A SULPHUR DEPOSIT NEAR AUBURN, LINCOLN COUNTY, WYOMING

Location and Ownership

The deposit is located in Sec. 23, T. 33 N., R. 119 W., two and one half miles north of Auburn. It is easily reached by automobile.

Kieth Hyde of Auburn, Wyo., owns the land on which the hot springs are located. J. B. Stanley, Organic Products, Box 373, Clackamas, Oregon, is reported interested in developing the property, and he has made chemical analysis of the sulphur and hot springs.

History and Development

The hot springs were originally intended for use as a swimming and bathing resort and several pools were excavated for this purpose. These, however, had not been completed.

In 1948, a group of individuals leased the property and built a small plant to refine the sulphur. Shortly after, due to poor management, the plant was closed down and all of the equipment was removed. At present, the plant is beyond the state of repair.

Geology

The hot springs flow from a large travertine (tufa) terrace which is at the confluence of two faults. Just north of the terrace, the Triassic Thaynes and Woodside formations and the Permian Phosphoria formation outcrop in a north-northeasterly trending anticline (Mansfield, Plate 5, 1927).

The travertine terrace is probably Pleistocene to Recent in age since it apparently rests upon Quaternary alluvium.

The Hot Springs

The hot springs terrace dips gently towards the flood plain of the Salt River. The hot springs arise in a series of small pools building small mounds two to three feet in height by the precipitation of the tufa. Eventually these are sealed off and the hot springs escape through different channels and repeat the mound-building process.

The water flows from higher to the lower pools by subsurface channels. The temperature of the springs varies from almost boiling to luke warm, and the higher pools are generally warmer than the lower ones. The pools vary in size from a few inches in diameter to over one hundred feet in diameter. The maximum observed depth is about five feet.

Free sulphur is found around the rim of the small pools and grading into the tufa. Small crystals of sulphur are also found in the tufa, but the major deposit of sulphur is found disseminated in the weathered tufa (or travertine) which surrounds the larger pools.

The odor of sulphur and H_2S is very apparent near the hot springs, and it is probable that sulphur has been derived from sulphur compounds present in the spring waters. As the water approaches the surface, the sulphur compounds are cooled and oxidized and thus deposit free sulphur. These deposits are probably quite shallow since the loss of heat and oxidation take place near the surface.

The exposed sulphur deposits are restricted to an area of approximately several hundred square yards. In addition to the sulphur content, the waters are reported to contain important amounts of calcium, sodium, and chlorine.

Signed

William H. Wilson
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Geol. Survey of Wyo.
Oct. 1, 1951

Reference

Mansfield, G. R., (1927) "Geography, geology, and mineral resources of part of southeastern Idaho", U. S. G. S. Prof. Paper 152, Plate 5.