

# Connecting Element Names with the Names of U.S. Towns

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It is well known that some towns in the United States have unusual names. Notable place names might include: Santa Claus, IN; Rabbit Hash, KY; Okay, OK; George, WA; and Sandwich, IL. Chemical terms, too, are perhaps surprisingly well represented with many towns named after minerals, elements, or various chemical concepts. List 1 gives a few examples (1). The names of common metals, such as silver, gold, and copper, have also been used in various forms to name hundreds of towns from coast to coast in the United States. Thousands more geographical locations (lakes, creeks, rivers, valleys, bays, etc.) include elements in their names (e.g., Iodine Creek, ID; Aluminum Pond, NY; Uranium Peak, CO; Mercury Lake, MS). While many towns obviously derive their name from regional mineral or metal deposits, others have been named for nonmineralogical reasons.

Presented here are a sampling of U.S. towns with names based on the chemical elements (1–4). While the focus is on towns with single-word element names such as Carbon and Gold, rather than Carbon Hill or Gold Valley, a few of the latter type have been included because of their interesting chemical or mineralogical history. Some of these towns are now deserted and no longer the thriving mining towns of yesteryear; many, however, may still be found on a U.S. road atlas (but they may not be listed in the index). Information for some towns is scarce; when available, references to online sources have been provided.

Teachers may find this sampling a convenient starting point for student projects to further investigate these and other similarly named areas in their region. Many other sources are available for students to research towns or other geographical areas with chemical names. A quick scan of a standard U.S. road atlas index (2) revealed the towns of Saline, MI; Nitro, WV; Limestone, AK; Bauxite, AR; Galena, IL; and Gypsum, KS. Local museums and historical societies, often accessible online, often provide additional information. The U.S. Board on Geographic Names Web site (1) has an extensive and searchable database for finding locations by name. For example, an online search produced some 2000 locations with “gold” in their names. Interesting student projects might include locating towns (and other areas) in a school’s county, state, or region with chemical names, determining which names reflect local geological resources, describing the chemistry behind the mineralogical extraction and refinement, and explaining the economic and environmental impact on the town or region. A class project might also involve collecting photographs from online sources,

visiting nearby towns, and interviewing long-time residents (in person or by email). Understanding the origin behind the naming of these towns provides students with an interesting way to connect chemistry with U.S. history and geography.

## Towns’ Names, Locations, and Historical Overviews

### Antimony, Utah

Settled in 1873 by cattle ranchers, the town was first called Coyote. In 1880, the mineral stibnite ( $\text{Sb}_2\text{S}_3$ ) was discovered and the antimony in the ore was used to make bullets and arrowheads. Mines opened, and by 1916 more than 200 settlers were employed in mining and smelting operations. The name was changed to Antimony in 1920. Located in northern Garfield County, 40 miles north of Bryce Canyon, it was once the home of outlaw Butch Cassidy. Today, Antimony is a quiet ranching and vacation community (5).

### Arsenic Tubs, Arizona

Located on the San Carlos Apache Reservation in Graham County, Arsenic Tubs is named for the mineral hot springs containing “varying amounts of arsenic, barium, cadmium, fluoride, copper, iron, zinc, mercury, and several other beneficial minerals” (6) and the naturally occurring “tubs” in the local rocks.

### Barium Springs, North Carolina

The first settlers to explore the area (located about 40 miles north of Charlotte, NC) in 1775 discovered several mineral springs, the largest containing barium salts. Initially it was known as Poison Springs, because cattle refused to drink the water. The water was first analyzed in the late 1890s and found to contain “17 Troy grains [ $\sim 1.1$  g] per United States gallon of barium sulphate and chloride, phosphoric acid, and iron” (7) and a company formed to market what was believed to be “healthy” water from the barium spring. The company called itself The Great Human Repair Shop and shipped its Barium Rock Water throughout America and across the Atlantic, and continued to do so until the end of World War I (7). The campus of the Barium Springs Children’s Home encompasses almost all of the current town.

### Boron, California

The town of Boron can be traced to the discovery of borax deposits in 1872 in California’s Death Valley. The Pacific Coast Borax company (renamed U. S. Borax) used teams of twenty mules to haul wagon loads of borax through the remote desert. The region supplies nearly half the world’s demand for refined borates. The name Boron was adopted in 1940. The 2000 movie *Erin Brockovich* was filmed in Boron (8).

### Bromide, Oklahoma

A gathering place for early Native Americans because of its “healing waters”, the area was settled by Judge W. H. Jackson in the early 1900s and initially named after his daughter. Renamed Bromide in 1906, it soon became a prosperous health resort.

List 1. Some U.S. Towns with Chemistry-Related Names

Alloy, WV	Crystal, ND	Ozone, AR
Acid, MO	Electron, WA	Potash, AL
Alkali, NV	Ether, NC	Phosphate, TN
Alum, TX	Faraday, WV	Pyrites, NY
Calcite, MI	Gasoline, TX	Silica, MN
Cyanide, MT	Ion, IA	Sugar, CO
Carbonate, SD	Kelvin, ND	Water, MO
Graphite, NY	Nitrate, MT	Zirconia, NC

Bathhouses and swimming pools filled with mineral waters attracted tourists until 1930, when the town declined. Today, Bromide is home to ~100 residents. The mineral springs are now closed to the public and are on private property (9).

### Calcium, New York

A small, unincorporated hamlet in Jefferson County with a current population of around 3000. However the town was not always called Calcium. Formerly known as Sanford's Corner, residents' mail was often sent by mistake to Stanfordville, NY. In the early 1900s, Madison Cooper, apparently irked by many personal postal misdirections, petitioned successfully to change the town's name. Being involved in cold storage and refrigeration that, at the time, used calcium chloride, Cooper chose to rename the town Calcium not only to reflect the chemical used in his profession, but in hopes of solving his lost mail problem because no other U.S. town had that name (10).

### Carbon, Wyoming and Carbon, Texas

One of a dozen or so towns named Carbon that are located mostly in the coal-rich Midwest, Carbon, WY, grew to a population of about 3000 residents, with a state bank, newspaper, and seven active mines (11). Today, little remains from this old mining town other than a cemetery and foundations. The town of Carbon, TX, was first settled in 1881. It had a gin, a lumberyard, a school, a bank, several churches, a Masonic lodge, and 600 residents by 1904. The *Carbon Herald* was the local newspaper. A population of ~200 was reported in 2000 (12). Carbon, IL has a prominent pink water tower.

### Chloride, Arizona and Chloride, New Mexico

Located in northeastern Arizona within the Cerbat Mountain Range, Chloride was named after silver chloride found in minerals in the region's hills. Mining began in the 1860s; at one point the town boasted over 75 mines. As of 2005, Chloride had ~150 residents. The Chloride post office has been in operation since 1893, making it the oldest continually operated post office in Arizona (13). Chloride, NM is largely uninhabited (14).

### Cobalt, Idaho

Named for rich cobalt deposits in this mountain region west of Salmon and 135 miles northeast of Boise, mining began in Cobalt in the late 1890s and continued intermittently until 1982. The primary cobalt ore was cobaltite (CoAsS); the Blackbird cobalt and copper mine was sited on one of North America's largest cobalt deposits. In 1993 a government public health assessment of the area warned of heavy metal water contamination resulting from mining operations (15); only 13 residents remained at that time.

### Copper, California

About 60 miles southeast of Sacramento lies the old copper mining town officially called Copperopolis, but known to locals simply as "Copper". While searching for gold and silver in Calaveras County in the 1860s, Hiram Hughes discovered a reddish-colored ore known locally as "iron rust". After assaying, he found the mineral contained copper with a value of \$120 per ton. During the Civil War, the ore was taken to Stockton and shipped by river to San Francisco, where it was loaded onto sailing ships and taken around Cape Horn to the smelters in Boston, New York, and Philadelphia. The copper was used to

make bullets for the Union Army. Copper ore totaling over 30 million kg was mined between 1861 and 1946 (16).

### Fluorine, Nevada

Originally an old mining camp, Fluorine boomed briefly into a town in Nye County east of Rhyolite and Gold Center in southern Nevada bordering California near Death Valley. Named after the adjacent Fluorine Mining District, the town had its own post office from May 1908 to July 1909 (1).

### Gold, Texas

This town was founded in 1869 by the families of two German brothers, Jacob and Peter Gold, who both died of cholera shortly after arriving in the United States in the 1850s (12).

### Gold Hill, Colorado

Rich in gold and tellurium, Gold Hill boasted over 1500 residents in the mid-1800s. Today, several hundred residents live in the town that still has no traffic lights or paved streets (17).

### Iron, Minnesota

A town in northeastern St. Louis County in an area known as the Iron Range, Iron, MN is one of a series of small, former iron mining towns. Today, the low-grade silicate iron ore taconite is mined in the region (18).

### Krypton, Kentucky

This small village is tucked away in mountainous Perry County, which possibly led to its name because krypton means "hidden". Clark Kent would consider it an appropriate warning that only a few miles away lies the town of Hazard, KY (1).

### Lead, South Dakota

Officially founded in 1876 after the discovery of gold, Lead is the site of the Homestake mine, the largest, deepest, and most productive gold mine in the Western Hemisphere before it closed in 2001. Locals pronounce the town's name as "leed" (19).

### Leadville, Colorado

In 1874, gold miners observed that a heavy sand was slowing their attempts to recover the gold. The sand contained cerussite (PbCO<sub>3</sub>) with a high silver content. Following the mineral to its source, miners' discovery of new silver and lead deposits set off the Colorado silver boom in 1877. Because many other towns had "silver" in their names, Leadville was adopted instead. Within a few years, it became one of the world's largest silver towns with a population of more than 40,000 (20).

### Lithium, Missouri

Founded in 1882, this Perry County village has a total area of just 4983 m<sup>2</sup> (1.2 acres)—the municipality with the smallest land area. Named after lithium carbonate discovered in local spring water, according to a 2000 census it is now uninhabited (21).

### Manganese, Minnesota

This is an old mining village in Crow Wing County, near the iron mines of the Cuyuna Iron Range (22).

### Mercury, Nevada

From 1951–1962, Mercury was a town in the Nevada atomic testing site where hundreds of test explosions were conducted.

Anecdotal evidence suggests Mercury was named by an unknown miner working in the Calico Hills mining mercury-bearing ore in the 1850s. The route he traveled was called Mercury Road and the surrounding area became known as Mercury (23). Originally created to house military personal, Mercury grew to have its own post office, movie theater, and bowling alley. Demonstrators in the 1960s occasionally visited Mercury to protest war and the use of nuclear weapons. When the McDermitt mine opened in 1975, Nevada became the nation's leading producer of mercury.

### Neon, Kentucky

Neon was originally established in 1913 as a trading center to serve the nearby coal towns. Though the origin of its naming is obscure, its Greek meaning ("new one") would certainly be appropriate for a new town. Neon merged with the town of Fleming in 1978 to form Fleming–Neon, located in northeast Letcher county, near the Virginia border (24).

### Nickel, Texas

Located 12 miles northeast of Gonzales, Nickel—sometimes spelled Nickle—is a ghost town today, but still can be found on most maps. The 1948 census listed 25 people (25).

### Platinum, Alaska

Sited on the Bering Sea coast, the town was established shortly after traces of platinum were discovered by Walter Smith in 1926. Between 1927 and 1934, several small placer mines operated on creeks in the area. Some 85 kg of platinum were mined over that period, worth ~\$1700 per kg. A big strike in 1936 brought a stampede of prospectors searching for "white gold". By 1975, over 15,000 kg of platinum had been mined at the site. Although mining ceased in 1990, it has been estimated that platinum reserves of another 15,000 kg remain. The population was 41 at the 2000 census (26).

### Radium, Colorado and Radium, Kansas

Radium is a small, rural community in southwest Colorado, where carnotite ( $K_2(UO_2)_2(VO_4)_2 \cdot 3H_2O$ ) was mined in the early 1900s as a source of radium, a decay product of all uranium ores. Samuel Lind studied extraction and refinement of radium from carnotite while working for the U.S. Bureau of Mines in their Denver labs in the early 1900s. Lind, who was given 0.5 g of radium to study, was unaware of its danger at the time and regularly handled the material with his fingers. His skin was burned so badly that his fingerprints were removed, but he apparently suffered no long-term illness from the effects of handling the radium, and died from drowning at the age of 86 (27). Several other U.S. towns are also named Radium, but the origin of their names is less documented. In Radium, KS, the Kansas Radon Program at Kansas State University took advantage of the unique name and began a campaign to promote radon testing throughout the state. Almost all of the 26 tested structures in Radium, KS (90% of the buildings) were found to have levels of radon within the range expected for Stafford County, indicating a moderate risk of elevated radon levels (28).

### Radium Springs, Georgia

Known as the location of one of the "seven natural wonders of Georgia", this town is home to the largest natural spring in the state. Some 265,000 L  $min^{-1}$  of deep-blue water empties into the Flint River. Originally called Skywater by Creek Native Americans

and later Blue Springs by early Albany residents, it became known as Radium Springs when developer Baron Collier tested the water and found traces of radium, thought to be a healing substance at that time. The water temperature is 20 °C year round (29).

### Silver, South Carolina

This community was named for John S. Silver, a railroad investor (4). It is known for its abundance of Carolina Bays—mysterious elliptical ground depressions that are concentrated along the Atlantic seaboard—rather than any mineral connection. Little more than a crossroads today, with ~140 residents (30), it was hometown to 1950s tennis champion, Althea Gibson (31).

### Sodium, Wyoming

Named after nearby Soda Lake, Sodium was an early railroad station by the town of Natrona, west of Casper, in Natrona County. Natrona clearly derived its name from natron, the naturally occurring mixture of hydrated sodium carbonate, sodium bicarbonate along with small quantities of sodium chloride and sodium sulfate. Wyoming is known as a commercial source of trona ( $Na_3H(CO_3)_2 \cdot 2H_2O$ ), which was discovered near the Green River in 1938, and has the largest deposit in the world (32).

### Sulphur, Louisiana

In 1867, geologist Eugene W. Hilgard surveyed the state's oil and mineral resources and found high levels of sulfur from soil borings west of Lake Charles next to the Texas border. The Calcasieu Sulphur Mining Company formed 3 years later. In addition to the discovery of sulfur deposits, the 1870s construction of the Louisiana Western Railroad led to the creation of the city of Sulphur. Digging shafts to the sulfur buried beneath several hundred feet of "muck and treacherous quicksand filled with hydrogen sulfide" proved difficult and dangerous throughout the 1870–1880s, and many miners were killed (33). After Hermann Frasch revolutionized the sulfur mining process in 1894, sulfur was safely extracted by pumping superheated water down into the deposit, melting the sulfur, and pumping it to the surface (33).

### Telluride, Colorado

Prospector John Fallon registered the Sheridan mine with the Silverton County Clerk in 1875, a claim that proved to be rich in zinc, lead, copper, iron, silver, and gold. The ensuing town of Columbia, established in 1880, was confused with another mining camp, Columbia, CA, so the name was changed to Telluride. This name was probably derived from tellurium, which is often associated with rich mineral deposits of gold and some silver, although the element was never actually found in the Telluride mountains. Another more colorful theory suggests that the town was named for the famous send-off "To-hell-u-ride!" given to hopeful prospectors heading out to seek their fortune (34).

### Tellurium, Colorado

The mining town of Tellurium was started in the mid-1870s but was already a ghost town by 1880. In its heyday, an expensive mill was built and an elaborate town site was laid out. There is not much left today aside from a few crumbling cabins (35).

### Tungsten, Nevada

This small mining town in the Humboldt River Basin in the northern part of the state was rich in tungsten (36). While searching for silver ore in 1914, Emil Stank discovered scheelite

(CaWO<sub>4</sub>) in the brownish-white sands. During World War I, tungsten became a sought-after metal and in 1917 Stank began mining. By the close of mining operations in 1958, over 3 million tons of ore had been produced. At its peak, Tungsten was the second-largest town in Pershing County, with a post office, elementary school, community hall, and library (37).

### Vanadium, New Mexico

This small mining town in southwest Grant County in the foothills of the Pinos Altos Mountains was named for the mineral vanadinite, Pb<sub>5</sub>(VO<sub>4</sub>)<sub>3</sub>Cl, found in the region (22). Silver, lead, copper, and zinc were also mined. According to some sources (e.g., 38) Marie and Pierre Curie visited New Mexico and Colorado in the 1880s to buy tailings from the vanadium mill site west of Telluride along the San Miguel River. The Curies were supposedly offered fresh samples and discovered radium in the ore. This popular myth, and various versions, can also be found on many Web sites. Marie met and married Pierre in 1894. Her first trip outside Poland was to Paris to study in 1891, while her first of two U.S. trips was in 1921 (39) when President Harding presented her with 1 g of radium in recognition of her service to science (40).

### Zinc, Arkansas

Located in eastern Boone County, Zinc and the area around it prospered during the late 1800s–early 1920s because of significant mineral deposits, chiefly silicate of zinc. Purportedly it was the source of the best-grade slab zinc that could be smelted from virgin ore (41). The town's population was 76 in the 2000 census.

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