

sodium salts predominate. Due to the fact that the borates are more soluble than the other salts, they remain in solution longer, and if the lake has alternate periods of desiccation and flooding the borates will crystallize out at or near the surface.

The deposition of borates in the playa type of deposits depends upon a combination of favorable conditions that is not widespread, and in consequence this type of deposit is restricted as to locality. The essential conditions required for the accumulation of borates are:

1. A source of boron, namely, solfataric springs in a region of former volcanic activity.
2. Suitable drainage basins, without any outlet, for the accumulation of the salts.
3. The climate must be sufficiently arid to concentrate the salts by evaporation and to prevent the removal of the borates, which are relatively soluble compounds.

At Teel's Marsh the boron-bearing mineral was principally borax, the natural sodium tetraborate intimately mixed with other salts forming a crust on the surface of the playa. The upper stratum of the deposits was the purest worked, but when this crust was removed other strata were found below at shallow depths associated with greater quantities of carbonate of soda or sodium chloride. The presence of sodium carbonate in the salts prevented the formation of the mineral ulexite nodules, the characteristic boron mineral in some dry-lake deposits.

The refining of the product was simple, as the natural borate of soda only required boiling to get the mineral in solution. On cooling, the borax was precipitated on wires or rods suspended in vats, leaving the other forms of soda, sand, and clayey matter at the bottom of the vat to be run off in the waste solution. The solution pans were semicircular, about 8 feet in diameter and 30 feet in length. These were fired from beneath with sagebrush, greasewood, or pinon pine from the foothills.

The crude borax obtained by crystallization was first hauled with wagon teams to Wadsworth, Nev., 130 miles distant, for shipment by rail to the San Francisco Bay region, where refineries were located. In 1882 a narrow-gage railroad was completed to Mina, and long haul with a team was eliminated.

5250 0001

WHISKEY FLAT DISTRICT

The Whiskey Flat district is at the south end of Whiskey Flat, on the north slope of the Excelsior Mountains, about 20 miles southeast of Hawthorne. Mining was first done in this area in 1882, when copper ore carrying silver and a little gold was treated locally in a 400-pound-capacity furnace.



A company called the Excelsior Mountain Copper Co. operated for several years after 1907. Production has been small. There has been no activity in the district in recent years.

The mineralization is in limestone near a granite contact. In addition to silver and a little gold, the ore carries copper carbonates and sulphides. Garnet occurs as a gangue mineral.