APCA 9 - remove 7/2 - 7/6

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Loadings

element	MeanConc	source_1	source_2	source_3	source_4	source_5	source_6	source_7	source_8	source_9	r_squared	PredConc	Pct_error
aluminum	22.18	2.93	0.32	13.26	2.21	0.01	2.53	1.82	3.60	1.01	0.51	27.69	24.85
ammonium_ion	1120.78	312.61	4.32	143.07	250.32	71.52	-20.31	213.10	66.63	-23.82	0.87	1017.46	-9.22
arsenic	0.49	0.21	0.01	0.04	0.04	0.00	0.01	0.12	0.03	-0.03	0.21	0.43	-12.07
barium	1.87	0.41	0.29	0.37	0.07	-0.11	0.16	1.20	-0.66	0.78	0.60	2.50	33.68
bromine	3.06	1.75	0.33	0.28	0.26	-0.06	0.10	0.17	0.09	-0.06	0.50	2.85	-6.93
cadmium	1.68	-0.15	-0.06	0.00	0.06	0.12	-0.09	-0.29	0.03	0.33	0.10	-0.03	-101.78
calcium	51.85	7.63	3.07	9.45	1.71	5.79	-3.43	15.66	-2.41	3.30	0.65	40.80	-21.31
chlorine	37.07	23.02	46.69	-3.08	-0.68	0.21	1.31	3.00	-11.19	-2.64	0.70	56.66	52.85
chromium	2.13	0.51	-0.09	0.36	-0.12	0.09	3.24	-0.29	-0.57	-0.36	0.74	2.76	29.35
copper	4.55	1.63	-0.04	0.53	0.24	0.12	0.30	2.78	0.08	0.03	0.67	5.68	24.78
elemental_carbon	707.73	79.65	5.10	55.24	19.56	33.19	-48.83	584.27	-36.70	10.26	0.81	701.73	-0.85
iron	105.50	8.77	0.74	19.14	2.99	1.77	8.87	61.48	-0.74	-0.08	0.96	102.93	-2.44
lead	2.02	1.66	0.04	0.12	0.17	0.11	-0.03	0.24	-0.03	0.13	0.53	2.41	19.59
magnesium	7.12	0.33	6.94	0.48	0.11	-0.32	0.29	-0.98	-0.34	0.70	0.88	7.21	1.33
manganese	2.10	0.58	0.02	0.29	0.12	0.20	0.08	1.03	0.01	0.01	0.73	2.35	11.86
nickel	4.94	1.16	0.09	0.04	0.34	1.04	0.58	0.53	0.35	0.02	0.97	4.16	-15.86
organic_carbon	2693.20	534.07	-38.37	348.18	257.86	-34.99	6.50	741.21	339.67	25.73	0.85	2179.86	-19.06
pm25	10322.11	2566.78	197.63	1358.66	1329.70	160.99	-44.05	2427.30	1280.82	-17.28	0.84	9260.54	-10.28
potassium_ion	36.15	21.79	4.63	4.03	5.16	-0.04	2.05	-0.40	1.00	4.71	0.43	42.93	18.75
selenium	0.40	0.09	0.01	0.05	0.09	0.03	0.00	-0.07	0.08	0.05	0.43	0.35	-11.46
silicon	61.01	2.17	1.62	40.35	3.05	1.16	-1.49	13.21	-1.17	2.08	0.93	60.98	-0.05
sodium	95.65	-1.45	65.99	5.83	1.41	3.53	-4.33	9.65	9.91	-5.24	0.95	85.31	-10.81
sulfur	0.79	0.11	0.00	0.16	0.16	0.01	-0.02	0.08	0.24	-0.03	0.84	0.71	-9.90

element	MeanConc	source_1	source_2	source_3	source_4	source_5	source_6	source_7	source_8	source_9	r_squared	PredConc	Pct_error
titanium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	-100.00
total_nitrate	1.61	0.74	0.12	-0.03	0.16	0.14	0.02	0.50	-0.31	0.04	0.57	1.39	-13.85
vanadium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.00	-100.00
zinc	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.96	0.02	-23.35

Source proportions

element	source_1	source_2	source_3	source_4	source_5	source_6	source_7	source_8	source_9
aluminum	10.60	1.14	47.87	8.00	0.03	9.14	6.59	13.00	3.64
ammonium_ion	29.45	0.41	13.48	23.58	6.74	0.00	20.07	6.28	0.00
arsenic	46.07	1.46	9.48	7.96	0.00	3.16	25.43	6.44	0.00
barium	12.62	8.75	11.38	2.11	0.00	4.84	36.61	0.00	23.69
bromine	58.79	11.02	9.31	8.76	0.00	3.29	5.79	3.04	0.00
cadmium	0.00	0.00	0.90	10.90	22.21	0.00	0.00	6.26	59.74
calcium	16.37	6.59	20.27	3.68	12.42	0.00	33.59	0.00	7.08
chlorine	31.01	62.90	0.00	0.00	0.29	1.77	4.04	0.00	0.00
chromium	12.07	0.00	8.58	0.00	2.23	77.11	0.00	0.00	0.00
copper	28.57	0.00	9.33	4.21	2.16	5.17	48.64	1.39	0.53
elemental_carbon	10.12	0.65	7.02	2.48	4.22	0.00	74.22	0.00	1.30
iron	8.46	0.71	18.45	2.88	1.70	8.55	59.25	0.00	0.00
lead	67.13	1.71	4.67	6.95	4.34	0.00	9.84	0.00	5.36
magnesium	3.78	78.35	5.44	1.23	0.00	3.28	0.00	0.00	7.92
manganese	24.76	0.93	12.33	5.10	8.57	3.58	43.94	0.56	0.25
nickel	27.86	2.26	1.07	8.21	25.07	14.02	12.83	8.30	0.39
organic_carbon	23.70	0.00	15.45	11.44	0.00	0.29	32.90	15.07	1.14
pm25	27.54	2.12	14.57	14.26	1.73	0.00	26.04	13.74	0.00
potassium_ion	50.24	10.68	9.29	11.89	0.00	4.74	0.00	2.31	10.85
selenium	22.97	3.15	11.63	21.96	7.83	1.00	0.00	18.57	12.90
silicon	3.41	2.54	63.40	4.80	1.82	0.00	20.76	0.00	3.27
sodium	0.00	68.51	6.05	1.46	3.67	0.00	10.02	10.28	0.00
sulfur	14.52	0.00	20.78	21.49	1.27	0.00	10.39	31.55	0.00
titanium	0.00	0.85	35.62	5.76	1.10	0.00	44.16	6.62	5.88
total_nitrate	42.89	6.68	0.00	9.41	8.17	1.40	29.31	0.00	2.14
vanadium	11.81	2.13	11.99	10.36	7.32	0.00	30.18	26.21	0.00
zinc	68.79	1.10	0.00	0.00	8.79	0.00	21.32	0.00	0.00

Bar graph of the above proportions

```
## <ggproto object: Class ScaleDiscrete, Scale, gg>
##     aesthetics: fill
##     axis_order: function
##     break_info: function
##     break_positions: function
##     breaks: waiver
##     call: call
##     clone: function
##     dimension: function
##     drop: TRUE
##     expand: waiver
##     get_breaks: function
##     get_breaks_minor: function
##     get_labels: function
##     get_limits: function
##     guide: legend
##     is_discrete: function
##     is_empty: function
##     labels: waiver
##     limits: NULL
##     make_sec_title: function
##     make_title: function
##     map: function
##     map_df: function
##     n.breaks.cache: NULL
##     na.translate: TRUE
##     na.value: NA
##     name: waiver
##     palette: function
##     palette.cache: NULL
##     position: left
##     range: <ggproto object: Class RangeDiscrete, Range, gg>
##         range: NULL
##         reset: function
##         train: function
##         super:  <ggproto object: Class RangeDiscrete, Range, gg>
##     rescale: function
```

```
##     reset: function
##     scale_name: brewer
##     train: function
##     train_df: function
##     transform: function
##     transform_df: function
##     super:  <ggproto object: Class ScaleDiscrete, Scale, gg>
```