

Trona History

During the Eocene Epoch, over 50 million years ago, volcanoes in the Great Basin volcanic range in Idaho and the Absoraka volcanoes in Wyoming were erupting.

The ash was deposited over western Wyoming. The map indicates the present day deposit. Excessive rains during this time created Lake Gosiute which covered an area of 15,000 mi² and drained from an area of 48,500 mi². The climate during this era was sub-tropical and the elevation was less than

500 feet above sea level.

Deposited into this lake was thousands of feet of the volcanic ash and sediment from the area. The lake constantly changed size and shape and eventually disappeared.

The volcanic ash was high in sodium (Na), and the decaying plant material produced an excessive amount of carbon-dioxide (CO₂). The increased temperature under the surface and the correct mixture of Na, CO₂ and other minerals caused the precipitation of trona, oil shale and tuffaceous shale. This entire process took several million years to complete.

Today, there are over 40 different beds of trona in southwest Wyoming. Twenty-two of the thicker beds contain 127 billion tons of trona. Bed 1 is located at 3,500 feet below the surface and bed 25 is at 800 feet in depth.

Beds 1-18 are composed predominately of the "maple sugar" type of trona with occurrences of halite. Beds 19-25 are halite free and consist mostly of "root beer" type trona.

The area in red on the map is today's location of the trona deposits. Remains of the volcanic ash can be found in some areas that are shaded blue. White Mountain near Rock Springs is evidence of this ash.

Mining

These underground deposits of trona remained hidden until the late 1930's. Mining of this deposit began a decade later.

Today, FMC, General Chemical, OCI and Solvay are the four trona mining companies in Wyoming. OCI mines trona from beds 24 & 25 at about 800 feet underground. The three other companies mine in bed 17 at a depth of 1,800 feet.

Trona mining occurs by using electric mining machines. Every company uses either a bore miner or a continuous miner to remove the trona ore. Some companies will also use a long-wall mining machine to mine the ore. After mining, the trona is transferred, via shuttle car and conveyor to the skips for transport to the surface.

Once on the surface, the trona is processed into soda ash (sodium carbonate, Na₂CO₃). This process involves calcining the trona, dissolving, filtering, evaporating and drying. Approximately one and half pounds of trona ore will result in 1 pound of soda ash.

—over—

