

# Soil Report - VCP

## Mn

**Summary:** Manganese is a chemical element with symbol Mn and atomic number 25. It is not found as a free element in nature; it is often found in combination with iron, and in many minerals. Manganese is a metal with important industrial metal alloy uses, particularly in stainless steels.

**Category:** transition metal

**Number:** 25

**Atomic Mass:** 54.9380443

### Region: cw

count 45.000000  
mean 1607.121765  
std 1032.125934  
min 309.894154  
25% 746.008580  
50% 1489.927203  
75% 2105.309052  
max 5047.359100

**EF: [2.65320068]**

### Region: nwf

count 45.000000  
mean 1765.441567  
std 2942.957936  
min 49.986346  
25% 349.551144  
50% 713.580784  
75% 1832.511752  
max 12727.966900

**EF: [3.26709064]**

### Region: vh

count 45.000000  
mean 996.853358  
std 453.318859  
min 275.598479  
25% 648.824886  
50% 939.933880  
75% 1377.316298  
max 2006.082905

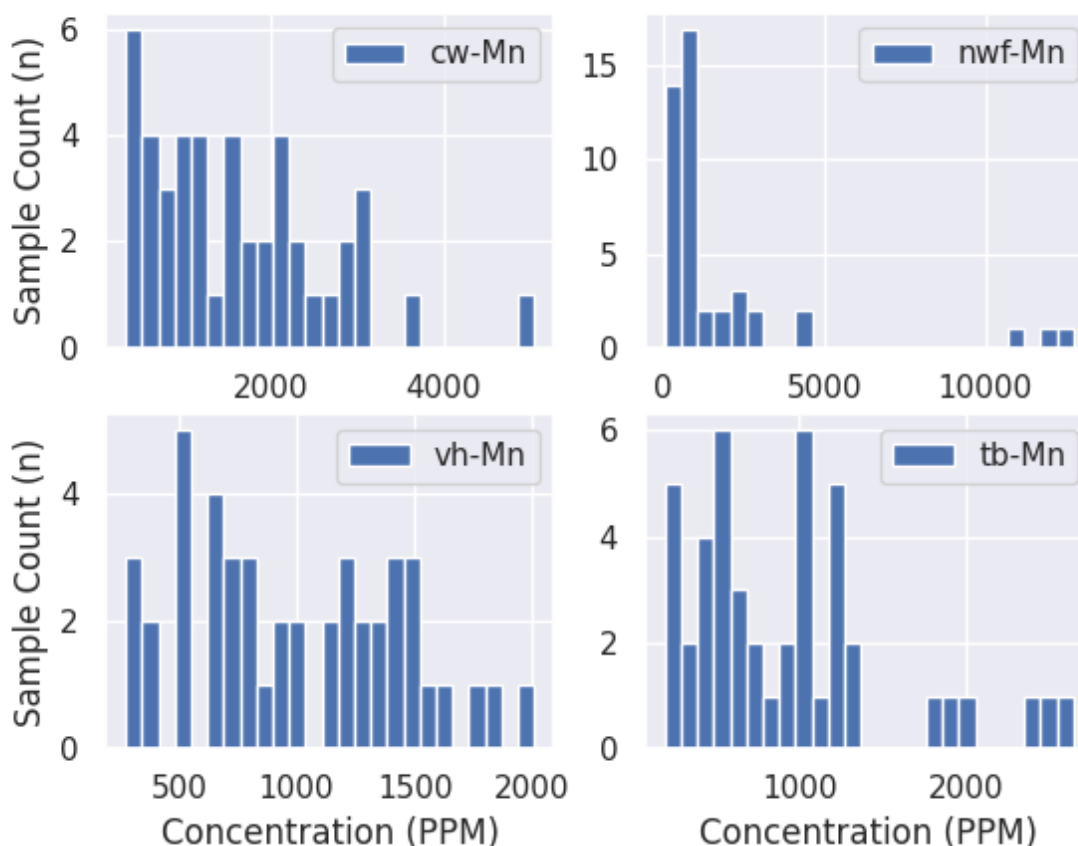
**EF: [1.60109868]**

### **Region: tb**

count 45.000000  
mean 938.209050  
std 610.181611  
min 198.204463  
25% 491.381687  
50% 844.049082  
75% 1204.347826  
max 2636.067973

**EF: [1.37443203]**

## Sample Results for Mn



## Fe

**Summary:** Iron is a chemical element with symbol Fe (from Latin:ferrum) and atomic number 26. It is a metal in the first transition series. It is by mass the most common element on Earth, forming much of Earth's outer and inner core.

**Category:** transition metal

**Number:** 26

**Atomic Mass:** 55.8452

**Region:** cw

```
count 45.000000
mean 30718.451657
std 7769.905274
min 19880.077290
25% 24931.443660
50% 28802.999400
75% 35548.040910
max 50263.914700
```

**EF: [1.]**

**Region: nwf**

count 45.000000  
mean 27403.927052  
std 6289.044140  
min 15937.687030  
25% 23878.858030  
50% 26746.872330  
75% 30278.721620  
max 47126.393700

**EF: [1.]**

**Region: vh**

count 45.000000  
mean 31574.306099  
std 5179.618887  
min 21302.898190  
25% 28588.551740  
50% 31406.275120  
75% 34051.766430  
max 48492.070900

**EF: [1.]**

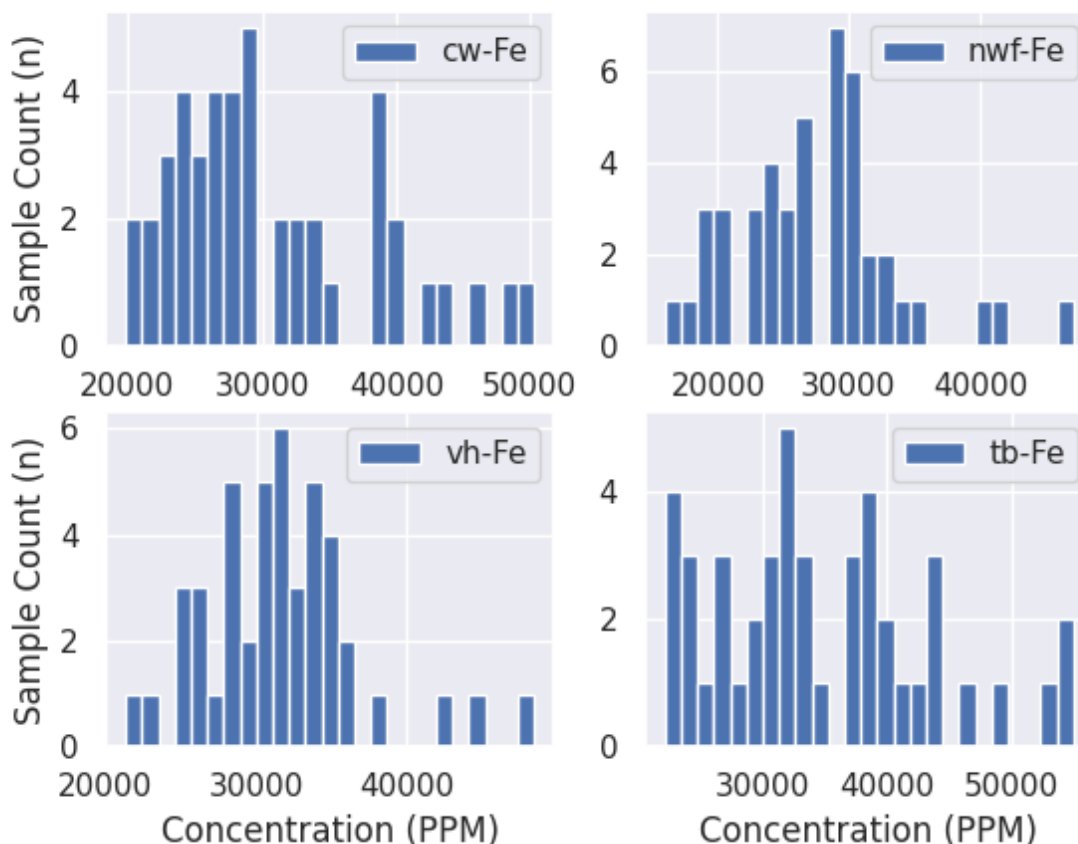
**Region: tb**

count 45.000000  
mean 34617.602591  
std 8634.558639  
min 22226.005020  
25% 27556.833370  
50% 32747.811710  
75% 39797.740810  
max 54920.520290

**EF: [1.]**



## Sample Results for Fe



## Ti

**Summary:** Titanium is a chemical element with symbol Ti and atomic number 22. It is a lustrous transition metal with a silver color, low density and high strength. It is highly resistant to corrosion in sea water, aqua regia and chlorine.

**Category:** transition metal

**Number:** 22

**Atomic Mass:** 47.8671

**Region:** cw

```
count 45.000000
mean 4979.893126
std 647.704955
min 3748.561490
25% 4519.440470
50% 4843.307850
75% 5477.552570
max 6380.946730
```

**EF: [2.5577507]**

**Region: nwf**

count 45.000000  
mean 5097.992231  
std 1495.588495  
min 2660.864710  
25% 4200.811720  
50% 4557.179950  
75% 5370.035720  
max 9869.866740

**EF: [2.93510659]**

**Region: vh**

count 45.000000  
mean 4359.907092  
std 451.528294  
min 3362.939710  
25% 4099.712000  
50% 4394.283450  
75% 4613.173300  
max 5357.541990

**EF: [2.17861722]**

**Region: tb**

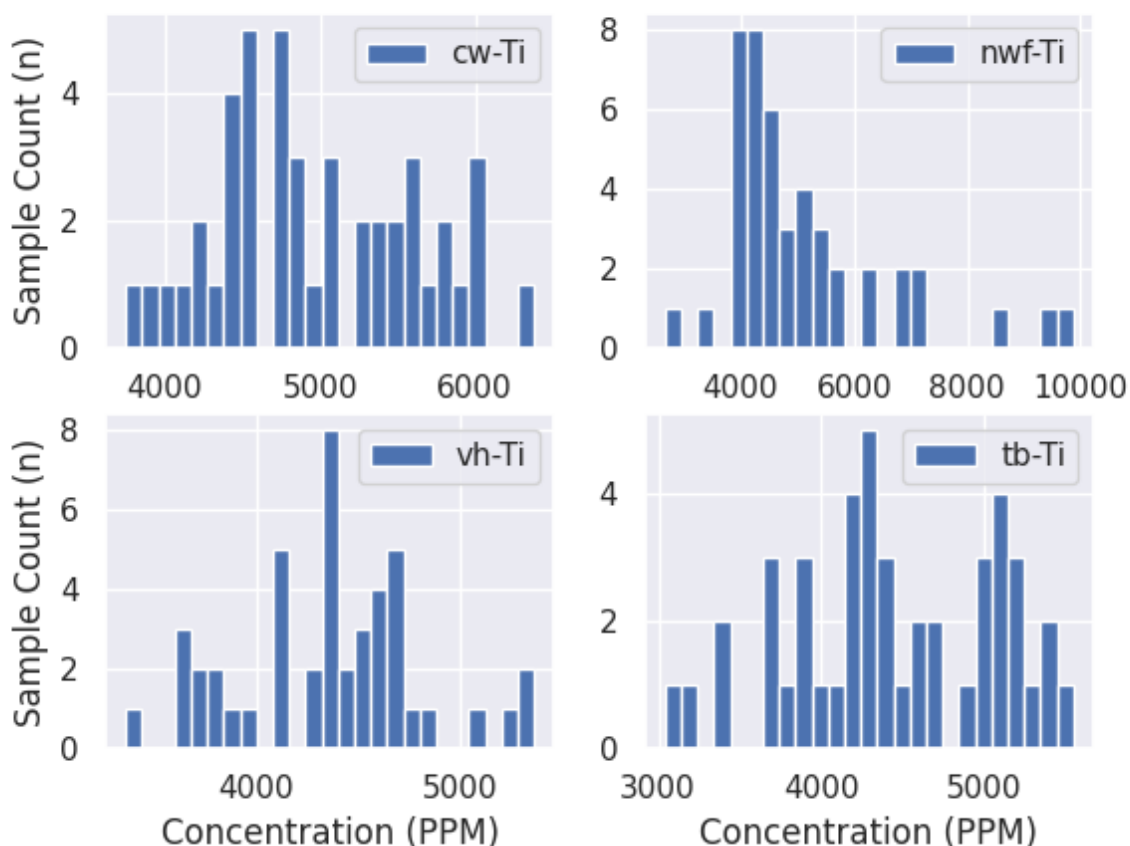
count 45.000000  
mean 4438.880488  
std 642.897977  
min 3039.976410  
25% 4009.590080  
50% 4349.727220  
75% 5042.703660  
max 5551.603150

**EF: [2.02308428]**





## Sample Results for Ti



## Ba

**Summary:** Barium is a chemical element with symbol Ba and atomic number 56. It is the fifth element in Group 2, a soft silvery metallic alkaline earth metal. Because of its high chemical reactivity barium is never found in nature as a free element.

**Category:** alkaline earth metal

**Number:** 56

**Atomic Mass:** 137.3277

**Region:** cw

count 45.000000  
 mean 1163.063197  
 std 265.106752  
 min 697.192151  
 25% 987.709899  
 50% 1142.202120  
 75% 1305.962726

max 1821.268794

**EF: [1.48475014]**

### **Region: nwf**

count 45.000000  
mean 1448.827605  
std 621.884574  
min 418.973124  
25% 1016.565544  
50% 1239.951387  
75% 1836.791646  
max 3387.880962

**EF: [2.07325773]**

### **Region: vh**

count 45.000000  
mean 1108.404108  
std 198.698234  
min 686.241100  
25% 977.028015  
50% 1098.743398  
75% 1225.763758  
max 1703.556760

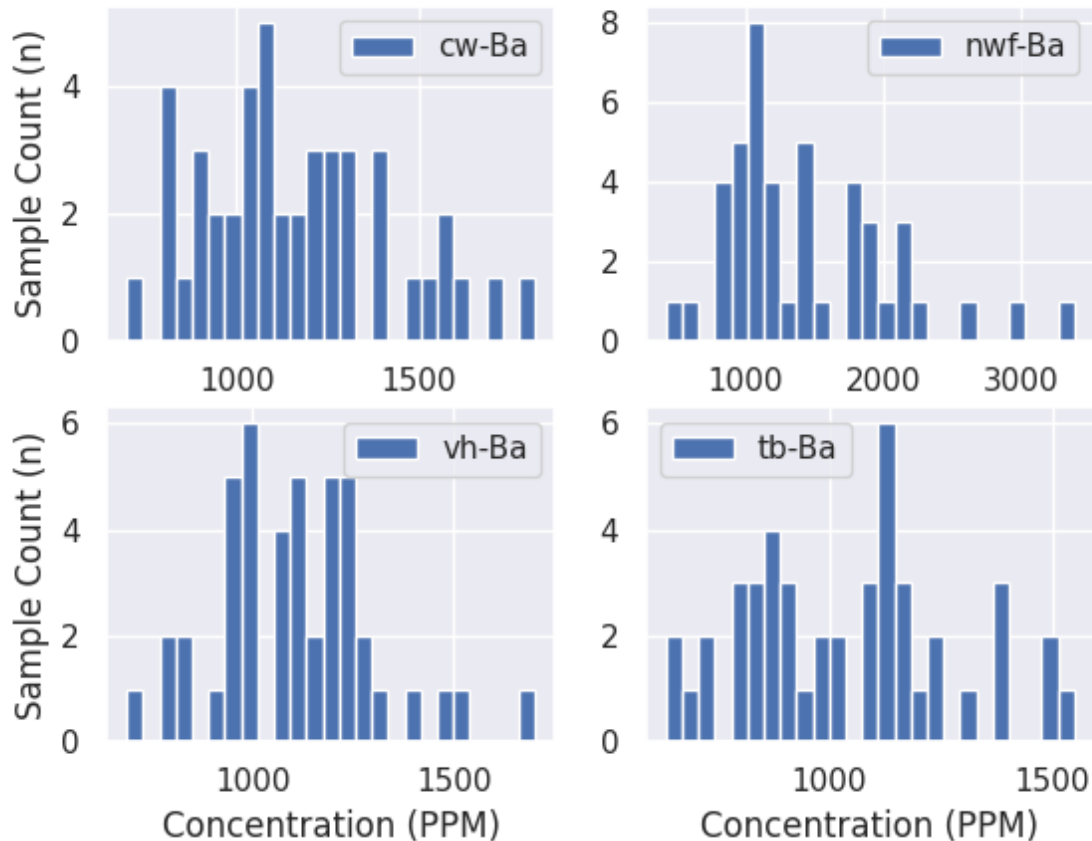
**EF: [1.3766188]**

### **Region: tb**

count 45.000000  
mean 1038.209058  
std 236.715066  
min 634.900370  
25% 860.193027  
50% 1030.337501  
75% 1178.015260  
max 1547.855397

**EF: [1.17608094]**

## Sample Results for Ba



## Ca

**Summary:** Calcium is a chemical element with symbol Ca and atomic number 20. Calcium is a soft gray alkaline earth metal, fifth-most-abundant element by mass in the Earth's crust. The ion  $\text{Ca}^{2+}$  is also the fifth-most-abundant dissolved ion in seawater by both molarity and mass, after sodium, chloride, magnesium, and sulfate.

**Category:** alkaline earth metal

**Number:** 20

**Atomic Mass:** 40.0784

### Region: cw

count 45.000000  
 mean 6341.245428  
 std 1568.402973  
 min 3524.260540  
 25% 4765.137610  
 50% 6851.496980

75% 7609.749430  
max 9155.329430

**EF: [0.24105086]**

### **Region: nwf**

count 45.000000  
mean 12973.787737  
std 13775.690253  
min 976.421910  
25% 3807.698130  
50% 5494.462120  
75% 21591.665610  
max 45469.269500

**EF: [0.55282469]**

### **Region: vh**

count 45.000000  
mean 3748.147276  
std 1549.324163  
min 1166.788180  
25% 2919.164190  
50% 3358.164870  
75% 4245.770230  
max 7534.011200

**EF: [0.13861693]**

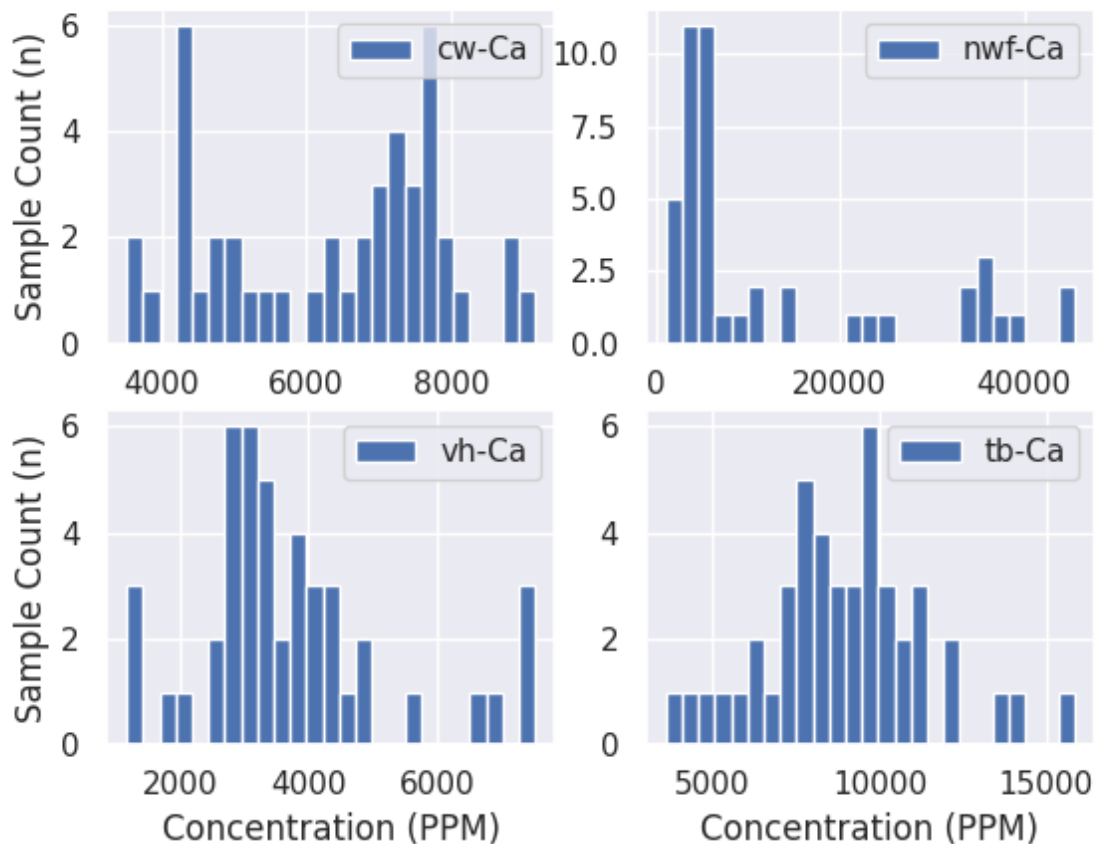
### **Region: tb**

count 45.000000  
mean 8946.143058  
std 2489.455133  
min 3615.932600  
25% 7616.827530  
50% 8789.153580  
75% 10066.685510

max 15834.847770

**EF: [0.30176738]**

## Sample Results for Ca



## K

**Summary:** Potassium is a chemical element with symbol K (derived from Neo-Latin, kalium) and atomic number 19. It was first isolated from potash, the ashes of plants, from which its name is derived. In the Periodic table, potassium is one of seven elements in column (group) 1 (alkali metals): they all have a single valence electron in their outer electron shell, which they readily give up to create an atom with a positive charge - a cation, and combine with anions to form salts.

**Category:** alkali metal

**Number:** 19

**Atomic Mass:** 39.09831

**Region:** cw

count 45.000000  
 mean 11913.084738  
 std 1307.066779  
 min 9659.817860

25% 11196.392120  
50% 11924.155090  
75% 12337.350230  
max 15798.331390

**EF: [0.56402045]**

### **Region: nwf**

count 45.000000  
mean 8873.700602  
std 1435.351231  
min 5463.809610  
25% 8085.433390  
50% 8898.799850  
75% 10099.390490  
max 11156.277090

**EF: [0.47093602]**

### **Region: vh**

count 45.000000  
mean 9478.925377  
std 794.166291  
min 7323.580830  
25% 9081.933270  
50% 9589.930970  
75% 10000.476410  
max 10862.282650

**EF: [0.43661156]**

### **Region: tb**

count 45.000000  
mean 12987.419896  
std 1458.001899  
min 10198.455310  
25% 12097.319760

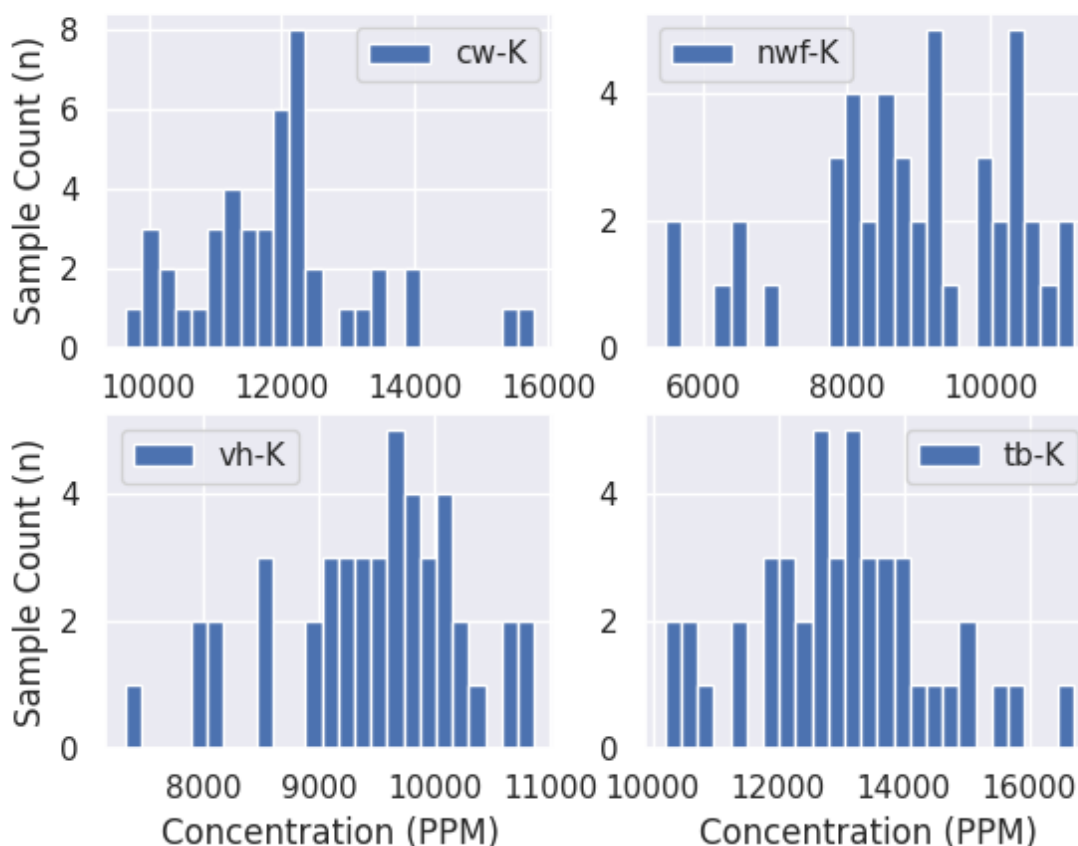


50% 13007.017500  
75% 13831.536510  
max 16696.012740

**EF: [0.54562698]**

**S**

## Sample Results for K



**Summary:** Sulfur or sulphur (see spelling differences) is a chemical element with symbol S and atomic number 16. It is an abundant, multivalent non-metal. Under normal conditions, sulfur atoms form cyclic octatomic molecules with chemical formula S<sub>8</sub>.

**Category:** polyatomic nonmetal

**Number:** 16

**Atomic Mass:** 32.06

**Region:** cw

count 45.000000  
mean 7445.791574  
std 112.722976  
min 7194.559470  
25% 7380.730760  
50% 7452.689060  
75% 7517.515580  
max 7643.121060

**EF:** [1.1669457]

### **Region: nwf**

count 45.000000  
mean 8265.781530  
std 516.717124  
min 7613.027370  
25% 7884.142120  
50% 8106.512420  
75% 8699.829030  
max 9369.779190

**EF: [1.45214577]**

### **Region: vh**

count 45.000000  
mean 7934.598694  
std 309.260824  
min 7434.844320  
25% 7736.677680  
50% 7868.122570  
75% 8086.091830  
max 8751.698070

**EF: [1.20984642]**

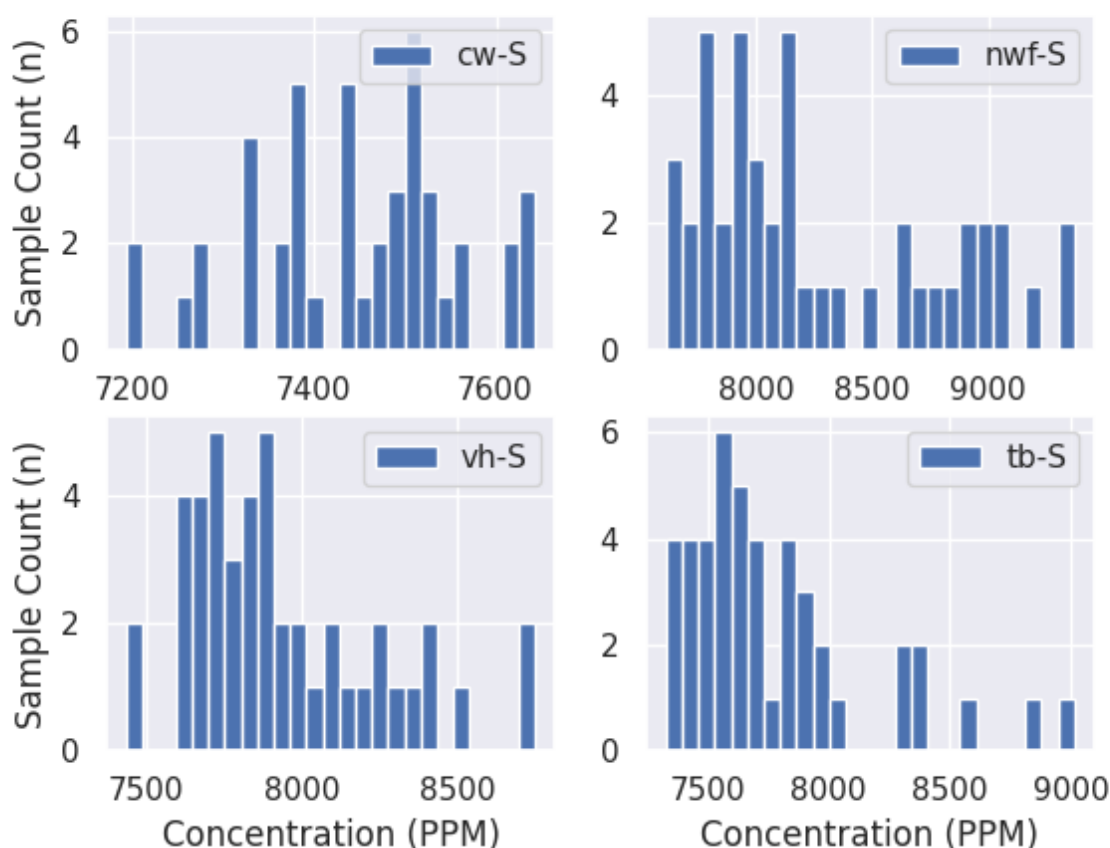
### **Region: tb**

count 45.000000  
mean 7773.945707  
std 386.425371  
min 7328.088080  
25% 7527.425040  
50% 7657.317920  
75% 7895.361350  
max 9011.674690

**EF: [1.08114417]**



## Sample Results for S



## Si

**Summary:** Silicon is a chemical element with symbol Si and atomic number 14. It is a tetravalent metalloid, more reactive than germanium, the metalloid directly below it in the table. Controversy about silicon's character dates to its discovery.

**Category:** metalloid

**Number:** 14

**Atomic Mass:** 28.085

**Region:** cw

```
count 45.000000
mean 176971.569360
std 16813.152468
min 145760.914200
25% 166825.889000
50% 177034.730000
75% 188521.818000
```

max 215358.753900

**EF: [0.9734283]**

**Region: nwf**

count 45.000000  
mean 131747.465839  
std 33693.455229  
min 78952.344680  
25% 103383.272100  
50% 136852.383500  
75% 158991.447000  
max 197962.590800

**EF: [0.81232395]**

**Region: vh**

count 45.000000  
mean 157917.883613  
std 17154.250088  
min 119034.808800  
25% 144926.114200  
50% 161601.724200  
75% 170310.636100  
max 186788.590300

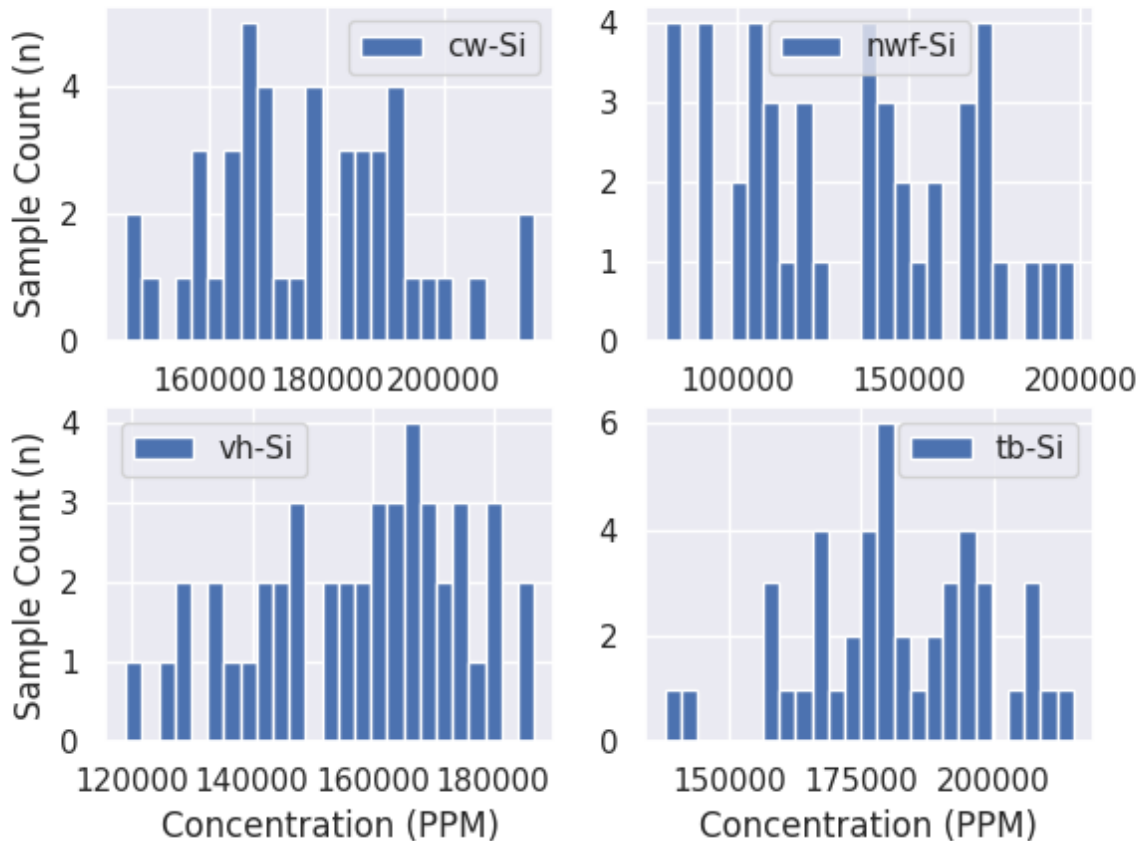
**EF: [0.84507896]**

**Region: tb**

count 45.000000  
mean 181567.399616  
std 17594.645308  
min 137849.758800  
25% 170675.050300  
50% 179994.511600  
75% 195453.137900  
max 214990.866500

**EF: [0.88621822]**

## Sample Results for Si



## Mg

**Summary:** Magnesium is a chemical element with symbol Mg and atomic number 12. It is a shiny gray solid which bears a close physical resemblance to the other five elements in the second column (Group 2, or alkaline earth metals) of the periodic table: they each have the same electron configuration in their outer electron shell producing a similar crystal structure. Magnesium is the ninth most abundant element in the universe.

**Category:** alkaline earth metal

**Number:** 12

**Atomic Mass:** 24.305

**Region:** cw

count 45.000000  
 mean 10618.871620  
 std 1407.425136  
 min 8099.008160  
 25% 9304.960280



50% 10750.544680  
75% 11426.306650  
max 13860.105120

**EF: [1.46532058]**

### **Region: nwf**

count 45.000000  
mean 14263.685163  
std 1989.113108  
min 9564.404790  
25% 13202.072670  
50% 14333.087800  
75% 15520.082990  
max 18088.716750

**EF: [2.20634052]**

### **Region: vh**

count 45.000000  
mean 13255.740479  
std 1651.315868  
min 9900.896010  
25% 12341.183590  
50% 13072.507630  
75% 14258.140860  
max 17413.698020

**EF: [1.77960566]**

### **Region: tb**

count 45.000000  
mean 10391.654267  
std 1352.638057  
min 8205.813630  
25% 9610.966780  
50% 10130.888210

75% 10861.581100  
max 14649.179540

**EF: [1.27245169]**

Sample Results for Mg

