produced in commercial quantities are manganese, vanadium, molybdenum, cobalt, platinum, and palladium. Turquoise has also been produced for semiprecious gem stones.

The county has also produced considerable tonnages of certain industrial minerals. Production statistics of these minerals are not available, but from information gathered in the field past production is estimated as follows: Limestone and dolomite, 1,500,000 tons; gypsum, more than 1,000,000 tons; silica sand, 200,000 tons; borates (colemanite), 200,000 tons (B_2O_3 content about 20 percent); and small amounts of rock salt and feldspar. Large reserves of the foregoing industrial minerals occur in the county, and while some of the deposits have little commercial importance at the present time on account of transportation difficulties and distance from consuming centers, they constitute valuable sources of supply for future needs.

Extensive reserves of magnesite occur in the St. Thomas district, but the material contains too great a percentage of impurities for commercial use. To utilize this magnesite on a large scale as a source of magnesium or for other purposes, research work is necessary.

In February 1937 the writer estimates that 360 men were directly employed in the mining industries of the county; two-thirds of these were employed in metal mining and one-third in the production of nonmetallic minerals.

ALUNITE DISTRICT

(Gold)

The Alunite district is in central Clark County 3 to 5 miles west of Boulder City, the nearest railroad point. In 1908, gold was found here by Robert T. Hill, and the Alunite Mining Co. was organized to prospect in this area. The country rock is generally alunitized, and it was thought that because of the similarilty in rock alteration to the Goldfield district important gold deposits would be found. Although considerable exploration was done, this company did not find anything of importance.

The alunite of potash variety is widely disseminated in the country rock as well as in small veins. The district has been examined on several occasions as a source of potash, but on the average the alunite is too low grade to be of commercial importance at present. Samples taken by Gale 6/ indicate that the average K_2O content is probably 2 1/2 to 3 1/2 percent.

There is no record of production from this district, but the Quo Vadis property is reported to have made several small shipments of very high grade ore. This property was first worked in 1915 by a company called the Quo

6/ Gale, H. S., in Phalen, W. C., Potash Salts: U. S. Geol. Survey Mineral Resources, 1915, pt. 2, 1917, pp. 111-112.

Vadis Gold Mining Co. In February 1937 a small company called the Boulder Canyon Gold Mining Co. was preparing to prospect the Quo Vadis property.

Quo Vadis Group

The Quo Vadis property comprises a group of five unpatented claims owned by E. W. Clark, of Las Vegas, Nev., and associates.

Development work consists of a 1 1/2-compartment vertical shaft 90 feet deep and an adit 300 feet long. Mining equipment includes a Gardner-Rix compressor (6 by 6 inches) driven by a Buick automobile engine, a 15-horsepower Fairbanks-Morse geared hoist, mining tools, and blacksmith shop.

Rich stringers of free-milling gold ore occur in biotite monzonite formation. The gangue is chiefly quartz and calcite stained with manganese. A small amount of silver is associated with the gold.

ARDEN DISTRICT

(Gypsum, Silica Sand)

Gypsum deposits occur in the Spring Mountains 5 to 13 miles west of Arden, Nev., a station on the Union Pacific R.R. Gypsum was mined in this locality by the Arden Plaster Co. from about 1909 to 1919. In 1919 the holdings of the Arden Plaster Co. were purchased by the United States Gypsum Co., and the latter company operated until 1931, when the mine and mill closed because the deposit was exhausted. The plaster mill at Arden is still intact, but much of the equipment is either in poor condition or obsolete. In 1925 the Blue Diamond Corporation, Ltd., began mining a gypsum deposit 13 miles westerly from Arden. This company has operated steadily and in 1936 was the only active producer of gypsum in the district. Adjoining the Blue Diamond mine is the Mateucci gypsum deposit, which has never been exploited. This property is reported to contain large reserves of gypsum comparatively free from anhydrite and of excellent grade.

Statistics on the production of gypsum from the Arden deposits are not available, but judging from the extent of the workings production has probably exceeded 1,000,000 tons.

Unlimited reserves of silica sand suitable for molding purposes occur west of Arden. Molding sand has been produced on a small scale from this deposit by the Arden Silica Co. for several years.

Blue Diamond Corporation, Ltd.

The property of the Blue Diamond Corporation, Ltd., comprises about 1,000 acres, one-third of which is covered by a gypsum deposit. The company employs an average of 35 men in the production of about 300 tons of gypsum per day. The gypsum is crushed and screened at the mine and is shipped to southern California for use in cement and building industries.