W.O. VANDERBURG
1937

189 Item 7

0410 0007

I. C. 6941

Wet weight	73,400		
Sacks (666)	392		
	73,008		
Less Moisture 6.2%	4,526		
	68,482	equals 34.241 tons at $208.84	$7,150.89
Freight, at $10.70 per ton		$392.69	
Sacks returned		2.68	
Hauling, at $1.75 per ton		64.22	
Royalty, 15 percent		1,003.69	1,463.28
Net proceeds			5,687.61

The royalty of 15 percent on this shipment of ore is less than the royalty payment shown in the table, because in this particular case the lessees agreed to do a certain amount of "dead" work in return for a reduction in the royalty.

The haul to Kinkead Siding 11 miles from the property is done under contract at $1.75 per ton. The above shipment represents the best shipment of ore from the district. The average value of the ore has been $25 per ton.

According to J. H. Miller, the material in the dumps will average $5 per ton. If the ore is screened through a 1/2-inch screen the undersize will average $12 per ton. The fines constitute about 25 percent of the dump material. The mine dumps contain, roughly, several thousand tons.

With the present stage of development in the district, there is not sufficient tonnage of ore in sight to justify the expense of erecting a mill.

0410 0007

AURORA DISTRICT

Aurora, known in the early days as the Esmeralda district, is in western Mineral County, 3 miles east of the California-Nevada boundary line and at the head of Aurora Canyon, which is tributary to Bodie Canyon. Aurora is 30 miles by automobile road southwest of Hawthorne via Fletcher's Station. The altitude of Aurora is approximately 7,400 feet above sea level. The area is quite mountainous, and during the winter months snowfalls are sometimes heavy so that the camp is inaccessible by automobile. Mining, however, can be carried on the year round.

Aurora is supplied with electric energy from the high-tension transmission line of the Mineral County Power System.

Water for milling is available at the Prospectus drainage tunnel at Gregory Flat and at Tamarack Springs, which are reported to have a flow of 4 miner's inches. Tamarack Springs are at an elevation of 9,000 feet and, according to a survey, the water can be carried to the town by a gravity pipe line 8,300 feet long.

Veins carrying gold and silver were discovered here on August 26, 1860, by E. R. Hicks and party while they were hunting for game. Shortly after the discovery a spectacular rush ensued, and the camp of Esmeralda was established on Gregory Flats. Later, the town of Aurora was established several mines distant from Esmeralda camp. By an act of the First Territorial Legislature, November 25, 1861, Esmeralda County, named after the mining district, was made one of the nine original counties of Nevada, with Aurora as the county seat. The town of Aurora was substantially built, and a number of the houses and stores were constructed of brick and masonry. At present most of the buildings are in ruins, and the general atmosphere of the camp is one of neglect and decay.

In 1864, Aurora had a population of nearly 10,000, but by 1869 the bonanza ore near the surface became exhausted and a considerable part of the population moved to Virginia City. The mines, however, continued to produce up to 1882.

In the early days as many as 17 mills were operating in the district at one time. These mills employed stamps for crushing and the Washoe pan process for recovering the values. Compared with modern processes, the recovery in these early-day mills was low, and the tailings that were available were subsequently cyanided in 1901 and 1902.

In 1912 the Aurora Consolidated Mines Co. was incorporated. This property was purchased in 1914 by the Goldfield Consolidated Mines Co., which erected a 500-ton mill equipped with 40 stamps, each weighing 1,750 pounds. Primary crushing was done with the stamps and fine grinding with 3-tube mills. Countercurrent cyanidation was employed to recover the values. After about 3 years operation the mill was dismantled and the equipment sold.

At present there are two small mills at Aurora. One is a 10-stamp affair erected in 1912 and owned by W. J. McKeough of Aurora. In 1935, the mill was operated for a short time by the Western Consolidated Mines Co. This company ran into financial difficulties and closed down. Mill equipment consists of two 5-stamp batteries (1,050-pound stamps), a ball mill 5 feet by 4 1/2 feet, 2 amalgamation plates, a Dorr simplex classifier and 2 Groch flotation cells. The other mill is a Kincaid mill with a capacity of 2 tons per day and is owned by Freid Walker of Aurora.

In recent years mining activity has been confined to small leasing operations, and the small amounts of ore produced were either shipped to smelters or milled locally. In June 1936, a crew of four men, under the direction of Walter Trent, was employed in sampling old workings.

As in all early-day mining camps, the records of the production of Aurora are incomplete. According to the records of the Wells Fargo Co., the bullion shipped through them up to 1869 had a value of $27,000,000. In addition, there is a record of $2,365,969 shipped without insurance; therefore, it can be stated safely that the output of the district between

the years 1861 and 1869 was about $30,000,000. This sum appears conservative if statements of production from some of the high-grade stopes are considered. From 1910 to 1920 the district produced $1,882,861 in gold and 128,808 ounces of silver, valued in all at $1,974,290, according to Mineral Resources of the United States. Production from 1915 to 1917 made by the Goldfield Consolidated Mines Co. is shown in the following table:

TABLE 3. - Mineral production of Aurora District, Mineral County, Nev., 1915-17, inclusive.

Year	Ore and tailings, tons	Average value, per ton	Total value
1915....	141,421	$3.734	$528,097.00
1916....	173,270	2.892	501,041.14
1917....	175,477	2.315	406,277.52
Total.	490,168	2.93	1,435,415.66

The mineralized belt is about 2 miles long and 1 mile wide. Total workings comprise about 20 miles. The deepest shaft is the Del Monte, which is 900 feet deep. The depths of other important shafts are: The Gladiator, 450 feet; the Monarch, 400 feet; the Durand, 500 feet; and the Junietta, 450 feet. The Prospectus tunnel near the former mill site of the Goldfield Consolidated Mines is 1 1/4 miles long.

The principal holdings in the area comprise a large group of patented claims owned by the Goldfield Consolidated Mines Co. Other claims in the district are owned by the West End Mines Co., the Aurora Consolidated Mines Co., and W. J. McKeough of Aurora. In addition, individuals or groups of individuals own from 2 to 7 claims each. Many of the claims are small, being 1,500 feet long and 200 feet or less wide.

The formations in the Aurora area are volcanic, probably of Tertiary age, which have flowed out on a basement of porphyritic granite. The oldest flows are latites, with associated andesites, on top of which is a rhyolite flow; above the rhyolite is a flow of basalt.

The ore deposits are quartz veins that fill fissures in the latite and andesite. Some of these are simple quartz veins that range from 2 to 30 feet in width, while others are made up of an interlacing network of small veins. The vein filling is principally fine-grained white quartz occurring in bands and small druses. The veins vary in strike, but in general the strike is northeast-southwest with dips of 45° to 50° to the south.

The rich ores are characterized by irregular streaks made up of quartz, adularia, tetrahedrite, pyrite, chalcopyrite, and a soft bluish green material supposed to be a combination of gold, and possibly silver, with selenium. Free gold is present in the richest ores. The values are principally gold, with some silver.

In conclusion, it can be stated that the general impression gained by the writer in a brief visit to the camp is that the district may be worth investigating from the viewpoint of working the properties on a leasing basis. The area contains numerous narrow interlacing veins that are ore-bearing over a large area. A condition such as this in an old camp from which the cream has been skimmed naturally lends itself to the leasing system, whereby a number of men, working separately or in groups of two or three, can mine ore from comparatively small veins unsuited for mass production, provided metal prices are favorable, an equitable royalty schedule and fair milling rates are established, and the lessees can have their ore treated in a local custom plant, which they themselves cannot afford to erect. Some of the best ground could be reserved for company operations. The writer was informed that a custom mill equipped with 20 stamps operated in the district from 1906 to 1911. This mill was erected by J. S. Cain and employed amalgamation with subsequent cyanide leaching of the amalgamation tailings. Ore was ground to 30-mesh. The mill ran entirely on custom ore and had a capacity of 60 tons per day. The increased price for gold is an important factor in considering an investigation of the possibilities of the district.

The writer has been informed that a number of the old mine dumps carry values from $6 to 11 per ton and that approximately 35,000 tons of such material is available in 12 different dumps. This information would have to be checked by thorough sampling.

BASALT DISTRICT

Basalt is a station on the narrow-gage railroad that operates between Mina, Nevada, and Keeler, Calif. It is 22 miles west of Coaldale, Esmeralda County, Nev., and is accessible from this place by an excellent highway.

A deposit of diatomaceous earth approximately 3 miles long and 1/2 mile wide occurs in the vicinity of Basalt. This deposit has been prospected by a number of shafts and open cuts. The deepest shaft is 135 feet and the bottom is still in diatomaceous earth. The depth of the overburden, which consists of desert wash and a few basalt boulders, is not more than a few feet. Although this occurrence of diatomaceous earth has been known since 1905, only small shipments have been made. The last shipments were made in 1927 and 1928, when about 5,000 tons of the material was shipped to Los Angeles for filtering and construction purposes. For all practical purposes the supply of diatomaceous earth is unlimited.

Somerville Group

Robert D. Somerville of Basalt owns a group of 16 claims of 40 acres each, covering part of the deposit. The earth could be mined easily with a power shovel, and, in one place the distance to the railroad is not more than 1/4 mile. When shipment is made by rail, the material would have to