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AUSTIN CUSTOM MILL REPORT

By:

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The ores of Austin, Nevada, and tributary districts are silver and gold with a small proportion of associated lead, copper and zinc.

Austin is in the center of the Reese River Mining District located in Lander County, Nevada, on the West slope of the Toyabe Range. It is on the Lincoln Highway in the geographical center of the State. By the Lincoln Highway it is 114 miles East of Fallon, 179 miles East of Reno, 148 miles West of Ely. The 97 mile Nevada Central R.R. connects Austin with the Southern Pacific R.R. at Battle Mountain, Nevada.

Modern highways and trucks have revolutionized the haulage problem. Formerly remote locations are now easily accessible; Austin is well situated for economical operations.

The Austin District has been one of the sensational producers of the West. Its production of $40,000,000 was made in 30 years from ores averaging 300 oz. silver per ton. Original records available today show a production of $20,000,000 from an area approximately 2,000 feet square. The camp was discovered in 1862 and closed down in 1887, after which time only desultory work was done.

The conditions under which this early production was made were primitive. Milling costs at that time were $30 per ton. No work has been done in this camp since the flotation process was developed. The last mill to operate in Austin made a 50% extraction from an ore regarded as simple today.

On the outskirts of the old bonanza area there is an entire district only partly developed. Low prices for silver and lack of milling facilities prevented the development of the district. The ores on the outskirts of the bonanza production are of a more basic type, lower in silver, not amenable to hand sorting for shipment direct and require concentration. There is, however, a widespread distribution of these ores.

No one owner has had the means to develop enough mill ore in one property to put in sight tonnage sufficient to justify a plant. The geological conditions are such as to cause a great number of comparatively narrow veins to be ore bearing over a large area. A district of this kind naturally lends itself to the employment of a large number of men working comparatively narrow veins or

small mines unsuited for mass production, provided they have favorable metal prices and can have their product treated in a plant which they themselves cannot afford to erect. It is an ideal "leaser" district.

It would be difficult to find anywhere such a large number of silver and gold mines which have had enough work done over a period of years to expose a certain amount of ore. This has all been done with the hopes that some day this ore could be treated at a profit. With modern roads and machinery progress in ore treatment, more favorable metal prices for gold and silver, this day has now arrived.

The following charges made on a recent direct smelter shipment of 450 oz. silver ore show how badly some local treatment of ore is needed:

Smelter charge	$ 7.70 per ton
" deduction	14.59
Sampling charge	4.00
Railroad freight	15.60
Total:	$41.89 per ton

The ores of the district and the area tributary to Austin can be divided into 2 types:

1st - Base metal sulfides combined with silver sulfides.

2nd - Gold ores.

By far the largest production would be of the first type. The first type would require concentration by tabling and flotation with shipment of a high grade concentrate to the smelters.

The second type would require amalgamation of the coarse gold followed by tabling and flotation for the fine gold and accompanying sulfides.

The flow sheet for the first type would in general consist of coarse crushing-ball mill or similar secondary grinding-classifier-tables-flotation.

The flow sheet for the second type would consist of the same coarse crushing plant, followed by stamps for amalgamation with plates, thence to the same ball mill, classifier, tables and flotation used for type 1.

The ores of the Austin district have been tested by the American Cyamid Co. and found ideal for flotation. There are no ores known in the area that would be tributary to the Austin custom mill that should be difficult to treat.

An excellent mill site with Railroad connection is available. With a flow of 30 gallons of water per minute from the mine drainage tunnel and with reuse of water from settling ponds and allowing 1 ton of fresh water per ton of ore there is available enough water by gravity flow to mill 170 tons per day. Additional water now going to waste could be developed in the canyons above the mines and mill. There is unlimited supply of water in the valley below the mill that could be pumped to the mill against a moderate head if at any time in the future the expansion of the plant exceeded our present expectations.

The cost of a new 100-ton per day mill with sampling plant and laboratory would be $80,000. If the Austin Silver Mining Co.'s mill site were used with its foundations, bins and building and its jaw crusher, gyratory crusher, 20 stamps, etc. and all other equipment were intelligently bought in good condition but not new the mill could be completed for $40,000.

Power would probably be generated by Diesels with 200 H.P. installed of 2 H.P. per ton of capacity.

The cost per ton of milling and assaying and testing would probably be about $2.50 per ton.

Appended hereto is a list of 68 points where mill ore can be seen or where if inaccessible, it is known to exist. Such points where a leaser has reasonable expectations of making himself self-supporting have been selected. A leaser always keeps in mind the chances for striking a bonanza and sometimes he does. In giving figures for production present day metal prices were used, namely, $34. per oz. gold and 64 cents per oz. silver.

No definite measurable amount of ore can be demonstrated at any of these locations. They are ore exposures of unknown and undeveloped magnitude in a district that has been famous for its productivity.

An attempt has been made to estimate the number of men that would find employment either as leasers or employees at these points, if these ores were made marketable through a local plant. No claim for accuracy can be made for such an estimate but by assuming that 50% of the showings would be worked we can reasonably expect 100 men to find employment as a result of a custom mill at Austin. With this work in progress some mines will be developed which in themselves will absorb a large proportion of this 100 men.

The NERA unemployment relief rolls of Austin show that they are supporting constantly 26% of the whole population, with average expenditures for this purpose of $1,645.67 per month.

There has never been any consolidation of geological data in this district. Each prospect has heretofore been worked without regard to geological information available on the neighboring property. The present work of the Austin Silver Mining Co. engineers indicates that their work can be most helpful in assisting the small operator or leaser, and such operators who are now working in the district are freely seeking such benefits.

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AUSTIN (proper)

Point No.		Employment Men
1	"Stokes" Properties. Austin Silver Mining Co. 84 patented claims, $20,000,000 production average 200 Oz silver ore - 15 miles workings-stope fills-pillars-lower grade ores left.	10
2	Belle Wilder-King Alfred crosscut. Now being driven to expose 25 veins of productive records at depth of 350 feet. 4 veins already exposed show mill ore and justify development.	20
3	Ophir Shaft - depth 380 feet - partly caved. In favorable ground. Constant applications for lease.	4
4	Union Mine - depth 725 feet, production $3,500,000. With 50 oz silver ore in lower levels when shut down by Stokes who is authority for this statement. Mine not shut down because worked out.	4
5	Lee Kee Tunnel - 300 ft. long. Some production high grade shipping ore with mill ore exposed.	2
6	Leutjen Tunnel - Prosperity claim, 350 ft.long with stopes and drifts. Now operating sorting shipping ore and exposing mill ore.	2
7	Gleason Mine, 350 ft. deep. Vein 1 ft. to 3 ft. wide. Produced and milled ore in 1910. Dumps sorted and produced 500 oz. silver ore.	2
8	Highwater tunnel - some mill ore exposed.	2
9	Roosevelt claim-A.Moore, incline 85 ft. deep, drift 45 ft. 1 ft. veins carrying $35 in lead, silver and gold. Shipped 7 tons $60. ore.	2
10	Jack Pot Mine, produced $82,000. Shut down in 1912, mill was making 50% extraction from a simple ore. Ore not exhausted - very promising mine.	2

AUSTIN (proper) (cont'd.)

Point No.		Employment Men
11	Castle Fraction – Byers – inclined shaft 225 ft. deep. Short drifts reveal mill ore, undeveloped.	2
12	Oliphant–Richardson–Minnie group. Now developing with 2 men – good prospect.	2
13	New York Claim – Kilborn – Cook – incline 300 ft. deep 2.5 ft. of base ore exposed. Stranger incline 200 ft. deep 2 ft. vein base ore. Mill grade.	4
14	Herschell Con. Tunnel 400 ft. long. Considerable stoping high grade ore with expose mill ore.	2
15	Mizpah claim. Several hundred feet tunnels. Shaft 125 ft. deep. Production of some high grade in past with mill ore exposed and favorable conditions.	2
16	Hardy Claim – 1200 ft. workings. High grade shipments in past. Lower tunnel strategic for development with favorable conditions for mill ore.	2
17	Jack Pot Nos. 2 & 4, W. Cummings – 4 veins 1 ft. to 3 ft. wide. Shipped 30 tons 52 oz. ore from 3 ft. vein. Other veins show 6 inches to 1 ft. good mill grade.	2
18	Rundberg Mine – small high grade shipments with some mill ore.	2
19	Laurent–Pedronsini, shipped 40 tons $100 ore. Now developing 2 ft. of high grade ore. Several veins with erratic values in high grade but indicating good tonnage of mill grade.	4

AUSTIN SUMMIT

20	Jack O'Brien Mine. Stringers 4 in. to 6 in. in a 12 ft. zone carrying high grade gold values. High grade ore bunchy. Lower grade never developed.	2

AUSTIN SUMMIT (cont'd.)

Point No.		Employment Men.
21	G. Thorpe Mine (same as 20)	2
22	W. Francis Mine (same as 20)	2

MARSHALL CANYON

23	Dalton Claim - good vein 2 ft. wide mill ore exposed in Dalton tunnel. Some high grade production in past.	2
24	San Jose and Silver Chamber production $2,250,000, same claim.	2
25	Connecting Link Claim. Whitlach vein. Incline 150 ft. deep. The largest vein in the camp.	2
26	Golden Eagle - vein exposed in places 2.5 to 3 ft. mill ore. Several hundred ft. tunnel. Produced in early days.	2
27	Gallaher Mine - tunnel 200 ft. long. Vein 1 ft. wide, 4 inch to 6 inch 400 oz. ore in winze. 7 quartz veins on surface never developed.	2
28	Hodge Mine, narrow stringers high grade ore. 2 tunnels several hund. ft. long. 1.5 ft. mill ore. Dump has 20 tons $30 ore. Mill ore 17 oz. silver $7 gold.	2

SLAUGHTERHOUSE CANYON

29	Kilborn Tunnel 1800 ft. long, several veins 1.5 ft. to 3 ft. wide, exposed mill ore.	2
30	Vigus Mine. Tunnel 75 ft. long. Vein 1 ft. with 4 inches high grade. Production $30,000. One shipment 40 lbs. was 50% silver.	2
31	Con Cummings. Good prospect.	

EMIGRANT CANYON

32	Bray Mine - G. Thorpe. Now working, shaft 100 ft. deep. One 6 in. stringer produced 700 lbs. $4,000 ore and 400 lbs. of $2,000 ore. Low grade ignored.	2

EMIGRANT CANYON (cont'd.)

Point No.		Employment Men
33	Con Cummings – Cassidy Claim – Production $50,000, shipped $2,000 ore, considerable development work.	2

MIDAS FLAT – NEW YORK CANYON

34	Jo Miller Claim, slight past production	2
35	Morris & Cable. Tunnel 1,000 ft. long considerable 200 oz. silver ore produced in early days. Large stopes on Patriot Vein.	2
36	Yellow Dog Claims. 1,000 ft. workings slight production	2
37	Horton Mine – Metacon claim production of high grade in eighties, shut down by water with good ore left.	2
38	Patriot Mine – 500 ft. incline – Production $5,000,000 of 200 oz. ore. Shut down by water in eighties with ore left in mine considerable virgin ground.	2
39	Whitlach Mine. One record of $3,000 of 500 oz. silver ore. Several hundred ft. of workings.	2
40	Maricopa Mine – once operated crude mill at low prices of silver. 550 ft. tunnel. Vein 3 ft. to 8 ft. wide of $30 ore. Should be important producer.	2
41	Watt Mine – 300 ft. incline. 3 levels – vein 4 inch to 1 ft. In 1913 shipped $120 ore.	2
42	San Francisco Mine – W.G.Francis. 2 veins 16 inches wide, incline 350 ft. deep, recently shipped 3 tons.	2

FOLLOWING POINTS PLOTTED ON STATE MAP:

Amador District 5 miles N. of Austin.

43	Amador Mine – Finnegan Tunnel – Shoot of ore exposed and samples by 3 engineers. Length of shoot 80 ft. width 1.8 ft. value 64 oz. silver. 350 ft. of backs. Needs mill – waiting for custom mill at Austin, meantime shipping 450 oz. ore to smelters. This shoot should produce several hundred thousand dollars worth of mill ore. Easy road to Austin. Most	

Point No.	Amador District 5 miles N. of Austin (cont'd.)	Employment Men
43	favorable working conditions. Should be important contributor. Also 1300 ft. tunnel with 2 veins showing mill ore that have produced some high grade shipping ore.	5
	Cottonwood Canyon 8 miles N. of Austin	
44	McGuinness Mine - 11 veins up to 3 ft. wide. Shipped one car of arsenic ore during war. Veins carry $3 to $15 in gold.	2
	Calahan Canyon 18 miles N. of Austin	
45	Pedrnsini - Norman - Anderson - Russell Mine. Bunchy pockets high grade gold ore.	2
46	Gweena Mine - Lemaire Bros. - 12 miles W. of Austin. Now operating sorting shipping ore. Exposing mill ore and ready to contribute to custom mill.	4
47	San Lorenzo Mine - M. Malloy - 16 miles W. of Austin. 90 ft. shaft, 6 ft. vein. Gold, Silver, copper. Second vein 30 ft. wide, only surface development but encouraging assays for large quantity of mill ore. 3 miles from R.R.	2
48	Ravenswood - 30 miles N. of Austin. Rast Mine shipped 250 tons lead ore 36% Pb. 25 Oz. Ag. $5 gold. 1 shipment 13% zinc. 1 shipment 30 tons $30 gold ore.	2
49	Veaches Canyon - 8 miles S. of Austin. Ripple and Comet Claims. High grade shipments. Excellent mill ore exposed 2 ft. vein.	2
	Aberasturi and Mestrechua Claims - 2 ft. vein $25.	2
50	Big Creek - 10 miles S. of Austin. Clifford Mine 10 veins 2 ft. to 4 ft. wide-spotty pockets of high grade 70 oz. silver 60% lead.	
	Moss Mine - 3 veins 1 ft. wide, high grade pockets 60 oz. silver 40% lead.	2
51	Washington Canyon - 32 miles S. of Austin. Warner Mine 4 blanket veins, considerable mill ore, frequent high grade lenses, 1500 ft. workings, some shipments in past of 50 oz. silver ore.	2

Point No.		Employment Men
	GOLD PARK 35 miles SW of Austin	
60	Star of the West - Bowler and Nelson - gold considerable development, 7 miles from Lincoln Highway.	2
	Brown & Coolidge gold - 5 stamp mill	2
	War Eagle - shipped 5 tons $100 ore with mill ore exposed	2
61	R. Brown Mine 25 miles SW of Austin, now producing.	2
62	Peterson Canyon, Oakland owners, vein 2.5 ft. wide. $30 ore now exposed, shipped 10 tons $120 ore.	2
63	Camp Athas Mine, 43 miles SW of Austin, shaft 200 ft. 9 ft. vein. In places $16 ore, 300 tons milled mostly gold.	2
	Jenkins Mine, 45 miles SW of Austin, vein 1 to 3 ft. $10 ore.	2
	Greis Mine - 1.5 miles North of Jenkins Mine Buffalo Canyon, Iron dike, 300 ft. wide with scattered values, little work done but very interesting showing.	2
	NEW PASS 30 miles W of Austin	
64	Little Jumba - D.H.Tandy, 140 ft. incline, vein 3 ft. good mill ore, several veins, small mill with occasional shipments, 26 miles from Austin.	2
65	Happy Days, A. H. Shipway. 25 miles from Austin, several narrow veins, gold, shaft 80 ft. 2 veins average $15 per ton. Past shipments of high grade.	2
66	Beyers & Smith - Thomas W. Mine. Gold. Now operating Home-made mill. 1 vein 2 ft. wide. 125 ft. incline, $30. ore. 19 miles from Lincoln Highway.	2
67	Pitt Estate. Old Gold producer, considerable development and production about $500,000. 1922 to 1928 produced $100,000 of $23 ore. 5,000 ft. of workings 30 miles from Austin.	2

Point No.		Employment Men.
52	San Juan Canyon, 45 miles S. of Austin. McIntyre Tunnel 225 ft. long. 1 vein 2 ft. to 10 ft. wide, high grade pockets lead, silver, zinc.	2
	St. Helena claim patented since 1870. Extension of McIntyre veins. Same conditions.	2
	Easton-Dunstan-McIntyre, same conditions as above.	2
53	Kingston Canyon, 25 miles S. of Austin. Honorine Mine considerable mill ore but planning a mill of their own-cyanide. Linka Mine - some mill ore exposed adjoins Honorine.	
54	Milletts - 46 miles S. of Austin - Gold Mine considerable work. 3 tunnels. Ore erratic. Now operating and shipping ore to Manhattan. Good flotation ore.	2
55	Ophir Mine - 6 miles South of Milletts. Silver. considerable development work. Now under option. Famous old property. Should be producer.	2
	<u>IONE 50 Miles SE of Austin</u>	
56	Shamrock Mine - shipped 30 tons $70 ore. Gold and Silver. Now being operated.	2
	Yellow Cat Mine - gold and silver. Now working. Loose Mine - North of Ione, silver-lead and zinc. Now working, developing considerable mill ore.	2
57	Berlin Mine, famous old producer, several millions, 50 miles S. of Austin. Free milling gold ore, owned by Phelps Stokes, 25 claims, veins 4 ft. wide.	2
58	Penelas Mine, L.D.Gordon, Now developing body of mill ore. Gold and Silver Financially able to build mill.	
59	Ellsworth, 8 miles S. of Ione, 8 ton mill now working.	

Point No.		Employment Men
68	Birch Creek - Birch Creek Mine, 12 miles SE of Austin. 600 to 800 ft. of work. Some sensational high grade gold ore extracted, some mill ore exposed. free gold.	2