## APCA 9 - remove 7/2 - 7/6

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## Loadings

| element   | MeanCon  | acsource_1 | source_2 | source_3 | source_4 | source_5 | source_6 | source_7 | source_8 | source_9 | r_square | dPredCon | c Pct_erro |
|-----------|----------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------|
| aluminum  | 20.37    | 1.25       | 17.04    | -1.17    | -0.29    | 1.61     | 6.36     | 0.32     | -4.26    | 0.96     | 0.93     | 21.80    | 7.04       |
| arsenic   | 0.65     | 0.41       | 0.03     | 0.00     | 0.03     | 0.04     | 0.04     | -0.01    | 0.05     | 0.02     | 0.34     | 0.60     | -8.28      |
| barium    | 6.10     | 1.68       | -0.19    | -0.25    | 0.41     | 0.90     | -1.53    | -0.97    | 5.18     | 0.27     | 0.50     | 5.50     | -9.86      |
| bromine   | 3.32     | 1.95       | 0.21     | -0.12    | 0.13     | 0.32     | 0.25     | 0.06     | -0.08    | 0.19     | 0.62     | 2.92     | -12.04     |
| cadmium   | 1.51     | -0.06      | 0.05     | 0.01     | 0.03     | -0.07    | -0.07    | 0.26     | -0.05    | 0.03     | 0.02     | 0.12     | -92.06     |
| calcium   | 56.17    | 8.45       | 7.12     | 1.81     | 5.35     | 4.20     | -7.52    | 11.67    | 3.49     | 21.91    | 0.91     | 56.48    | 0.55       |
| chromium  | 1.63     | -0.18      | 0.18     | -0.13    | -0.24    | -0.13    | 3.62     | -0.55    | -0.67    | -0.26    | 0.26     | 1.63     | -0.25      |
| copper    | 4.41     | 1.33       | 0.33     | -0.12    | 0.03     | 0.12     | 1.71     | 0.55     | 0.03     | 0.71     | 0.61     | 4.69     | 6.43       |
| iron      | 111.77   | 22.16      | 13.78    | 1.08     | -1.17    | 0.74     | 42.41    | 5.25     | 12.75    | 15.36    | 1.00     | 112.36   | 0.53       |
| lead      | 3.28     | 1.88       | 0.17     | -0.43    | 0.27     | -0.12    | -0.11    | -0.08    | 1.39     | 0.52     | 0.85     | 3.50     | 6.66       |
| magnesiur | n 7.48   | -0.01      | 0.04     | 0.01     | -0.11    | 8.70     | -0.33    | -1.47    | 0.72     | 0.24     | 0.91     | 7.79     | 4.20       |
| manganes  | e = 2.37 | 0.66       | 0.28     | -0.05    | 0.08     | -0.06    | 0.40     | -0.22    | 0.08     | 1.20     | 1.00     | 2.36     | -0.62      |
| nickel    | 8.65     | 4.25       | -0.32    | -0.18    | 3.54     | -0.40    | -0.55    | 0.10     | 1.69     | 1.65     | 0.93     | 9.77     | 12.94      |
| nitrates  | 1822.27  | 1449.35    | -87.68   | 26.88    | 174.23   | -16.48   | 135.92   | 175.88   | -219.25  | 345.32   | 0.68     | 1984.17  | 8.88       |
| pm25      | 11803.26 | 6698.47    | 1275.11  | 257.19   | 164.80   | 86.48    | 437.35   | -157.39  | 55.21    | 772.55   | 0.79     | 9589.77  | -18.75     |
| potassium | 44.31    | 15.47      | 7.21     | -2.15    | 0.99     | 10.03    | 4.83     | 0.35     | 0.63     | 2.47     | 0.45     | 39.84    | -10.09     |
| selenium  | 0.76     | 0.84       | 0.10     | 0.00     | 0.04     | -0.07    | -0.09    | -0.15    | 0.15     | 0.05     | 0.76     | 0.86     | 13.80      |
| silicon   | 71.43    | 13.83      | 36.59    | 1.77     | 1.89     | -0.05    | -6.32    | 7.83     | 11.12    | 5.48     | 0.88     | 72.14    | 1.00       |
| sulfate   | 2980.02  | 2243.49    | 506.74   | 180.86   | -35.15   | -108.26  | -240.20  | -319.03  | 116.18   | -8.77    | 0.75     | 2335.85  | -21.62     |
| titanium  | 3.39     | 0.58       | 1.10     | -0.01    | 0.05     | -0.15    | -0.14    | -0.04    | 1.32     | 0.45     | 0.75     | 3.17     | -6.61      |
| vanadium  | 4.45     | 3.02       | 0.38     | 0.11     | 0.43     | 0.06     | -0.24    | -0.07    | 0.77     | 1.12     | 0.69     | 5.59     | 25.72      |
| zinc      | 27.03    | 10.33      | -1.17    | -2.24    | 3.36     | -0.44    | 1.20     | 7.78     | 0.11     | 7.20     | 0.94     | 26.14    | -3.29      |

## Source proportions

| element                  | source_1 | source_2 | source_3 | source_4 | source_5 | source_6 | source_7 | source_8 | source_9 |
|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| aluminum                 | 4.55     | 61.89    | 0.00     | 0.00     | 5.83     | 23.10    | 1.15     | 0.00     | 3.47     |
| arsenic                  | 66.85    | 4.42     | 0.00     | 5.64     | 6.10     | 5.78     | 0.00     | 8.20     | 3.00     |
| barium                   | 19.94    | 0.00     | 0.00     | 4.85     | 10.63    | 0.00     | 0.00     | 61.37    | 3.21     |
| bromine                  | 62.50    | 6.86     | 0.00     | 4.29     | 10.25    | 8.04     | 2.04     | 0.00     | 6.01     |
| $\operatorname{cadmium}$ | 0.00     | 14.30    | 1.90     | 7.20     | 0.00     | 0.00     | 68.88    | 0.00     | 7.71     |
| calcium                  | 13.20    | 11.13    | 2.82     | 8.36     | 6.56     | 0.00     | 18.24    | 5.45     | 34.23    |
| chromium                 | 0.00     | 4.80     | 0.00     | 0.00     | 0.00     | 95.20    | 0.00     | 0.00     | 0.00     |
| copper                   | 27.62    | 6.79     | 0.00     | 0.68     | 2.42     | 35.59    | 11.51    | 0.61     | 14.80    |
| iron                     | 19.52    | 12.14    | 0.95     | 0.00     | 0.65     | 37.36    | 4.62     | 11.23    | 13.53    |
| lead                     | 44.46    | 4.01     | 0.00     | 6.27     | 0.00     | 0.00     | 0.00     | 32.93    | 12.33    |
| magnesium                | 0.00     | 0.44     | 0.05     | 0.00     | 89.63    | 0.00     | 0.00     | 7.37     | 2.51     |
| manganese                | 24.35    | 10.47    | 0.00     | 3.03     | 0.00     | 14.92    | 0.00     | 2.96     | 44.27    |
| nickel                   | 37.87    | 0.00     | 0.00     | 31.49    | 0.00     | 0.00     | 0.91     | 15.07    | 14.66    |
| nitrates                 | 62.81    | 0.00     | 1.16     | 7.55     | 0.00     | 5.89     | 7.62     | 0.00     | 14.96    |
| pm25                     | 68.72    | 13.08    | 2.64     | 1.69     | 0.89     | 4.49     | 0.00     | 0.57     | 7.93     |
| potassium                | 36.85    | 17.16    | 0.00     | 2.35     | 23.89    | 11.51    | 0.84     | 1.50     | 5.89     |
| selenium                 | 71.77    | 8.31     | 0.06     | 3.36     | 0.00     | 0.00     | 0.00     | 12.44    | 4.06     |
| silicon                  | 17.62    | 46.61    | 2.25     | 2.41     | 0.00     | 0.00     | 9.98     | 14.16    | 6.97     |
| sulfate                  | 73.62    | 16.63    | 5.94     | 0.00     | 0.00     | 0.00     | 0.00     | 3.81     | 0.00     |
| titanium                 | 16.52    | 31.39    | 0.00     | 1.42     | 0.00     | 0.00     | 0.00     | 37.75    | 12.92    |
| vanadium                 | 51.19    | 6.48     | 1.82     | 7.37     | 1.03     | 0.00     | 0.00     | 13.10    | 19.02    |
| zinc                     | 34.45    | 0.00     | 0.00     | 11.22    | 0.00     | 4.01     | 25.95    | 0.37     | 24.01    |

## Bar graph of the above proportions

