AMERICAN FLAT MILL, ORE BIN
(Comstock Merger Mine Mills, Ore Bin)
Gold Hill vicinity
Storey County
Nevada

HAER NV-48-A
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
PACIFIC WEST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
333 Bush Street
San Francisco, CA 94104

HISTORIC AMERICAN ENGINEERING RECORD
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HAER No. NV-48-A

**Location:** One mile northwest of Silver City, Storey County, Nevada. The American Flat Mill Ore Bin is located at latitude: 39.27186, longitude: -119.66183. The coordinate represents the center point of the American Flat Mill Ore Bin. This coordinate was obtained on December 6, 2014, by plotting its location with Geoplaner V2.7 (www.geoplaner.com). The accuracy of the coordinate is +/- 1 meter. The coordinate's datum is WGS 84 (World Geodetic System 1984). There is no restriction on releasing the location to the public.

**Present Owner/ Occupant:** United States Department of Interior, Bureau of Land Management (BLM).

**Present Use:** Vacant.

**Significance:** The American Flat Mill Ore Bin is a contributing resource of the American Flat Mill District, an eight building silver ore processing mill complex. The American Flat Mill is significant under National Register Criterion A for its historical importance as the last remaining remnant of what was once the United Comstock and the Comstock Merger mining operations. The mill and its associated mining activities represented the last large scale underground mining efforts on the Comstock. Other early twentieth century mining activities on the Comstock were either much smaller in scale, or reflected the use of alternate technologies such as open pit mining or dredging. The American Flat Mill is also a contributing element to the Virginia City National Register District under Criterion A.

The American Flat Mill is eligible for listing on the National Register under Criterion B at the local level due to the

early and active participation of Royce Hardy and Alex Wise. These two local men were mining engineers who were involved in the formation of the United Comstock Mines Company and worked with the company until its demise in 1923. Wise began developing the "middle mines" which became a key part of the Comstock Merger operation. The American Flat Mill is the largest remaining physical reflection of their actions on the Comstock.

The American Flat Mill is eligible for the National Register under Criterion C at the national level as an early representative of the International Style of architecture, which stressed the metaphor of form following function, rejection of ornament, and use of modern building materials, including reinforced concrete, structural steel, and large window panels. All of these characteristics are strongly expressed throughout the American Flat Mill.

**Historian:** Written historical and descriptive data and large-format photographs were prepared by David C. Berg, historian for The Ottery Group in August through December of 2014.

**Project Information:** HAER documentation of American Flat Mill is part of the measures to mitigate the adverse effect that will result from demolition of all buildings at the site. The BLM has proposed the demolition of the mill for public safety reasons.

## PART I. HISTORICAL INFORMATION

### A. Physical History

1. **Date of Erection:** 1921-22.

2. **Engineer:** Walter L. Reid, consulting milling engineer; A. J. Weinig, metallurgist; Lee L. Fillius, superintendent of construction; B. P. Little, chief draftsman in charge of engineering office; and Robert McFarland Doble, in charge of power and electrical engineering.

3. **Original and Subsequent Owners, Occupants, Uses:** United Comstock Mines Company, 1922-24; Comstock Merger Mines, Inc.(subsidiary of Gold Fields America Development Company/New Consolidated Gold Fields, Ltd., of London), 1924-26.

4. **General Contractor:** United Comstock Mines Company.

5. **Original Plans and Construction:** Although original plans of the mill are no longer extant, a basic plan and section of the Ore Bin is shown in the *Engineering and Mining Journal*, along with a photographic detail showing the large ore tipple.[1]

6. **Alterations and Additions:** None known.

## PART II. STRUCTURAL/DESIGN/EQUIPMENT INFORMATION

### A. General Description

1. **Character:** The Ore Bin, located at the northeast corner of the facility, is a rectangular structure with massive concrete supports to accommodate twin narrow-gauge railroad tracks and a rotating tipple. The building originally had a structural steel frame covered with a corrugated steel metal roof and two sides to protect the

1 George Young. "New Treatment Plant of United Comstock Mines Company," *Engineering and Mining Journal* 114 (1922): 849-850.

ore train which passed through the building. Ore would be dumped through a hole adjacent to the track for conveying to the Coarse Crushing Plant.

2. **Condition of Fabric:** The Ore Bin is presently in ruins. As part of salvage efforts soon after the mill's close in 1926, all machinery and metal was removed from site. This included the railroad tracks and ties, structural members, roof materials and even any useable wood. All that remains are the decaying foundations and reinforced concrete walls. The tunnel adit has been closed and the entrance ramp and trestle from the northwest also have been removed.

**B. Description of Exterior**

1. **Overall Dimensions:** Approximately 112' long and 30' wide. Height from foundation to original metal roof was approximately 66'.

2. **Foundations:** Reinforced concrete.

3. **Walls:** Originally corrugated metal which is now removed.

4. **Structural System, Framing:** Reinforced concrete post and beam with reinforced concrete walls below railroad grade and structural steel frame from railroad grade to roof.

5. **Bulkheads:** A series of five diagonal bulkheads rise from either side of the lower level to support a massive concrete floor at the railroad grade.

6. **Openings:** The only original openings in the Ore Bin were at either gable end to facilitate the movement of ore trains through the structure on one of the two rail spurs.

**C. Description of Interior**

1. **Floor Plan:** The floor plan was simple, having two railroad tracks entering at the north and exiting the south of the building. At the center of the Ore Bin was a large opening on the floor that led to a lower level ore pocket of 1,600 ton capacity where ore would be conveyed

to the Coarse Crushing Plant. Surrounding one of the tracks was a giant steel tipple that would tip the ore car to dump the ore into the ore pocket.

2. **Flooring:** Reinforced concrete.

3. **Wall and Ceiling Finish:** None.

4. **Openings:** The only openings consisted of the two open gable ends and the ore pocket hole.

5. **Conveyors:** A 48" wide pan conveyor brought ore from the ore pocket up into the Coarse Crushing Plant through an underground connection between the buildings.

6. **Machinery:** All machinery and equipment associated with the Ore Bin was removed upon closure in 1926.

### D. Site Layout

The Ore Bin is located at the northeast corner of the mill complex. Ore traveled from mines north of the mill by electric railway car through the tunnel which terminated at the Ore Bin. Directly adjacent to the southwest side of the Ore Bin stood the Coarse Crushing Plant.

## Part III. OPERATIONS AND PROCESS

### A. Operations

Mine ore was delivered to the Ore Bin via a nearly 10,000' long underground tunnel. Two trains of twelve cars each were hauled by two eight ton General Electric locomotives in tandem. The cars were then dumped, four at a time, by a revolving tipple into the ore pocket. The ore then passed through a finger-bar grate and up a 48" Stephens-Adamson pan conveyor with wood-cushioned pans up to the Coarse Crushing Plant.

## PART IV. SOURCES OF INFORMATION

### A. Architectural Drawings

Selected drawings depicting process flow charts, plans and sections

of buildings at the mill may be found in: George Young, "New Treatment Plant of United Comstock Mines," *Engineering and Mining Journal* 114 (1922): 846-853.

**B. Early Views**

Early views of the American Flat Mill are available from the Nevada Historical Society, Special Collections and University Archives Photographs at the University of Nevada, Reno. The views during operation range in date from approximately 1922 to 1926, with some later views dating from the 1940s and 1950s, representing a total of 86 views. An additional private collection owned by Mr. Joseph Curtis of Virginia City represents approximately 50 views of the mill during its operating years. Some unique views of the ore tipple and machinery may be found in George Young, "New Treatment Plant of United Comstock Mines," *Engineering and Mining Journal* 114 (1922): 846-853. One aerial view of the mill ruins from 1947 is available from the University of California, Davis, in the Eastman's Originals Collection, Department of Special Collections, General Library.

**C. Interviews**

Glass, M. *Royce Aller Hardy: Reminiscence and a Short Autobiography*. Oral History Program, University of Nevada, Reno, 1965.

**D. Selected Sources**

Bray, John L. *The Principles of Metallurgy.* Boston: Ginn and Company, The Athenaeum Press, 1929.

Gavazzi, I., and R. Kendall. *American Flat: Stepchild of the Comstock*, Virginia City, Nevada: Mark Twain Bookstore, 2001.

Goin, P., and E. Raymond. *Changing Mines in America*. Santa Fe, New Mexico: The Center for American Places, 2004.

Hamilton, E. M. *Manual of Cyanidation.* New York: McGraw-Hill Book Company Inc., 1920.

Hardesty, D. National *Register Evaluation of the East Yellow Jacket Mine and the American Flat Mill Sites, Storey County, Nevada.*

Report prepared by University of Nevada, Reno. Submitted to Bureau of Land Management, Carson City Field Office, 1998.

Kendall, Robert E. "American Flat: Stepchild of the Comstock Lode – Part II," *Nevada Historical Society Quarterly* 41(2): 1998.

Lincoln, Francis Church. *Mining Districts and Mineral Resources of Nevada.* Reno: Nevada Newsletter Publishing Company, 1923.

Morse Brothers Machinery and Supply Company. "Mining and Milling Machinery of The Comstock Merger Mines and Mills at Virginia City, Nevada" Catalog by the Morse Brothers Machinery and Supply Company, Denver, Virginia City, Reno, ca. 1927. Located in the Special Collections and University Archives, University of Nevada, Reno.

Reid, Walter L. "Design and Construction of United Comstock Mills," *Mining and Metallurgy* 191 (1922): 44-47.

Weinig, A. J. "A General Study of United Comstock Metallurgy," in *Papers Related to the Geology, Mining, Metallurgy and Milling of the Comstock Orebodies of the United Comstock Mines Company,* San Francisco: American Institute of Mining and Metallurgical Engineers, 1922.

Young, George. "New Treatment Plant of United Comstock Mines Company," in *Engineering and Mining Journal* 114 (1922): 846-853.

Zeier, Charles, Michael Drews and Ron Reno. "An Architectural and Archaeological Inventory of the American Flat Mill, Storey County, Nevada." Clinton, Tennessee: Zeier and Associates, 2009.

**E. Likely Sources Not Yet Investigated**

Newspaper clippings on file at the Nevada Historical Society, Subject Card Index: "American Flat".