1 | | | | |
| S05 | | | | | 5.14 | | | | |
| DIST STD | | | | | 0.98 | | | | |
| DUP S06 | 100 | 110 | 3.37 | 30.6 | 3.20 | 0.10 | | | |

MDV-279

# COMPUTATION SHEET

| | |
|---|---|
| OFFICE | FILE NO. |
| SUBJECT | F concentration SEDIMENTS |
| COMPUTATION | D/S 3424 |
| COMPUTED BY R.A. Pavo | CHECKED BY / DATE 8/15/86 / PAGE OF PAGES |

| (1) | (2) mes distillate | (3) mg/L | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| CS1 | | 0.37 | | | | | | | |
| CS2 | | 0.98 | | | | | | | |
| S01 | 115 | 0.65 | | | | | | | |
| S02 | 120 | 1.60 | | | | | | | |
| S03 | 110 | 2.40 | | | | | | | |
| BL | | 0.10 | | | | | | | |
| S04 | 120 | 2.59 | | | | | | | |
| S05 | 100 | 4.96 | | | | | | | |
| S06 | 110 | 3.12 | | | | | | | |
| S07 | 100 | 3.89 | | | | | | | |
| D09 | 105 | 40.2 | | | | | | | |
| S13 | 100 | 3.06 | | | | | | | |
| DUP S06 | 110 | 3.20 | | | | | | | |
| CS1 | ~~0~~ | 0.40 | | | | | | | |
| CS2 | | 1.02 | | | | | | | |
| D09 | 105 | 2.01 | x20 = 40.2 | (1:20 dil) | | | | | |
| S05 | 100 | 2.48 | x2 = 4.96 | (1:1 dil) | | | | | |
| DIST STD | | 0.98 | | | | | | | |

# COMPUTATION SHEET

| OFFICE | | | | | | | | | FILE NO. |
|---|---|---|---|---|---|---|---|---|---|
| SUBJECT | DS # EDO 3424 | | | | | | | | |
| COMPUTATION | F | | | | | | | | |
| COMPUTED BY Pankaj | | CHECKED BY | | | DATE 8/11/86 | | | PAGE OF PAGES | |

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| | | wet wt. of solid taken in gms | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| BLK | | | | | | | | | |
| Dist Std | | | | | | | | | |
| | | | | | | | | | |
| S08 | | 3.61 | | | | | | | |
| S10 | | 2.78 | | | | | | | |
| S11 | | 3.12 | | | | | | | |
| S12 | | 2.95 | | | | | | | |
| S01 | | 2.00 | | | | | | | |
| S02 | | 2.69 | | | | | | | |
| S03 | | 2.34 | | | | | | | |
| S04 | | 2.09 | | | | | | | |
| S10 DUP | | 2.96 | | | | | | | |
| S05 | | 3.96 | | | | | | | |
| S07 | | 2.31 | | | | | | | |
| D09 | | 2.12 | | | | | | | |
| S13 | | 5.10 | | | | | | | |
| S14 | | 2.65 | | | | | | | |
| S14 SPK | | 2.55 | | | | | | | |
| S06 | | 3.37 | | | | | | | |

ED03424 % solids

| DATA SET | SAMPLE I. D. | TARE WEIGHT GRAMS | SX+TARE WEIGHT GRAMS | DRIED WEIGHT GRAMS | PERCENT SOLIDS | |
|---|---|---|---|---|---|---|
| ED03424 | BLANK | 64.74 | 64.74000 | 64.74 | 0 | |
| | EF10S01 | 74.21 | 102 | 101.53 | 98.30874 | |
| | EF10S02 | 75.44 | 91.77 | 91.48 | 98.22412 | |
| | EF10S03 | 72.26 | 101 | 100.32 | 97.63395 | |
| | EF10S04 | 68.4 | 78.83 | 78.71 | 98.84947 | |
| | EF10S05 | 68.73 | 108.59 | 107.06 | 96.16156 | |
| | EF10S06 | 69.33 | 90.65 | 90.6 | 99.76547 | |
| | EF10S07 | 69 | 86.06 | 85.53 | 96.89331 | |
| | EF10S08 | 64.86 | 91.33 | 71.35 | 24.51832 | |
| | S08 DUP | 62.94 | 91.02 | 69.92 | 24.85754 | |
| | EF10D09 | 64.52 | 79.33 | 79.28 | 99.66239 | |
| | EF10S10 | 61.27 | 73.28 | 73.26 | 99.83347 | |
| | EF10S11 | 72.13 | 97.06 | 82.3 | 40.79422 | |
| | EF10S12 | 62.9 | 88.12 | 69.84 | 27.51784 | |
| | EF10S13 | 73.7 | 97.43 | 80.19 | 27.34934 | |
| | EF10S14 | 74.22 | 84.54 | 84.07 | 95.44573 | |
| | S14 DUP | 72.72 | 84.02 | 83.35 | 94.07079 | Δ ≤10% |

JVM
13 Aug 91

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 8-18-86

SUBJECT: Precision and Accuracy of Analyses for Data Set EDO 3424
Site: AMERICAN STEEL FOUNDRY

FROM: Steve Parker,
CRL QC Coordinator

TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 15 (number) ~~WATER~~ SOIL (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limts.

Attachment

TRANSMITTED BY
AUG 18 1986
U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: EDO 3424

Matrix: WATER

Site Name: AMERICAN STEEL FOUNDRY

| | PRECISION | | | ACCURACY | | |
|---|---|---|---|---|---|---|
| Parameter | RPD (R') | Limit | Method of Quality Control | % Recovery % Bias | Limit | Method of Quality Control |
| % SOLIDS | 0.3 % | ≤ 2% | DUPLICATE SAMPLE | N/A | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

COMMENT:

QC FLAGS:

8/15/86 AS

ACTIVITY# C28359 all oc 8-18 (8)

8/29/86 REST OF SAMPLES

8/18/86

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ESD/EDU SAMPLING DATE 8/6-7/86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 PRIORITY #1

DU NUMBER D307 DATASET NUMBER 3424 STUDY AMERICAN STEEL FOUNDRIES PRIORITY 1 * CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | SEDIMENTS SOLIDS TOTAL SOLIDS % MIN45423 | SEDIMENTS SOLIDS TOTAL VOLATILE SOLIDS % OF DRY WT. MIN45524 | SEDIMENTS SOLIDS AMMONIA MG N/KG (DRY) MIN42925 | SEDIMENTS SOLIDS TOTAL KJELDAHL NITROGEN MG N/KG (DRY) MIN43025 | SEDIMENTS SOLIDS TOTAL PHOSPHORUS MG P/KG (DRY) MIN43126 |
|---|---|---|---|---|---|---|
| 8EF10 | | | | | | |
| S01 | 5-90240 | X 98 | | | | |
| S02 | 5-90241 | X 98 | | | | |
| S03 | 5-90242 | X 98 | | | | |
| S04 | 5-90243 | X 99 | | | | |
| S05 | 5-90244 | X 96 | | | | |
| S06 | 5-90245 | X 100 | | | | |
| S07 | 5-90229 | X 97 | | | | |
| * S08 | 5-90246 | X 25 | | | | |
| D09 | 5-90247 | X 100 | | | | |
| * S10 | 5-90248 | X 100 | | | | |
| * S11 | 5-90249 | X 41 | | | | |
| * S12 | 5-90127 | X 28 | | | | |
| S13 | 5-90226 | X 27 | | | | |
| S14 | 5-90250 | X 95 | | | | |
| R15 | 5-90227 | X NA | | | | |
| | | JVM 13Aug86 | | | | |

CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

CRL V.2: 3/85

| DATA SET | SAMPLE I. D. | TARE WEIGHT GRAMS | SX+TARE WEIGHT GRAMS | DRIED WEIGHT GRAMS | PERCENT SOLIDS |
|---|---|---|---|---|---|
| ED03424 | BLANK | 64.74 | 64.74000 | 64.74 | 0 |
| | EF10S01 | 74.21 | 102 | 101.53 | 98.30874 |
| | EF10S02 | 75.44 | 91.77 | 91.48 | 98.22412 |
| | EF10S03 | 72.26 | 101 | 100.32 | 97.63395 |
| | EF10S04 | 68.4 | 78.83 | 78.71 | 98.84947 |
| | EF10S05 | 68.73 | 108.59 | 107.06 | 96.16156 |
| | EF10S06 | 69.33 | 90.65 | 90.6 | 99.76547 |
| | EF10S07 | 69 | 86.06 | 85.53 | 96.89331 |
| | EF10S08 | 64.86 | 91.33 | 71.35 | 24.51832 |
| | S08 DUP | 62.94 | 91.02 | 69.92 | 24.85754 |
| | EF10D09 | 64.52 | 79.33 | 79.28 | 99.66239 |
| | EF10S10 | 61.27 | 73.28 | 73.26 | 99.83347 |
| | EF10S11 | 72.13 | 97.06 | 82.3 | 40.79422 |
| | EF10S12 | 62.9 | 88.12 | 69.84 | 27.51784 |
| | EF10S13 | 73.7 | 97.43 | 80.19 | 27.34934 |
| | EF10S14 | 74.22 | 84.54 | 84.07 | 95.44573 |
| | S14 DUP | 72.72 | 84.02 | 83.35 | 94.07079 Δ ≤ 10% |

JVM
13 Aug 86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 8-18-86

SUBJECT: Precision and Accuracy of Analyses for Data Set EDO 3424
Site: AMERICAN STEEL FOUNDRY

FROM: Steve Parker,
CRL QC Coordinator

TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 14 15 SP (number) ~~WATER~~ SOIL (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limts.

Attachment

TRANSMITTED BY
AUG 18 1986
U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: EDO 3424

Matrix: WATER

Site Name: AMERICAN STEEL FOUNDRY

| | PRECISION | | | ACCURACY | | |
|---|---|---|---|---|---|---|
| Parameter | RPD (R') | Limit | Method of Quality Control | % Recovery % Bias | Limit | Method of Quality Control |
| PHENOLICS | 0.2 mg/Kg ~~2.2 mg/L~~ | ≤ 1 mg/Kg ~~≤ 10 mg/L~~ | DUPLICATE SAMPLE | 87% | 78-110% | CONTROL STD |
| CN | BDL | ≤ 3 mg/Kg | " | 88% | 80-120% | SPIKED SAMPLE |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

COMMENT:

QC FLAGS:

Rec-track * C28359

8/15/86 all QC Pass PP

8/24/86 REST OF SAMPLES

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM MINERALS-NUTRIENTS

DIVISION/BRANCH EDO/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 *PRIORITY #1

8/18/86

CU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Foundries PRIORITY 1 * CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | SEDIMENTS SOLIDS CHEMICAL OXYGEN DEMAND MG COD/KG (DRY) MIN43327 | SEDIMENTS SOLIDS MERCURY MG HG/KG (DRY) MIN44728 | SEDIMENTS SOLIDS PHENOLICS MG PHENOL/KG (DRY) MIN44829 | SEDIMENTS SOLIDS CYANIDE MG CN/KG (DRY) MIN44930 | CRL TAG# |
|---|---|---|---|---|---|---|
| 86EF10 | | | | | | |
| S01 | Soil | | | X (PP) ~~0.9~~ 2.7 | X PP ~~K3~~ K1 | 5-90240 |
| S02 | | | | X (PP) ~~2.7~~ 6.8 | X K1 | 5-90241 |
| S03 | | | | X 4.6 | X K1 | 5-90242 |
| S04 | | | | X 37.8 | X 2 | 5-90243 |
| S05 | | | | X 15.2 | X K1 | 5-90244 |
| S06 | | | | X 7.3 | X K1 | 5-90245 |
| S07 | | | | X 68.2 | X 2 | 5-90229 |
| * S08 | | | | X 15.6 | X K3 | 5-90246 |
| D09 | | | | X 3.2 | X ~~PP K3~~ ~~K1~~ | 5-90247 |
| * S10 | | | | X (PP) ~~5.0~~ 3.3 | X PP 2 K1 | 5-90248 |
| * S11 | | | | X 10 | X K3 | 5-90249 |
| * S12 | | | | X 16.5 | X PP ~~K3~~ K4 | 5-90127 |
| S13 | | | | X 30.7 | X K3 | 5-90226 |
| S14 | | | | X 2.2 | X 2 | 5-90250 |
| R15 | | | | X 0 — | X — | 5-90227 EMPTY CONTAINER NOT RUN 8/18/86 |
| | | | | P.P. 8/14/86 | PPP 8/14/86 | |

CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

* SEDCAL * CSC VERSION 1.00 *

NAME OF ANALYST ----: PP
DATE OF ANALYSIS ----: 08-14-1986

ED0342Y

SEDIMENT CALCULATION FOR PHENOL

| SAMPLE NO. | % SOLID | WET WT(GMS) | DRY WT(GM/L) | SED CONC(UG/L) | SED CONC(MG/KG) |
|---|---|---|---|---|---|
| ********** | ******* | ********** | ********** | ********** | ********** |
| ~~S01~~ | ~~98.00~~ | ~~2.86~~ | ~~28.03~~ | ~~25.00~~ | ~~0.892~~ wrong Subty (PP) |
| ~~S02~~ S01 | 98.00 | 2.86 | 28.03 | 76.00 | 2.712 |
| S02 | 98.00 | 2.85 | 27.93 | 191.00 | 6.839 |
| S03 | 98.00 | 1.71 | 16.76 | 78.00 | 4.654 |
| S04 | 99.00 | 1.55 | 15.34 | 580.00 | 37.797 |
| S06 | 100.00 | 1.89 | 18.90 | 138.00 | 7.302 |
| S07 | 97.00 | 2.04 | 19.79 | %1350.00 | 68.223 |
| S08 | 25.00 | 5.12 | 12.80 | 200.00 | 15.625 |
| S08D | 25.00 | 4.14 | 10.35 | 202.00 | 19.517 |
| D09 | 100.00 | 1.34 | 13.40 | 43.00 | 3.209 |
| S10 | 100 ~~41.00~~ | ~~1.52~~ | ~~6.23~~ | ~~50.00~~ | ~~8.027~~ wrong Subty (PP) |
| S11 | 41.00 | 4.68 | 19.19 | 191.00 | 9.954 |
| S12 | 28.00 | 4.73 | 13.24 | 219.00 | 16.536 |
| S13 | 27.00 | 2.04 | 5.51 | 169.00 | 30.683 |
| S14 | 95.00 | 1.31 | 12.45 | 28.00 | 2.290 |
| S07D | 97.00 | 1.90 | 18.43 | %1350.00 | 73.250 |
| R15 | | | | 0 | 0 |

* SEDCAL * CSC VERSION 1.00 *

NAME OF ANALYST ----: PP
DATE OF ANALYSIS ----: 08-14-1986

ED0342Y

SEDIMENT CALCULATION FOR PHENOL

| SAMPLE NO. | % SOLID | WET WT(GMS) | DRY WT(GM/L) | SED CONC(UG/L) | SED CONC(MG/KG) |
|---|---|---|---|---|---|
| ********** | ******* | ********** | ********** | ********** | ********** |
| S10 | 100.00 | 1.52 | 15.20 | 50.00 | 3.289 |

* SEDCAL * CSC VERSION 1.00 *

NAME OF ANALYST ----: PP
DATE OF ANALYSIS ----: 08-14-1986

ED0342Y

SEDIMENT CALCULATION FOR PHENOL

| SAMPLE NO. | % SOLID | WET WT(GMS) | DRY WT(GM/L) | SED CONC(UG/L) | SED CONC(MG/KG) |
|---|---|---|---|---|---|
| ********** | ******* | ********** | ********** | ********** | ********** |
| S05 | 96.00 | 1.67 | 15.03 | 244.00 | ~~16.24~~ 15.22 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 8-18-86

SUBJECT: Precision and Accuracy of Analyses for Data Set EDO 3424
Site: AMERICAN STEEL FOUNDRY

FROM: Steve Parker,
CRL QC Coordinator

TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 5 (number) ~~WATER~~ SOIL (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limts.

Attachment

TRANSMITTED BY
AUG 18 1986

U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: EDO 3424

Matrix: WATER

Site Name: AMERICAN STEEL FOUNDRY

| | PRECISION | | | ACCURACY | | |
|---|---|---|---|---|---|---|
| Parameter | RPD / R' | Limit | Method of Quality Control | % Recovery / % Bias | Limit | Method of Quality Control |
| F | 10% 4 mg/L | ≤ 10% ≤ 4 mg/L | DUPLICATE SAMPLE | 92% | 90-110% | CONTROL STD |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

COMMENT:

QC FLAGS:

Restrack C28359

au oe Pamas-PB 8/15/86 AJ

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES & PCB'S

8/29/86 REST OF SAMPLES

DIVISION/BRANCH EDO/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 * PRIORITY #1 8/18/86

DU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Foundry PRIORITY 1 * CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | MATRIX Soil<br>TEST Flouride<br>UNITS mg/kg<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | CRL TAG # |
|---|---|---|---|---|---|---|---|
| 86EF10 | | | | | | | |
| S01 | Soil | X | | | | | 5-90240 |
| S02 | | X | | | | | 5-90241 |
| S03 | | X | | | | | 5-90242 |
| S04 | | X | | | | | 5-90243 |
| S05 | | X | | | | | 5-90244 |
| S06 | | X | | | | | 5-90245 |
| S07 | | X | | | | | 5-90229 |
| * S08 | | X 0.2 | | | | | 5-90246 |
| D09 | | X | | | | | 5-90247 |
| * S10 | | X 1.5 | | | | | 5-90248 |
| * S11 | | X 1.0 | | | | | 5-90249 |
| * S12 | | X 0.28 | | | | | 5-90127 |
| S13 | | X | | | | | 5-90226 |
| S14 | | X 2.0 | | | | | 5-90250 |
| R15 | | X | | | | | 5-90227 |

P. Parish 8/15/86

NOTE: Rest of the sample analysis report will be submitted later on as soon as samples are done - Pat Lay

CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

# COMPUTATION SHEET

OFFICE

FILE NO.

SUBJECT ED03424

COMPUTATION F (mg/Kg) Sediment Calculation.

COMPUTED BY [illegible] CHECKED BY DATE 8/15/86 PAGE 1 OF 1 PAGES

| (1) Sample # | (2) % solids | (3) Final vol. of sample distillate | (4) wet wt. (GMS) | (5) Dry wt. (GMS/L) | (6) Sed Conc. (MG/L) | (7) F sed conc (mg/kg) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| S08 | 25 | 100 | 3.61 | 9.025 | 2.1 | 0.23 | | | |
| S10 | 100 | 115 | 2.78 | 24.17 ~~11.18~~ | 36 | 1.49 | | | |
| S11 | 41 | 115 | 3.12 | 11.12 | 11 | 0.99 | | | |
| S12 | 28 | 115 | 2.95 | 7.18 | 2.0 | 0.28 | | | |
| S14 | 95 | 115 | 2.65 | 21.89 | 44 | 2.01 | | | |
| S10DUP | 100 | 125 | 2.96 | 23.68 | 40 | 1.69 | | | |

# COMPUTATION SHEET

OFFICE

FILE NO.

SUBJECT: EDO 3424

COMPUTATION: F (mg/L)

COMPUTED BY: Barlay

CHECKED BY:

DATE: 8/15/88

PAGE 1 OF 1 PAGES

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| | ~~mg/L~~ | mg/L | | | | | | | |
| Cal std - 0.4 | | | | | | | | | |
| " " 4.0 | | | | | | | | | |
| 1.0 (Read) | | 0.96 | | | | | | | |
| CS-LO | | 0.42 | Limit = 0.4 ± 0.1 | | | | | | |
| CS-Hi | | 0.92 | " = ~~1.0~~ 1.0 ± 0.1 | | | | | | |
| BLK | | 0.05 | ≤ 0.1 | | | | | | |
| DIST BLK | | 0.08 | ≤ 0.1 | | | | | | |
| " STD (TV=1.0) | | 0.92 | % rec = 92 (LIMIT = 94 ± 16%) | | | | | | |
| S08 | | 2.1 | | | | | | | |
| 115 S10 | | 46.6 | | | | | | | |
| 115 S11 | | 13.2 | | | | | | | |
| 115 S12 | | 2.0 | | | | | | | |
| S14 | | 56.3 | | | | | | | |
| 125 S10DUP | | over cal range | | | | | | | |
| S14SPK (+1.0) | | over cal range | | | | | | | |
| ~~CS-LO~~ | | | | | | | | | |
| ~~CS-Hi~~ | | | | | | | | | |
| S10 (1:20 DIL) | | 1.76 x 20 ≈ 36 | | | | | | | |
| S11 (1:10 DIL) | | 1.13 x 10 ≈ 11 | | | | | | | |
| S14 (1:40 DIL) | | 1.06 x 40 ≈ 44 | | | | | | | |
| S14SPK (1:40 DIL) | | 0.99 | Invalid spike | | | | | | |
| S10DUP (1:20 DIL) | | 1.98 x 20 ≈ 40 | | | | | | | |
| CS-LO | | 0.39 | | | | | | | |
| CS-Hi | | 0.92 | | | | | | | |

| DATA SET | SAMPLE I. D. | TARE WEIGHT GRAMS | SX+TARE WEIGHT GRAMS | DRIED WEIGHT GRAMS | PERCENT SOLIDS |
|---|---|---|---|---|---|
| ED03424 | BLANK | 64.74 | 64.74000 | 64.74 | 0 |
| | EF10S01 | 74.21 | 102 | 101.53 | 98.30874 |
| | EF10S02 | 75.44 | 91.77 | 91.48 | 98.22412 |
| | EF10S03 | 72.26 | 101 | 100.32 | 97.63395 |
| | EF10S04 | 68.4 | 78.83 | 78.71 | 98.84947 |
| | EF10S05 | 68.73 | 108.59 | 107.06 | 96.16156 |
| | EF10S06 | 69.33 | 90.65 | 90.6 | 99.76547 |
| | EF10S07 | 69 | 86.06 | 85.53 | 96.89331 |
| | EF10S08 | 64.86 | 91.33 | 71.35 | 24.51832 |
| | S08 DUP | 62.94 | 91.02 | 69.92 | 24.85754 |
| | EF10D09 | 64.52 | 79.33 | 79.28 | 99.66239 |
| | EF10S10 | 61.27 | 73.28 | 73.26 | 99.83347 |
| | EF10S11 | 72.13 | 97.06 | 82.3 | 40.79422 |
| | EF10S12 | 62.9 | 88.12 | 69.84 | 27.51784 |
| | EF10S13 | 73.7 | 97.43 | 80.19 | 27.34934 |
| | EF10S14 | 74.22 | 84.54 | 84.07 | 95.44573 |
| | S14 DUP | 72.72 | 84.02 | 83.35 | 94.07079 |

JVM
13Aug86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 8-18-86

SUBJECT: Precision and Accuracy of Analyses for Data Set EDO 3424
Site: AMERICAN STEEL FOUNDRY

FROM: Steve Parker,
CRL QC Coordinator

TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 4 (number) WATER SOIL (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limts.

Attachment

TRANSMITTED BY
AUG 18 1986
U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: EDO 3424

Matrix: WATER

Site Name: AMERICAN STEEL FOUNDRY

| | PRECISION | | | ACCURACY | | |
|---|---|---|---|---|---|---|
| Parameter | RPD (R) | Limit | Method of Quality Control | % Recovery % Bias | Limit | Method of Quality Control |
| Ag | BDL | < ~~0.4~~ 0.006 mg/L | DUPLICATE SAMPLE | 106 | 85-115% | SPIKED SAMPLE |
| Ba | 8% | < 10% | " | 99 | " | " |
| Cd | BDL | < 0.010 mg/L | " | 104 | " | " |
| Cr | $\bar{X} \pm$ DL | ± 0.008 mg/L | " | 104 | " | " |
| Pb | BDL | < 0.070 mg/L | " | 99 | " | " |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

COMMENT:

QC FLAGS:

8/18/86
8/18/86

AMERICAN

STEEL FOUNDRY

DL1:[001,054]RUN538.BRN 15-AUG-86

DATA SET: ED03424

| ELEMENT | EF10S08 | EF10S10 | EF10S11 | EF10S12 |
|---|---|---|---|---|
| AG mg/l | < .006 | < .06 | < .06 | < .006 |
| BA mg/l | .114 | .796 | .329 | .130 |
| CD mg/l | < .010 | 4.30 | 1.01 | .0269 |
| CR mg/l | < .008 | < .08 | < .08 | .009 |
| PB mg/l | < .070 | 14.5 | 24.4 | .229 |

8/15/86 AJ

MS 8/15/86

AMERICAN STEEL FOUNDRY

JVM 15 Aug 86



DATA SET : ED03424

| ELEMENT | | EF10S08 | EF10S10 | EF10S11 | EF10S12 |
|---|---|---|---|---|---|
| AG | mg/l | < .006 | < .06 | < .06 | < .006 |
| AL | | .089 | < .80 | 820 | .864 |
| B | | .170 | 202 | .991 | .211 |
| BA | | .114 | .796 | .329 | .130 |
| BE | | < .001 | < .001 | < .01 | < .001 |
| CD | | < .010 | 430 | 101 | .0269 |
| CO | | < .006 | < .06 | < .06 | < .006 |
| CR | | < .008 | < .08 | < .08 | .009 |
| CU | | .0134 | .378 | .005 | .0296 |
| FE | | < .080 | .925 | 235 | .250 |
| LI | | .0129 | .276 | < .10 | .021 |
| MN | | .169 | 119. | 645 | 2.410 |
| MO | | < .015 | .15 | < .15 | < .015 |
| NI | | .016 | .334 | .391 | .0394 |
| PB | | < .070 | 145 | 244 | .229 |
| SN | | < .040 | < .40 | < .40 | < .040 |
| SR | | .535 | .711 | 1.44 | .915 |
| TI | | < .025 | < 0.25 | < .25 | .027 |
| V | | < .005 | < .05 | < .05 | < .005 |
| Y | | < .005 | < .05 | < .05 | < .005 |
| ZN | | < .040 | | | .136 |
| CA | mg/l | 24.3 | 644. | 243. | 42.1 |
| K | | < 2.00 | 248. | 46.9 | 3.90 |
| MG | | 6.0 | 227. | 116. | 11.0 |
| NA | | 9.1 | 473. | 118. | 16.6 |
| ZN | | | 1250. | 495. | |

NUMBER OF BLANK(s) TO BE REPORTED : 3

JVM
15 Aug 86

MS 8/15/86
all values ± detection limit
except Ba

DL1:C001.054]RUN538.BRN 15-AUG-86 08:45:02 PAGE 1

DATA SET : METALS1

| ELEMENT | DET LIM | BLANK10 |
|---|---|---|
| AG | 6.00 | 0.53 |
| AL | 80.0 | 17.3 |
| B | 80.0 | 13.3 |
| BA | 6.00 | 11.20* |
| BE | 1.000 | -0.260 |
| CD | 10.000 | -0.649 |
| CO | 6.000 | -1.000 |
| CR | 8.00 | 3.34 |
| CU | 6.00 | 4.26 |
| FE | 80.0 | 37.3 |
| LI | 10.000 | -2.660 |
| MN | 5.000 | 1.270 |
| MO | 15.000 | -2.900 |
| NI | 15.0 | 14.9 |
| PB | 70.00 | 6.82 |
| SN | 40.00 | 0.56 |
| SR | 10.000 | -0.169 |
| TI | 25.00 | -1.29 |
| V | 5.00 | -2.42 |
| Y | 5.000 | 0.000 |
| ZN | 40.00 | 14.30 |
| CA | 0.500 | 0.055 |
| CA | 0.500 | 0.027 |
| K | 2.000 | -0.727 |
| .G | 0.100 | 0.012 |
| NA | 1.000 | 0.032 |

DATA SET : METALS1 SAMPLE ID : AQC.086

JVM 15 Aug 86

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AL | 4760.00 | 4830.00 | 1.53 |
| B | 1050.000 | 1050.000 | 0.038 |
| BA | 1510.000 | 1510.000 | 0.343 |
| BE | 728.00 | 739.00 | 1.58 |
| CD | 425.000 | 429.000 | 0.765 |
| CO | 972.000 | 971.000 | -0.075 |
| CR | 1570.00 | 1550.00 | -1.55 |
| CU | 1160.00 | 1190.00 | 3.03 |
| FE | 3820.000 | 3790.000 | -0.659 |
| LI | 808.000 | 813.000 | 0.680 |
| MN | 1330.00 | 1350.00 | 1.27 |
| MO | 811.00 | 793.00 | -2.11 |
| NI | 1180.00 | 1200.00 | 1.75 |
| PB | 2970.00 | 2880.00 | -3.14 |
| SN | 2430.00 | 2270.00* | -6.62 |
| SR | 902.00 | 878.00 | -2.66 |
| TI | 1200.000 | 1200.000 | 0.180 |
| V | 744.00 | 758.00 | 1.88 |
| Y | 784.000 | 777.000 | -0.947 |
| ZN | 2800.00 | 2860.00 | 2.13 |
| CA | 12.4 | 14.0 | 12.7 |
| CA | 13.20 | 13.90 | 5.11 |
| K | 96.00 | 97.30 | 1.30 |
| MG | 5.21 | 5.12 | -1.67 |
| NA | 18.50 | 18.80 | 1.49 |

MS 8/15/86 All values except Sn within ± 2σ

DATA SET : METALS1 SAMPLE ID : AQC.086

JVM 15 Aug 86

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AL | 4760.00 | 4820.00 | 1.14 |
| B | 1050.000 | 1050.000 | 0.648 |
| BA | 1510.000 | 1500.000 | -0.635 |
| BE | 728.00 | 739.00 | 1.52 |
| CD | 425.000 | 424.000 | -0.254 |
| CO | 972.000 | 969.000 | -0.229 |
| CR | 1570.00 | 1530.00 | -2.75 |
| CU | 1160.00 | 1190.00 | 2.80 |
| FE | 3820.000 | 3800.000 | -0.503 |
| LI | 808.000 | 814.000 | 0.718 |
| MN | 1330.00 | 1350.00 | 1.16 |
| MO | 811.00 | 797.00 | -1.73 |
| NI | 1180.00 | 1200.00 | 1.75 |
| PB | 2970.00 | 2890.00 | -2.94 |
| SN | 2430.00 | 2260.00 | -6.90 |
| SR | 902.00 | 879.00 | -2.55 |
| TI | 1200.000 | 1200.000 | 0.127 |
| V | 744.00 | 761.00 | 2.21 |
| Y | 784.000 | 779.000 | -0.737 |
| ZN | 2800.00 | 2850.00 | 1.66 |
| CA | 12.4 | 14.0 | 12.9 |
| CA | 13.20 | 13.90 | 4.91 |
| K | 96.000 | 96.600 | 0.547 |
| MG | 5.21 | 5.06 | -2.87 |
| NA | 18.50 | 18.80 | 1.39 |

MS 8/15/86 All values ± 10% or 2σ

JVM
15 Aug 86



DATA SET : METALS1 SAMPLE ID : AQC.086

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AL | 4760.000 | 4780.000 | 0.333 |
| B | 1050.000 | 1050.000 | 0.479 |
| BA | 1510.000 | 1510.000 | 0.201 |
| BE | 728.000 | 734.000 | 0.824 |
| CD | 425.000 | 423.000 | -0.564 |
| CO | 972.000 | 970.000 | -0.155 |
| CR | 1570.00 | 1520.00 | -3.22 |
| CU | 1160.00 | 1190.00 | 2.66 |
| FE | 3820.00 | 3770.00 | -1.16 |
| LI | 808.000 | 810.000 | 0.215 |
| MN | 1330.00 | 1350.00 | 1.18 |
| MO | 811.00 | 789.00 | -2.62 |
| NI | 1180.000 | 1190.000 | 0.732 |
| PB | 2970.00 | 2900.00 | -2.59 |
| SN | 2430.00 | 2310.00 | -4.79 |
| SR | 902.00 | 877.00 | -2.72 |
| TI | 1200.000 | 1200.000 | -0.222 |
| V | 744.00 | 753.00 | 1.21 |
| Y | 784.00 | 775.00 | -1.14 |
| ZN | 2800.00 | 2850.00 | 1.65 |
| CA | 12.4 | 13.9 | 12.3 |
| CA | 13.20 | 13.80 | 4.77 |
| K | 96.000 | 96.800 | 0.832 |
| MG | 5.21 | 5.12 | -1.71 |
| NA | 18.50 | 18.70 | 1.25 |

MS 8/15/86 All values ± 10% or 2σ

JVM 15 Aug 86

DATA SET : METALS1 SAMPLE ID : AQC.086

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AL | 4760.000 | 4780.000 | 0.303 |
| B | 1050.000 | 1040.000 | -0.540 |
| BA | 1510.00 | 1480.00 | -2.01 |
| BE | 728.00 | 736.00 | 1.07 |
| CD | 425.000 | 423.000 | -0.466 |
| CO | 972.000 | 965.000 | -0.716 |
| CR | 1570.00 | 1510.00 | -3.56 |
| CU | 1160.00 | 1170.00 | 1.58 |
| FE | 3820.00 | 3780.00 | -1.01 |
| LI | 808.000 | 803.000 | -0.576 |
| MN | 1330.000 | 1340.000 | 0.399 |
| MO | 811.00 | 789.00 | -2.63 |
| NI | 1180.00 | 1210.00 | 2.28 |
| PB | 2970.00 | 2890.00 | -2.85 |
| SN | 2430.00 | 2230.00 | -7.98 |
| SR | 902.00 | 866.00 | -3.96 |
| TI | 1200.000 | 1190.000 | -0.823 |
| V | 744.00 | 753.00 | 1.16 |
| Y | 784.00 | 767.00 | -2.20 |
| ZN | 2800.00 | 2850.00 | 1.70 |
| CA | 12.4 | 13.9 | 11.5 |
| CA | 13.20 | 13.80 | 4.42 |
| K | 96.000 | 96.200 | 0.154 |
| MG | 5.21 | 5.06 | -2.90 |
| NA | 18.500 | 18.400 | -0.288 |

MS 8/15/86 All values ± 10% or 2σ

DATA SET : METALS1 SAMPLE ID : AQC.086

JV 15 Aug 86

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AL | 4760.000 | 4760.000 | -0.104 |
| B | 1050.000 | 1040.000 | -0.749 |
| BA | 1510.00 | 1470.00 | -2.57 |
| BE | 728.000 | 731.000 | 0.417 |
| CD | 425.000 | 425.000 | -0.163 |
| CO | 972.00 | 961.00 | -1.08 |
| CR | 1570.00 | 1520.00 | -3.14 |
| CU | 1160.000 | 1170.000 | 0.880 |
| FE | 3820.00 | 3770.00 | -1.26 |
| LI | 808.00 | 798.00 | -1.18 |
| MN | 1330.000 | 1330.000 | -0.247 |
| MO | 811.00 | 782.00 | -3.52 |
| NI | 1180.000 | 1180.000 | 0.255 |
| PB | 2970.00 | 2890.00 | -2.95 |
| SN | 2430.00 | 2230.00 | -7.95 |
| SR | 902.00 | 861.00 | -4.54 |
| TI | 1200.00 | 1180.00 | -1.47 |
| V | 744.000 | 747.000 | 0.315 |
| Y | 784.00 | 763.00 | -2.76 |
| ZN | 2800.00 | 2840.00 | 1.14 |
| CA | 12.4 | 13.8 | 10.8 |
| CA | 13.20 | 13.70 | 3.95 |
| K | 96.000 | 95.500 | -0.606 |
| MG | 5.21 | 5.02 | -3.64 |
| NA | 18.50 | 18.30 | -1.26 |

MS 8/15/86 All values ± 10% or 2σ

JRUN538.BRN

JVM 15 Aug 86

15-AUG

08:52:58 PAGE 6

DATA SET : METALS1 SAMPLE ID : AQC.086

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AL | 4760.00 | 4680.00 | -1.62 |
| B | 1050.00 | 1020.00 | -2.29 |
| BA | 1510.00 | 1460.00 | -3.22 |
| BE | 728.00 | 717.00 | -1.48 |
| CD | 425.00 | 414.00 | -2.76 |
| CO | 972.00 | 943.00 | -2.91 |
| CR | 1570.00 | 1500.00 | -4.24 |
| CU | 1160.000 | 1160.000 | 0.002 |
| FE | 3820.00 | 3700.00 | -2.98 |
| LI | 808.00 | 796.00 | -1.54 |
| MN | 1330.00 | 1310.00 | -1.91 |
| MO | 811.00 | 770.00 | -4.96 |
| NI | 1180.00 | 1170.00 | -1.27 |
| PB | 2970.00 | 2810.00 | -5.51 |
| SN | 2430.00 | 2190.00 | -9.79 |
| SR | 902.00 | 856.00 | -5.10 |
| TI | 1200.00 | 1170.00 | -2.53 |
| V | 744.00 | 736.00 | -1.16 |
| Y | 784.00 | 756.00 | -3.56 |
| ZN | 2800.000 | 2780.000 | -0.845 |
| CA | 12.40 | 13.60 | 9.56 |
| CA | 13.20 | 13.50 | 1.93 |
| K | 96.00 | 94.10 | -1.98 |
| MG | 5.21 | 4.92 | -5.66 |
| NA | 18.50 | 18.20 | -1.66 |

MS 8/15/86 All values ±10%

JW 15 Aug 86

DATA SET : METALS1 SAMPLE ID : AQC.086

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AL | 4760.000 | 4720.000 | -0.810 |
| B | 1050.000 | 1040.000 | -0.554 |
| BA | 1510.00 | 1480.00 | -2.04 |
| BE | 728.000 | 732.000 | 0.571 |
| CD | 425.000 | 425.000 | -0.039 |
| CO | 972.000 | 965.000 | -0.686 |
| CR | 1570.00 | 1510.00 | -3.69 |
| CU | 1160.000 | 1170.000 | 0.954 |
| FE | 3820.00 | 3750.00 | -1.84 |
| LI | 808.000 | 802.000 | -0.780 |
| MN | 1330.000 | 1330.000 | -0.072 |
| MO | 811.00 | 783.00 | -3.41 |
| NI | 1180.000 | 1190.000 | 0.760 |
| PB | 2970.00 | 2890.00 | -3.01 |
| SN | 2430.00 | 2240.00 | -7.66 |
| SR | 902.00 | 863.00 | -4.26 |
| TI | 1200.00 | 1180.00 | -1.33 |
| V | 744.000 | 750.000 | 0.774 |
| Y | 784.00 | 764.00 | -2.56 |
| ZN | 2800.00 | 2840.00 | 1.34 |
| CA | 12.4 | 13.8 | 10.8 |
| CA | 13.20 | 13.70 | 3.90 |
| K | 96.00 | 94.60 | -1.50 |
| MG | 5.21 | 5.06 | -2.93 |
| NA | 18.50 | 18.20 | -1.37 |

MS 8/15/86 All value ± 10% or 2σ

DL1:[001,054]RUN538.BRN 15-AUG-86 08:57:45 PAGE 10

JVM 15 Aug

DATA SET : METALS1 SAMPLE ID : WP37810

MS 8/15/86 Ag ±10%

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AG | 48.00 | 50.70 | 5.70 |

DL1:[001,054]RUN538.BRN 15-AUG-86 08:55:22 PAGE 8

DATA SET : METALS1 SAMPLE ID : WP37810

MS 8/15/86 Ag ± 10%

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AG | 48.00 | 50.90 | 5.98 |

DL1:[001,054]RUN538.BRN 15-AUG-86 09:00:08 PAGE 12

DATA SET : METALS1 SAMPLE ID : WP37810

MS 8/15/86 Ag ± 10%

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AG | 48.00 | 50.30 | 4.88 |

DL1:[001,054]RUN538.BRN 15-AUG-86 09:01:19 PAGE 13

DATA SET : METALS1 SAMPLE ID : WP37810

MS 8/15/86 Ag ±10%

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AG | 48.00 | 50.90 | 5.98 |

DL1:[001,054]RUN538.BRN 15-AUG-86 08:58:56 PAGE 11

DATA SET : METALS1 SAMPLE ID : WP37810

8/15/86 MS Ag ±10%

| ELEMENT | TRUE | MEASURED | % DEV |
|---|---|---|---|
| AG | 48.00 | 50.10 | 4.28 |

Jw 15 Aug 86



DATA SET : ED03424 SAMPLE ID : EF10S08

| ELEMENT | DL | SAMPLE | DUPLICATE | AVERAGE | R P D |
|---|---|---|---|---|---|
| AG | 6.0 | 3.6 | 1.6 | 2.6 | 76.4 |
| AL | 80.0 | 88.6 | 74.6 | 81.6 | 17.1 |
| B | | 170.00 | 182.00 | 176.00 | 6.81 |
| BA | | 114.00 | 123.00 | 119.00 | 7.52 |
| BE | 1.0 | -0.3 | -0.2 | -0.2 | -51.2 |
| CD | 10.0 | 1.0 | 0.6 | 0.8 | 59.1 |
| CO | 6.0 | 2.00 | 1.90 | 1.95 | 5.31 |
| CR | 8.0 | 3. | 18. | 10. | 146.* |
| CU | 6.0 | 13.4 | 7.1 | 10.3 | 61.0* |
| FE | 80.0 | 39.3 | 77.5 | 58.4 | 65.5 |
| LI | 10.0 | 12.9 | 14.7 | 13.8 | 13.6 |
| MN | | 169.00 | 178.00 | 174.00 | 5.68 |
| MO | 15.0 | -0. | 6. | 3. | 227. |
| NI | 16.0 | 16.0 | 28.7 | 22.3 | 57.1 |
| PB | 70.0 | 37.6 | 30.1 | 33.9 | 22.2 |
| SN | 40.0 | 6.5 | 13.4 | 10.0 | 68.8 |
| SR | | 535.00 | 558.00 | 546.00 | 4.13 |
| TI | 25.0 | 11.9 | 13.8 | 12.9 | 15.0 |
| V | 5.0 | -2. | 0. | -1. | -299. |
| Y | 5.0 | 0. | 0. | 0. | 133. |
| ZN | 40.0 | 32.2 | 22.1 | 27.1 | 37.0 |
| CA | | 25.90 | 27.30 | 26.60 | 5.14 |
| CA | | 24.30 | 25.60 | 24.90 | 5.20 |
| K | 2.0 | 0.7 | 1.5 | 1.1 | 67.3 |
| MG | | 6.01 | 6.28 | 6.14 | 4.46 |
| NA | | 9.07 | 9.47 | 9.27 | 4.34 |

MS 8/15/86 All values ± 10% or ± detection limit except Cr + Cu

for 15 Aug 86

DATA SET : SF3406 SAMPLE ID : FL08S35

| ELEMENT | Det limit | SAMPLE | DUPLICATE | AVERAGE | R P D |
|---|---|---|---|---|---|
| AG | 6.0 | -1.2 | -1.3 | -1.3 | -10.9 |
| AL | | -49.30 | -46.50 | -47.90 | -5.86 |
| B | 60.0 | 86.1 | 99.2 | 92.7 | 14.2 |
| BA | | 74.70 | 75.80 | 75.20 | 1.46 |
| BE | 1.0 | -0.0 | -0.1 | -0.1 | -93.5 |
| CD | 10.0 | 1. | -0. | 0. | 1120. |
| CO | 6.0 | -1.1 | -1.8 | -1.5 | -44.7 |
| CR | 8.0 | 4.6 | 5.2 | 4.9 | 12.4 |
| CU | | 11.100 | 11.100 | 11.100 | 0.011 |
| FE | | 177.00 | 169.00 | 173.00 | 4.69 |
| LI | | 13.80 | 14.60 | 14.20 | 5.35 |
| MN | | 222.00 | 225.00 | 224.00 | 1.65 |
| MO | 16.0 | -0.4 | -0.8 | -0.6 | -63.7 |
| NI | | 5.74 | 5.32 | 5.53 | 7.70 |
| PB | 70.0 | 9. | 1. | 5. | 145. |
| SN | 40.0 | 13.7 | 21.4 | 17.6 | 43.9 |
| SR | | 223.00 | 226.00 | 225.00 | 1.39 |
| TI | | 2.52 | 2.77 | 2.65 | 9.25 |
| V | 5.0 | -0.6 | -1.1 | -0.9 | -62.5 |
| Y | 5.0 | 0.0 | 0.1 | 0.1 | 66.8 |
| ZN | 40.0 | 10.6 | 14.5 | 12.5 | 30.8 |
| CA | | 103.000 | 103.000 | 103.000 | 0.000 |
| CA | | 76.80 | 78.00 | 77.40 | 1.56 |
| K | | 2.87 | 2.98 | 2.92 | 3.59 |
| MG | | 19.80 | 20.10 | 19.90 | 1.92 |
| NA | | 8.23 | 8.32 | 8.28 | 1.08 |

MS 8/15/86

All values ± 10% or ± detection limit

JM 15 Aug 86



DATA SET : SF3407 SAMPLE ID : SB41S01

| ELEMENT | Det limit | SAMPLE | DUPLICATE | AVERAGE | R P D |
|---|---|---|---|---|---|
| AG | 6.0 | -1.4 | -0.7 | -1.0 | -60.8 |
| AL | | -38.90 | -41.30 | -40.10 | -5.77 |
| B | | 114.00 | 119.00 | 116.00 | 4.90 |
| BA | | 40.20 | 39.20 | 39.70 | 2.54 |
| BE | 1.0 | -0.1 | -0.1 | -0.1 | -43.2 |
| CD | 10.0 | 1. | -1. | -0. | -785. |
| CO | 6.0 | -2. | 1. | -1. | -414. |
| CR | | 3.850 | 3.850 | 3.850 | 0.053 |
| CU | 6.0 | 11.5 | 13.2 | 12.3 | 13.9 |
| FE | 80.0 | 51.2 | 33.5 | 42.3 | 41.8 |
| LI | | 31.00 | 29.90 | 30.50 | 3.78 |
| MN | 5.0 | 1.0 | 1.1 | 1.0 | 12.2 |
| MO | 15.0 | -1.5 | -2.6 | -2.1 | -50.2 |
| NI | | 7.66 | 7.02 | 7.34 | 8.69 |
| PB | 70.0 | 17. | 0. | 9. | 199. |
| SN | 40.0 | -1. | 1. | 0. | 1370. |
| SR | | 1140.00 | 1110.00 | 1130.00 | 2.42 |
| TI | | 2.96 | 3.16 | 3.06 | 6.30 |
| V | 5.0 | -0.5 | -0.8 | -0.7 | -47.2 |
| Y | 5.0 | -0. | 0. | -0. | -466. |
| ZN | 40.0 | 19.1 | 16.0 | 17.5 | 17.5 |
| CA | | 103.000 | 103.000 | 103.000 | 0.000 |
| CA | | 83.70 | 82.20 | 82.90 | 1.82 |
| K | | 0.79 | 0.77 | 0.78 | 2.09 |
| MG | | 25.10 | 24.60 | 24.80 | 2.05 |
| NA | | 42.20 | 41.00 | 41.60 | 2.88 |

MS 8/15/86

all values ± detection limit or ± 10%

JVM
15 Aug 86

DL1:[001,054]RUN538.BRN 15-AUG-86 09:27:00 PAGE 1

DATA SET : ED03424 SAMPLE ID : EF10S08

| ELEMENT | SAMPLE | SPIKE | SPIKE ADDED | % RECOVERY |
|---|---|---|---|---|
| AG | 4. | 57. | 50. | 106. |
| AL | 88.6 | 840.0 | 800.0 | 93.9 |
| B | 170.0 | 345.0 | 800.0 | 21.8* |
| BA | 114.0 | 313.0 | 200.0 | 99.4 |
| BE | -0. | 10. | 10. | 105. |
| CD | 1. | 27. | 25. | 104. |
| CO | 2.0 | 100.0 | 100.0 | 98.0 |
| CR | 3. | 107. | 100. | 104. |
| CU | 13. | 65. | 50. | 103. |
| FE | 39.3 | 819.0 | 800.0 | 97.4 |
| LI | 13. | 75. | 54. | 115. |
| MN | 169.0 | 215.0 | 50.0 | 92.5 |
| MO | -0. | 105. | 100. | 106. |
| NI | 16. | 171. | 150. | 103. |
| PB | 37.6 | 826.0 | 800.0 | 98.6 |
| SN | 7. | 418. | 400. | 103. |
| SR | 535.0 | 1510.0 | 1000.0 | 97.1 |
| TI | 12. | 114. | 100. | 102. |
| V | -1.5 | 46.0 | 50.0 | 95.0 |
| Y | 0.0 | 49.2 | 50.0 | 98.4 |
| ZN | 32. | 433. | 400. | 100. |
| CA | 26. | 103. | 50. | 154.* |
| CA | 24.3 | 73.7 | 50.0 | 98.7 |
| K | 1. | 23. | 20. | 111. |
| MG | 6.0 | 30.7 | 25.0 | 98.8 |
| NA | 9. | 60. | 50. | 101. |

all values ± 15% except B

MS 8/15/86

SET PAPER TO TOP OF FORM AND
PRESS "RETURN TO CONTINUE!

JVM 15 Aug 86

DL1:[001,054]RUN538.BRN 15-AUG-86 10:00:23 PAGE 1

DATA SET : SF3406 SAMPLE ID : FL08S35

| ELEMENT | SAMPLE | SPIKE | SPIKE ADDED | % RECOVERY |
|---|---|---|---|---|
| AG | -1. | 50. | 50. | 102. |
| AL | -49.3 | 702.0 | 800.0 | 93.8 |
| B | 86.1 | 864.0 | 800.0 | 97.3 |
| BA | 74.7 | 268.0 | 200.0 | 96.5 |
| BE | -0.0 | 9.3 | 10.0 | 93.6 |
| CD | 0.6 | 22.4 | 25.0 | 87.3 |
| CO | -1.1 | 93.2 | 100.0 | 94.3 |
| CR | 4.6 | 101.0 | 100.0 | 96.1 |
| CU | 11.1 | 49.9 | 50.0 | 77.6* |
| FE | 177. | 2340. | 800. | 270.* |
| LI | 14. | 69. | 54. | 101. |
| MN | 222. | 275. | 50. | 107. |
| MO | -0.4 | 97.1 | 100.0 | 97.5 |
| NI | 5.7 | 154.0 | 150.0 | 98.9 |
| SN | 13.7 | 377.0 | 400.0 | 90.9 |
| SR | 223.0 | 1210.0 | 1000.0 | 98.6 |
| TI | 2.5 | 99.5 | 100.0 | 97.0 |
| V | -0.6 | 46.6 | 50.0 | 94.5 |
| Y | 0.0 | 48.3 | 50.0 | 96.6 |
| ZN | 10.6 | 391.0 | 400.0 | 95.0 |
| CA | 103.000 | 103.000 | 50.000 | 0.000 |
| CA | 76.8 | 126.0 | 50.0 | 97.9 |
| K | 2.9 | 22.4 | 20.0 | 97.9 |
| MG | 19.8 | 43.4 | 25.0 | 94.4 |
| NA | 8.2 | 57.7 | 50.0 | 99.0 |

MS 8/15/86

All values ± 15% except Cu + Fe

Jr
15 Aug 86

DL1:[001,054]RUN538.BRN 15-AUG-86 09:53:52 PAGE 1

DATA SET : SF3407 SAMPLE ID : SB41S01

| ELEMENT | SAMPLE | SPIKE | SPIKE ADDED | % RECOVERY |
|---|---|---|---|---|
| AG | -1. | 52. | 50. | 106. |
| AL | -38.9 | 704.0 | 800.0 | 92.9 |
| B | 114.0 | 887.0 | 800.0 | 96.6 |
| BA | 40.2 | 232.0 | 200.0 | 95.6 |
| BE | -0.1 | 9.5 | 10.0 | 96.5 |
| CD | 0.6 | 22.8 | 25.0 | 88.7 |
| CO | -2.2 | 96.2 | 100.0 | 98.4 |
| CR | 3.8 | 101.0 | 100.0 | 96.7 |
| CU | 11.5 | 49.9 | 50.0 | 76.8* |
| FE | 51.2 | 815.0 | 800.0 | 95.5 |
| LI | 31. | 87. | 54. | 104. |
| MN | 1.0 | 49.6 | 50.0 | 97.3 |
| MO | -2. | 100. | 100. | 101. |
| NI | 7.7 | 147.0 | 150.0 | 93.1 |
| SN | -1.0 | 380.0 | 400.0 | 95.3 |
| SR | 1140. | 2140. | 1000. | 100. |
| TI | 3.0 | 99.5 | 100.0 | 96.6 |
| V | -0.5 | 46.3 | 50.0 | 93.5 |
| Y | -0.2 | 47.7 | 50.0 | 95.7 |
| ZN | 19.1 | 397.0 | 400.0 | 94.4 |
| CA | 103.000 | 103.000 | 50.000 | 0.000 |
| CA | 84. | 134. | 50. | 101. |
| K | 1. | 21. | 20. | 102. |
| MG | 25.1 | 48.8 | 25.0 | 94.8 |
| NA | 42. | 92. | 50. | 100. |

MS 8/15/86 All values ±15% except Cu

JW 15 Aug 86

MS 8/15/86



DATA SET : METALS1

| ELEMENT | HIGHAQC | HIGHAQC | HIGHAQC |
|---|---|---|---|
| AG | < 6.00 | < 6.00 | < 6.00 |
| AL | 99300. | 101000. | 101000. |
| B | < 80.0 | < 80.0 | < 80.0 |
| BA | < 6.00 | < 6.00 | 7.85 |
| BE | < 1.00 | < 1.00 | 1.73 |
| CD | < 10.0 | < 10.0 | < 10.0 |
| CO | < 6.00 | < 6.00 | < 6.00 |
| CR | 12.30 | 14.40 | < 8.00 |
| CU | < 6.00 | < 6.00 | < 6.00 |
| FE | 95500. | 97500. | 95500. |
| LI | 15.1 | 15.7 | 18.0 |
| MN | 18.7 | 19.0 | 22.0 |
| MO | < 15.0 | < 15.0 | < 15.0 |
| NI | < 15.0 | < 15.0 | < 15.0 |
| PB | < 70.0 | < 70.0 | < 70.0 |
| SN | < 40.0 | < 40.0 | < 40.0 |
| SR | 27.0 | 27.6 | 29.0 |
| TI | < 25.0 | < 25.0 | < 25.0 |
| V | < 5.00 | < 5.00 | < 5.00 |
| Y | < 5.00 | < 5.00 | < 5.00 |
| ZN | 94400. | 96900. | 96100. |
| CA | 103. | 103. | 103. |
| CA | 100. | 102. | 101. |
| K | < 2.00 | < 2.00 | 2.00 |
| MG | 10.2 | 10.5 | 10.3 |
| A | < 1.00 | < 1.00 | 1.00 |
| AL | 98.9 | 101.0 | 99.8 |
| FE | 94.5 | 96.1 | 94.5 |
| ZN | 98.3 | 100.0 | 99.4 |

JLM 15 Aug 86

MS 8/15/86



DATA SET : METALS1

| ELEMENT | | HIGHAQC | | HIGHAQC |
|---|---|---|---|---|
| AG | < | 6.00 | < | 6.00 |
| AL | | 99700. | | 102000. |
| B | < | 80.0 | < | 80.0 |
| BA | < | 6.00 | | 6.99 |
| BE | < | 1.00 | | 1.03 |
| CD | < | 10.0 | < | 10.0 |
| CO | < | 6.00 | < | 6.00 |
| CR | < | 8.00 | < | 8.00 |
| CU | < | 6.00 | < | 6.00 |
| FE | | 96200. | | 97500. |
| LI | | 15.5 | | 19.0 |
| MN | | 18.6 | | 21.9 |
| MO | < | 15.0 | < | 15.0 |
| NI | < | 15.0 | < | 15.0 |
| PB | < | 70.0 | < | 70.0 |
| SN | < | 40.0 | < | 40.0 |
| SR | | 27.0 | | 29.1 |
| TI | < | 25.0 | < | 25.0 |
| V | < | 5.00 | < | 5.00 |
| Y | < | 5.00 | < | 5.00 |
| ZN | | 95500. | | 98800. |
| CA | | 103. | | 103. |
| CA | | 100. | | 103. |
| K | < | 2.00 | < | 2.00 |
| MG | | 10.4 | | 10.6 |
| NA | < | 1.00 | < | 1.00 |
| AL | | 100. | | 102. |
| FE | | 95.0 | | 96.3 |
| ZN | | 99. | | 102. |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 8-18-86

SUBJECT: Precision and Accuracy of Analyses for Data Set EDO 3424
Site: AMERICAN STEEL FOUNDRY

FROM: Steve Parker,
CRL QC Coordinator

TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 4 (number) ~~WATER~~ SOIL (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limts.

Attachment

TRANSMITTED BY
AUG 18 1986
U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: EDO 3424

Matrix: WATER

Site Name: AMERICAN STEEL FOUNDRY

| | PRECISION | | | ACCURACY | | |
|---|---|---|---|---|---|---|
| Parameter | RPD (R') | Limit | Method of Quality Control | % Recovery % Bias | Limit | Method of Quality Control |
| Se | 0.0001 mg/L | ± 0.002 mg/L | DUPLICATE SAMPLE | 94% | 90-110% | SPIKED SAMPLE |
| As | 0.0005 mg/L | ≤ 0.002 mg/L | DUPLICATE CONTROL | 99-102% | " | CONTROL STD |
| As | — | — | — | 100% | " | SPIKED SAMPLE |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

COMMENT:

QC FLAGS:

Rerack - C28359

Jun 15 Aug PM 8/15/86

8/29/86 REST OF SAMPLES.

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH EDO/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 *PRIORITY #1 8/18/86

DU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Foundry PRIORITY / * CONTRACTOR N

| CHL LOG NUMBER 86EF10 | SAMPLE DESCRIPTION | EP TOX EXTRACT ICP METALS MG/L MET19364 | EP TOX EXTRACT SE MG/L MET19109 | EP TOX EXTRACT AS MG/L MET1989 | EP TOX EXTRACT Pb MG/L | EP TOX EXTRACT Cr MG/L |
|---|---|---|---|---|---|---|
| S01 | 5-90240 | X | X | X | X | X |
| S02 | 5-90241 | X | X | X | X | X |
| S03 | 5-90242 | X | X | X | X | X |
| S04 | 5-90243 | X | X | X | X | X |
| S05 | 5-90244 | X | X | X | X | X |
| S06 | 5-90245 | X | X | X | X | X |
| S07 | 5-90229 | X | X | X | X | X |
| * S08 | 5-90246 | X | X <0.002 | X <0.002 | X | X |
| D09 | 5-90247 | X | X | X | X | X |
| * S10 | 5-90248 | X | X 0.040 | X < 0.002 | X | X |
| * S11 | 5-90249 | X | X 0.007 | X < 0.002 | X | X |
| * S12 | 5-90127 | X | X <0.002 | X < 0.002 | X | X |
| S13 | 5-90226 | X | X | X | X | X |
| S14 | 5-90250 | X | X | X | X | X |
| R15 | 5-90227 | X | X | X | X | X |
| | | | PM 8-14-86 | JAR 8/15/86 | X | X |
| | | | | | X | X |
| | | | | | X | X |
| | | | | | X | X |

*CHL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

Jun
15 Aug 86

wheel # 1
from D/S 3424

---

* FLAMELESS * CSC VERSION 1.00 *

---

NAME OF ANALYST ---: HNR
DATE OF ANALYSIS --: 08-15-1986
PARAMETER NAME ----: AS
DATA SET # --------: ~~5424~~ 3371

---

| SAMPLE NO. | CONC. | R VALUE | SLOPE | |
|---|---|---|---|---|
| R | -.2040811 | .9998612 | .00294 | % dev = 0.4 100% |
| AQC T.V. 23.5 | 23.60947 | .9995799 | .00338 | |
| SO2X50 | 123.7006 | .9927206 | 3.540001E-03 | |
| SO2X50X5 (conc 2) | 27.44866 | .9987374 | 3.410002E-03 | 6850 |
| AQC T.V. 23.5 | 24.09881 | .9996449 | 3.440003E-03 | % dev = 2.5 102% |

---

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | -5.999985E-04 | -5.999985E-04 | 100 % |
| 10 | .028 | .0288 | 8.000005E-04 | 2.777779 % |
| 20 | .058 | .0582 | 2.000034E-04 | .3436484 % |
| 30 | .088 | 8.760001E-02 | -3.999919E-04 | -.4566117 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 7.900001E-02 | 7.980002E-02 | 8.000136E-04 | 1.002523 % |
| 10 | .114 | .1136 | -3.999844E-04 | -.3520989 % |
| 20 | .149 | .1474 | -1.599982E-03 | -1.08547 % |
| 30 | .18 | .1812 | 1.20002E-03 | .6622628 % |

SO2X50

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .439 | .4379001 | -1.099914E-03 | -.2511793 % |
| 10 | .468 | .4733001 | 5.300105E-03 | 1.119819 % |
| 20 | .516 | .5087002 | -7.299841E-03 | -1.434999 % |
| 30 | .541 | .5441001 | 3.100097E-03 | .569766 % |

SO2X50X5

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .093 | 9.359998E-02 | 5.999729E-04 | .6409969 % |
| 10 | .127 | .1277 | 6.99997E-04 | .5481573 % |
| 20 | .165 | .1618 | -3.199995E-03 | -1.977747 % |
| 30 | .194 | .1959 | 1.900017E-03 | .9698913 % |

ADG

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .083 | 8.289996E-02 | -1.000315E-04 | -.1206653 % |
| 10 | .118 | .1173 | -7.000119E-04 | -.5967706 % |
| [illegible] | .15 | .1517 | 1.700014E-03 | 1.120642 % |
| 30 | .187 | .1861 | -8.999705E-04 | -.4835951 % |

JVT 45 Angst

---

* FLAMELESS * CSC VERSION 1.00 *

---

NAME OF ANALYST ---: HNR
DATE OF ANALYSIS --: 08-15-1986
PARAMETER NAME ----: AS
DATA SET # --------:

---

| SAMPLE NO. | CONC. | R VALUE | SLOPE |
|---|---|---|---|
| S01 (conc. 1) | .3047109 | .9999462 | .00361 |

---

S01

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .001 | 1.100006E-03 | 1.00006E-04 | 9.091404 % |
| 10 | .037 | 3.720001E-02 | 2.000034E-04 | .5376435 % |
| 20 | .074 | .0733 | -7.000044E-04 | -.9549856 % |
| 30 | .109 | .1094 | 3.999919E-04 | .3656233 % |

3888

Begin Element - AE

0.004
0.000 AZ
0.000
0.028
0.058 R
0.088

0.079
0.114
0.149 AQC
0.180

0.001
0.037
0.074 SO1 undil. WP283 Conc 1
0.105

0.439
0.468 SO2 X50 WP283 Conc 2
0.515
0.541

0.093
0.127 SO2 X50X5
0.165
0.194

0.083
0.113 AQC
0.150
0.157

Jm
15 Aug 86

---

* FLAMELESS * CSC VERSION 1.00 *

---

N E OF ANALYST ---: HNR
DATE OF ANALYSIS --: 08-15-1986
PARAMETER NAME ----: AS
DATA SET # --------: ~~5371~~ 3424

---

| SAMPLE NO. | CONC. | R VALUE | SLOPE |
|---|---|---|---|
| R | -.1027382 | .9997891 | .00292 |
| ~~AQC~~ | ~~23.90534~~ | ~~.9948935~~ | ~~3.379999E-03~~ |
| ~~RCRA 50~~ | ~~32.95084~~ | ~~.9945106~~ | ~~3.049999E-03~~ |
| DUPRCRA X50 | 31.06062 | .9991749 | 3.299999E-03 |
| S08 | 1.463414 | .9998018 | .00246 |
| S10 | .3061217 | .9991681 | .00196 |
| S11 | .7035185 | .9993189 | .00199 |
| DUPS11 | .2439024 | .9996432 | .00205 |
| AQC TV 23.5 | 23.35404 | .9997304 | .00322 |

---

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | -2.999954E-04 | -2.999954E-04 | 100 % |
| 10 | .029 | .0289 | -9.999797E-05 | -.3460137 % |
| 20 | .057 | .0581 | .0011 | 1.893287 % |
| 30 | .088 | 8.729999E-02 | -7.000044E-04 | -.8018379 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .082 | 8.080002E-02 | -1.199983E-03 | -1.485127 % |
| 10 | .11 | .1146 | 4.600011E-03 | 4.013971 % |
| 20 | .154 | .1484 | -5.599991E-03 | -3.773578 % |
| 30 | .18 | .1822 | 2.199978E-03 | 1.207452 % |

RCRA 50

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .104 | .1005 | -3.49997E-03 | -3.482556 % |
| 10 | .125 | .131 | 6.000027E-03 | 4.580173 % |
| 20 | .163 | .1615 | -1.499981E-03 | -.9287805 % |
| 30 | .193 | .192 | -1.000002E-03 | -.5208344 % |

DUPRCRA

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .104 | .1025 | -1.499973E-03 | [illegible] |
| 10 | .133 | .1355 | 2.500013E-03 | [illegible] |
| 20 | .169 | .1685 | -4.999936E-04 | [illegible] |
| 30 | .202 | .2015 | -5.000085E-04 | [illegible] |

Jun 15 Aug 86

2nd sheet

4 dup ~1.0 Bad cond.

Bad cond.

0.6 % dev

99%

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .004 | 3.599999E-03 | -4.000017E-04 | -11.11116 % |
| 10 | .028 | .0282 | 1.999997E-04 | .7092186 % |
| 20 | .052 | .0528 | 7.999987E-04 | 1.515149 % |
| 30 | .078 | 7.740001E-02 | -5.999953E-04 | -.7751876 % |

JVM 15 Aug 84

S10

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .001 | 5.999985E-04 | -4.000016E-04 | -66.6671 % |
| 10 | .019 | .0202 | 1.199998E-03 | 5.940585 % |
| 20 | .041 | .0398 | -1.200005E-03 | -3.015089 % |
| 30 | .059 | 5.939999E-02 | 3.999919E-04 | .6733871 % |

S11

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .002 | 1.400002E-03 | -5.999985E-04 | -42.85699 % |
| 10 | .021 | .0213 | 2.999995E-04 | 1.408448 % |
| 20 | .04 | .0412 | 1.199998E-03 | 2.912617 % |
| 30 | .062 | .0611 | -9.000041E-04 | -1.473002 % |

DUPS11

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .001 | .0005 | -5.000001E-04 | -100 % |
| 10 | .02 | .021 | 1.000002E-03 | 4.761915 % |
| 20 | .042 | 4.150001E-02 | -4.999936E-04 | -1.204804 % |
| 30 | .062 | 6.200001E-02 | 7.450581E-09 | 1.201706E-05 % |

ADD

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .076 | 7.520001E-02 | -7.999838E-04 | -1.063808 % |
| 10 | .106 | .1074 | 1.400016E-03 | 1.303553 % |
| 20 | .14 | .1396 | -3.999919E-04 | -.2865271 % |
| 30 | .172 | .1718 | -1.999885E-04 | -.1164077 % |

RCRA X50
RCRAX50dup ] 503

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: HNR
DATE OF ANALYSIS --: 08-15-1986
PARAMETER NAME ----: AS
DATA SET # --------: 3371

wheel #3 from ASMyH

| SAMPLE NO. | CONC. | R VALUE | SLOPE |
|---|---|---|---|
| R | .4942978 | .9993789 | .00263 |
| S11 SPK | 20.7798 | .9979435 | .00218 |
| RCRAX50 repeat | 22.38804 | .9987993 | 3.350001E-03 |
| ADC T.V. 23.5 | 23.33333 | .9990778 | .00285 |

note S12 goes here

% Recovery 502.0 / 20 = 101%

.85% dev.

ave RCRA X50
31.6
22.4
54.0 ÷ 2 = 27 reported

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .002 | 1.300003E-03 | -6.999971E-04 | -53.84581 % |
| 10 | .026 | .0276 | 1.599997E-03 | 5.797092 % |
| 20 | .055 | 5.389999E-02 | -1.100008E-03 | -2.04083 % |
| 30 | .08 | 8.019999E-02 | 1.999885E-04 | .2493623 % |

S11 SPK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .047 | 4.529998E-02 | -1.700025E-03 | -3.752817 % |
| 10 | .065 | 6.709998E-02 | 2.099976E-03 | 3.129623 % |
| 20 | .088 | 8.889999E-02 | 8.995254E-04 | 1.012357 % |
| 30 | .112 | .1107 | -1.300022E-03 | -1.174365 % |

RCRAX50

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .077 | 7.499998E-02 | -2.000026E-03 | -2.666703 % |
| 10 | .106 | .1085 | 2.49999E-03 | 2.304139 % |
| 20 | .141 | .142 | 9.999871E-04 | .7042164 % |
| 30 | .177 | .1755 | -1.499996E-03 | -.8546983 % |

ADC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 6.800001E-02 | 6.649999E-02 | -1.500018E-03 | -2.255667 % |
| 10 | .093 | 9.499998E-02 | 1.999982E-03 | 2.105244 % |
| 20 | .123 | .1235 | 4.999861E-04 | .4048471 % |
| 30 | .153 | .152 | -1.000002E-03 | -.6578961 % |

Jim
15 ug/L

---

* FLAMELESS * CSC VERSION 1.00 *

---

NAME OF ANALYST ---: HNR
DATE OF ANALYSIS --: 08-15-1986
PARAMETER NAME ----: AS
DATA SET # --------: D/S 3324

---

| SAMPLE NO. | CONC. | R VALUE | SLOPE |
|---|---|---|---|
| S12 | 5.235522E-02 | .9998081 | .00192 |

---

S12

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | 9.999848E-05 | 9.999848E-05 | 100 % |
| 10 | .019 | .0192 | 2.000015E-04 | 1.041675 % |
| 20 | .039 | 3.830001E-02 | -6.99997E-04 | -1.827668 % |
| 30 | .057 | 5.740001E-02 | 4.000068E-04 | .6968758 % |

Begin Element - AS

2nd wheel cent. From D/S 3371

JVM
15 Aug 11

0.001
0.000 AZ
-0.000
0.029
0.057 R
0.088
0.082
0.110
0.154 AOC Badcorrel.
0.180
0.104
0.125

RCRA X50 Badcorrel.

0.163
0.193
0.104
0.133 DUP RCRA X50
0.169
0.202
0.004
0.028
0.052 S08
0.078
0.001
0.019
0.041 S10
0.059
0.002
0.021
0.040 S11
0.062
0.001
0.020 dupS11
0.042
0.062
0.076
0.106
0.140 AOC

Jun
15 Aug 1

Wheel # 3

↓

0.172
0.002
0.026 R
0.055
0.080
0.000
0.019 S12
0.039
0.057
0.047
0.065 S11 Spke
0.088
0.112
0.077
0.106
0.141 RCRA x50
0.177
~~0.067~~
0.068
0.093 ARC
0.123
0.153

JVM 15 Aug 86

---

* FLAMELESS * CSC VERSION 1.00 *

---

NAME OF ANALYST ---: P.M.
DATE OF ANALYSIS --: 08-14-1986 — PERCRA 3371
PARAMETER NAME ----: Se in ug/l
DATA SET # --------: RCRA PE, EDO 3424

---

| | SAMPLE NO. ug/l | CONC. | R VALUE | SLOPE | |
|---|---|---|---|---|---|
| | STD | -.4166649 | .9990095 | .01008 | |
| | NBS | 9.418598 | .9995421 | .01032 | -3.1% |
| 3371 | RCRA S03 | 15.62679 | .9998012 | 7.019999E-03 | |
| " | RCRA D S03 | 15.07712 | .9969444 | 7.780001E-03 | |
| | ~~3371 RCRA~~ S08 | .8427001 | .9994325 | .0089 | |
| 3424 | S10 interference | 31.9203 | .9815919 | 2.759999E-03 | |
| | S11 | 6.618356 | .9994636 | .00414 | |
| | S12 | 8.894694E-02 | .9995435 | 7.869998E-03 | |
| | QC | 9.254739 | .9990139 | 7.380001E-03 | -4.6 |
| 3424 | S11SP | 25.43714 | .9979011 | 3.660002E-03 | 94% Rec. |
| 3371 | S01 | -.4330732 | .9995559 | 7.620001E-03 | |
| 3424 | S11 D | 6.498604 | .9998196 | .00357 | |
| | EXT B | -.5683884 | .9999272 | 5.630001E-03 | |
| | D BLANK | -.6032912 | .9997228 | .00547 | |
| 3371 | S02 1:10 | 135.9348 | .9964787 | 6.419991E-03 | |
| 3424 | S10 1/10 | 4.03362 | .9957481 | 5.949999E-03 | |
| | NBS | 10.51546 | .9990027 | .00485 | +8.2 |
| 3371 | S02 1/100 | 11.88679 | .9957549 | 5.300001E-03 | 1188ppb |
| | ~~QC~~ NBS | 9.683552 | .999635 | 4.739999E-03 | 0% |

---

STD

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.001 | -4.199982E-03 | -3.199982E-03 | 76.19037 % |
| 10 | .089 | 9.660002E-02 | 7.600025E-03 | 7.867518 % |
| 20 | .203 | .1974 | -5.599961E-03 | -2.836859 % |
| 30 | .297 | .2982001 | 1.20005E-03 | .4024313 % |

NBS

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .101 | 9.719994E-02 | -3.800057E-03 | -3.909526 % |
| 10 | .195 | .2004 | 5.399972E-03 | 2.694597 % |
| 20 | .303 | .3036 | 5.999506E-04 | .1976122 % |
| 30 | .409 | .4068 | -2.200037E-03 | -.5408155 % |

RCRA

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .111 | .1097 | -1.299992E-03 | -1.185043 % |
| 10 | .179 | .1799 | 8.999954E-04 | .5003609 % |

| | | | | |
|---|---|---|---|---|
| 20 | .246 | .2501 | 2.099981E-03 | .8396480 % |
| 30 | .322 | .3203 | -1.700014E-03 | -.5307568 % |

RCRA D

Jun 85 Thy JK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .121 | .1173 | -3.700011E-03 | -3.154315 % |
| 10 | .195 | .1951 | 1.000017E-04 | 5.125664E-02 % |
| 20 | .262 | .2729 | 1.089999E-02 | 3.994134 % |
| 30 | .358 | .3507 | -7.29999E-03 | -2.081548 % |

STRON

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .006 | 7.500031E-03 | 1.500031E-03 | 20.00032 % |
| 10 | .101 | 9.650003E-02 | -4.499972E-03 | -4.663182 % |
| 20 | .181 | .1855 | 4.500047E-03 | 2.425901 % |
| 30 | .276 | .2745 | -1.499981E-03 | -.546441 % |

S10

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 9.399999E-02 | 8.810001E-02 | -5.899988E-03 | -6.696922 % |
| 10 | .11 | .1157 | .0057 | 4.926534 % |
| 20 | .137 | .1433 | 6.300003E-03 | 4.396373 % |
| 30 | .177 | .1709 | -6.100014E-03 | -3.569347 % |

S11

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .029 | .0274 | -1.600005E-03 | -5.839435 % |
| 10 | .067 | .0688 | 1.800001E-03 | 2.61628 % |
| 20 | .109 | .1102 | 1.200005E-03 | 1.088934 % |
| 30 | .153 | .1516 | -1.399994E-03 | -.9234788 % |

S12

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .003 | 7.000122E-04 | -2.299988E-03 | -328.5639 % |
| 10 | .075 | 7.939999E-02 | 4.399985E-03 | 5.541544 % |
| 20 | .16 | .1581 | -1.900032E-03 | -1.201792 % |
| 30 | .237 | .2368 | -2.000481E-04 | -8.447978E-02 % |

QC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .072 | 6.829999E-02 | -3.700011E-03 | -5.417293 % |
| 10 | .136 | .1421 | 6.099999E-03 | 4.292751 % |
| 20 | .217 | .2159 | -1.099989E-03 | -.50949 % |
| 30 | .291 | .2897 | -1.299977E-03 | -.4487322 % |

S11SP

| | | | | |
|---|---|---|---|---|
| 0 | .096 | 9.309998E-02 | -2.900027E-03 | -3.11496 % |
| 10 | .126 | .1297 | 3.699988E-03 | 2.852728 % |
| 20 | .165 | .1663 | 1.299992E-03 | .7817151 % |
| 30 | .205 | .2029 | -2.099976E-03 | -1.034981 % |

S(

JVM
15 Aug 84

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.001 | -3.300019E-03 | -2.300019E-03 | 69.69714 % |
| 10 | .071 | 7.289999E-02 | 1.899988E-03 | 2.606293 % |
| 20 | .146 | .1491 | 3.100008E-03 | 2.079147 % |
| 30 | .228 | .2253 | -2.699986E-03 | -1.198396 % |

S11 D

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .024 | 2.320001E-02 | -7.999875E-04 | -3.44822 % |
| 10 | .058 | 5.890001E-02 | 9.000115E-04 | 1.528033 % |
| 20 | 9.399999E-02 | 9.460001E-02 | 6.000102E-04 | .6342602 % |
| 30 | .131 | .1303 | -6.999821E-04 | -.537208 % |

EXT B

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.004 | -3.200028E-03 | 7.999728E-04 | -24.99894 % |
| 10 | .054 | 5.309998E-02 | -9.00019E-04 | -1.694952 % |
| 20 | .11 | .1094 | -6.000102E-04 | -.5484555 % |
| 30 | .165 | .1657 | 6.99997E-04 | .4224484 % |

D BLANK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.002 | -3.300003E-03 | -1.300003E-03 | 39.39399 % |
| 10 | .049 | .0514 | .0024 | 4.66926 % |
| 20 | .107 | .1061 | -9.000003E-04 | -.8482566 % |
| 30 | .161 | .1608 | -1.999885E-04 | -.1243709 % |

S02

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .879 | .8727001 | -6.299913E-03 | -.7218875 % |
| 10 | .927 | .9369 | 9.900034E-03 | 1.05668 % |
| 20 | 1.002 | 1.0011 | -9.000301E-04 | -8.990412E-02 % |
| 30 | 1.068 | 1.0653 | -2.70021E-03 | -.2534695 % |

S1( /10

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .021 | 2.400003E-02 | 3.00003E-03 | 12.50011 % |
| 10 | .083 | 8.350001E-02 | 5.000159E-04 | .5988213 % |
| 20 | .153 | .143 | -9.999991E-03 | -6.993 % |
| 30 | .196 | .2025 | 6.500006E-03 | 3.20988 % |

NBS

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .05 | .051 | 9.999983E-04 | 1.960781 % |
| | .099 | .0995 | 5.00001E-04 | .5025136 % |
| 20 | .152 | .148 | -3.999993E-03 | -2.702698 % |
| 30 | .194 | .1965 | 2.499998E-03 | 1.272263 % |

Jw
15 Aug 81

SO2 1/100

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .067 | 6.299997E-02 | -4.000031E-03 | -6.349258 % |
| 10 | .114 | .116 | 1.999982E-03 | 1.724122 % |
| 20 | .161 | .169 | 8.000001E-03 | 4.733729 % |
| 30 | .228 | .222 | -5.999998E-03 | -2.702701 % |

QC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .047 | 4.590003E-02 | -1.099974E-03 | -2.396456 % |
| 10 | .091 | 9.330001E-02 | 2.300017E-03 | 2.465184 % |
| 20 | .142 | .1407 | -1.299992E-03 | -.923946 % |
| 30 | .188 | .1881 | 9.998679E-05 | .0531562 % |

BEGIN DATA FILE: FRI1.DF

JVM
15 Aug 86

Begin Element - SE
0.000
0.000 AZ
-0.001
0.085 std
0.209
0.257
0.101
0.195
0.309 NBS
0.408
0.118
0.127
0.010
0.094
0.095 screen
0.006
0.180
-0.002
4.555

0.111
0.179 RCRA
0.248 S03
0.322
0.121
0.195 S03D
0.263
0.358
0.005
0.101 S08
0.181
0.276
0.094
0.110
0.187 S10
0.177
0.029
0.057 S11
0.109
0.158
0.005
0.075
0.180 S12
0.287
0.072
0.126 Q.C.
0.217
0.291
-0.006 Blank
0.096
0.125 S11sp
0.165
0.205
-0.001
0.071 S01
0.145
0.229
0.024
0.058
0.094

S11D

Jun 15 Aug 86

0.181
-0.004
0.054 Ex B
0.110
0.165
-0.002
0.049
0.107 Diag B
0.161
0.879
0.927
1.002 SO2 1:10
1.088
0.021
0.083
0.153 S10 1:10
0.196
0.050
0.099
0.153 Q.C NBS
0.194

0.067
0.114
0.161 SO2 1:100
0.238
0.047
0.091
0.142 NBS
0.188
-0.005 Blank cup
-0.004
0.043 Poco
0.091 Blank
0.152
-0.005
0.054
0.107 PW1
0.159
-0.001
0.051
0.106 PW2
0.155
-0.003 Bakart
0.048
0.098 R05
0.155
-0.001
0.055
0.109 S35
0.155
-0.002
0.049
0.111 S36
0.172
-0.002
0.052
0.121 S37
0.174
0.050
0.104

Reg Area Lab - C28359

Jun AS Angle P1 8/15/86, 8/28/86

8/29/86 REST OF SAMPLES.

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH EDC/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 *PRIORITY #1

DU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Found PRIORITY / * CONTRACTOR N

| CRL LOG NUMBER 86EF10 | SAMPLE DESCRIPTION | EP TOX EXTRACT ICP METALS MG/L MET19364 | EP TOX EXTRACT SE MG/L MET19109 | EP TOX EXTRACT AS MG/L MET1989 | EP TOX EXTRACT Pb MG/L | EP TOX EXTRACT Cr MG/L |
|---|---|---|---|---|---|---|
| S01 | 5-90240 | X | X <0.02 | X <0.002 | X | X |
| S02 | 5-90241 | X | X <0.02 | X <0.002 | X | X |
| S03 | 5-90242 | X | X <0.02 | X <0.002 | X | X |
| S04 | 5-90243 | X | X <0.02 | X <0.002 | X | X |
| S05 | 5-90244 | X | X <0.02 | X <0.002 | X | X |
| S06 | 5-90245 | X | X <0.02 | X <0.002 | X | X |
| S07 | 5-90229 | X | X <0.02 | X 0.004 | X | X |
| * S08 | 5-90246 | X | X <0.002 | X <0.002 | X | X |
| D09 | 5-90247 | X | X <0.02 | X <0.002 | X | X |
| * S10 | 5-90248 | X | X 0.040 | X < 0.002 | X | X |
| * S11 | 5-90249 | X | X 0.007 | X < 0.002 | X | X |
| * S12 | 5-90127 | X | X <0.002 | X < 0.002 | X | X |
| S13 | 5-90226 | X | X <0.02. | X <0.002 | X | X |
| S14 | 5-90250 | X | X <0.02 | X <0.002 | X | X |
| R15 | 5-90227 | X | X <0.002 | X <0.002 | X | X |
| | | | PM 8-14-86 | JMR 8/15/86 | | |
| | | | PM 8-27-86 | PM 8-28-86 | | |
| | | | MS 8-28-86 | MS 8-28-86 | | |

Jun Priority 2 28 Aug 86 8/9/86

TRANSMITTED BY
SEP 08 1986
U.S. EPA CENTRAL REGIONAL LAB

*CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

Jm
28 Aug 86

---

* FLAMELESS * CSC VERSION 1.00 *

---

NAME OF ANALYST ---: MS
DATE OF ANALYSIS --: 08-28-1986
PARAMETER NAME ----: AS
DATA SET # --------: 3424

---

| SAMPLE NO. | CONC. | R VALUE | SLOPE |
|---|---|---|---|
| BLANK | -.352866 | .9994937 | 3.004001E-02 |
| AQC | 23.59209 | .9973074 | 2.872998E-02 0% |
| ~~AQC~~ | ~~5.428585~~ | ~~.9516341~~ | ~~.045697~~ error |
| S07 | 3.650796 | .9987157 | .01386 |
| ~~AQC~~ | ~~-1.701412E+38~~ | ~~1.701412E+38~~ | ~~0~~ entry error |
| AQC | 22.96998 | .9990457 | 2.899001E-02 -2.2 |
| S09 | -.3411505 | .9995441 | .01407 |
| S13 | -.5729481 | .9985159 | .01693 |
| S14 | .515464 | .9981558 | .01455 |
| BLANK | -5.033557E-02 | .999855 | .0298 |
| AQC | 22.19978 | .9998639 | 3.123003E-02 -5.5 |

---

BLANK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.001 | -.0106001 | -9.600098E-03 | 90.56612 % |
| 10 | .272 | .2898 | 1.779994E-02 | 6.142149 % |
| 20 | .597 | .5902 | -6.799996E-03 | -1.152151 % |
| 30 | .892 | .8906001 | -1.399934E-03 | -.15719 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .652 | .6778003 | 2.580029E-02 | 3.806473 % |
| 10 | 1.001 | .9651001 | -3.589994E-02 | -3.719815 % |
| 20 | 1.258 | 1.2524 | -5.600095E-03 | -.4471491 % |
| 30 | 1.524 | 1.5397 | 1.569974E-02 | 1.019663 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .0681 | .2480701 | .1799701 | 72.54808 % |
| 10 | .933 | .7050401 | -.2279599 | -32.33291 % |
| 20 | 1.246 | 1.16201 | -8.398998E-02 | -7.227991 % |
| 30 | 1.487 | 1.61898 | .1319799 | 8.152043 % |

S07

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 10 | .187 | .1892 | 2.200037E-03 | 1.16281 % |
| 20 | .316 | .3278 | 1.180002E-02 | 3.599762 % |
| 30 | .475 | .4664001 | -8.599967E-03 | -1.843904 % |

JVM 28 Aug 86

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| .681 | 0 | 0 | 0 | 1.701412E+38 % |
| 0 | 0 | 0 | 0 | 1.701412E+38 % |
| 0 | 0 | 0 | 0 | 1.701412E+38 % |
| 0 | 0 | 0 | 0 | 1.701412E+38 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .681 | .6658999 | -1.510012E-02 | -2.267626 % |
| 10 | .933 | .9557999 | 2.279991E-02 | 2.385427 % |
| 20 | 1.246 | 1.2457 | -3.000498E-04 | -2.408684E-02 % |
| 30 | 1.543 | 1.5356 | -7.399917E-03 | -.4818909 % |

S09

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | -4.799988E-03 | -4.799988E-03 | 100 % |
| 10 | .131 | .1359 | 4.900009E-03 | 3.605599 % |
| 20 | .272 | .2766 | 4.599989E-03 | 1.663047 % |
| 30 | .422 | .4173 | -4.700005E-03 | -1.126289 % |

S13

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | -9.700012E-03 | -9.700012E-03 | 100 % |
| 10 | .151 | .1596 | 8.600011E-03 | 5.388479 % |
| 20 | .317 | .3289001 | 1.190004E-02 | 3.618132 % |
| 30 | .509 | .4982001 | -1.079995E-02 | -2.167793 % |

S14

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .018 | .0075 | -.0105 | -140 % |
| 10 | .137 | .153 | 1.599999E-02 | 10.45751 % |
| 20 | .299 | .2985 | -5.000234E-04 | -.167512 % |
| 30 | .449 | .444 | -5.000025E-03 | -1.126132 % |

BLANK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.003 | -.0015 | .0015 | -100 % |
| 10 | .294 | .2965 | 2.499998E-03 | .8431695 % |
| 20 | .604 | .5945 | -9.499967E-03 | -1.597976 % |
| 30 | .887 | .8925 | 5.499959E-03 | .616242 % |

HGC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .694 | .6932998 | -7.002354E-04 | -.1010004 % |
| 10 | 1 | 1.0056 | 5.599976E-03 | .5568791 % |
| 20 | 1.327 | 1.3179 | -9.099722E-03 | -.6904712 % |
| 30 | 1.626 | 1.630201 | 4.200578E-03 | .2576724 % |

Jim
28 Aug 86

BEGIN DATA FILE: AS828.DF

Jun 28 Aug 86

Begin Element - AS
0.100
0.000 AZ
-0.100
-0.116
0.000 AZ
0.005
BEGIN DATA FILE: AS828.DF

Begin Element - AS
0.002
0.000 AZ
0.004
0.145
0.299
0.418
0.567
0.599
0.708
0.798
0.516
0.542
0.739
0.790
0.393
0.556
0.523
0.752
0.460
-0.001
0.000 AZ
0.001
0.006
0.000 AZ
-0.001
0.272
0.597
0.892
0.652
1.001
1.258
1.524
0.681
0.933
1.246
1.487

Bad tube or alignment of tube

Blonds sets

AQC

AQC

bad injection ignore

1.543 repeat of last emp
0.056
0.187 507
0.316
0.475
0.000
0.131 509
0.272
0.422

1.543 repeat of last exp
0.056
0.187 507
0.316
0.475
0.000
0.131 509
0.272
0.422
0.000
0.151
0.317 513
0.509

JLM
8 Aug 86

0.018
0.137 514
0.299
0.449
-0.003
0.294 5
0.604
0.887
0.694
1.000
1.327 AQC
1.626
0.001
0.166 ext
0.355 B
0.567
-0.002
0.177 Dig
0.386 B
0.579
0.002
0.174 501
0.334 Dup
0.493
0.157
0.313 501
0.478 Spike
0.636
0.008
0.174
0.323 501
0.478
0.004
0.256 502
0.500
0.738
0.002
0.167 505
0.351
0.512
0.692
1.016
1.348 AQC last QC out rerun
1.689

*PRIORITY#1

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

C28359

Restrack # C28359 4

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

# CHAIN OF CUSTODY RECORD

PROJ. NO.: 86EF10
PROJECT NAME: American Steel Foundries

CDO 3424

SAMPLERS: (Signature) Michael Potter, Joseph Fuller

| STA. NO. | DATE 1986 | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | Soil Sample | | | | | | | Tag # | SEAL # | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S01 | 8-6 | 1006 | | X | WASTE PILE FROM LOAD #2 | 1 | • | | | | | | | 5-90240 | EF10-1 | |
| S02 | 8-6 | 1030 | | X | WASTE PILE FROM LOAD #1 | 1 | • | | | | | | | 5-90241 | " | |
| S03 | 8-6 | 1327 | | X | CARRIER BLAST DUST COLLECTOR | 1 | • | | | | | | | 5-90242 | " | |
| S04 | 8-6 | 1338 | | X | KNOCKOUT DUST COLLECTOR | 1 | • | | | | | | | 5-90243 | " | |
| S05 | 8-6 | 1415 | | X | CARWET BLAST DUST COLLECT. | 1 | • | | | | | | | 5-90244 | " | |
| S06 | 8-6 | 1425 | | X | TUMBLAST DUST COLLECT. | 1 | • | | | | | | | 5-90245 | " | |
| S07 | 8-7 | 1045 | | X | SOUTH END SAND SYSTEM | 1 | • | | | | | | | 5-90229 | " | |
| * S08 | 8-7 | 1100 | | X | SAND WASH & WET SCRUBBER SLURY | 1 | • | | | | | | | 5-90246 | EF10-2 | PRIORITY 1 |
| S09 | 8-7 | | | X | | 1 | • | | | | | | | 5-90247 | " | |
| * S10 | 8-7 | 1300 | | X | EAF DUST | 1 | • | | | | | | | 5-90248 | " | PRIORITY 1 |
| * S11 | 8-7 | 1420 | | X | AFTER DUMP | 1 | • | | | | | | | 5-90249 | " | " |
| * S12 | 8-7 | 1418 | | X | LAST HALF OF DUMP | 1 | • | | | | | | | 5-90227 | " | " |
| S13 | 8-7 | 1414 | | X | 1ST HALF OF DUMP | 1 | • | | | | | | | 5-90226 | " | |
| S14 | 8-7 | 1410 | | X | CORE OF LOAD | 1 | • | | | | | | | 5-90250 | " | |
| R15 | 8-7 | 1700 | | X | BLANK | 1 | • | | | | | | | 5-90227 | " | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Joe Fuller | 8-7-86 1800 | AIRBORN | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) William Sanger | Date / Time 8/8/86 2:45PM | Remarks SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1 | |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5-5415

ACTIVITY# C28359

(8)

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

8/29/86 REST OF SAMPLES

DIVISION/BRANCH ESD/EOU SAMPLING DATE 8/6-7/86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 PRIORITY #1

DU NUMBER D307 DATASET NUMBER 3424 STUDY AMERICAN STEEL FOUNDRIES PRIORITY 1 * CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | SEDIMENTS SOLIDS TOTAL SOLIDS % MIN45423 | SEDIMENTS SOLIDS TOTAL VOLATILE SOLIDS % OF DRY WT. MIN45524 | SEDIMENTS SOLIDS AMMONIA MG N/KG (DRY) MIN42925 | SEDIMENTS SOLIDS TOTAL KJELDAHL NITROGEN MG N/KG (DRY) MIN43025 | SEDIMENTS SOLIDS TOTAL PHOSPHORUS MG P/KG (DRY) MIN43126 |
|---|---|---|---|---|---|---|
| 86EF10 | | | | | | |
| S01 | 5-90240 | X | | | | |
| S02 | 5-90241 | X | | | | |
| S03 | 5-90242 | X | | | | |
| S04 | 5-90243 | X | | | | |
| S05 | 5-90244 | X | | | | |
| S06 | 5-90245 | X | | | | |
| S07 | 5-90229 | X | | | | |
| * S08 | 5-90246 | X | | | | |
| D09 | 5-90247 | X | | | | |
| * S10 | 5-90248 | X | | | | |
| * S11 | 5-90249 | X | | | | |
| * S12 | 5-90127 | X | | | | |
| S13 | 5-90226 | X | | | | |
| S14 | 5-90250 | X | | | | |
| R15 | 5-90227 | X | | | | |

CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

CRL V.2; 3/85

Restrack C28359

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES & PCB'S

8/29/86 REST OF SAMPLES

DIVISION/BRANCH EDO/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 * PRIORITY #1

DU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Found. PRIORITY / * CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | MATRIX Soil<br>TEST Fluoride<br>UNITS mg/kg<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | MATRIX<br>TEST<br>UNITS<br>PES235826 | CRL TAG# |
|---|---|---|---|---|---|---|---|
| 86EF10 | | | | | | | |
| S01 | SOIL | X | | | | | 5-90240 |
| S02 | | X | | | | | 5-90241 |
| S03 | | X | | | | | 5-90242 |
| S04 | | X | | | | | 5-90243 |
| S05 | | X | | | | | 5-90244 |
| S06 | | X | | | | | 590245 |
| S07 | | X | | | | | 5-90229 |
| * S08 | | X | | | | | 590246 |
| S09 | | X | | | | | 5-90247 |
| * S10 | | X | | | | | 5-90248 |
| * S11 | | X | | | | | 5-90249 |
| * S12 | | X | | | | | 5-90127 |
| S13 | | X | | | | | 5-90226 |
| S14 | | X | | | | | 5-90250 |
| R15 | | X | | | | | 5-90227 |

CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

Restrack # C28359

8/29/86 REST OF SAMPLES

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH EDO/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 *PRIORITY#1

CU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Found PRIORITY 1 * CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | SEDIMENTS SOLIDS CHEMICAL OXYGEN DEMAND MG COD/KG (DRY) MIN43327 | SEDIMENTS SOLIDS MERCURY MG HG/KG (DRY) MIN44728 | SEDIMENTS SOLIDS PHENOLICS MG PHENOL/KG (DRY) MIN44829 | SEDIMENTS SOLIDS CYANIDE MG CN/KG (DRY) MIN44930 | CRL TAG# |
|---|---|---|---|---|---|---|
| 86EF10 | | | | | | |
| S01 | Soil | | | X | X | 5-90240 |
| S02 | | | | X | X | 5-90241 |
| S03 | | | | X | X | 5-90242 |
| S04 | | | | X | X | 5-90243 |
| S05 | | | | X | X | 5-90244 |
| S06 | | | | X | X | 5-90245 |
| S07 | | | | X | X | 5-90229 |
| * S08 | | | | X | X | 5-90246 |
| D09 | | | | X | X | 5-90247 |
| * S10 | | | | X | X | 5-90248 |
| * S11 | | | | X | X | 5-90249 |
| * S12 | | | | X | X | 5-90127 |
| S13 | | | | X | X | 5-90226 |
| S14 | | | | X | X | 5-90250 |
| R15 | | | | X | X | 5-90227 |

CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY#1

Regback - C28359

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

8/29/86 REST OF SAMPLES.

DIVISION/BRANCH EDO/ESD SAMPLING DATE 8-6-86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 *PRIORITY #1

DU NUMBER D-307 DATASET NUMBER 3424 STUDY American Steel Found PRIORITY / * CONTRACTOR N

| CRL LOG NUMBER 86EF10 | SAMPLE DESCRIPTION | EP TOX EXTRACT ICP METALS MG/L MET19364 | EP TOX EXTRACT SE MG/L MET19109 | EP TOX EXTRACT AS MG/L MET1989 | EP TOX EXTRACT Pb MG/L | EP TOX EXTRACT Cr MG/L |
|---|---|---|---|---|---|---|
| S01 | 5-90240 | X | X | X | X | X |
| S02 | 5-90241 | X | X | X | X | X |
| S03 | 5-90242 | X | X | X | X | X |
| S04 | 5-90243 | X | X | X | X | X |
| S05 | 5-90244 | X | X | X | X | X |
| S06 | 5-90245 | X | X | X | X | X |
| S07 | 5-90229 | X | X | X | X | X |
| * S08 | 5-90246 | X | X | X | X | X |
| S09 | 5-90247 | X | X | X | X | X |
| * S10 | 5-90248 | X | X | X | X | X |
| * S11 | 5-90249 | X | X | X | X | X |
| * S12 | 5-90127 | X | X | X | X | X |
| S13 | 5-90226 | X | X | X | X | X |
| S14 | 5-90250 | X | X | X | X | X |
| R15 | 5-90227 | X | X | X | X | X |

*CRL NOTED: SAMPLES WITH A * BY THE NUMBER ARE PRIORITY #1

Run No. 541

Jun 27 Aug 86

Prep. by MS Date 8/25/86 Anal. by Date

| Beaker No. | Data Set | Sample | Notes | Beaker No. | Data Set | Sample | Notes |
|---|---|---|---|---|---|---|---|
| 1 | ED03424 | EF10 S01 | | 26 | ED03424 | S01 | As-Se Dig |
| 2 | | S02 | | 27 | | S02 | |
| 3 | | S03 | | 28 | | S03 | |
| 4 | | S04 | | 29 | | S04 | |
| 5 | | S05 | | 30 | | S05 | |
| 6 | | S06 | | 31 | | S06 | |
| 7 | | S07 | | 32 | | S07 | |
| 8 | | S09 | | 33 | | S09 | |
| 9 | | S13 | | 34 | | S13 | |
| 10 | | S14 | | 35 | | S14 | |
| 11 | | EX BLANK | | 36 | | EX BLANK | |
| 12 | | AQC | | 37 | | AQC | |
| 13 | | BLANK | | 38 | | BLANK | |
| 14 | | S01 | DUP | 39 | | S01 | DUP |
| 15 | | S01 | SPIKE | 40 | | S01 | SPIKE |
| 16 | | S09 | 1/10 | 41 | | | |
| 17 | | S14 | 1/10 | 42 | | | |
| 18 | | AQC | 1/10 | 43 | | | |
| 19 | | | | 44 | | | |
| 20 | | | | 45 | | | |
| 21 | | | | 46 | | | |
| 22 | | | | 47 | | | |
| 23 | | | | 48 | | | |
| 24 | | | | 49 | | | |
| 25 | | | | 50 | | | |

JVM 27 Aug 86



DATA SET : METALS1

| ELEMENT | | DET LIM | BLANK11 | BLANK13 |
|---|---|---|---|---|
| AG | µg/L | 6.000 | 0.508 | 0.098 |
| AL | | 80.0 | 22.6 | 22.6 |
| B | | 80.0 | 92.1* | 57.9 |
| BA | | 6.0 | 87.4* | 34.5* |
| BE | | 1.000 | 0.138 | 0.188 |
| CD | | 10.000 | 1.470 | 0.557 |
| CO | | 6.00 | -0.30 | -2.50 |
| CR | | 8.00 | 0.72 | -1.93 |
| CU | | 6.000 | 0.982 | 0.702 |
| FE | | 80.0 | 27.5 | 23.6 |
| LI | | 10.00 | -0.87 | -2.31 |
| MN | | 5.000 | 3.930 | 0.765 |
| MO | | 15.00 | -2.85 | -2.47 |
| NI | | 15.00 | 7.12 | 3.56 |
| PB | | 70.0 | -1.6 | 14.2 |
| SN | | 40.0 | -7.2 | 17.3 |
| SR | | 10.000 | 0.554 | 0.107 |
| TI | | 25.00 | 4.67 | 3.01 |
| V | | 5.00 | -0.78 | -1.79 |
| Y | | 5.000 | 0.349 | 0.105 |
| ZN | | 40.0 | 20.4 | 13.3 |
| CA | mg/L | 0.500 | 0.327 | 0.157 |
| CA | | 0.500 | 0.310 | 0.130 |
| K | | 2.000 | -0.181 | -0.347 |
| MG | | 0.100 | 0.019 | 0.015 |
| NA | | 1.000 | 0.283 | 0.237 |

NOT SIGNIFICANT

9/4/86

Repeat of same blank about 1 hr apart

MS 8/26/86

Ba + B contamination

problems with Ba not corrected because all samples are well below RCRA action level of 100 mg/L for EP Tox

JVM 27 Aug 86

Jun
27 Aug 86

MS 8/26/86

All values ± 2σ
except hi Ca

DL1:[001,054]RUN541.BRN 26-AUG-86 14:13:55 PAGE 2

DATA SET : METALS1 SAMPLE ID : AQC.086

| ELEMENT | | TRUE | MEASURED | % DEV |
|---|---|---|---|---|
| AL | µg/L | 4760.00 | 4820.00 | 1.34 |
| B | | 1050.00 | 1070.00 | 2.73 |
| BA | | 1510.00 | 1530.00 | 1.22 |
| BE | | 728.00 | 738.00 | 1.36 |
| CD | | 425.00 | 433.00 | 1.73 |
| CO | | 972.00 | 995.00 | 2.43 |
| CR | | 1570.00 | 1610.00 | 2.78 |
| CU | | 1160.000 | 1170.000 | 0.963 |
| FE | | 3820.00 | 3870.00 | 1.50 |
| LI | | 808.000 | 815.000 | 0.917 |
| MN | | 1330.000 | 1340.000 | 0.429 |
| MO | | 811.00 | 821.00 | 1.26 |
| NI | | 1180.000 | 1190.000 | 0.787 |
| PB | | 2970.00 | 3080.00 | 3.36 |
| SN | | 2430.00 | 2330.00 | -3.93 |
| SR | | 902.00 | 890.00 | -1.35 |
| TI | | 1200.00 | 1210.00 | 1.16 |
| V | | 744.000 | 750.000 | 0.805 |
| Y | | 784.000 | 787.000 | 0.338 |
| ZN | | 2800.000 | 2800.000 | 0.035 |
| CA | mg/L | 12.4 | 14.3 | 15.2 |
| CA | | 13.20 | 14.30 * | 7.89 |
| [illegible] | | 96.00 | 98.20 | 2.21 |
| [illegible] | | 5.210 | 5.190 | -0.364 |
| NA | | 18.500 | 18.600 | 0.496 |

JLM
27 August

MS 8/26/86

All values ± 10% or
± 2σ

DL1:L001.054IRUN541.BRN 26-AUG-86 14:15:06 PAGE 4

DATA SET : METALS1 SAMPLE ID : AQC.086

| ELEMENT | | TRUE | MEASURED | % DEV |
|---|---|---|---|---|
| AL | µg/L | 4760.00 | 4690.00 | -1.41 |
| B | | 1050.000 | 1040.000 | -0.180 |
| BA | | 1510.000 | 1500.000 | -0.570 |
| BE | | 728.00 | 714.00 | -1.91 |
| CD | | 425.00 | 411.00 | -3.32 |
| CO | | 972.00 | 958.00 | -1.43 |
| CR | | 1570.00 | 1540.00 | -2.07 |
| CU | | 1160.00 | 1140.00 | -1.70 |
| FE | | 3820.00 | 3750.00 | -1.76 |
| LI | | 808.000 | 801.000 | -0.849 |
| MN | | 1330.00 | 1290.00 | -3.00 |
| MO | | 811.00 | 798.00 | -1.55 |
| NI | | 1180.00 | 1120.00 | -4.72 |
| PB | | 2970.00 | 2910.00 | -2.22 |
| SN | | 2430.00 | 2270.00 | -6.50 |
| SR | | 902.00 | 869.00 | -3.62 |
| TI | | 1200.00 | 1170.00 | -2.11 |
| V | | 744.00 | 725.00 | -2.53 |
| Y | | 784.00 | 766.00 | -2.30 |
| ZN | | 2800.00 | 2710.00 | -3.44 |
| CA | mg/L | 12.4 | 13.8 | 11.5 |
| CA | | 13.20 | 13.70 | 3.48 |
| K | | 96.000 | 96.400 | 0.313 |
| [illegible] | | 5.21 | 5.00 | -4.07 |
| NA | | 18.500 | 18.600 | 0.408 |

JVM
27 Aug 86

MS 8/26/86

All values
±10% or 2σ

DL1:[001,054]RUN541.BRN 26-AUG-86 14:16:18 PAGE 4

DATA SET : METALS1 SAMPLE ID : AQC.086

| ELEMENT | | TRUE | MEASURED | % DEV |
|---|---|---|---|---|
| AL | µg/L | 4760.000 | 4770.000 | 0.252 |
| B | | 1050.00 | 1060.00 | 1.33 |
| BA | | 1510.000 | 1510.000 | 0.035 |
| BE | | 728.000 | 726.000 | -0.304 |
| CD | | 425.000 | 422.000 | -0.731 |
| CO | | 972.000 | 978.000 | 0.598 |
| CR | | 1570.000 | 1570.000 | 0.053 |
| CU | | 1160.000 | 1150.000 | -0.252 |
| FE | | 3820.000 | 3800.000 | -0.378 |
| LI | | 808.000 | 811.000 | 0.361 |
| MN | | 1330.00 | 1320.00 | -1.17 |
| MO | | 811.000 | 804.000 | -0.771 |
| NI | | 1180.00 | 1170.00 | -1.29 |
| PB | | 2970.00 | 2930.00 | -1.53 |
| SN | | 2430.00 | 2340.00 | -3.47 |
| SR | | 902.00 | 881.00 | -2.31 |
| TI | | 1200.000 | 1200.000 | -0.095 |
| V | | 744.00 | 736.00 | -1.17 |
| Y | | 784.000 | 778.000 | -0.865 |
| ZN | | 2800.00 | 2760.00 | -1.62 |
| CA | mg/L | 12.4 | 14.2 | 14.1 |
| CA | | 13.20 | 13.90 | 5.52 |
| K | | 96.000 | 96.300 | 0.233 |
| MG | | 5.21 | 5.11 | -2.01 |
| NA | | 18.500 | 18.500 | -0.058 |

Jun
27 Aug 86

MS 8/26/86 Ag ± 10%

DL1:[001,054]RUN541.BKN 26-AUG-86 14:18:41 PAGE 6

DATA SET : METALS1 SAMPLE ID : WP37810

| ELEMENT | | TRUE | MEASURED | % DEV |
|---|---|---|---|---|
| AG | µg/L | 48.00 | 49.80 | 3.70 |

Jun
27 Aug 86

MS 8/26/86 Ag ±10%

DL1:[001,054]RUN541.BRN 26-AUG-86 14:21:05 PAGE 8

DATA SET : METALS1 SAMPLE ID : WP37810

| ELEMENT | | TRUE | MEASURED | % DEV |
|---|---|---|---|---|
| AG | µg/L | 48.00 | 49.80 | 3.85 |

MS 8/26/86 Ag ±10%

001,054]RUN541.BRN 26-AUG-86 14:19:53 PAGE 7

DATA SET : METALS1 SAMPLE ID : WP37810

| ELEMENT | | TRUE | MEASURED | % DEV |
|---|---|---|---|---|
| AG | µg/L | 48.00 | 50.20 | 4.57 |

JVM
27 Aug

S. PAPER TO TOP OF FORM AND
PRESS "RETURN TO CONTINUE!

MS 8/26/86

all values ±10% or ± detection limit except Ba

DL1:[001,054]RUN541.BRN 26-AUG-86 14:23:39 PAGE 1

DATA SET : ED03424 SAMPLE ID : EF10S01

| ELEMENT | | Det limit | SAMPLE | DUPLICATE | AVERAGE | R P D |
|---|---|---|---|---|---|---|
| AG | µg/L | 6.0 | 0.6 | 0.8 | 0.7 | 27.1 |
| AL | | | 135.00 | 148.00 | 141.00 | 8.92 |
| B | | 80.0 | 289.0 | 382.0 | 336.0 | 27.9 |
| BA | | 6.0 | 46.9 | 58.2 | 52.6 | 21.5* |
| BE | | 1.0 | 0.1 | 0.1 | 0.1 | 49.7 |
| CD | | 10.0 | 1.5 | 3.3 | 2.4 | 76.6 |
| CO | | 6.0 | 1.6 | 2.0 | 1.8 | 20.2 |
| CR | | 8.0 | 1. | 4. | 2. | 134. |
| CU | | 6.0 | 5.7 | 4.8 | 5.2 | 17.6 |
| FE | | | 121.00 | 111.00 | 116.00 | 8.97 |
| LI | | | 20.80 | 20.20 | 20.50 | 2.46 |
| MN | | | 126.000 | 127.000 | 127.000 | 0.471 |
| MO | | 15.0 | 1. | 7. | 4. | 146. |
| NI | | | 23.90 | 22.10 | 23.00 | 7.70 |
| PB | | 70.0 | 11. | 41. | 26. | 117. |
| SN | | 40.0 | -16.4 | -11.5 | -13.9 | -35.3 |
| SR | | | 317.000 | 317.000 | 317.000 | 0.067 |
| TI | | | 5.38 | 4.98 | 5.18 | 7.62 |
| V | | 5.0 | 1.0 | 0.4 | 0.7 | 88.0 |
| Y | | 5.0 | 0.3 | 0.7 | 0.5 | 62.1 |
| ZN | | | 52.70 | 49.20 | 50.90 | 6.93 |
| CA | mg/L | | 10.000 | 10.100 | 10.100 | 0.410 |
| CA | | | 9.880 | 9.960 | 9.920 | 0.837 |
| K | | | 1.280 | 1.270 | 1.270 | 0.969 |
| MG | | | 2.680 | 2.680 | 2.680 | 0.062 |
| NA | | | 23.900 | 24.100 | 24.000 | 0.983 |

Jim
27 Aug 86

SET PAPER TO TOP OF FORM AND
PRESS "RETURN TO CONTINUE!

AMS 8/26/86

DL1:[001,054]RUN541.BRN 26-AUG-86 14:35:49 PAGE 1

DATA SET : ED03424 SAMPLE ID : EF10S01

| ELEMENT | | SAMPLE | SPIKE | SPIKE ADDED | % RECOVERY |
|---|---|---|---|---|---|
| AG | µg/L | 0.6 | 47.7 | 50.0 | 94.1 |
| AL | | 135.0 | 853.0 | 800.0 | 89.7 |
| B | | 289. | 1290. | 800. | 125. * |
| BA | | 46.9 | 231.0 | 200.0 | 92.3 |
| BE | | 0.1 | 9.2 | 10.0 | 91.4 |
| CD | | 1.5 | 22.8 | 25.0 | 85.4 |
| CO | | 1.6 | 93.8 | 100.0 | 92.1 |
| CR | | 0.7 | 96.4 | 100.0 | 95.7 |
| CU | | 5.7 | 49.9 | 50.0 | 88.5 |
| FE | | 121.0 | 873.0 | 800.0 | 93.9 |
| LI | | 20.8 | 73.2 | 54.0 | 97.1 |
| MN | | 126.0 | 174.0 | 50.0 | 95.5 |
| MO | | 1. | 104. | 100. | 103. |
| NI | | 23.9 | 152.0 | 150.0 | 85.2 |
| PB | | 10.8 | 795.0 | 800.0 | 98.0 |
| SN | | -16.4 | 342.0 | 400.0 | 89.6 |
| SR | | 317.0 | 1260.0 | 1000.0 | 94.4 |
| TI | | 5.4 | 97.3 | 100.0 | 92.0 |
| V | | 1.0 | 43.5 | 50.0 | 85.0 |
| Y | | 0.3 | 47.1 | 50.0 | 93.5 |
| ZN | | 53. | 517. | 400. | 116. * |
| CA | mg/L | 10. | 82. | 50. | 145. |
| CA | | 9.9 | 56.3 | 50.0 | 92.8 |
| K | | 1.3 | 19.5 | 20.0 | 91.2 |
| MG | | 2.7 | 26.0 | 25.0 | 93.2 |
| NA | | 23.9 | 70.8 | 50.0 | 93.8 |

All values except Zn and B are ± 15%

Jun 27 Aug 86



DATA SET : METALS1

| ELEMENT | | | HIGHAUC |
|---|---|---|---|
| AG | µg/L | < | 6.00 |
| AL | | | 99400. |
| B | | < | 80.0 |
| BA | | < | 6.00 |
| BE | | < | 1.00 |
| CD | | < | 10.0 |
| CO | | < | 6.00 |
| CR | | | 8.48 |
| CU | | < | 6.00 |
| FE | | | 97400. |
| LI | | | 13.2 |
| MN | | | 15.9 |
| MO | | < | 15.0 |
| NI | | < | 15.0 |
| PB | | < | 70.0 |
| SN | | < | 40.0 |
| SR | | | 27.5 |
| TI | | < | 25.0 |
| V | | < | 5.00 |
| Y | | < | 5.00 |
| ZN | | | 92500. |
| CA | mg/L | | 103. |
| CA | | | 102. |
| K | | < | 2.00 |
| MG | | | 10.3 |
| NA | | < | 1.00 |

MS 8/26/86

9/4/86

JM 27 Aug 86



DATA SET : ED03424

| ELEMENT | | | EXBLANK |
|---|---|---|---|
| AG | µg/l | < | 6.00 |
| AL | | < | 80.0 |
| B | | | 114. |
| BA | | < | 6.00 |
| BE | | < | 1.00 |
| CD | | < | 10.0 |
| CO | | < | 6.00 |
| CR | | < | 8.00 |
| CU | | < | 6.00 |
| FE | | < | 80.0 |
| LI | | < | 10.0 |
| MN | | | 11.8 |
| MO | | < | 15.0 |
| NI | | | 66.4 |
| PB | | < | 70.0 |
| SN | | < | 40.0 |
| SR | | < | 10.0 |
| TI | | < | 25.0 |
| V | | < | 5.00 |
| Y | | < | 5.00 |
| ZN | | | 47.4 |
| CA | | < | 0.500 |
| CA | mg/l | < | 0.500 |
| K | | < | 2.00 |
| MG | | < | 0.100 |
| NA | | < | 1.00 |

MS 8/27/86

9/4/86

Activity # C28359

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

8/29/86 remainder

DIVISION/BRANCH ESD/EDO SAMPLING DATE 8/6/86 LAB ARRIVAL DATE 8/8/86 DUE DATE 8/15/86 * priority 1

DU NUMBER D307 DATASET NUMBER 3424 STUDY American Steel Foundry PRIORITY 1* CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | EP TOX EXTRACT MERCURY MG/L MIN19309 | FISH HG MG/KG (WET) MIN528168 |
|---|---|---|---|
| 86EF10501 | 5-90240 | X | |
| 86EF10502 | 5-90241 | X | |
| 86EF10503 | 5-90242 | X | |
| 86EF10504 | 5-90243 | X | |
| 86EF10505 | 5-90244 | X | |
| 86EF10506 | 5-90245 | X | |
| 86EF10507 | 5-90229 | X | |
| *86EF10508 | 5-90246 | X | |
| 86EF10509 | 5-90247 | X | |
| *86EF10510 | 5-90248 | X | |
| *86EF10511 | 5-90249 | X | |
| *86EF10512 | 5-90127 | X | |
| 86EF10513 | 5-90226 | X | |
| 86EF10514 | 5-90250 | X | |
| 86EF10R15 | 5-90227 | X | |

*priority 1

CRL V.2: 3/85

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: August 18, 1986

SUBJECT: Data for Priority I

FROM: William H. Sanders III, Director
Environmental Services Division

TO: A.R. Winklhofer, Chief
Eastern District Office

Attached is all the data for Priority I sample for Data Set Number

EDO 3424 American Steel Foundry.

If you have questions, please call Sylvia Griffin or Curtis Ross at the Central Regional Laboratory (353-8370).

William H. Sanders III

Attachment

CRL
Off for Sanders
8/18/86

TRANSMITTED BY
Griffin
AUG 18 1986
U.S. EPA CENTRAL
REGIONAL LAB

EPA FORM 1320-6 (REV. 3-76)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: August 18, 1986

SUBJECT: Data for Priority I

FROM: William H. Sanders III, Director
Environmental Services Division

TO: A.R. Winklhofer, Chief
Eastern District Office

Attached is all the data for Priority I sample for Data Set Number

EDO 3424 American Steel Foundry.

If you have questions, please call Sylvia Griffin or Curtis Ross at the Central Regional Laboratory (353-8370).

William H. Sanders III

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
CRL SAMPLE TRACKING FORM I

DATA SET NO. EDO 3424

STUDY NAME: American Steel Foundries

SAMPLE NO.(s): 86EF10S07 thru 86EF10S14

TOTAL NUMBER OF SAMPLES: 4 DATA USER: A.R. Winkelhofer

ANALYSES: EP Tox - Se, As SAMPLE DATA RECEIVED: 11/12/86

1. Have chain-of-custody records been received? YES ✓ or NO ____

2. Mailed to Data User by: Sylvia Griffin Date: 11/12/86

---

DATA USER'S RECORDS

☐ The described samples and analyses requested are incorrect.

DISCREPANCIES: _____

DATE: _____

SIGNATURE: _____

TO DATA USERS:

Please fill in the blanks below and return this form to:

Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

3. Data received by: BL Burge Date: 11-18-86

4. Received by CRL for file by: Sylvia Griffin Date: 12/15/86

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: PP
PARAMETER NAME ----: PHENOL
DATE OF ANALYSIS --: 08-14-1986

DATA SET NUMBER ---: ED03424/
DU NUMBER ---------:

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +1.10410E+00
+4.41174E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9998384

T-A-B-L-E 0-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | +0.000 | +0.000 | +1.104 |
| 2 | +11.000 | +50.000 | +49.633 |
| 3 | +22.500 | +100.000 | +100.368 |
| 4 | +45.000 | +200.000 | +199.632 |
| 5 | +67.000 | +300.000 | +296.690 |
| 6 | +91.000 | +400.000 | +402.572 |

T-A-B-L-E 0-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION ug/L | |
|---|---|---|---|
| CS20 | +3.500 | +16.545 | Limit 20 ± 5 |
| CS100 | +23.500 | +104.779 | " 100 ± 10 |
| DISTBLK | +0.000 | +1.104 | Limit ≤ 8 |
| DISTSTD (TV=100) | +19.500 % rec = 87 % | +87.132 | Limit = 94 ± 16 %. |
| 11RD1 | +0.000 | +1.104 | CD 03340 |
| SD1 | +5.000 | +23.162 | |
| 12RD12 | +0.000 | +1.104 | CD03395 |
| SD1 | +5.500 | +25.368 | |
| SD1(40) | +0.000 | +1.104 | |
| SD1(41) | +0.000 | +1.104 | |
| SD8 | +45.000 | +199.632 | |
| S10 | +11.000 | +49.633 | |
| S12 | +49.500 | +219.484 | |
| D09 | +9.500 | +43.015 | ED03424 |
| SD8DUP | +45.500 | +201.838 | |
| CS20 | +4.000 | +18.751 | |
| CS100 | +22.500 | +100.368 | |
| SD1 | +17.000 | +76.103 | |
| SD2 | +43.000 | +190.808 | |
| SD3 | +17.500 | +78.309 | |
| SD4 (1:50 DIL) | +26.000 | +115.809 x5 = 580 | |
| SD6 | +31.000 | +137.867 | |
| SD7 (1:5 DIL) | +61.000 | +270.219 x5 = 1350 | |
| S13 | +38.000 | +168.750 | |
| S14 | +6.000 | +27.574 | |
| S11 | +43.000 | +190.808 | |
| S12 | +49.500 | +219.484 | |
| SD7DUP | +61.500 | +272.425 | |
| CS20 | +4.000 | +18.751 | |
| CS100 | +23.000 | +102.574 | |

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: PP  DATA SET NUMBER ---: ED03424
PARAMETER NAME ----:  DU NUMBER ---------:
DATE OF ANALYSIS --: 08-14-1986

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +1.10410E+00
+4.41174E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9998384

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | +0.000 | +0.000 | +1.104 |
| 2 | +11.000 | +50.000 | +49.633 |
| 3 | +22.500 | +100.000 | +100.368 |
| 4 | +45.000 | +200.000 | +199.632 |
| 5 | +67.000 | +300.000 | +296.690 |
| 6 | +91.000 | +400.000 | +402.572 |

T-A-B-L-E O-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION |
|---|---|---|
| 505 | +55.000 | +243.749 ED03424 |

This one forgot to enter in previous report.

# COMPUTATION SHEET

| | |
|---|---|
| OFFICE | FILE NO. |
| SUBJECT | EPD3424 |
| COMPUTATION | Phenol |
| COMPUTED BY PP | CHECKED BY / DATE 8/14/86 / PAGE OF PAGES |

| (1) | (2) wet Wittaker | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| S08 | 5.12 | | | | | | | | |
| S10 | 1.52 | | | | | | | | |
| S11 | 4.68 | | | | | | | | |
| S12 | 4.73 | | | | | | | | |
| D09 | 1.34 | | | | | | | | |
| S08DUP | 4.14 | | | | | | | | |
| | | | | | | | | | |
| S01 | 2.86 | | | | | | | | |
| S02 | 2.85 | | | | | | | | |
| S03 | 1.71 | | | | | | | | |
| S04 | 1.55 | | | | | | | | |
| S05 | 1.67 | | | | | | | | |
| S06 | 1.89 | | | | | | | | |
| | | | | | | | | | |
| S07 | 2.04 | | | | | | | | |
| S13 | 4.03 | | | | | | | | |
| S14 | 1.31 | | | | | | | | |
| S07DUP | 1.90 | | | | | | | | |

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: RAP
PARAMETER NAME ----: CN
DATE OF ANALYSIS --: 08-15-1986

DATA SET NUMBER ---: 3395/3423/3424
DU NUMBER ---------: B304/D307

MANUAL DISTILLATION

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +1.21042E+00
+2.05542E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9989336

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | +0.000 | +0.000 | +1.210 |
| 2 | +10.500 | +25.000 | +22.792 |
| 3 | +23.000 | +50.000 | +48.485 |
| 4 | +50.000 | +100.000 | +103.981 |
| 5 | +96.000 | +200.000 | +198.530 |

T-A-B-L-E O-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION |
|---|---|---|
| BL | +0.000 | +1.210 - LIMIT (±8) |
| AQC [TV=100] | +53.500 | +111.175 - LIMIT (100±15) |
| DIST AQC [TV=100] | +49.500 | +102.953 - LIMIT (100±15) |
| DIST BL | +0.000 | +1.210 |
| 86CL12S01 | +9.500 | +20.736 |
| DUP S01 | +8.500 | +18.681 - Δ (≤15) |
| SPK S01 (+100) | +52.500 | +109.119 - % REC = 88 (100±20) |
| 86CH03S02 | +3.000 | +7.376 |
| 86EF10S08 | +0.500 | +2.238 |
| S10 | +3.000 | +7.376 |
| S11 | +1.000 | +3.265 |
| S12 | +1.000 | +3.265 |
| DUP S11 | +2.000 | +5.321 |
| S01 | +2.000 | +5.321 |
| S02 | +1.000 | +3.265 |
| S03 | +0.500 | +2.238 |
| S04 | +6.500 | +14.570 |
| S05 | +0.500 | +2.238 |
| S06 | +1.000 | +3.265 |
| S07 | +4.500 | +10.459 |
| D09 | +3.500 | +8.404 |
| S13 | +1.000 | +3.265 |
| S14 | +3.500 | +8.404 |
| ~~AQC~~ | ~~+56.000~~ | ~~+116.313~~ * |
| BLO | +0.000 | +1.210 |
| DIST BL | +0.000 | +1.210 |

Several samples + the QC were repeated to confirm the results AT

* AQC WAS OUT OF CONTROL BECAUSE THE PYRIDINE REAGENT WAS DEPLEATED. THE AQC'S PLUS THE LAST FOUR SAMPLES WERE RERUN AND THE REPORT IS ATTACHE

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: RAP
RAMETER NAME ----: CN
DATE OF ANALYSIS --: 08-14-1986

DATA SET NUMBER ---: 3395/3424
DU NUMBER ---------: D304/D307
MANUAL DIST.

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +1.21196E+00
+2.19607E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9992136

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

| STANDARD | SIGNAL | CONCENTRATION | CALCULATED |
|---|---|---|---|
| 1 | +0.000 | +0.000 | +1.211 |
| 2 | +10.000 | +25.000 | +23.172 |
| 3 | +21.500 | +50.000 | +48.427 |
| 4 | +46.500 | +100.000 | +103.329 |
| 5 | +90.000 | +200.000 | +198.858 |

T-A-B-L-E O-F S-A-M-P-L-E-S

| SAMPLE I.D. | SIGNAL | CONCENTRATION |
|---|---|---|
| AQC | *+49.500 | +109.917 |
| AQC | +50.000 | +111.015 |
| DIST. AQC | +46.000 | +102.231 |
| S01 | +9.000 | +20.976 |

*THESE SAMPLES WERE RERUN WITH A NEW PYRIDINE REAGENT AND AGREE WITH THE FIRST RUN.

* SEDCAL * CSC VERSION 1.00 *

NAME OF ANALYST ----: RAP
DATE OF ANALYSIS ---: 08-15-1986

SEDIMENT CALCULATION FOR CYANIDE

| SAMPLE NO. | % SOLID | WET WT(GMS) | DRY WT(GM/L) | SED CONC(UG/L) | SED CONC(MG/KG) |
|---|---|---|---|---|---|
| 86EF10S08 | 25.00 | 2.68 | 2.68 | <8.00 | 2.985 |
| S10 | 100.00 | 2.26 | 9.04 | <8.00 | 0.885 |
| S11 | 41.00 | 2.19 | 3.59 | <8.00 | 2.227 |
| S12 | 28.00 | 2.29 | 2.56 | <8.00 | 3.119 |
| DUP 11 | 41.00 | 2.09 | 3.43 | <8.00 | 2.334 |
| S01 | 98.00 | 2.51 | 9.84 | <8.00 | 0.813 |
| S02 | 98.00 | 2.62 | 10.27 | <8.00 | 0.779 |
| S03 | 98.00 | 2.08 | 8.15 | <8.00 | 0.981 |
| S04 | 99.00 | 2.04 | 8.08 | 15.00 | 1.857 |
| S05 | 96.00 | 2.74 | 10.52 | <8.00 | 0.760 |
| S06 | 100.00 | 2.04 | 8.16 | <8.00 | 0.980 |
| S07 | 97.00 | 2.05 | 7.95 | 10.00 | 1.257 |
| D09 | 100.00 | 2.03 | 8.12 | 8.00 | 0.985 |
| S13 | 27.00 | 2.50 | 2.70 | <8.00 | 2.963 |
| S14 | 95.00 | 2.06 | 7.83 | 8.00 | 1.022 |

# COMPUTATION SHEET

| | |
|---|---|
| OFFICE | FILE NO. |
| SUBJECT | EDO 3424 |
| COMPUTATION | CN |
| COMPUTED BY / CHECKED BY | DATE 2-13-86 / PAGE 1 OF 1 PAGES |

| (1) | (2) wet wt. | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| S08 | 2.68 | | | | | | | | |
| S10 | 2.26 | | | | | | | | |
| S11 | 2.19 | | | | | | | | |
| S12 | 2.0927 | | | | | | | | |
| DUP S11 | 2.09 | | | | | | | | |
| S01 | 2.51 | | | | | | | | |
| S02 | 2.62 | | | | | | | | |
| S03 | 2.08 | | | | | | | | |
| S04 | 2.04 | | | | | | | | |
| S05 | 2.74 | | | | | | | | |
| S06 | 2.04 | | | | | | | | |
| S07 | 2.05 | | | | | | | | |
| S13 | 2.90 | | | | | | | | |
| S14 | 2.06 | | | | | | | | |
| D09 | 2.03 | | | | | | | | |

* FLAMELESS * CSC VERSION 1.00 *

AME OF ANALYST ---: AQ
DATE OF ANALYSIS --: 11-06-1986
PARAMETER NAME ----: SE
DATA SET # --------: ED03371 ED03424
S03 only S06, S07, S09, S13 only.

JMM
7 MOVK

| SAMPLE NO. | CONC. | R VALUE | | SLOPE | |
|---|---|---|---|---|---|
| B | -.499607 | .9999958 | | .01281 | ≤ 2 |
| ~~AQC~~ | ~~54.67353~~ | ~~.2486339~~ | typing | ~~1.533333E-03~~ | |
| AQC | 8.936156 | .9995042 | | 9.870003E-03 | 9.7±10% 92% |
| ED0 3371 S03 | 5.859214 | .9987038 | | .00483 | |
| S03 EXT DUP | 5.503882 | .9968542 | | 6.449999E-03 | |
| ~~EXT BLK~~ | ~~26.50486~~ | ~~.2114963~~ | typing | ~~.00103~~ | |
| EXT BLK | -1.603649 | .9957388 | | .00767 | |
| DIG BLK | -1.524162 | .9983718 | | 8.069999E-03 | |
| ED0 3371 S03 WHEEL DUP | 8.187634 | .9986978 | | .00469 | |
| ED0 3424 S06 | -.1252622 | .9991209 | | 9.579999E-03 | |
| ~~S07~~ | ~~1.53711~~ | ~~.9845676~~ | typing | ~~.005636~~ | |
| S07 | -.4872919 | .9988438 | | 4.720001E-03 | |
| AQC | 8.712869 | .9990604 | | .0101 9.7±10% | Rcd 90% |
| AQC | 10.96339 | .9999554 | | .01038 9.7±10% | (instrument shift.) |
| B | .2728852 | .9995029 | | .01136 | |
| S13 | -.6394695 | .9980331 | | 9.069999E-03 | |
| AQC | 13.11544 | .9996802 | | 9.789997E-03 9.7±10% | = 2 but no value on sample |
| B | -.8505551 | .9959941 | | .01258 ≤ 2 | |

B

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.006 | -6.399964E-03 | -3.999635E-04 | 6.249465 % |
| 10 | .121 | .1217 | 7.000119E-04 | .5751946 % |
| 20 | .25 | .2498 | -2.000034E-04 | -8.006541E-02 % |
| 30 | .378 | .3779 | -1.000166E-04 | -2.646642E-02 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .092 | 8.383334E-02 | -8.166663E-03 | -9.741547 % |
| 10 | .182 | 6.850001E-02 | -.1135 | -165.6934 % |
| 30 | 0 | 3.783335E-02 | 3.783335E-02 | 100 % |
| 0 | 0 | 8.383334E-02 | 8.383334E-02 | 99.99999 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .092 | 8.819989E-02 | -3.800109E-03 | -4.308519 % |
| 10 | .182 | .1868999 | 4.899934E-03 | 2.621688 % |
| 20 | .284 | .2856 | 1.599938E-03 | .5602024 % |
| 30 | .387 | .3843 | -2.700031E-03 | -.7025842 % |

EDO 3371

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .031 | .0283 | -2.699997E-03 | -9.540626 % |
| 10 | .072 | .0766 | 4.600004E-03 | 6.005226 % |
| 20 | .126 | .1249 | -1.100004E-03 | -.8807076 % |
| 30 | .174 | .1732 | -7.999987E-04 | -.461893 % |

JVM
FMM

S03 EXT DUP

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .036 | 3.550003E-02 | -4.999675E-04 | -1.408358 % |
| 10 | .104 | .1 | -3.999978E-03 | -3.999977 % |
| 20 | .155 | .1645 | 9.500012E-03 | 5.775083 % |
| 30 | .234 | .229 | -4.999995E-03 | -2.183404 % |

EXT BLK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -8.999999E-03 | 2.730001E-02 | .0363 | 132.967 % |
| 10 | .052 | .0376 | -.0144 | -38.29786 % |
| 20 | .128 | 4.790001E-02 | -.0801 | -167.2234 % |
| 30 | 0 | 5.820001E-02 | 5.820001E-02 | 99.99999 % |

EXT BLK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -8.999999E-03 | -1.229999E-02 | -3.299988E-03 | 26.8292 % |
| 10 | .066 | 6.440002E-02 | -1.599982E-03 | -2.484444 % |
| 20 | .128 | .1411 | 1.310001E-02 | 9.284204 % |
| 30 | .226 | .2178 | -8.199975E-03 | -3.76491 % |

DIG BLK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.017 | -1.229999E-02 | 4.700014E-03 | -38.21153 % |
| 10 | .077 | .0684 | -8.599997E-03 | -12.57309 % |
| 20 | .146 | .1491 | 3.099993E-03 | 2.079137 % |
| 30 | .229 | .2298 | 7.999689E-04 | .3481153 % |

EDO 3371 S03 WH

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .038 | .0384 | 3.999956E-04 | 1.041655 % |
| 10 | .088 | 8.529998E-02 | -2.700016E-03 | -3.165318 % |
| 20 | .128 | .1322 | 4.199967E-03 | 3.17698 % |
| 30 | .181 | .1791 | -1.900017E-03 | -1.06087 % |

EDO 3424

* FLAMELESS * CSC VERSION 1.00 *

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.001 | -1.200012E-03 | -2.000121E-04 | 16.66751 % |
| 10 | .098 | 9.459999E-02 | -3.400013E-03 | -3.594095 % |
| 20 | .183 | .1904 | 7.399977E-03 | 3.886543 % |
| 30 | .29 | .2862 | -3.800035E-03 | -1.327755 % |

JVM
7/20/88

S07

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.001 | -8.740005E-03 | -7.740005E-03 | 88.55835 % |
| 10 | .045 | .04812 | 3.119994E-03 | 6.483778 % |
| 20 | .088 | .10498 | 1.697999E-02 | 16.1745 % |
| 30 | .1742 | .16184 | -1.236001E-02 | -7.637177 % |

S07

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.001 | -2.300018E-03 | -1.300018E-03 | 56.52208 % |
| 10 | .045 | .0449 | -1.000091E-04 | -.2227376 % |
| 20 | .088 | .0921 | 4.100002E-03 | 4.451686 % |
| 30 | .142 | .1393 | -2.700001E-03 | -1.938263 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .088 | .088 | 0 | 0 % |
| 10 | .193 | .189 | -3.999978E-03 | -2.11639 % |
| 20 | .282 | .2900001 | 8.000046E-03 | 2.758636 % |
| 30 | .395 | .3910001 | -3.999949E-03 | -1.023005 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .115 | .1138 | -1.200013E-03 | -1.054493 % |
| 10 | .216 | .2176 | 1.599953E-03 | .7352725 % |
| 20 | .321 | .3213999 | 3.999174E-04 | .1244298 % |
| 30 | .426 | .4251999 | -8.00103E-04 | -.188171 % |

B

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| | -.001 | 3.099976E-03 | 4.099976E-03 | 132.2583 % |
| 10 | .121 | .1167 | -4.300013E-03 | -3.684673 % |
| 20 | .234 | .2303 | -3.700003E-03 | -1.606602 % |
| 30 | .34 | .3439 | 3.899992E-03 | 1.134048 % |

S13

| ( KE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.005 | -5.799988E-03 | -7.99988E-04 | 13.79292 % |
| 10 | .089 | 8.490001E-02 | -4.099988E-03 | -4.829195 % |
| 20 | .165 | .1756 | .0106 | 6.036447 % |
| 30 | .272 | .2663 | -5.699992E-03 | -2.14044 % |

JLM
Frank

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .131 | .1284001 | -2.59991E-03 | -2.024851 % |
| 10 | .224 | .2263001 | 2.300054E-03 | 1.016374 % |
| 20 | .321 | .3242 | 3.200024E-03 | .9870524 % |
| 30 | .425 | .4221 | -2.900034E-03 | -.6870491 % |

B

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .001 | -1.069998E-02 | -1.169998E-02 | 109.3458 % |
| 10 | .105 | .1151 | 1.010001E-02 | 8.774984 % |
| 20 | .226 | .2409 | 1.489998E-02 | 6.185133 % |
| 30 | .38 | .3667 | -1.330003E-02 | -3.626952 % |

Jim Frost

EDO 3371 503 out

EDO 3424 506, 507, Di

513 out

AQ

~~H-8~~ 11-05-8

```
Begin Element - SE
  -0.611
   0.000 AZ
  -0.001

Begin Element - SE
  -0.035
   0.000 AZ
  -0.006
   0.121   Blk
   0.250
   0.378
   0.092
   0.182   AQC
   0.284
   0.387
   0.031
   0.072   EDO 3371
   0.126       503 #1
   0.174
   0.036
   0.104       503 #2 Extraction Dup.
   0.155
   0.234
  -0.009
   0.052   Ext
   0.128   Blk
   0.226   X Corr. Coeff.
  -0.017
   0.077
   0.146   Dig Blk
   0.229
   0.038
   0.088   EDO 3371
   0.128       503 wheel Dup.
   0.181
  -0.001
   0.098   EDO 3424
   0.183       506
   0.290
   0.066
  -0.024   Air
  -0.001   EDO 3424
   0.045
   0.088   507
   0.142
   0.032   Dog
   0.047   Corr. Coeff.
   0.070
   0.082   X
   0.088
   0.193
   0.282   AQC
   0.395
   0.090
   0.128   Dog Dig. Dup.
   0.139
   0.177   X
```

repeat

8.7 , TV = 9.7 ± 10 %

-0.009
0.086

S13 Corr. Coeff

0.182
0.326 X

0.016
0.043 S14
0.056 X Corr.
0.099

0.029
0.044 S14 repeat
0.077
0.095 corr. X

0.115
0.216 AQC ← 10.9 , TV=9.7±10%
0.321
0.426

-0.001
0.121
0.234 BlK X
0.340

0.091
0.117 D09 X
0.198
0.193

0.053
0.067
0.068 D09 DigDup. X
0.119

-0.005 13.1 — TV = 9.7±10%
0.089 S13
0.165
0.272

0.034
0.045 S14 X corr
0.068
0.117

0.131
0.224 AQC 13.1 TV=9.7±10%
0.321
0.425

0.001
0.105 Blk
0.226
0.380

0.037 D09 (1:3)
0.088
0.119 X Corr.
0.149

0.030
0.084 X
0.131 D09 (1:3) Corr.
0.181

0.032
0.093 S14 (1:3) X Corr.
0.139
0.159

0.323
0.323 S06 SpK TV=20
0.525 (1:5)
0.198
0.112

X Corr.

JVM
7/10/

Jim
Frough

0.112
0.249 AQC
0.316
0.417
-0.004

BIK

0.112
0.241
0.368
-0.013 Air.
0.221

Jun 7 Mark

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ----: HNR
DATE OF ANALYSIS --: 11-05-1986
PARAMETER NAME -----: AS
DATA SET # ----------: SF 3560, EDO 3424 ug/l

all QC within ±10% dev.

| SAMPLE NO. | CONC. | R VALUE | SLOPE | |
|---|---|---|---|---|
| R | -1.085323 | .9985263 | .02801 | <2 |
| AQC TV.23.5 | 23.82825 | .9982961 | 2.795001E-02 | 1.4% dev. |
| S01 | -1.007801 | .9979702 | .03334 | |
| S02 | -.8603634 | .9989772 | .03545 | |
| S03 | -.682788 | .9992954 | .03515 | |
| S04 | -.1503759 | .9999878 | .03325 | |
| AQC | 22.1488 | .9992256 | 3.239001E-02 | 5.7% dev. |
| R | .4787434 | .9998052 | .02799 | <2 |
| S05 | 1.117946 | .9973894 | 3.416999E-02 | D/S SF 3560 |
| S06 | .1612939 | .9993394 | .0341 | |
| AQC | 21.68166 | .9998634 | 3.223001E-02 | 7.7% dev. |
| R | .1687079 | .9993372 | .0326 | <2 |
| S07 | .5484994 | .9999074 | .03227 | |
| S08 | .3601359 | .9998645 | .03221 | |
| AQC | 23.66491 | .999401 | 2.865001E-02 | 0.7% dev. |
| R | -.5401082 | .9994016 | .02481 | <2 |
| S09 | -.1324052 | .9995232 | .02719 | |
| R10 | -.1728748 | .9995022 | .03008 | |
| AQC | 25.06338 | .9958004 | 2.682001E-02 | 6.6% dev. |
| R TAKE D/S # | -.0625897 | .9998786 | .02077 | <2 |
| S26 (S06) | -3.166667 | .9779893 | .018 | |
| S27 (S07 | 5.517999 | .9992628 | .02722 | |
| S28 (D09 | .8661731 | .9967264 | .02436 | |
| AQC | 22.73818 | .999533 | .02834 | 3.4% dev. D/S COD 3424 |
| S29 (S13) | .2298861 | .9999372 | .02349 | |
| S30 (S14) | .1668634 | .9997629 | .02517 | |
| AQC | 22.7323 | .9990308 | 2.529001E-02 | 3.4% dev. |
| R | -.4802261 | .9999077 | .0177 | <2 |
| R | -.599571 | .9991283 | .03269 | <2 |
| AQC | 25.00159 | .9997419 | 3.162999E-02 | -6.4% dev. |
| S26 | -3.198936 | .971151 | .02629 | |
| AQC | 22.92517 | .9969942 | .03087 | 2.6% dev. |
| AQC | 22.5938 | .9991006 | 3.331001E-02 | 3.9% dev. |
| R | .1797845 | .9995931 | .02948 | |
| S34 DUP OF D09 | .6693165 | .9985304 | .03526 | |
| S35 BLANK | -.6261836 | .9979711 | .03162 | |
| S36 Ext. BLANK | -9.118541E-02 | .9998929 | .0329 | |
| [illegible] | 23.43144 | .9992996 | .03194 | 0.4% dev. |

labeled by beaker

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.015 | -.0303999 | -.0153999 | 50.65774 % |
| 10 | .237 | .2497001 | 1.270008E-02 | 5.086134 % |

AGC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| | .684 | .6659998 | -1.800025E-02 | -2.702741 % |
| 10 | .928 | .9454999 | 1.749992E-02 | 1.850865 % |
| 20 | 1.206 | 1.225 | 1.900005E-02 | 1.551025 % |
| 30 | 1.523 | 1.5045 | -1.849985E-02 | -1.229634 % |

Jim Frank

S01

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.025 | -.0336001 | -8.600099E-03 | 25.59546 % |
| 10 | .27 | .2997999 | 2.979991E-02 | 9.939933 % |
| 20 | .667 | .6332 | -3.380007E-02 | -5.337977 % |
| 30 | .954 | .9665999 | 1.259995E-02 | 1.303533 % |

S02

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.013 | -3.049988E-02 | -1.749988E-02 | 57.37688 % |
| 10 | .294 | .3240001 | 3.000009E-02 | 9.259285 % |
| 20 | .686 | .6785001 | -7.499933E-03 | -1.10537 % |
| 30 | 1.038 | 1.033 | -4.999995E-03 | -.4840267 % |

S03

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.011 | -.024 | -.013 | 54.16667 % |
| 10 | .303 | .3275001 | 2.450004E-02 | 7.480928 % |
| 20 | .689 | .6790001 | -9.999931E-03 | -1.472744 % |
| 30 | 1.032 | 1.0305 | -1.499891E-03 | -.1455499 % |

S04

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.007 | -.005 | .002 | -40.00001 % |
| 10 | .33 | .3275 | -2.499998E-03 | -.763358 % |
| 20 | .661 | .66 | -9.999871E-04 | -.1515132 % |
| 30 | .991 | .9925 | 1.500011E-03 | .1511346 % |

AGC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| | .715 | .7173999 | 2.399922E-03 | .3345305 % |
| 10 | 1.056 | 1.0413 | -1.469994E-02 | -1.411691 % |
| 20 | 1.343 | 1.3652 | 2.220011E-02 | 1.626143 % |
| 30 | 1.699 | 1.6891 | -9.899736E-03 | -.5860952 % |

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 0 | .019 | 1.340003E-02 | -5.599975E-03 | -41.79078 % |
| 10 | .283 | .2933 | 1.029998E-02 | 3.511757 % |
| 20 | .577 | .5732 | -3.800094E-03 | -.6629614 % |
| 30 | .854 | .8530999 | -9.000897E-04 | -.1055081 % |

Jim Frank

[ ]

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .044 | .0382002 | -5.799804E-03 | -15.18266 % |
| 10 | .35 | .3799001 | 2.990011E-02 | 7.870518 % |
| 20 | .764 | .7216 | -.0424 | -5.875832 % |
| 30 | 1.045 | 1.0633 | 1.829994E-02 | 1.721051 % |

S06

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .015 | 5.500122E-03 | -9.499878E-03 | -172.7212 % |
| 10 | .325 | .3465001 | 2.150011E-02 | 6.204937 % |
| 20 | .702 | .6875001 | -.0144999 | -2.109077 % |
| 30 | 1.026 | 1.0285 | 2.500057E-03 | .243078 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .698 | .6988 | 8.000136E-04 | .1144839 % |
| 10 | 1.027 | 1.0211 | -5.899787E-03 | -.5777873 % |
| 20 | 1.334 | 1.3434 | 9.400249E-03 | .6997355 % |
| 30 | 1.67 | 1.6657 | -4.299522E-03 | -.2581209 % |

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .016 | 5.499878E-03 | -1.050012E-02 | -190.9156 % |
| 10 | .325 | .3314999 | 6.499887E-03 | 1.960751 % |
| 20 | .639 | .6575 | 1.849991E-02 | 2.813675 % |
| 30 | .998 | .9834999 | -1.450008E-02 | -1.474335 % |

S07

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .018 | 1.770007E-02 | -2.999269E-04 | -1.694495 % |
| 10 | .336 | .3404001 | 4.400045E-03 | 1.29261 % |
| 20 | .671 | .6631 | -.0079 | -1.191374 % |
| 30 | .982 | .9857999 | 3.799975E-03 | .3854712 % |

[ ]

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .018 | 1.159998E-02 | -6.400024E-03 | -55.17274 % |
| 10 | .326 | .3337 | 7.699967E-03 | 2.307452 % |
| 20 | .652 | .6558 | 3.799915E-03 | .5794321 % |
| 30 | .983 | .9778999 | -5.100012E-03 | -.521527 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .689 | .6779998 | -1.100028E-02 | -1.62246 % |
| 1 | .946 | .9644998 | 1.849985E-02 | 1.918077 % |
| 20 | 1.255 | 1.251 | -4.000068E-03 | -.3197496 % |
| 30 | 1.541 | 1.5375 | -3.500104E-03 | -.2276491 % |

Jim Frank

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.003 | -1.340009E-02 | -1.040009E-02 | 77.61208 % |
| 10 | .222 | .2346999 | 1.269993E-02 | 5.411136 % |
| 20 | .477 | .4828 | 5.799949E-03 | 1.201315 % |
| 30 | .739 | .7309 | -8.100093E-03 | -1.108236 % |

S09

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .004 | -3.600098E-03 | -7.600098E-03 | 211.1081 % |
| 10 | .253 | .2682999 | 1.529995E-02 | 5.702553 % |
| 20 | .548 | .5402 | -7.800043E-03 | -1.443918 % |
| 30 | .812 | .8121 | 9.995699E-05 | 1.230846E-02 % |

R10

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .001 | -5.200073E-03 | -6.200074E-03 | 119.2305 % |
| 10 | .28 | .2955999 | 1.559994E-02 | 5.277382 % |
| 20 | .609 | .5964 | -1.260006E-02 | -2.112687 % |
| 30 | .894 | .8972 | 3.199995E-03 | .3566646 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .656 | .6722 | 1.619995E-02 | 2.409989 % |
| 10 | .981 | .9404 | -.0406 | -4.317312 % |
| 20 | 1.176 | 1.2086 | 3.260005E-02 | 2.697339 % |
| 30 | 1.485 | 1.4768 | -8.199811E-03 | -.5552417 % |

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.003 | -1.299988E-03 | 1.700012E-03 | -130.7714 % |
| 10 | .206 | .2064 | 3.99977E-04 | .1937873 % |
| 20 | .42 | .4140999 | -5.900055E-03 | -1.42479 % |
| 30 | .618 | .6218 | 3.799975E-03 | .611125 % |

S26

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.01 | -.057 | -.047 | 82.45614 % |
| [illegible] | [illegible] | [illegible] | 6.400001E-02 | 52.03253 % |

| | | | | |
|---|---|---|---|---|
| 20 | .29 | .303 | 1.300001E-02 | 4.290433 % |
| 30 | .513 | .483 | -.03 | -6.21118 % |

S27

Jun 7 Mark

| ( KE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .142 | .1502 | 8.199945E-03 | 5.459353 % |
| 10 | .426 | .4224 | -3.600031E-03 | -.8522801 % |
| 20 | .712 | .6946 | -1.740003E-02 | -2.505043 % |
| 30 | .954 | .9668 | 1.279998E-02 | 1.323953 % |

S28

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .045 | 2.109998E-02 | -2.390003E-02 | -113.2704 % |
| 10 | .23 | .2647 | 3.469996E-02 | 13.10917 % |
| 20 | .506 | .5083 | 2.299965E-03 | .4524818 % |
| 30 | .765 | .7518999 | -1.310009E-02 | -1.742265 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .635 | .6443999 | 9.399891E-03 | 1.458705 % |
| 10 | .944 | .9277998 | -1.620019E-02 | -1.746086 % |
| 20 | 1.207 | 1.2112 | 4.199744E-03 | .3467424 % |
| 30 | 1.492 | 1.4946 | 2.599836E-03 | .1739485 % |

S29

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .004 | 5.400025E-03 | 1.400024E-03 | 25.92626 % |
| 10 | .24 | .2403 | 3.000051E-04 | .1248461 % |
| 20 | .48 | .4752 | -4.800022E-03 | -1.010106 % |
| 30 | .707 | .7100999 | 3.099859E-03 | .4365385 % |

S30

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 8.999999E-03 | 4.199951E-03 | -4.800049E-03 | -114.2882 % |
| 10 | .253 | .2558999 | 2.899945E-03 | 1.133234 % |
| 20 | .499 | .5075999 | 8.599878E-03 | 1.694224 % |
| 30 | .766 | .7592999 | -6.700099E-03 | -.8824048 % |

AQC

| ' IKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .565 | .5749 | 9.899914E-03 | 1.722024 % |
| 10 | .848 | .8278001 | -2.019996E-02 | -2.440197 % |
| 20 | 1.07 | 1.0807 | 1.070011E-02 | .9901088 % |
| 30 | 1.334 | 1.3336 | -3.99828E-04 | -.0299811 % |

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -8.000001E-03 | -8.500001E-03 | -5.000001E-04 | 5.882354 % |
| 10 | .17 | .1685 | -1.500011E-03 | -.8902139 % |
| 20 | .341 | .3455 | 4.499972E-03 | 1.302452 % |
| 30 | .525 | .5224999 | -2.500057E-03 | -.4784799 % |

Jun 7 Proof

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.004 | -1.959998E-02 | -1.559998E-02 | 79.59181 % |
| 10 | .282 | .3073 | 2.530003E-02 | 8.233005 % |
| 20 | .638 | .6342001 | -3.799975E-03 | -.5991761 % |
| 30 | .967 | .9611001 | -5.899966E-03 | -.6138763 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .792 | .7908001 | -1.199961E-03 | -.1517401 % |
| 10 | 1.112 | 1.1071 | -4.899979E-03 | -.4425959 % |
| 20 | 1.41 | 1.4234 | 1.339996E-02 | .9414051 % |
| 30 | 1.747 | 1.7397 | -7.300139E-03 | -.4196206 % |

S26

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.018 | -8.410004E-02 | -6.610004E-02 | 78.59693 % |
| 10 | .123 | .1788 | 5.579999E-02 | 31.20805 % |
| 20 | .355 | .4417 | 8.670002E-02 | 19.62871 % |
| 30 | .781 | .7046 | -7.640005E-02 | -10.84304 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .698 | .7076997 | 9.699702E-03 | 1.370596 % |
| 10 | 1.05 | 1.0164 | -3.360033E-02 | -3.305819 % |
| 20 | 1.287 | 1.3251 | 3.809965E-02 | 2.875229 % |
| 30 | 1.648 | 1.6338 | -1.420045E-02 | -.8691671 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .762 | .7525998 | -9.400189E-03 | -1.249029 % |
| 10 | 1.084 | 1.0857 | 1.699925E-03 | .1565741 % |
| 20 | 1.394 | 1.4188 | 2.480006E-02 | 1.74796 % |
| 30 | 1.769 | 1.7519 | -1.709986E-02 | -.9760749 % |

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .01 | 5.300049E-03 | -4.699951E-03 | -88.67751 % |
| 10 | .287 | .3001001 | 1.310009E-02 | 4.36524 % |
| 20 | .607 | .5949001 | -1.209986E-02 | -2.033932 % |
| 30 | .886 | .8897001 | 3.700137E-03 | .4158859 % |

S34

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .047 | .0236001 | -.0233999 | -99.15171 % |
| 10 | .346 | .3762001 | 3.020007E-02 | 8.027661 % |
| 20 | .719 | .7288 | 9.800017E-03 | 1.344679 % |
| 30 | 1.098 | 1.0814 | -1.660013E-02 | -1.53506 % |

Jun 7 Mark

S35

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .002 | -1.979993E-02 | -2.179993E-02 | 110.101 % |
| 10 | .276 | .2964001 | 2.040008E-02 | 6.882615 % |
| 20 | .588 | .6126001 | 2.460009E-02 | 4.015685 % |
| 30 | .952 | .9288002 | -2.319986E-02 | -2.497831 % |

S36

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .002 | -.003 | -.005 | 166.6667 % |
| 10 | .317 | .326 | 9.000033E-03 | 2.760746 % |
| 20 | .658 | .655 | -2.999962E-03 | -.4580094 % |
| 30 | .985 | .984 | -9.999871E-04 | -.1016247 % |

AOC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .734 | .7484001 | 1.440013E-02 | 1.924121 % |
| 10 | 1.085 | 1.0678 | -1.719987E-02 | -1.610776 % |
| 20 | 1.396 | 1.3872 | -8.799911E-03 | -.6343649 % |
| 30 | 1.695 | 1.7066 | 1.160014E-02 | .679722 % |

0.012
0.000 AZ
-0.015
0.237
0.509 R
0.828

0.684
0.928
1.206 ARC
1.523

-0.025
0.270
0.667 S01
0.954

-0.013
0.294
0.686 S02
1.038

-0.011
0.303
0.689 S03
1.032

D/S SF3560

-0.007
0.330
0.661 S04
0.991

0.715
1.056
1.343 ARC
1.699

0.019
0.283
0.577 R
0.854

0.044
0.350
0.764 S05
1.045

0.015
0.325 S06
0.702
1.026

0.698
1.027 ~~S07~~
1.334 ARC
1.670

0.016
0.325
0.639 R
0.998

0.018
0.336
0.671 S07
0.982

0.018 S08
0.326
0.652
0.983

0.689
0.946 ARC
1.255
1.541

-0.003
0.222
0.477 R
0.739

0.004
0.253
0.548 S09
0.812

0.001
0.280
0.609 R10
0.894

0.656
0.981
1.176 ARC
1.485

labeled by hearsay number

D/S EDO 3424

-0.003
0.206
0.420 R
0.618

True date not number
S06

-0.010
0.059
0.290 S26
0.513

0.142
0.426
0.712 S27
0.954

S07

0.045
0.230
0.506 S28
0.765

D09

0.535
0.944
1.207 ARC
1.492

0.004
0.240
0.480 S29
0.707

S13

0.009
0.253
0.499 S30
0.766

S14

0.565
0.848
1.070 ARC
1.334

-0.008
0.170
0.341 R
0.525

Jim Frank

Amplitude broke, not sample approaching

-0.003
0.040
-0.020
-0.006
0.000 AZ
-0.004
0.282 R
0.638
0.967

0.792
1.112 ARC
1.410
1.747

02 ER
S31 02 ER
S01 02 ER

Interference must be diluted S26

-0.018
0.123
0.355
0.781

CDO
02 ER
S01 (D/S 3371) S32 02 ER
(dup) (S06 spk) S33 2.260

To dilute

0.698
1.050
1.287 ARC
1.648

0.762
1.084
1.394 ARC
1.769

0.010
0.287
0.607 R
0.886

0.047
0.346
0.719 S34
1.098

D09 dup

0.002
0.276 S35
0.588
0.952

Blank

0.002
0.317
0.658 S36
0.985

Extract Blank

0.734
1.085
1.396 ARC
1.695

* FLAMELESS * CSC VERSION 1.00 *

JVM 7/20/86

NAME OF ANALYST ---: HNR
DATE OF ANALYSIS --: 11-05-1986
PARAMETER NAME -----: AS
DATA SET # ---------: 3424, 3371, 3552

Labeled by hand

| SAMPLE NO. | CONC. | | R VALUE | | SLOPE | |
|---|---|---|---|---|---|---|
| R | .2135232 | | .998476 | | .0281 | |
| AQC T.V. 23.5 | 23.45963 | 0.2% dev | .9999643 | | 3.035001E-02 | |
| S26 X10 (50b) | -.7277866 | 83% recov | .9972395 | <20 | .02116 | D/S 3424 |
| S33 X10 (5pk sol) | 7.585175 | | .9997534 | <20 | 2.318999E-02 | |
| S31 X100 (50g) | 5.20608 | 52% | .9995827 | | .03421 | D/S 3371 |
| S32 X100 (50g) | 6.63534 | 66% | .9999901 | | 3.299001E-02 | |
| AQC T.V. 23.5 | 22.75967 | 3.15% dev. | .9980018 | | 3.225002E-02 | |
| R | -.1796392 | | .9992319 | | .03173 | |
| S26 1:1 dil = x2 | 20.76164 | 41.52 | .9999428 | | 3.243001E-02 | |
| S27 1:3 dil = x4 | 19.53325 | 78.13 | .9997453 | | .03278 | D/S 3552 |
| AQC T.V. 23.5 | 21.72988 | 7.5% dev. | .9998224 | | 3.295002E-02 | WS 19 |
| S28 | 17.17682 | | .9997282 | | 3.365001E-02 | |
| S29 1:1 dil = x2 | 20.17384 | 40.35 | .9994512 | | 3.106001E-02 | |
| AQC TV. 23.5 | 22.90834 | 2.5% dev. | .9987822 | | .03153 | |

Spk had 10 ml of 0.5 ppm soln.

ave S03 = 59%

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .003 | .006 | .003 | 50 % |
| 10 | .277 | .287 | 9.999991E-03 | 3.484317 % |
| 20 | .597 | .568 | -2.900005E-02 | -5.105642 % |
| 30 | .833 | .8489999 | 1.599991E-02 | 1.88456 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .71 | .7119998 | 1.999795E-03 | .2808702 % |
| 10 | 1.02 | 1.0155 | -4.500151E-03 | -.4431464 % |
| 20 | 1.316 | 1.319 | 2.999902E-03 | .2274376 % |
| 30 | 1.623 | 1.6225 | -5.00083E-04 | -3.082176E-02 % |

S26 X10

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| | 0 | -1.539996E-02 | -1.539996E-02 | 100 % |
| 10 | .167 | .1962 | 2.920003E-02 | 14.88279 % |
| 20 | .42 | .4078 | -1.219997E-02 | -2.991655 % |
| 30 | .621 | .6194 | -1.600027E-03 | -.2583189 % |

S33 X10

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .17 | .1759002 | 5.900145E-03 | 3.354258 % |
| 10 | .414 | .4078001 | -6.199926E-03 | -1.520335 % |
| 20 | .645 | .6397 | -5.299986E-03 | -.8285111 % |
| 30 | .866 | .8715999 | 5.599916E-03 | .642487 % |

Jun 7 Mark

S31 X100

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .179 | .1781 | -9.000301E-04 | -.5053511 % |
| 10 | .51 | .5202 | 1.019996E-02 | 1.960778 % |
| 20 | .88 | .8623 | -1.770002E-02 | -2.052652 % |
| 30 | 1.196 | 1.2044 | 8.399963E-03 | .6974397 % |

S32 X100

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .219 | .2188999 | -1.000911E-04 | -.0457246 % |
| 10 | .55 | .5488 | -1.20002E-03 | -.2186626 % |
| 20 | .876 | .8787 | 2.700031E-03 | .3072756 % |
| 30 | 1.21 | 1.2086 | -1.399994E-03 | -.115836 % |

ADC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .731 | .7339998 | 2.999723E-03 | .4086818 % |
| 10 | 1.079 | 1.0565 | -2.250004E-02 | -2.129677 % |
| 20 | 1.343 | 1.379 | 3.600001E-02 | 2.610588 % |
| 30 | 1.718 | 1.7015 | -1.649988E-02 | -.9697252 % |

R

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 8.999999E-03 | -5.699951E-03 | -1.469995E-02 | 257.8961 % |
| 10 | .289 | .3116001 | 2.260006E-02 | 7.252905 % |
| 20 | .63 | .6289001 | -1.099944E-03 | -.1748997 % |
| 30 | .953 | .9462001 | -6.799877E-03 | -.718651 % |

S26

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .67 | .6733 | 3.300011E-03 | .4901249 % |
| 10 | 1 | .9976001 | -2.399922E-03 | -.2405695 % |
| 20 | 1.327 | 1.3219 | -5.099893E-03 | -.3858002 % |
| 30 | 1.642 | 1.6462 | 4.20034E-03 | .2551536 % |

S27

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .644 | .6403001 | -3.699958E-03 | -.5778476 % |
| 10 | .957 | .9681 | 1.109999E-02 | 1.146575 % |
| 20 | 1.307 | 1.2959 | -1.110005E-02 | -.8565517 % |
| 30 | 1.62 | 1.6237 | 3.700018E-03 | .2278757 % |

ADC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .723 | .7159998 | -7.000268E-03 | -.9776914 % |
| 10 | 1.034 | 1.0455 | 1.149976E-02 | 1.09993 % |
| 20 | 1.377 | 1.375 | -1.999974E-03 | -.1454527 % |
| 30 | 1.707 | 1.7045 | -2.499819E-03 | -.1466599 % |

S28

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .587 | .578 | -9.000003E-03 | -1.557094 % |
| 10 | .9 | .9145001 | 1.450014E-02 | 1.585581 % |
| 20 | 1.253 | 1.251 | -1.999855E-03 | -.1598605 % |
| 30 | 1.591 | 1.5875 | -3.499627E-03 | -.2204489 % |

S29

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .628 | .6265999 | -1.400173E-03 | -.2234557 % |
| 10 | .926 | .9371999 | 1.119995E-02 | 1.195044 % |
| 20 | 1.266 | 1.2478 | -1.819992E-02 | -1.458561 % |
| 30 | 1.55 | 1.5584 | 8.400202E-03 | .5390273 % |

ADC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .719 | .7222998 | 3.299832E-03 | .4568508 % |
| 10 | 1.056 | 1.0376 | -1.840019E-02 | -1.773342 % |
| 20 | 1.326 | 1.3529 | 2.689982E-02 | 1.988308 % |
| 30 | 1.68 | 1.6682 | -1.180017E-02 | -.7073595 % |

Jm
7 Nov

0.003
0.000 AZ
0.003
0.277
0.597 R
0.833

0.710
1.020
1.316 AOC
1.623

0.000
0.167 S26 X10
0.420
0.621

0.170
0.414 S33
0.645 X10~~0~~
0.866

0.179
0.510 S31
0.880 X100
1.196

0.219
0.550 S32
0.876
1.210 X100

0.731
1.079 AOC
1.343
1.718

0.009 R
0.289
0.630
0.953

0.670
1.000
1:1 dil = x2 1.327 S26
1.642

0.644
1:3 dil = x4 0.957
1.307 S27
1.620

0.723
1.034 AOC
1.377 ~~S28~~
1.707

To check if to be diluted or not
S28 (0 cmp)
S29 (0 cmp)
0.583
1.427
0.587 ~~S28~~
0.900

1.253 S28
1.591

0.628
0.926 S29
1.266 ~~S27~~
1:1 dil = x 1.550

0.719
1.056
1.326 AOC
1.680

Jim
7 March

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: AQ
DATE OF ANALYSIS --: 11-06-1986
PARAMETER NAME ----: SE
DATA SET # --------: CDO 3424 + MASON County

| SAMPLE NO. | CONC. | R VALUE | SLOPE | |
|---|---|---|---|---|
| BLK | .5034306 | .9999842 | .01311 | ≤2 |
| AQC | 10.31916 | .9979242 | 9.399998E-03 | 9.7 ± 10% Rcd 106 |
| D09 | 12.45901 | .9996236 | 6.100002E-03 | |
| S14 1:10 | 2.557251 | .9984302 | .01048 | Tv = 2.5 x 10 = 25 |
| S06 SPK (Tv=10) | 7.662692 | .9987699 | .01091 | Rcd 77% no control |
| S24 | .2153547 | .9997739 | .01068 | |
| ~~S25~~ | ~~9.723761~~ | ~~.948535~~ typing | ~~.00724~~ | |
| S25 | .7164487 | .9996876 | 9.909999E-03 | |
| R05 | 1.137296 | .9993267 | .00976 | |
| S26 | .512591 | .9992424 | .01112 | |
| S27 | .1353959 | .9977516 | .01034 | |
| ~~S34~~ | ~~.0442494~~ | ~~.9536047~~ typing | ~~110.0922~~ | |
| S34 | 1.008172 | .999401 | .01101 | |
| BLK | .5604732 | .9951404 | .01017 | |
| AQC | 10.14549 | .9998801 | .01031 | Tv = 9.7 ± 10% 104% |
| AQC | 9.442384 | .9994204 | .01076 | Tv = 9.7 ± 10% 97% |

BLK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .006 | 6.599976E-03 | 5.999757E-04 | 9.090574 % |
| 10 | .139 | .1377 | -1.300022E-03 | -.9440974 % |
| 20 | .268 | .2688 | 7.99954E-04 | .297602 % |
| 30 | .4 | .3999 | -1.000166E-04 | -.0250104 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .099 | 9.700006E-02 | -1.999937E-03 | -2.061789 % |
| 10 | .183 | .1910001 | 8.000046E-03 | 4.188505 % |
| 20 | .295 | .285 | -9.999961E-03 | -3.508758 % |
| 30 | .375 | .379 | 4.000008E-03 | 1.055411 % |

D09 DIG DUP

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .075 | 7.599997E-02 | 9.999648E-04 | 1.315744 % |
| 10 | .137 | .137 | 0 | 0 % |
| 20 | .201 | .198 | -2.999991E-03 | -1.515147 % |
| 30 | .257 | .259 | 2.000034E-03 | .7722138 % |

S14 1:10

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .034 | 2.679999E-02 | -7.200014E-03 | -26.86574 % |
| 10 | .122 | .1316 | 9.599991E-03 | 7.294827 % |
| 20 | .234 | .2364 | 2.399996E-03 | 1.015227 % |
| 30 | .346 | .3412 | -4.800022E-03 | -1.406806 % |

Jun 7 Nick

S06 SPK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .077 | 8.359998E-02 | 6.599978E-03 | 7.894713 % |
| 10 | .202 | .1927 | -9.300008E-03 | -4.826159 % |
| 20 | .303 | .3018 | -1.199991E-03 | -.3976112 % |
| 30 | .407 | .4109 | 3.900021E-03 | .9491411 % |

S24

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .001 | 2.299988E-03 | 1.299988E-03 | 56.52151 % |
| 10 | .109 | .1091 | 9.997189E-05 | 9.163329E-02 % |
| 20 | .22 | .2159 | -4.10004E-03 | -1.899046 % |
| 30 | .32 | .3226999 | 2.699942E-03 | .8366725 % |

S25

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .1 | 7.040003E-02 | -2.959998E-02 | -42.04541 % |
| 10 | .103 | .1428 | 3.980002E-02 | 27.87116 % |
| 20 | .206 | .2152 | 9.200007E-03 | 4.275096 % |
| 30 | .307 | .2876 | -.0194 | -6.74548 % |

S25

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .01 | 7.100006E-03 | -2.899994E-03 | -40.84495 % |
| 10 | .103 | .1062 | 3.200002E-03 | 3.013185 % |
| 20 | .203 | .2053 | 2.299994E-03 | 1.120309 % |
| 30 | .307 | .3044 | -2.600014E-03 | -.854144 % |

R05

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .015 | 1.110001E-02 | -3.899993E-03 | -35.13506 % |
| 10 | .105 | .1087 | 3.700011E-03 | 3.403873 % |
| 20 | .202 | .2063 | 4.299999E-03 | 2.084342 % |
| 30 | .308 | .3039 | -4.099995E-03 | -1.349126 % |

S26

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .007 | 5.700012E-03 | -1.299988E-03 | -22.80676 % |

| | | | | |
|---|---|---|---|---|
| 10 | .119 | .1169 | -2.099984E-03 | -1.796393 % |
| 20 | .22 | .2281 | 8.100018E-03 | 3.551082 % |
| 30 | .344 | .3393 | -4.699976E-03 | -1.385197 % |

JVM
7 Nov 4

S27

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .006 | 1.399994E-03 | -4.600006E-03 | -328.5733 % |
| 10 | .104 | .1048 | 7.999838E-04 | .7633433 % |
| 20 | .196 | .2082 | 1.219998E-02 | 5.859743 % |
| 30 | .32 | .3116 | -8.400023E-03 | -2.695772 % |

S34

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | 0 | 4.871515 | 4.871515 | 100 % |
| .007 | 10 | 5.64216 | -4.35784 | -77.23708 % |
| .125 | 20 | 18.63304 | -1.366957 | -7.336197 % |
| .236 | 30 | 30.85328 | .8532791 | 2.765603 % |

S34

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .007 | 1.109998E-02 | 4.099975E-03 | 36.9368 % |
| 10 | .125 | .1212 | -3.800005E-03 | -3.135318 % |
| 20 | .236 | .2313 | -4.699976E-03 | -2.031982 % |
| 30 | .337 | .3414 | 4.400015E-03 | 1.288815 % |

BLK

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | -.004 | 5.700012E-03 | 9.700012E-03 | 170.1753 % |
| 10 | .126 | .1074 | -.0186 | -17.31843 % |
| 20 | .201 | .2091 | 8.099988E-03 | 3.873739 % |
| 30 | .31 | .3108 | 8.000136E-04 | .2574046 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .103 | .1046 | 1.599975E-03 | 1.529613 % |
| 10 | .209 | .2077 | -1.300022E-03 | -.6259134 % |
| 20 | .313 | .3108 | -2.200008E-03 | -.7078531 % |
| 30 | .412 | .4139 | 1.899988E-03 | .4590451 % |

AQC

| SPIKE | MEASURED | CALC. | ERROR | PER CENT |
|---|---|---|---|---|
| 0 | .102 | .1016 | -3.999621E-04 | -.3936633 % |
| 10 | .212 | .2092 | -2.799973E-03 | -1.338419 % |
| 20 | .31 | .3168 | 6.799996E-03 | 2.146464 % |
| 30 | .428 | .4244 | -3.600031E-03 | -.8482638 % |

JMM
7MM

Begin Element - BE

| | | |
|---|---|---|
| -0.047 | | |
| 0.000 | AZ | |
| 0.006 | | |
| 0.139 | Blk | |
| 0.221 | | |
| 0.400 | | |
| 0.099 | | |
| 0.206 | AQC | |
| 0.300 | | too high |
| 0.397 | | |
| 0.268 | | |
| 0.099 | | |
| 0.188 | AQC | |
| 0.295 | repeat same four cups above! | |
| 0.375 | | |
| 0.075 | | |
| 0.137 | D09 | CD03424 Dig. Dup. |
| 0.201 | | |
| 0.257 | | |
| 0.034 | | |
| 0.122 | S14 (1:10) | |
| 0.234 | | |
| 0.346 | | |
| 0.086 | | |
| 0.241 | S06 spk (1:10) | |
| 0.333 | | X Corr. Coeff. |
| 0.357 | | |
| 0.077 | | |
| 0.202 | S06 spk (1:10) | |
| 0.303 | | |
| 0.407 | dil | Dup. |
| 0.001 | | |
| 0.109 | | |
| 0.220 | S24 | |
| 0.320 | | |
| 0.010 | | |
| 0.103 | | |
| 0.206 | S25 | |
| 0.307 | | |
| 0.015 | | |
| 0.105 | | |
| 0.202 | R05 | |
| 0.308 | | |
| 0.007 | | |
| 0.119 | S26 | |
| 0.220 | | |
| 0.344 | | |

repeat cup! energy!

CD03424 S14, D09 (digestion Duplicate)

+ Mason County S24, 25, R05, S26, S27, S34 only

AQ
11-6-86

JVM
7 Nov 8

0.006
0.104
0.196

S27

0.220
0.007
0.125
0.235

S3Y

0.337
-0.004
0.126
0.201
0.310

B1K

0.108
0.209
0.313
0.412

AQC

AQC

0.102
0.212
0.310
0.428