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

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## Loadings

| element                   | MeanConc | source_1 | source_2 | source_3 | source_4 | source_5 | source_6 | r_squared | PredConc | Pct_error |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|-----------|
| aluminum                  | 22.18    | 0.13     | 0.20     | 14.69    | 4.47     | 5.33     | 1.68     | 0.44      | 26.51    | 19.51     |
| ammonium                  | 1120.78  | 205.57   | 9.02     | 153.02   | 799.87   | -154.09  | 40.46    | 0.93      | 1053.86  | -5.97     |
| arsenic                   | 0.49     | 0.07     | 0.01     | 0.03     | 0.15     | 0.14     | 0.00     | 0.16      | 0.40     | -17.98    |
| barium                    | 1.87     | 0.07     | 0.16     | 0.52     | 0.11     | 2.30     | -0.06    | 0.26      | 3.10     | 65.68     |
| bromine                   | 3.06     | 0.51     | 0.31     | 0.14     | 0.92     | 1.10     | -0.32    | 0.38      | 2.66     | -13.12    |
| $\operatorname{cadmium}$  | 1.68     | 0.12     | -0.07    | 0.09     | -0.07    | 0.13     | -0.17    | 0.01      | 0.03     | -98.37    |
| $\operatorname{calcium}$  | 51.85    | 16.07    | 2.49     | 13.58    | 5.46     | 3.11     | 0.07     | 0.56      | 40.78    | -21.35    |
| chlorine                  | 37.07    | 11.45    | 42.81    | -4.87    | 5.40     | 5.83     | -2.02    | 0.69      | 58.58    | 58.04     |
| $\operatorname{chromium}$ | 2.13     | 0.50     | -0.09    | 0.32     | -0.46    | -0.88    | 3.19     | 0.26      | 2.58     | 20.89     |
| copper                    | 4.55     | 1.07     | -0.07    | 0.63     | 0.99     | 2.33     | 0.69     | 0.67      | 5.64     | 23.87     |
| EC                        | 707.73   | 145.70   | -3.45    | 98.42    | 133.30   | 253.47   | 68.64    | 0.52      | 696.09   | -1.64     |
| iron                      | 105.50   | 11.02    | -0.32    | 24.81    | 13.89    | 33.86    | 25.18    | 0.96      | 108.45   | 2.79      |
| lead                      | 2.02     | 0.88     | 0.04     | 0.05     | 0.56     | 1.16     | -0.41    | 0.51      | 2.28     | 13.15     |
| magnesium                 | 7.12     | -0.81    | 6.30     | 0.47     | -0.02    | 2.20     | -0.30    | 0.88      | 7.84     | 10.22     |
| manganese                 | 2.10     | 0.71     | 0.01     | 0.40     | 0.44     | 0.34     | 0.38     | 0.73      | 2.28     | 8.74      |
| nickel                    | 4.94     | 2.49     | 0.13     | 0.34     | 0.78     | -1.73    | 1.55     | 0.88      | 3.55     | -28.14    |
| nitrate                   | 1613.47  | 608.43   | 101.61   | 0.31     | 670.44   | 103.38   | 66.42    | 0.56      | 1550.59  | -3.90     |
| OC                        | 2693.20  | 64.84    | -46.27   | 346.91   | 800.00   | 882.38   | 20.93    | 0.82      | 2068.79  | -23.18    |
| pm25                      | 10322.11 | 901.08   | 170.76   | 1386.50  | 4257.78  | 1867.95  | 129.58   | 0.85      | 8713.65  | -15.58    |
| potassium                 | 36.15    | 6.59     | 3.98     | 2.97     | 14.05    | 20.54    | -4.98    | 0.32      | 43.14    | 19.34     |
| selenium                  | 0.40     | 0.05     | 0.01     | 0.05     | 0.22     | 0.01     | -0.01    | 0.29      | 0.33     | -15.71    |
| silicon                   | 61.01    | 3.59     | 1.09     | 46.19    | 8.85     | 7.53     | -3.03    | 0.94      | 64.22    | 5.26      |
| sodium                    | 95.65    | 5.13     | 59.40    | 7.82     | 4.95     | -8.24    | 5.69     | 0.90      | 74.77    | -21.83    |
| $\operatorname{sulfur}$   | 788.05   | -20.40   | 2.28     | 155.69   | 477.01   | -10.82   | 10.88    | 0.83      | 614.64   | -22.01    |
| titanium                  | 2.37     | 0.02     | -0.02    | 1.23     | 0.44     | 0.86     | 0.12     | 0.48      | 2.65     | 11.89     |
| vanadium                  | 2.86     | 0.76     | 0.11     | 0.72     | 1.38     | 0.33     | 0.32     | 0.43      | 3.61     | 26.55     |
| zinc                      | 26.09    | 15.40    | 0.54     | -1.79    | 3.20     | 7.76     | -3.75    | 0.93      | 21.36    | -18.14    |

## Source proportions

| element                   | source_1 | source_2 | source_3 | source_4 | source_5 | source_6 |
|---------------------------|----------|----------|----------|----------|----------|----------|
| aluminum                  | 0.51     | 0.77     | 55.41    | 16.88    | 20.09    | 6.34     |
| ammonium                  | 17.02    | 0.75     | 12.67    | 66.22    | 0.00     | 3.35     |
| arsenic                   | 18.55    | 2.17     | 7.35     | 36.79    | 34.63    | 0.51     |
| barium                    | 2.11     | 5.21     | 16.55    | 3.37     | 72.76    | 0.00     |
| bromine                   | 17.06    | 10.32    | 4.69     | 30.92    | 37.01    | 0.00     |
| $\operatorname{cadmium}$  | 35.28    | 0.00     | 25.28    | 0.00     | 39.43    | 0.00     |
| calcium                   | 39.42    | 6.10     | 33.31    | 13.39    | 7.62     | 0.16     |
| chlorine                  | 17.48    | 65.37    | 0.00     | 8.24     | 8.91     | 0.00     |
| $\operatorname{chromium}$ | 12.47    | 0.00     | 8.03     | 0.00     | 0.00     | 79.51    |
| copper                    | 18.72    | 0.00     | 11.01    | 17.41    | 40.77    | 12.09    |
| EC                        | 20.83    | 0.00     | 14.07    | 19.06    | 36.23    | 9.81     |
| iron                      | 10.13    | 0.00     | 22.81    | 12.77    | 31.13    | 23.15    |
| lead                      | 32.56    | 1.51     | 2.03     | 20.81    | 43.09    | 0.00     |
| magnesium                 | 0.00     | 70.20    | 5.24     | 0.00     | 24.56    | 0.00     |
| manganese                 | 31.04    | 0.58     | 17.72    | 19.48    | 14.75    | 16.44    |
| nickel                    | 47.09    | 2.40     | 6.39     | 14.83    | 0.00     | 29.28    |
| nitrate                   | 39.24    | 6.55     | 0.02     | 43.24    | 6.67     | 4.28     |
| OC                        | 3.07     | 0.00     | 16.40    | 37.82    | 41.72    | 0.99     |
| pm25                      | 10.34    | 1.96     | 15.91    | 48.86    | 21.44    | 1.49     |
| potassium                 | 13.69    | 8.27     | 6.17     | 29.21    | 42.67    | 0.00     |
| selenium                  | 15.59    | 3.15     | 15.15    | 62.56    | 3.56     | 0.00     |
| silicon                   | 5.34     | 1.62     | 68.69    | 13.16    | 11.19    | 0.00     |
| $\operatorname{sodium}$   | 6.18     | 71.57    | 9.42     | 5.97     | 0.00     | 6.86     |
| sulfur                    | 0.00     | 0.35     | 24.11    | 73.86    | 0.00     | 1.68     |
| titanium                  | 0.60     | 0.00     | 46.16    | 16.30    | 32.39    | 4.56     |
| vanadium                  | 21.05    | 2.93     | 19.98    | 38.06    | 9.23     | 8.75     |
| zinc                      | 57.24    | 1.99     | 0.00     | 11.92    | 28.85    | 0.00     |

## Bar graph of the above proportions

