and several thousand feet of workings. Equipment includes an assay office, 25-ton mill, blacksmith shop, and camp building. In 1936, a portion of the property was under lease to W. B. Worlock, who had made two small shipments up to October.

At the Gold Pen mine the vein is said to be 3 to 8 feet wide and separated from the walls by sheets of alunite from 3 inches to 1 foot wide. Values are gold and silver in a quartz gangue. The enriched zone extends to a depth of 250 feet from the surface.

Lone Star Group

The Lone Star group of eight unpatented claims is owned by E. M. Mims, of Sacramento, Calif., and adjoins the Randall property. Development consists of a shaft 550 feet deep and about 1,000 feet of underground workings. Mining is done by hand.

Geological conditions on this property are essentially the same as on the Randall group. Production has been about $25,000 in gold and silver.

RAWHIDE DISTRICT

The Rawhide or Regent district is on an irregular range of hills at the south end of the Sand Springs Range in northeast Mineral County near the border of Churchill County. Fallon in Churchill County is 50 miles northwest, and Schurz, the nearest shipping point, 29 miles east.

Mining locations were first made in the area in 1906. With the finding of some high-grade gold ore and after considerable flamboyant advertising, a rush to the district took place in 1908 that raised the temporary population to 4,000 people. On September 4, 1908, a fire destroyed a large part of the business section of Rawhide, which caused a loss of several hundred thousand dollars. No large mines have ever been developed in this area and the principal production of the camp has been derived from leasing operations. In the early years of the camp as many as 50 sets of lessees or leasing companies were at work at one time. Nearly all the ore was shipped for treatment.

In 1909, two mills of unusual type were erected in the district. One was called a Tadmor and the other a Cannonball mill. The Tadmor mill employed a heavy muller actuated by an overhead eccentric bearing, which gave a crushing movement similar to that of a gyratory crusher. The muller weighed 8,000 pounds, and crushing was effected by the action of its weight upon a die. This mill is reported to have had a capacity of 20 tons per 24 hours. Concentrating was done with Wilfley tables.

The second mill is reported to have had a capacity of 30 tons per 24 hours, from 1 inch to 80-mesh, crushing either wet or dry. The crushing device consisted of a flat iron pan with three rings at increasing distances from the axis of rotation. Each ring carried a number of chilled iron balls,

...in size for each ring but diminishing in size from the inner to ...outer ring. The balls were held in place under pressure by overhead ...so designed that the pressure on each ring could be changed inde... ...ntly of the other two. The ore was fed to the center of the machine ...as discharged at the periphery. Concentrating was done by amalgama...

Both these mills operated only a short time and are mentioned here ...because of their metallurgical interest than because of their economic ...tance. Several other mills using stamps for crushing were erected in ...district in the early days. All of the mills have been dismantled.

The largest holdings in the district are owned by the Scheeline estate, ...controls 17 1/2 patented claims, and the Grutt brothers, who own 19 ...most of which are patented.

Development work consists of a number of shafts and tunnels, the deepest ...being 600 feet with a winze from the bottom level 120 feet deep. Judg... ...from the mine dumps, total underground workings will comprise at least ...miles.

The formations in the area are rhyolite, dacite, and andesite. The ...ccurs in a network of veinlets that impregnate the country rock. The ...lization appears to follow incipient fissures, mainly in kaolinized ...dite. In places the kaolinite material carries good values. The ore ...als are native gold alloyed with silver, argentite, and cerargyrite.

At the time of the writer's visit in June 1936, several lessees were ...in the camp.

Production of the district from 1908 to 1934 is shown in table 6.

Leonard Lease

For the past 18 years W. H. Leonard of Rawhide has shipped 15 to 20 ...of ore annually, which had a value of from $50 to $1,200 per ton. In ...Leonard leased on the Truett property, owned by the Scheeline estate.

The royalty paid by Leonard on the net smelter returns is as follows:

Value of ore	Royalty, percent
$50 or less	10
$50 to $400	15
$400 or more	20

C.C.C. 353 samples unadjusted 0.039 oz/au/t
taken at Leonard Lease 0.71 oz/ag/t
± 1917 adjusted 0.031 oz/au/ton
0.40 oz/ag/ton

Mining is confined to working a large mass of low-grade ore that averages about $2.50 per ton in gold. According to Leonard, the gold occurs in a number of small fissures in dacite. On the surface the fissured area is 225 feet wide and 700 feet long. By screening the run of mine product through 1-inch screen, Leonard can obtain a product that averages about $100 per ton. Several men are employed, and mining is done by hand. Hoisting is done with a 25-horsepower Western gasoline hoist.

The smelter returns on a shipment of ore made by W. H. Leonard to the American Smelting & Refining Co. on October 18, 1935, gave the following returns:

Metal quotation:	Au	$34.9125		
	Ag	.77		
Settlement assay:	Au	2.425 oz.		
	Ag	7.7 oz.		
	Insol.	88 percent		
Metal payment:	Au at $31.81825			$77.16
	Ag 95% less 0.5 oz. at .77			5.27
				82.43
Treatment charge:	base	3.75		
10% excess over $20.00		2.25 (max.)		
		6.00		6.00
	Net value per ton			76.43
	Pounds			
Wet weight	45,040			
Moisture, less 4.2%	1,892			
Dry weight	43,148	21.574 tons at $76.43		$1,648.90
Royalty before hauling, 15%		$214.57		
Freight at $9.30		209.44		
Emergency freight at $0.40 per ton		9.01		
Hauling at $3.50 per ton		78.82		511.84
Net proceeds				1,137.06

Placers

Placer gold has been found south and southwest of the town of Rawhide. The lack of water necessitated the use of dry-washing equipment, although hand rockers were employed to some extent in the early days. Water for recovering gold with rockers was hauled from wells several miles southeast of the camp.

The best placer diggings were on the southeast slope of Hooligan Hill. Numerous shafts averaging about 15 feet in depth attest the activity in this area in former days. The gravel is composed of angular rock fragments, sand and soil, with few large boulders. The largest nugget found is reported to have had a value of $70.

TABLE 6 - Gold, silver, copper, and lead production from Regent (Rawhide) district, Mineral County, Nev., 1908-35

(Compiled by Charles White Merrill, Mineral Production and Economics Division, U. S. Bureau of Mines)

Year	Placer						Lode			
	No. of mines	Gold		Silver		Total value	No. of mines	Ore, short tons	Gold	
		Fine oz.	Value	Fine oz.	Value				Fine oz.	Value
1908	1	4.40	$91	--	--	$91	9	1,826	6,069.86	$125,475
1909	--	--	--	--	--	--	10	6,197	7,546.59	156,002
1910	5	579.79	11,985	467	$252	12,237	22	12,582	6,538.27	135,158
1911	7	324.25	6,699	271	143	6,842	17	6,013	3,364.65	69,554
1912	2	81.90	1,693	82	50	1,743	19	1,579	1,563.50	32,320
1913	1	8.20	170	10	6	176	13	9,954	4,845.44	100,164
1914	5	201.78	4,171	148	82	4,253	24	18,279	7,523.45	155,524
1915	3	274.70	5,679	166	84	5,763	5	6,973	3,968.80	82,042
1916	1	12.62	261	7	5	266	7	4,371	2,268.56	46,895
1917	2	17.22	356	12	10	366	5	298	423.19	8,748
1918	4	47.55	983	48	48	1,031	8	285	620.14	12,820
1919	5	45.34	937	28	31	968	5	199	677.97	14,015
1920	--	--	--	--	--	--	7	284	807.65	16,696
1921	2	6.60	136	5	5	141	11	93	257.10	5,315
1922	--	--	--	--	--	--	11	237	368.02	7,607
1923	1	2.04	42	1	1	43	8	399	393.62	8,137
1924	1	8.38	173	2	1	174	9	221	178.09	3,681
1925	--	--	--	--	--	--	6	36	123.02	2,543
1926	--	--	--	--	--	--	12	120	93.92	1,941
1927	--	--	--	--	--	--	5	57	119.09	2,462
1928	--	--	--	--	--	--	4	186	272.67	5,636
1929	--	--	--	--	--	--	3	66	82.09	1,697
1930	--	--	--	--	--	--	5	40	52.90	1,094
1931	2	18.29	378	10	3	381	6	116	103.87	2,147
1932	2	32.30	668	24	6	674	9	118	288.01	5,954
1933	5	65.93	1,685	29	10	1,695	8	279	122.94	3,142
1934	2	31.77	1,110	89	57	1,167	8	139	111.88	3,910
1935	4	54.64	1,912	42	30	1,942	8	100	248.26	8,689
Totals		1,817.70	$33,129	1,441	$824	$33,953		71,047	49,033.55	$1,012,368

Continued