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United States Department of the Interior
National Park Service
National Register of Historic Places
Registration Form

This form is for use in nominating or requesting determination for individual properties and districts. See instruction in how to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for not applicable." For functions, architectural classification, materials and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Lewis Mill

other names/site number 5SM.4180

2. Location

street & number N/A [N/A] not for publication

city or town Telluride [X] vicinity

state Colorado code CO county San Miguel code 113 zip code 81435

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this [X] nomination [] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property [X] meets [] does not meet the National Register criteria. I recommend that this property be considered significant [] nationally [X] statewide [] locally. ([] See continuation sheet for additional comments.)

Deputy State Historic Preservation Officer

3/2/09
Date

Signature of certifying official/Title

Office of Archaeology and Historic Preservation, Colorado Historical Society
State or Federal agency and bureau

In my opinion, the property [] meets [] does not meet the National Register criteria. ([] See continuation sheet for additional comments.)

Signature of certifying official/Title

Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

- entered in the National Register [] See continuation sheet.
- determined eligible for the National Register [] See continuation sheet.
- determined not eligible for the National Register.
- removed from the National Register
- other, explain [] See continuation sheet.

Signature of the Keeper

Date of Action

Gordon H. Beall 5.6.09

Lewis Mill
Name of Property

San Miguel County/ Colorado
County/State

5. Classification

Ownership of Property

(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property

(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property

(Do not count previously listed resources.)

Contributing	Noncontributing	
1	0	buildings
0	0	sites
0	0	structures
0	0	objects
1	0	Total

Name of related multiple property listing.

(Enter "N/A" if property is not part of a multiple property listing.)

The Mining Industry in Colorado: Mining Technology,
Methods, and Equipment in Colorado: 1858-2005

**Number of contributing resources
previously listed in the National
Register.**

0

6. Function or Use

Historic Function

(Enter categories from instructions)

INDUSTRY/ PROCESSING/ EXTRACTION:
manufacturing facility

Current Functions

(Enter categories from instructions)

VACANT/ NOT IN USE

7. Description

Architectural Classification

(Enter categories from instructions)

NO STYLE

Materials

(Enter categories from instructions)

foundation WOOD
STONE
walls METAL/ iron
WOOD
roof METAL/ iron
other

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

Lewis Mill
Name of Property

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a commemorative property.
- G** less than 50 years of age or achieved significance within the past 50 years.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey

- recorded by Historic American Engineering Record

Areas of Significance

(Enter categories from instructions)

ENGINEERING
INDUSTRY

Periods of Significance

1910-1912

Significant Dates

1910

Significant Person(s)

(Complete if Criterion B is marked above).

N/A

Cultural Affiliation

N/A

Architect/Builder

MAXWELL, CHARLES

Primary location of additional data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local Government
- University
- Other

Name of repository:

Colorado Historical Society

Lewis Mill
Name of Property

San Miguel County/ Colorado
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10. Geographical Data

Acreage of Property less than one

UTM References

(Place additional UTM references on a continuation sheet.) (NAD 27)

1. 13 255979 4195795
Zone Easting Northing

2. Zone Easting Northing

3. Zone Easting Northing

4. Zone Easting Northing

The UTMS were derived by OAHP from heads up digitization on Digital Raster Graphic (DRG) maps provided to OAHP by the U.S. Bureau of Land Management

[] See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Sarah Zaske and Felicia Harmon (prepared for the property owner)

organization Historic Preservation Consultant; KRH Group Community Revitalization Consultants date Oct. 10, 2008

street & number 2034 N. 59th St.; P.O. Box 2286 telephone (970) 481-1981

city or town Milwaukee; Telluride state WI; CO zip code 53208; 81535

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional Items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name San Miguel County (contact: Linda Luther-Broderick, Open Space and Recreation Director)

street & number P.O. Box 1170 telephone (970) 369-5469

city or town Telluride state Colorado zip code 81435

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*)

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127, and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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Lewis Mill

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San Miguel County/ Colorado

The Mining Industry in Colorado: Mining Technology, Methods, and Equipment in Colorado: 1858-2005 MPS

DESCRIPTION

The 1910 Lewis Mill, a 60-ton capacity ore concentration mill, is located approximately 3.5 miles southeast of the town of Telluride at the head of Bridal Veil Basin. The mill's elevation is above timberline at 12,450 feet, with sparse vegetation surrounding the building. Bridal Veil Creek runs east of the mill. Although vehicular access is restricted in Bridal Veil Basin, the Lewis Mill site can be reached by backcountry skiers, hikers, mountain bikers, and horseback riders. Access to the interior of the mill is prohibited.

A designated San Miguel County Landmark, the five-story Lewis Mill is built on a slope that descends eastward five levels to Bridal Veil Creek. Typical of most concentration mills, Lewis Mill was constructed over a series of terraces cut into the slope of a hill, facilitating the use of gravity in moving and processing the ore. The Lewis Mill is an excellent example of all timber-frame construction. Due to the site's remote location, the mill building was pre-fabricated at the Pandora Mill near Telluride, a more accessible location at a lower elevation. The numbered sections were transported to Bridal Veil Basin by mule train and assembled on-site.

Lewis Mill is composed of a central, front gabled section intersected by two stepped, shed roof portions (see photo 3). All roof pitches are set at 12/12 to shed snow during the winter and minimize total roof load. The timber frame building is clad in wood sheathing covered by corrugated, galvanized iron siding, as is the roof. The eaves of both the gable and shed roofs have exposed rafter tails. An original metal flue extends from the east (rear) elevation's shed roof portion (see photo 6). The building has no formal foundation, but exposed timber frame crib walls exist on the east and west elevations and an 8 x 8 timber sill exists on the north and south sides. These timber sills and crib walls sit on mortar and stone masonry leveling courses. Exposed braced frame floor beam tails are evident on each elevation.

Most of the west façade's corrugated iron siding has fallen off, exposing vertical, 1"x 10" rough sawn wood planks. The façade's central front gable section is two stories tall, supported by exposed timber frame crib walls. The original white-painted single leaf door is missing. The door opening is accessed by a deteriorated 4' wide x 35' long wood plank walkway. A window opening on the first story and the double window opening in the second story gable are both missing their sashes. All of the mill's windows were originally white painted wood, double hung, six-over-six. No glazing remains in any of the sashes.

The façade's upper shed roof portion is three stories and larger than the central front gabled portion by the width of one bay. Two paired windows openings exist on each story. The windows on the north side of the upper shed roof portion retain original mullions and some original sashes with pieces of muntins. Mullions also remain in the windows on the south side of the central front gabled portion.

The façade's lower shed roof portion is also three stories and larger than the upper shed roof portion by the width of one bay. Two paired window openings exist on each story. The windows on both sides of the central front gabled portion retain original sashes, including some mullions and muntins.

Most of the south side of the building is clad with 1"x10" rough sawn vertical wood planks (see photos 3 and 4). Only portions of the corrugated iron siding remain. The west half of the south elevation's gable section has two window openings on each story. First story window openings contain only fragments of original muntins and mullions. The second story openings contain no window sashes. The larger, west opening was the terminus for the aerial tram. Unprocessed ore entered the mill at this location and was

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deposited into the interior ore bin. The east half of the south elevation's gable portion contains two window openings, one on each story. An additional shed roof portion extends from the east side of the central gabled portion. No window openings exist on the south side of the shed roof portion.

The south elevation's upper shed roof portion is three-and-one-half stories. There are two window openings on the second story, two on the third story, and one on the half story. Most window openings retain deteriorated fragments of the original window framing. Only a single panel of corrugated iron siding remains on this portion of the building.

The south elevation's lower shed roof portion is three-and-one-half stories. There is one window opening on the half story, two on the third, and four on the second story. The second story has an asymmetrical fenestration pattern with the westernmost window partially boarded over. A door opening located west of the second story window openings is also boarded over. Historic photographs indicate that there was a window located slightly east and below the easternmost second story window. This opening has since been boarded over.

The building's east (rear) elevation faces Bridal Veil Creek. Most of this elevation consists of the shed roof slope. The upper central portion of the east elevation contains the gable end of the mill's central gabled portion (see photos 6 and 7). A paired window opening sits in the gable end and contains fragments of the original wood window sashes. Directly beneath the gable a two-story upper shed roof section extends outward. The upper shed roof section contains two paired window openings on each story. All but one of the window openings retains portions of the original window sashes. Beneath the upper shed roof section two front gabled wall dormers with paired window openings project from the slope of the main shed roof. Exposed timber frame crib walls are located immediately below the eave of the main shed roof.

The north elevation of the building retains the most original corrugated iron siding (see photos 5 and 7). The two-story, central gabled portion has three window openings on the west side, two on the first story, and one on the second story. No original window fabric remains. The east half of the north elevation's central gabled portion contains two window openings, one on each story. The additional shed roof portion that extends from the rear of the central gable portion contains no window openings on this side.

The three-and-one-half story upper shed roof portion of the building's north elevation has five window openings: one on the half story, two on the third story, and two on the second story. The first story currently has no window openings, although there originally may have been an opening that has since been boarded over. Most of the window openings on the upper shed roof portion retain fragments of original window sashes and framing.

The lower shed roof portion of the building's north elevation is three-and-one-half stories with twelve openings. The half story has one window opening, the third story two window openings, and the second story four window openings with one door opening. The fenestration pattern is asymmetrical. Similar to the south elevation's lower shed roof portion, there is a window located slightly east and below the easternmost second story window. Unlike the south elevation, this opening has not been boarded over. The first story of the north elevation's lower shed roof portion has two door openings. The right door opening originally accessed the stable and has an adjacent small window opening.

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INTERIOR

At the time of its 1910 construction, the Lewis Mill was a state-of-the-art gravity concentration mill. It is part of a mining complex that originally included a mine portal, a tipple/tram house, bunkhouse, and office. Technologically, the mill represents the second generation of milling plants designed and built to process the polymetallic ores typical of the San Juan Mountains. The technology employed and equipment utilized mark a transition between earlier stamp mill technology and later full chemical flotation.

The mill was heated by a combination of radiant sunlight energy via the numerous windows and by a low pressure coal fired steam boiler located in the lowest level of the mill. Heat was most likely distributed by steel pipes installed on a slight slope to drain the condensate back to the boiler.

Water was supplied to both the mine and the mill via a 3" diameter pipeline that was run from Lewis Lake, located at a higher elevation in Bridal Veil Basin approximately one-half mile south of the mill. The pipeline entered the mill from the west near the crusher floor. Installation of a small head tank in the second highest level of the mill provided a steady flow to the trommel screens. Both steel pipes and wooden launders distributed water throughout the mill.

The Lewis Mill and Mine were powered by electricity generated at the Smuggler-Union Hydroelectric Power Plant/ Bridal Veil Falls Powerhouse (5SM.751, listed in the National Register 12/27/1979) located approximately three miles downstream from the mill. A single electric motor powered the mill, which transferred mechanical power through a flat belt/pulley drive system to a primary line shaft. The primary shaft provided power to a secondary line shaft through a second flat belt drive system. Every piece of equipment in the mill was driven by unguarded pulleys and flat belts from one of the two line shafts. The original electric motor and switchgear is missing. Power for the electric lights was distributed by wires run through knob and tube insulators that are still attached directly to the timber framing. Natural light from the mill's many windows supplemented the electric lighting.

The mill equipment is of standard design for the era and readily identifiable as to type and size, although manufacturers' nameplates are missing on most pieces. Each level of the mill housed equipment to perform a particular aspect of the ore processing and concentration. The equipment referenced in the descriptions below is still extant in the mill building.

Unprocessed ore entered the top (tram) floor of the mill at the tram terminus located in the south side of the west gabled section and was deposited into the coarse ore bin. From the bin, ore was fed down to the next level – the crusher floor – and deposited into the 4'x8' grizzly. The grizzly contained parallel bars spaced at 1" openings. Anything larger than an inch was sent to the 10'x16' Blake-type jaw crusher. Pieces smaller than an inch bypassed the jaw crusher and went to the crushed ore bin on the trommel floor. From the crushed ore bin, the ore went to the primary roll crusher.

Elevator no.1 took ore from the crushed ore bin and sent it to trommel screen no. 1 on the trommel floor. The first three trommel classifiers in the Lewis Mill shared a common power drive. The size of their screen openings descended in size - classifier no. 1 had a ¼" screen; no. 2 a 1/8" screen; and no. 3 a 1/16" screen. Ore pieces that did not pass through trommel nos. 1 and 2 were sent to a secondary roll crusher. From the secondary crusher, elevator no. 2 transported ore to trommel no. 4 with screen openings less than 1/16". Ore leaving trommel nos. 3 and 4 that was still larger than 1/16" descended to the tube mill located on the tube mill/ concentrate bin floor – the mill's lowest level – for tertiary crushing. The rock grinding media is still in place in the 4' tube mill. Elevator no. 3 then brought the

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crushed pieces back up to the classifier/ flotation floor. The trommel floor also contained a bunk room with six built-in bunks.

The classifier/ flotation floor contains a six-cell wood flotation machine with six agitators (most likely added after 1914 to replace the function of the frue vanners¹) and the de-sliming cone and box. The cone classifiers' function was to separate the fine from the coarse ore. Coarse ore continued to one of three Wilfley tables on the concentrator floor, while the fine ore went to the concentrator floor's vanners. Wilfley tables were designed by Arthur Wilfley for his mill in Summit County, Colorado, and by 1910 his design was adapted to treat a variety of metal ores. The vibrating tables were clad with rubber or linoleum held down with fine riffles. Tabletops were mounted at an incline on a rapidly oscillating iron frame. Such vigorous action caused the heavier material to settle against the higher riffles while water washed the waste downward. The Lewis Mill's four vanning tables featured a broad tube belt on rollers mounted to a vibrating iron frame. The classifier/ flotation floor also housed the mill's repair shop and the mill drive motor and switchgear.

From the concentrator floor, the processed ore was deposited in the concentrate bin on the tube mill/ concentrate bin floor to await shipment to the smelter for refining. Remaining material was removed from the mill to waste rock piles. The tube mill/ concentrate bin floor also contained stables for some of the draft animals used in transporting supplies up to the mill and delivering concentrates down to the railroad siding at Pandora.

ALTERATIONS

After 1912, the mill was only sporadically operational until the 1940s. After 1914, some modifications were made to the interior of the mill, mainly the addition of more technologically advanced equipment such as the flotation cells. Vacuum pumps and filters were most likely added in the late 1930s/early 1940s; however, the vast majority of the original equipment remained part of the operational flow.

In 2000, San Miguel County, on behalf of Idarado Mining Company, applied for and received a State Historical Fund (SHF) grant to complete a Historic Structure Assessment of the Lewis Mill. The findings of the Historic Structure Assessment provided the basis for a subsequent phased stabilization project, also funded by SHF. The 2001–05 stabilization involved the repair/ reconstruction of failed and/or missing primary and secondary roof framing; installation of galvanized, corrugated iron roofing to match the historic profile; repair of primary and secondary dormer framing; stabilization of interior structural members; and stabilization of select exterior timber frame crib walls. Per funding requirements, all work was completed according to the *Secretary of the Interior's Standards*. The project made the building more weather tight and provided needed structural stabilization. In 2007, the Idarado Mining Company deeded the mill building to San Miguel County with a preservation easement. The remainder of the mill site and surrounding high country remains in Idarado ownership.

¹ A frue vanner is a moving, inclined, endless apron on which ore is concentrated by a current of water; a kind of buddle. A buddle is defined as a shallow trough in which metalliferous ore is separated from gangue by means of running water. Definitions found on <http://dictionary.reference.com/> accessed on 3/16/2009.

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The Mining Industry in Colorado: Mining Technology, Methods, and Equipment in Colorado: 1858-2005 MPS

SIGNIFICANCE

The 1910 Lewis Mill is eligible for the National Register of Historic Places under Criterion C in the area of **Engineering** at the State level of significance. The mill is significant as a distinctive example of engineering and high country milling technology. At the time of its construction, the Lewis Mill was a state-of-the-art ore concentration mill. The technology employed and equipment utilized mark a transition from earlier stamp mill technology to later full chemical flotation. The Lewis Mill is the only transitional mill in Colorado that retains its original milling equipment. Additionally, the mill utilized technology developed by Robert H. Richards, a nationally recognized mining engineer from the Massachusetts School of Technology. The Lewis Mill contains the only remaining example of the Richards method of ore concentration in Colorado. The period of significance for Engineering is 1910, the year of construction.

The building meets the National Register requirements identified in the National Register of Historic Places Multiple Property Documentation Form *The Mining Industry in Colorado: Mining Technology, Methods, and Equipment in Colorado: 1858-2005* and represents the Ore-Concentration Facility – Concentration Mill property type. Though there were once many small and medium size mills located in the San Juan Mountains, most were salvaged for materials and/or subject to vandalism. The Lewis Mill's remote location spared it such a fate, leaving it remarkably intact and with much original equipment.

Additionally, the building is significant under Criterion A in the area of **Industry** at the local level of significance for its contribution to the history of the mining industry in Colorado. Although the mill's most productive period was brief, its very existence resulted from a shift in the business of mining. The early 1900s saw a period of consolidation in the mining industry. Consolidation and acquisition of smaller mines and mining ventures generated the increased capital required for the construction of more sophisticated processing facilities, such as the Lewis Mill. The period of significance for Industry is 1910 to 1912, the years the Mill was operational.

Historical Background and Criterion C - Engineering

The 1873-74 Brunot Treaty between the United States and the Ute Indians opened over four million acres of previously designated reservation land to Euro-American exploitation. This newly "open" area included the San Juan Mountains, resulting in a mining rush. The first mining claim in the Telluride area was filed in 1875 by the Remine brothers and eight others, all of whom had been prospecting in the area since 1873.

The Lewis Mill is located southeast of Telluride on the Lewis Lode. The 10.33 acre Lewis Lode was discovered and surveyed by the Bridal Veil Mining Company in 1881. Improvements made at that time included sinking two shafts and constructing a whim house and an ore house. The mine operated extensively beginning in 1883 with unprocessed ore taken by pack train to Silverton for shipment to Denver for smelting. When mining activity ceased for the winter, the shafts filled with water. Resumption of mining in 1884 required the installation of a pumping plant for dewatering. The expense of the pumping plant led to a disagreement among the owners, resulting in the cessation of mining activities. The mine again filled with water and sat idle while several transfers of partial ownership and a sheriff's sale took place. In 1889, taxes on the mining claim went unpaid and it was sold for \$21.62 at a public tax sale on June 10, 1890, to Charles Painter. Painter relinquished partial interests in the claim to others and no further work occurred in the ensuing years.

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Improved transportation networks and technological advances in the reduction of precious metal ores resulted in the growth and expansion of mining in the region during the 1880s and early 1890s. The Rio Grande Southern Railroad reached Telluride in 1891. Running along the grade of Otto Mears' toll road, the Telluride branch continued to Pandora which contained a wye at the site of the large mill. This further stimulated mining in the region, providing mines in the Telluride area the means to ship large quantities of ore - something prohibitively expensive previously.

Beginning in the 1890s, generation of electricity in the San Juan Mountains became a major factor in maintaining the profitability of the region's mines. It also played a key role in the development of the modern electrical industry in America. Constructed in 1890 and put on line in 1891, the Ames Power Plant at the Gold King Mine near Telluride was one of the first commercial alternating current electrical plants in the world (Husband, IV-35). Lucien Lucius Nunn, a Telluride business leader and entrepreneur, financed the Ames Plant and provided a practical application for the work of Nikola Tesla and George Westinghouse. The new alternating current technology, far more practical for the mining industry than direct current, could provide electricity over longer distances from a single power source - an attribute of vital importance for mountainous locations. Alternating current provided inexpensive power to the mines of the region, enabling them to continue to operate profitably into the 1910s and 1920s.

In 1907, the Smuggler-Union Mining Company constructed the National Register-listed Bridal Veil Powerhouse (5SM.751; listed 12/27/1979). Perched on a cliff at the mouth of Bridal Veil Falls, the construction of the powerhouse was initiated by Smuggler-Union president and manager, Bulkeley Wells. The powerhouse provided electricity to mines and mills in the area, including the Lewis, and its attached residence which with its dramatic views served as a summer home for Wells.

Also in 1907, Wells and Thomas Livermore, Jr. acquired a lease on the Lewis Mine and began making improvements on the property. Livermore was the son of Smuggler-Union Mining Company owner Colonel Thomas A. Livermore and the brother of Wells' wife, Grace Livermore. Wells and Livermore constructed a boarding house, bunkhouses, and shaft house, overhauled the hoist, and added new machinery. Dewatering of the mine took place during the winter of 1907-08, revealing promising ore bodies, prompting Wells and Livermore to take steps to purchase the property. Various ownership interests in the property were consolidated and Wells and Livermore acquired the Lewis Mine on September 1, 1908.

Livermore took samples of ore from the Lewis Mine to Salt Lake City in October 1909 for an independent assessment of the ore's value. He then sought out a suitable reduction process for the ore in anticipation of constructing a concentration mill at the mine site the following year. Although engineers and metallurgists followed a general pattern when designing concentration mills, each mine produced a distinctive type of ore that necessitated the creation of an individual operational flow and equipment list.

In January 1910, the Denver Engineering Works was contracted to provide machinery for the Lewis Mill. Key components of the mill were Richards' jigs and classifiers, invented by Professor Robert H. Richards of the Massachusetts School of Technology. Richards distinguished himself in the field of ore dressing when he determined the curves of materials settling in water, thereby establishing the fundamental principles of sorting ore by means of jigs and pulsators. His separators were adapted for Lake Superior copper, Virginia iron, and the polymetallic ores of the Rocky Mountain West. Richards authored more than 100 monographs and texts, including the seminal four-volume *Ore Dressing*

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(1903-09). The president of Denver Engineering Works, Frank E. Shepard, was a graduate of the Massachusetts School of Technology and had worked closely with Richards to produce the pulsator classifier and jigs.

Charles Maxwell of Delta, Colorado, and a crew of carpenters began framing the timber for the new mill in April 1910. His temporary "shop" was located at the end of the railroad tracks at Pandora, east of the Town of Telluride. Each piece of timber was numbered for later assembly at the mill site. Although structural steel frame buildings appeared by 1910, timber framing continued in use for mill construction for some time. The 1929 National Historic Landmark Mayflower Mill in San Juan County is an example of a later all-timber frame flotation mill.

In an attempt to open the trail to the mill as quickly as possible to transport the pre-fabricated timbers, the San Miguel County Commissioners were asked to pay for snow removal and other trail improvements. The route was reportedly initially constructed by the State of Colorado on a grade suitable for wagons and it was hoped the county could be persuaded to pay for all of the improvements. The commissioners funded half of the cost of snow removal. Wells and Livermore financed the blasting of narrow passages along the trail to allow heavy two-wheeled carts to transport machinery to the mill site. By mid-July 1910, work was well underway on the new mill building and in August the mill was completed. The mill began operation during the fall of 1910 before shutting down for the winter in early December.

With the new mill in successful operation, Wells and Livermore sold the Lewis Mine and Mill to the Lewis Mine Company on January 24, 1911. Included in the sale were the Lewis Lode; the Tobe Lode; the unpatented Snowstorm Lode; an interest in the unpatented Easter Lode; the concentration mill; all other improvements and equipment; the section of electrical transmission line from the Little Dorritt Mine to the Lewis Mill; and all water rights associated with the Lewis Mine and Mill. The Lewis Mine Company was a Massachusetts corporation with Thomas L. Livermore as president, Harris Livermore as secretary, and Thomas Livermore, Jr. as the company's authorized agent in Telluride.

The mill restarted for the summer season beginning June 13, 1911. On October 9, 1911, powder temporarily stored in the shaft accidentally ignited. It exploded, injuring seven men and destroying the shaft house. By early November, the shaft house had been rebuilt and mining resumed. Operation of the mill was suspended for the winter on January 13, 1912, but mine development continued with a crew of sixteen men during the winter months.

July 18, 1912, marked the start of the summer season at the Lewis Mill. At full capacity, the Lewis Mill was capable of producing twelve tons of concentrates per day. This required anywhere from sixty-five to ninety mules to haul the concentrates from the mill to the railroad at Pandora. Heavy snows forced the mill to shut down on December 5, 1912, but development work expected to continue, as it had the previous winter. In February and March of 1913, a new hoist cable was transported to the mine as well as a new electrical transformer. However, there is no indication that the mill operated in 1913.

This lack of operation was most likely due to the financial difficulties of the Lewis Mine Company. After a judgment against the company forced the sale of the Lewis Lode to E.N. Lavender in 1914, the Lewis Mill passed through six more changes in ownership until it was acquired by the Idarado Mining Company in 1958. Idarado, a subsidiary of Newmont Mining, transferred ownership of the mill building to San Miguel County in 2007.

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The Lewis Mill is significant as an intact transitional concentration mill and retains much of its original equipment. According to the findings of the National Register Multiple Property Documentation Form *Mining in Colorado*, salvage efforts, tailings removal, alterations, and natural decay have resulted in few remaining intact concentration mill sites. Sites retaining high degrees of engineering and architectural integrity tend to be very rare and Colorado features only a handful of intact mills. The owners of Lewis Mill have recognized the importance of the property and have taken steps to stabilize and interpret this valuable piece of Colorado's mining heritage.

Criterion A – Industry

Because mining companies rarely possessed sufficient capital to justify the construction of their own smelters, raw ores were often shipped from individual mines to large smelters. These facilities extracted the valuable metals from the ore – a process known as beneficiation. The processing fees charged by the smelters, along with the costs associated with shipping waste rock along with the valuable ore, led well-capitalized mining companies to construct their own concentration mills near mine sites. These money-saving concentration mills utilized mechanical, and later, chemical processes, to reduce the ore and prepare the resultant concentrates for shipment to a smelter for final roasting and refining.

The capital necessary to construct a mill at the Lewis Mine became available when Bulkeley Wells and Thomas Livermore, Jr. acquired the property. Prominent and powerful individuals in the mining industry, Livermore was the son of Colonel Thomas Livermore, a Civil War veteran and founder of the New England Exploration Company. Wells, a Harvard graduate, was Col. Livermore's son-in-law. The New England Exploration Company, successful in developing the copper mines around Lake Superior, bought a controlling interest in the Smuggler-Union Mine for \$1.5 million on April 28, 1899. The Smuggler-Union was the largest and most profitable mining and mill complex in the Telluride vicinity. At the turn of the twentieth century, the mine had the most extensive workings of any in Colorado, with haulage accomplished entirely through adits. The Smuggler-Union possessed an extraordinarily uniform and continuous mineral vein that had been developed through thirty to forty miles of workings. Wells became Smuggler-Union's president and manager in 1902.

The shift toward business consolidation in the mining industry began with the repeal of the Sherman Silver Purchase Act in 1893. Mergers in the industry occurred previously, but the crash magnified this trend, enabling fewer, larger companies to reduce operating costs and take advantage of economies of scale. After 1900, the value of metal produced in the traditional mining industry continued to decline and an added emphasis was placed on milling. The Smuggler-Union Mining Company's size and profitability allowed Wells and Livermore to speculate on other ventures, including the nearby Lewis.

The Lewis Mill's primary productive period was brief, lasting just three years. As prices of silver ore continued to decrease and equipment, labor, and maintenance costs increased, the overextended owners soon encountered financial difficulties and were forced to sell the property. Although the mine and mill experienced other brief flourishes of activity in the late 1930s and early 1940s, nothing compared to its initial productivity.

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November 1909, p.4; 15 January 1910, p. 1; 25 April 1910, p. 2; 14 May 1910, p. 2; 27 May 1910, p. 2; 18 June 1910, p. 2; 13 July 1910, p. 5; 11 August 1910, p.2; 18 August 1910, p. 2; 3 December 1910, p. 3; 4 January 1911, p. 4; 31 July 1911, p. 1; 9 October 1911, p. 1; 10 November 1911, p. 4; 16 January 1912, p. 4; 18 July 1912, p. 4; 15 August 1912, p. 1; 6 December 1912, p. 3; 1 February 1913, p. 2; 6 February, 1913, p. 4; 13 March 1913, p. 3.

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GEOGRAPHICAL DATA

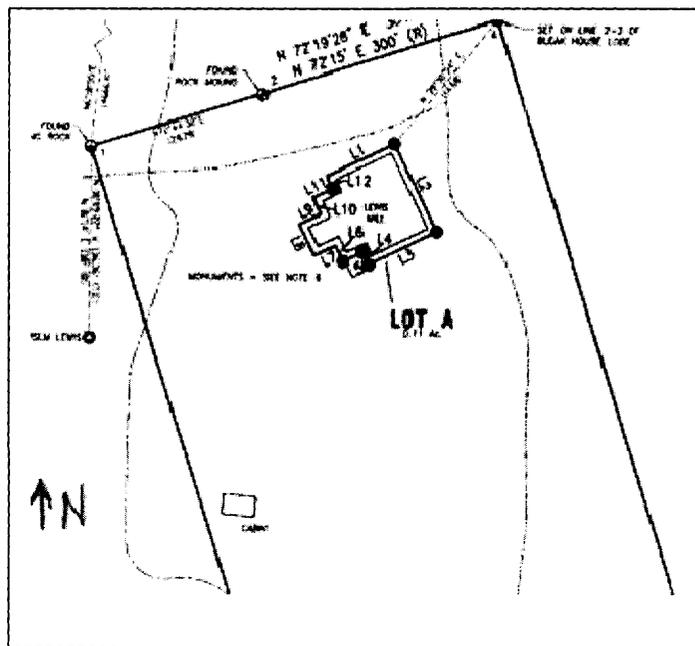
VERBAL BOUNDARY DESCRIPTION

The nominated property includes the footprint of the Lewis Mill plus 5' around the building's perimeter.

BOUNDARY JUSTIFICATION

The Lewis Mill retains the most physical integrity, by far, of all the mining related structures that were built at the Lewis Mill and Mine site. As the most outstanding component of the site from a technological perspective, the Lewis Mill building conveys the resource's significance in the area of engineering and mining technology.

SKETCH MAP



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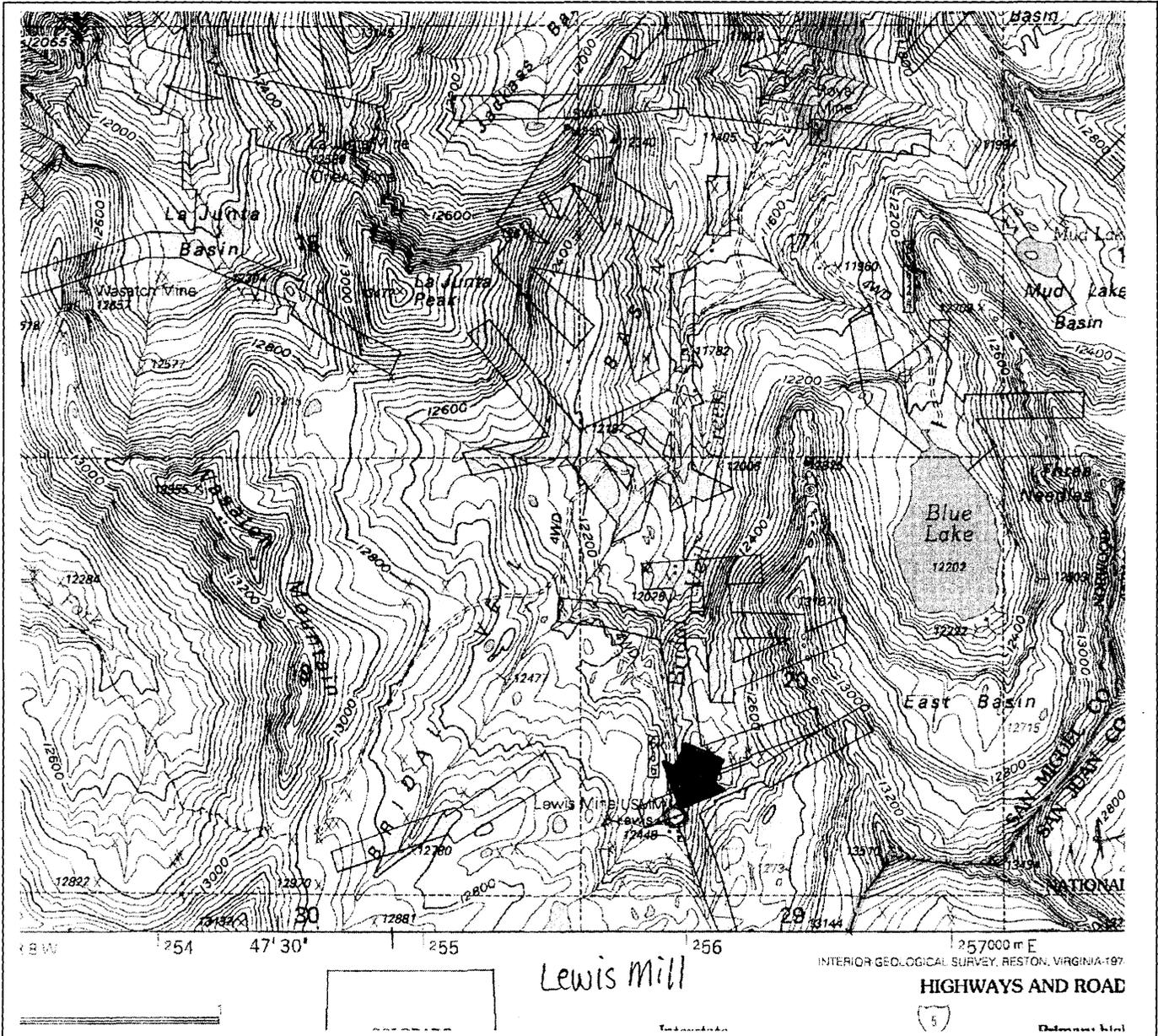
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USGS TOPOGRAPHIC MAP
Telluride Quadrangle, Colorado
7.5 Minute Series

UTM: Zone 13 / 255979E / 4195795N
PLSS: NM PM, T42N, R8W, Sec. 0
Elevation: 12420 feet



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PHOTOGRAPH LOG

The following information pertains to photograph numbers 1-16:

Photographer: Felicia Harmon
Date of Photographs: August 28, 2008
Negatives: tif images on cd on file with National Park Service, Washington, DC

Photo No.	Photographic Information
1	North and east elevations of Lewis Mill with Bridal Veil Creek to east; view to southwest
2	West elevation of Lewis Mill; view to east
3	West and south elevations of Lewis Mill; view to northeast
4	South elevation of Lewis Mill; view to north
5	North elevation of Lewis Mill; view to south
6	North and east elevations of Lewis Mill; view to southwest
7	North elevation of Lewis Mill; view to southwest
8	Dormer, west elevation of Lewis Mill; view to east
9	Interior: timber frame construction
10	Interior: timber frame support for pulley system
11	Interior: flat belt/pulley drive system detail
12	Interior: ore receiving chute at tram terminus
13	Interior: trommel screen
14	Interior: cone classifier
15	Interior: Wilfley table
16	Interior: tube mill

PHOTOGRAPH LOG - HISTORIC

These photographs may not be included in Internet posted documents and other publishing venues due to copyright restrictions.

Photo No.	Photographic Information
H1	Lewis Mill, circa 1910. Courtesy of Eric Jacobsen

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Photo H1: Lewis Mill, circa 1910

