

MINERAL WATERS

Ashland area.

Mineral water springs are numerous in the Ashland area. Their mineral content is varied as may be seen on the accompanying chart. The Lithia Springs are perhaps the best known springs, as the water is piped into Ashland where it is available at a public fountain in the center of town.

Few of these springs in the Ashland area are commercialized although several attempts have been made. In case the medicinal properties are questionable some use of the carbonated water might be made for the manufacture of dry ice.

Winchell (14) reports on these springs as follows:

*Single space.*

"Mineral springs are numerous in the vicinity of Ashland. Some of them have been productive commercially for many years, and some are improved so as to be used for bathing, for the establishment of health resorts and for medicinal purposes. But they are not used as much as they deserve to be nor as much as they will be in the future. The mineral spring waters are varied in composition and resultant qualities, and their merits are not widely known. Some of them are natural "soda water" charged with their own carbonic acid gas. Others are rich in chlorine and should be used for other purposes. A single instance is known of a water rich in iodine and bromine."

"All of the springs in the Ashland region contain notable amounts of chlorine, with the exception of one at Soda Springs, the "White Sulphur" spring being especially rich in this element. One of the analyses of the Coestin water shows a large amount of sulphuric acid radical, but the other mineral waters of this region contain very little. Carbonic acid is most abundant at Soda Springs, the artesian well, and Coestin; it is present in unusually small amount at White Sulphur Springs. Sodium is very abundant in the Lithia Springs and is surprisingly scanty in one analysis of Coestin and one of Soda Springs water. Potassium is important

in the Ashland Sulphur Springs and in the White Sulphur Springs and is found in the Colectin water. But according to Professor H. V. Tartar of the Oregon Agricultural College the analyses which show more potassium than sodium are probably incorrect in that respect. This throws doubt on the results for sodium and potassium in analyses 6, 7, 11, and 14. Omitting these analyses the least sodium is found in the Shepard sulphur spring water and the most potassium in the various lithia spring waters. Lithium is most abundant in the Ashland lithia spring water and is surprisingly abundant in the artesian well water. Calcium is most abundant at Colectin, where the mineral water is constantly depositing calcite or calcium carbonate; it is also abundant at Soda Springs and Shepard sulphur springs; very little calcium is present in the waters of Berkeley and White Sulphur Springs. Magnesium is especially important at Soda Springs and Shepard Sulphur Springs, and deficient at Berkeley and White Sulphur Springs and in the artesian well water. Iron oxide and alumina are relatively abundant at Soda Springs and lacking at Colectin, Ashland Sulphur, and White Sulphur, and Old Lithia Springs. Silica is very abundant in all the sulphur waters except the Shepard and is notably in amount in all the lithia waters including the artesian water."

"It is noteworthy that the total amount of salts dissolved in the lithia waters is much greater than the salinity of the sulphur or soda spring waters. Indeed the average salinity of the Ashland lithia water is 8982 parts per million and the average of the Ashland sulphur waters is only 830 parts per million and the average of the Soda and Colectin spring waters is 3030 parts per million. That is, the salinity of the Ashland lithia waters is nearly three times that of the Ashland sulphur waters. Furthermore, the average salinity of Ashland lithia waters is about 30 percent greater than the average salinity of the prominent lithia waters from other localities. As shown in the table (page 100) some geyser waters and springs associated with igneous intrusions have a surprisingly high percentage of lithium, but when expressed in parts per million of water they do not rank so high as the Ashland lithia waters. According to the owners the White Rock water contains very little ~~xx~~ lithium in its natural state; but is put on the market after the addition of lithium chloride; accordingly the Ashland lithia waters seem to be richer in lithium than any other potable mineral waters in their natural state."

"The sulphur waters of Ashland are charged chiefly with carbonic acid, sodium, calcium, magnesium, and silica, in addition to the characteristic sulphur, which is present, not only in the sulphates, but as hydrogen sulphur or free sulphur or both. These waters also contain a notable quantity of boric acid, probably combined in sodium borate (aside from that present in ionic form). The Yellowstone Park geyser waters contain about twice as much chlorine and half as much carbonic acid with less sulphuric acid, calcium, and magnesium, and more sodium and lithium than the Ashland sulphur waters. But it should

be noted that the latter are decidedly variable in composition not only in regard to sodium and potassium (possibly due to analytical errors), but also as to carbonic acid, and especially ~~xxx~~ calcium, magnesium, and silica. The Shepard sulphur springs is very high in magnesium and low in silica; both the Shepard and the Peat Marsh Sulphur Springs contain abundant calcium. The mineral water from Ojo Caliente in New Mexico and that from Vichy in France are low in chlorine and high in sodium; both contain a little strontium. The water from Steamboat Springs, Nevada, is remarkably rich in boric acid; it contains very little carbonic acid and abundant chlorine, sodium, potassium, and silica."

"In summary, the mineral waters of the Ashland district belong to two chief classes; the Coe Spring and Soda Springs waters are dominantly carbonate, while the Lithia and Sulphur springs waters are chloro-carbonate. As compared with similar waters found elsewhere many of the Oregon springs show an unusual quantity of potassium; the salinity of the sulphur springs is low, but that of the Lithia springs is high. The Sulphur springs are quite rich in silica and the Soda springs in magnesium. Finally, the Ashland lithia waters are remarkably high in their tenor of lithium, and deserve recognition for that fact."

The chart is from page 99 of Winchell (14).

Reference: Winchell 14:82,98,99,100,104,105.