### National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in Guidelines for Completing National Register Forms (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

#### 1. Name of Property

**historic name** Osceola (East) Ditch

#### 2. Location

- **street & number**: Great Basin National Park
- **city, town**: Baker
- **state**: Nevada
- **code**: NV
- **county**: White Pine
- **code**: D33
- **zip code**: 89311

#### 3. Classification

<table>
<thead>
<tr>
<th>Ownership of Property</th>
<th>Category of Property</th>
<th>Number of Resources within Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>private</td>
<td>building(s)</td>
<td>contributing: 4</td>
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<tr>
<td>public-local</td>
<td>district</td>
<td>noncontributing: 0</td>
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<td>public-State</td>
<td>site</td>
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<td>public-Federal</td>
<td>structure</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>object</td>
<td></td>
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</tbody>
</table>

Name of related multiple property listing: N/A

Number of contributing resources previously listed in the National Register: 0

#### 4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this nomination [X] 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. [ ] See continuation sheet.

Signature of certifying official: [Signature]

State or Federal agency and bureau: [Agency]

Date: [4.22.96]

In my opinion, the property [X] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of commenting or other official: [Signature]

Nevada State Historic Preservation Office

State or Federal agency and bureau: [Agency]

Date: [4/1/96]

#### 5. National Park Service Certification

I, hereby, certify that this property is:

[X] 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:)

Signature of the Keeper: [Signature]

Date of Action: [6/4/96]
6. Function or Use

<table>
<thead>
<tr>
<th>Historic Functions (enter categories from instructions)</th>
<th>Current Functions (enter categories from instructions)</th>
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</thead>
<tbody>
<tr>
<td>Industrv/Processing/Extraction-Waterworks</td>
<td>Vacant/Not in Use</td>
</tr>
</tbody>
</table>

7. Description

Architectural Classification
(enter categories from instructions)

Other: Water Ditch
Other: Rock Dam
Other: Tunnel
Other: Water Flume

Materials (enter categories from instructions)

<table>
<thead>
<tr>
<th>foundation</th>
<th>walls</th>
<th>roof</th>
<th>other</th>
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</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Earth Ditch; Wooden Flume; Rock Dam</td>
</tr>
</tbody>
</table>

Describe present and historic physical appearance.

Constructed in 1889-90 by the Osceola Gravel Mining Company, the Osceola (East) Ditch extended some 18 miles from Lehman Creek on a north-northwesterly course, carrying water for hydraulic mining operations at Osceola. The ditch included wooden flumes and a 600-foot tunnel and incorporated water from Lehman, Mill, Strawberry, Sage, and Weaver creeks. Approximately ten miles of the ditch are in Great Basin National Park. Many parts of the extant ditch in the park are eroded, overgrown with brush and trees, and partially filled with rock rubble, while the wooden flume remains are in a state of severe deterioration. The eastern portal of the tunnel near the north boundary of the park in Strawberry Canyon has collapsed.

As part of the Osceola (East) Ditch construction in 1889-90, a rock dam and headgate were built at Stella Lake in Upper Lehman Canyon to increase the lake's storage capacity and thus the flow of Lehman Creek. There are extant portions of the rock dam, but there are no visible headgate remains. The ditch structures and related improvements at the placer operations in Osceola fell into disuse, disrepair, and decay during the early 1900s and were destroyed entirely by a fire in the 1940s.
The Osceola (East) Ditch was completed, and water from Lehman Creek passed through to the reservoir near Osceola's Dry Gulch on July 4, 1890. The total length of the ditch, including flumes and tunnel, was 95,133 feet, or 18 miles and 93 feet. Total cost of the ditch's construction was $108,222.65. The ditch had a carrying capacity of 2,500 miners' inches of water. Together with the 1,000-1,100 miners' inches provided by the 16-mile Osceola (West) Ditch that had been constructed on the west side of the Snake Range in 1884-85, the Osceola (East) Ditch was designed to meet the water requirements of the Osceola Gravel Mining Company for hydraulic operations on its 712 acres of placer ground at Osceola, nearly 500 of which were patented, in the Dry Gulch area just west of the town site.

Since 1877 the Osceola Gravel Mining Company, a Salt Lake City-based firm owned principally by Benjamin Hampton, had been interested in the Osceola placers, endeavoring to extract gold from its claims using hydraulic methods similar to those employed in the California gold fields. In August 1889 the Osceola Gravel Mining Company was reorganized and its controlling stock sold to the Osceola Placer Mining Company, a firm that recently had been incorporated in New Jersey. The directors of the new firm were W. B. Kunhard and I. A. Harrison of New York and Benjamin Hampton of Salt Lake City. James H. Marriott was named general superintendent and had charge of day-to-day operations of the Osceola Gravel Mining Company which retained its organizational identity.

The ditch portion of the Osceola (East) Ditch was 82,891 feet in length. Its dimensions were four feet wide in the bottom, two and a half feet deep in solid ground with sloping sides of a half to one or an angle of 22 1/2 degrees. The uniform grade of the ditch was 14 feet per mile, and it had a carrying capacity of 40,000,000 gallons per 24 hours. The excavated material, consisting of gravel, boulders, loose rock, and solid rock, was placed on the lower side of the ditch. Altogether, 81,198 cubic yards of material were excavated by blasting or gadding at a cost of some $58,307.86.

There were 14 main sections of wooden flumes. The flumes were located in places where it was impracticable to excavate a ditch such as the sides of "rocky and precipitous mountains". This was especially true in Lehman Canyon where 3,768 feet of flume had to be built. The longest single flume section was 2,808 feet and the shortest 96 feet. The aggregate length of flume was 5,352 feet.
The dimensions of the wooden flumes were four feet wide and four feet deep with uniform grade of 32 feet per mile. Considerable lengths of the flumes had to be supported on trestlework.

There were six drop flumes or chutes along the length of the Osceola (East) Ditch. The dimensions of these flumes varied according to the vertical fall at their respective locations. The total length of the flumes was 6,258 feet with an aggregate vertical fall of 1,352 feet.

The total length of the main flumes and drop chutes was 11,610 feet, the total cost of which was $21,494.05. This sum included the cost of four ditch tenders' houses, each 14 X 20 feet and furnished with bunks and tables, 16 waste gates, and timbers for trestles, stringers, and ties. The total amount of lumber used in the flumes was 316,800 feet (board measure). In addition, 28,240 linear feet of hewn timbers were used for stringers, trestle posts, and ties, the sizes varying from eight to 12 inches in diameter. The timber used was yellow pine, most of the lumber being cut at a sawmill near Mount Moriah, although smaller amounts were cut in sawmills in Baker Creek Canyon and the South Fork of the Big Wash.

The route of the Osceola (East) Ditch was shortened at least two miles by the excavation of a tunnel "through a projecting spur of the main mountain range" in Strawberry Canyon (just inside the north boundary of Great Basin National Park). The tunnel was 632.5 feet long, 5 feet wide, 6.5 feet high, and had a grade of 4 feet. The tunnel was bored through "fairly solid granite" except at its approaches where the rock was somewhat decomposed, requiring a few sets of timbers and lagging". W. I. Aiken of Osceola excavated and timbered the tunnel under contract at a cost of $5,060.

The total cost of the Osceola (East) Ditch was $108,222.65. This sum was broken down as follows: Purchase of Lehman Creek water rights, with ranch and improvements--$10,000; engineering expenses--$6,221.99; ditch excavation--$58,307.86; flume construction--$21,494.05; tunnel--$5,060; and general expenses for teamsters, cooks, construction superintendent, etc. In addition and "properly chargeable to the east-ditch account" was the work of cutting and draining a small lake [Stella Lake] at the head of Lehman's Canyon, putting in culvert and gate, constructing cabin, etc." at a cost of $949.28.

Associated with the construction of the Osceola (East) Ditch were improvements at the placer mines in Osceola which were outside the present boundaries of Great Basin National Park. The
distributing reservoir was enlarged some 50 percent in March 1890 by the excavation of nearly 4,000 cubic yards of "cemented gravel" and rock from the interior and placing it upon the bank. The enlargement, together with a new gate tower and waste gate, cost $2,875. Two large-sized giants or monitors (Hoskin-Marysville-California patent, Size No. 5) having 15-inch inlets and 8-inch nozzle butts, were added to the plant. The giants, with two 18-inch water gates and deflectors, cost $900.

Some 1,100 feet of large bedrock sluice was also constructed at Osceola having dimensions of 60 inches in width and 35 inches in depth. Since all of the gravel in the existing workings passed through the sluice it was "strongly built and supported" and "absolutely tight in the bottom to prevent loss of quicksilver and gold". The bottoms of the sluice were selected lumber one and three-quarters inches thick, planed, tongued, and grooved. The sides of the sluice were doubled, the inner lining consisting of two-inch plank. Riffle blocks were square timbers 12 inches X 12 inches X 12 inches placed in rows across the bottom and divided by a two-inch strip, which left an aperture in which the gold could settle. Total cost of the sluice, which required approximately 80 feet of lumber per lineal foot, was $3,300.

In connection with construction of the sluice a tunnel was driven some 135 feet through the north end of the bedrock into the deep channel at a cost of $1,225. The tunnel was 8 feet wide and seven feet high and bored through solid quartzite.

One set of under-currents was constructed at a point 1,000 feet below the head of the sluice. The set was 24 feet X 48 feet, divided into four compartments with a grade of 1 in 12 feet, and cost $385.

Miscellaneous improvements were added to the hydraulic operations in Osceola. A small pipe line was constructed to furnish the water to a Pelton wheel for power generation. New buildings and an electric lighting plant were constructed. Two arc lights of 2,000 candle-power were erected at the placer, thus enabling increased hydraulic operations to be conducted at night.

Assessment of Integrity

Despite the decay, disrepair, and deterioration of the Osceola (East) Ditch remnants within the boundaries of Great Basin National Park, the components of the water conveyance engineering system have never been altered, reconstructed, or restored. Thus, the
integrity of the system has been affected primarily by neglect, disuse, and weather. While there are reports that some of the wooden flume components have been vandalized and used for local construction, the historic integrity of the ditch has been left largely unimpaired.
The Osceola (East) Ditch is significant on the local level as the most extensive engineering system of its kind in eastern Nevada, providing an elaborate conveyance of water required for the development of the hydraulic mining operations at Osceola. Osceola was the most important and productive mining district in eastern Nevada and the only predominately gold placer district in White Pine County. During its construction and immediately after its completion in 1889-90, the ditch received attention and publicity in nationally-circulating mining periodicals such as the Engineering and Mining Journal and the Mining and Scientific Press. The ditch was only utilized for its intended purpose for some eleven years (1890-1901) and never did provide the necessary quantity of water required to permit the Osceola Gravel Mining Company's hydraulic operations to reach their widely-anticipated development and production potential. The engineering work, however, is an outstanding example of a mining-related water conveyance system designed to facilitate exploitation of rich placer gold deposits in late nineteenth century eastern Nevada. Despite the present state of deterioration and decay of the ditch and related works, it is the only extant example of such an engineering system in eastern Nevada with the exception of scattered traces of its companion Osceola (West) Ditch.
Historical Context

The significance of the Osceola (East) Ditch to the placer operations at Osceola was noted almost immediately. The first full year of placer operations at Osceola using the waters of both the East and West ditches was 1891. That year hydraulic activity was begun on May 8, using a 2,000-inch volume of water about seven hours daily. After May 20 operations commenced "full blast almost throughout the 24 hours," using a 2,000-inch volume. Later on July 11, 1891, the Engineering and Mining Journal reported:

...Gravel is being boomed off at a much greater rate than ever before, and prospects are highly encouraging both for water and gold. The ditches hold well; no accident to either has occurred, and cost of maintaining the east ditch is very much less than anticipated. Bed rock cleaning was stopped when the full supply of water began as it takes the present small force of men to attend to both monitors, which are working most satisfactorily. Whenever the bedrock is exposed, however, nuggets are picked up. On June 17 the mine was running 24 hours with 2,500 inches (40,000,000 gallons) water, and the amount was increasing.

Despite the initial glowing reports of the Osceola placer operations, however, gold production did not meet the expectations of the East Ditch promoters. The gross yield of the Osceola Gravel Mining Company for the years 1890 and 1891 was only $16,190.67 and $20,223, respectively.

Beginning in 1892 the Osceola gold placer operations were hampered by periodic water shortages, largely the result of a mild dry winter and leaking ditch wooden flumes. In September, for instance, the Engineering and Mining Journal reported that the gold placers were "yielding well at present," but because "of the lack of water, operations are being carried on under difficulties." But "for this drawback the placers, it is claimed, would make a rich return." For a time in early 1894 the Osceola Gravel Mining Company closed down its operations. In July 1895 it was reported that Osceola placer mines had resumed operations, the "two canals which supply the hydraulics are in use and 100 men are employed." In August 1896, however, the White Pine News, a county newspaper, observed that water "for mining purposes is said to be getting so scarce in Osceola that placers will have to shut down." One month later the Engineering and Mining Journal noted that the placers had "recently cleared up $12,030 from 24 days' work." There was "much rich gravel, but no water in that vicinity."

Intermittent placer operations continued at Osceola through the 1901 season. The previous seven years had been mild dry winters, and the water supply in the ditches, depending primarily on melting snow and springs, became inadequate to meet the needs of the placers. Water theft, leaky wooden flumes, and legal battles over water rights contributed to the curtailment of placer operations. By the turn of the century it was reported that the East and West ditches combined could only provide about 100 miners' inches of water. Because of the continuing water problems the Osceola placers produced only some $10,000 worth of gold in 1901.
In 1906, after the Osceola placer operations had been shut down for five years, H. S. Woolley, a mining promoter from New York City, secured the holdings of the nearly defunct Osceola Placer Mining Company, the parent firm of the Osceola Gravel Mining Company, and secured an option for water rights on Baker Creek. Upon returning to New York City, he succeeded in organizing the Nevada Amalgamated Mines and Power Company with assets of $1,000,000. The new company planned to reconstruct the West and East ditches, construct a large power plant on Baker Creek to furnish electricity for operation of the hoists and reduction works, establish three towns, build a railroad spur from Ely to Osceola, and amass a large labor force to accomplish the work. After several years, however, the venture proved to be unsuccessful and the project never materialized.

There is no documentary evidence that the Osceola (East) Ditch was used for placer mining activities after 1901. The ditch and its components fell into disuse and decay. During the 1940s a disastrous fire swept through Osceola, destroying the remnants of the ditch engineering system in that locale.
9. Major Bibliographical References

1. White Pine News, October 24, 31, 1885; August 17, September 14, 21, October 12, November 23, 1889; February 8, April 5, 1890; May 5, 1904; and August 15, 1896.

2. Ely Mining Record, June 8, 1907.


10. Geographical Data

Acreage of property: Approx. 1 - 2 acres aggregate square measure

UTM References

\[
\begin{array}{cccc}
A & \text{Zone} & \text{Easting} & \text{Northing} \\
C & \text{Zone} & \text{Easting} & \text{Northing} \\
\end{array}
\]

Verbal Boundary Description

Boundary lines follow the line highlighted in yellow on the enclosed USGS quad maps. Generally, the boundary lines extend about 10 feet on either side of the center line of the ditch.

Boundary Justification

The boundary includes the Osceola (East) Ditch, its berm banks and associated components within Great Basin National Park. The Stella Lake Rock Dam is an associated component of the ditch system.

11. Form Prepared By

name/title: Harlan D. Unrau, Historian
organization: National Park Service - DSC - TWE
date: April 3, 1989
street & number: 12795 W. Alameda Parkway
city or town: Lakewood
state: Colorado
zip code: 80225


9. "Mining in 1889." Mining and Scientific Press, LX (February 1, 1890), 81.


United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 10  Page 2

UTM References

Osceola (East) Ditch - Zone 11

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Stella Lake Rock dam - Zone 11

732280  Easting
4320650  Northing
United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number photos Page 1

Photograph No. 1

Photographer - Harlan D. Unrau
Date - September 1988
Original Negative - Denver Service Center, Western Team
View - Ditch near automobile turnout on Wheeler Peak Scenic Road; looking north-northeast

Photograph No. 2

Photographer - Harlan D. Unrau
Date - September 1988
Original Negative - Denver Service Center, Western Team
View - Ditch near automobile turnout on Wheeler Peak Scenic Road; looking south-southwest

Photograph No. 3

Photographer - Harlan D. Unrau
Date - September 1988
Original Negative - Denver Service Center, Western Team
View - Ditch near automobile turnout on Wheeler Peak Scenic Road; looking north-northeast

Photograph No. 4

Photographer - Harlan D. Unrau
Date - September 1988
Original Negative - Denver Service Center, Western Team
View - West end (Spring Valley Side) of ditch tunnel

Photograph No. 5

Photographer - Harlan D. Unrau
Date - September 1988
Original Negative - Denver Service Center, Western Team
View - West end (Spring Valley Side) of ditch tunnel
United States Department of the Interior  
National Park Service  

National Register of Historic Places  
Continuation Sheet  

Section number photos Page 2  

Photograph No. 6  
Photographer - Harlan D. Unrau  
Date - September 1988  
Original Negative - Denver Service Center, Western Team  
View - Ditch in Strawberry Creek Canyon; looking west-northwest  

Photograph No. 7  
Photographer - Harlan D. Unrau  
Date - September 1988  
Original Negative - Denver Service Center, Western Team  
View - Stella Lake Rock Dam; looking south  

Photograph No. 8  
Photographer - Harlan D. Unrau  
Date - September 1988  
Original Negative - Denver Service Center, Western Team  
View - Stella Lake Rock Dam; looking south  

Photograph No. 9  
Photographer - Harlan D. Unrau  
Date - September 1988  
Original Negative - Denver Service Center, Western Team  
View - Stella Lake Rock Dam; looking south
EAST DITCH CONSTRUCTION DRAWINGS

CROSS-SECTION OF BED-ROCK SLUICE

CROSS-SECTION OF EAST DITCH

CROSS-SECTION OF FLUME IN LEHMAN CANYON
SIDE VIEW OF FLUME

PRESSURE TANK FOR THE 22 IN. PIPE

OSCEOLA GRAVEL MINING COMPANY.
United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number _____ Page _____

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 96000584 Date Listed: 6/6/96

OSCEOLA (EAST) DITCH White Pine NV
Property Name County State

N/A Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Signature of the Keeper 6/6/96 Date of Action

Amended Items in Nomination:

Verbal Boundary Description:
The verbal boundary description (VBD) is revised to read:
Boundary lines follow the line highlighted in yellow on
the enclosed USGS quad maps, starting at Point A on the
northern park boundary and ending at Point H on Lehman
Creek. Generally, the boundary lines extend about 10
feet on either side of the center line of the ditch.
The boundary for the discontiguous dam includes the
full extent of the stonework dam and an area ten (10)
feet on all sides to include appropriate landscape
features and setting, similar to the main ditch.

Acreage:
The correct acreage for the resource is approx. 24 acres.

This information was confirmed with Robbyn Jackson of the NPS.

DISTRIBUTION:
National Register property file
Nominating Authority (without nomination attachment)
Oscenla (East) Ditch, White Pine, Nevada (Photo #2)
OSCEOLA (EAST) DITCH, WHITE PINE, NEVADA (PHOTO #3)
OSCEOLA (EAST) DITCH, WHITE PINE, NEVADA (PHOTO #4)
OSECOLA (EAST) DITCH, WHITE PINE, NEVADA (PHOTO #5)
OSCEOLA (EAST) DITCH, WHITE PINE, NEVADA (PHOTO #6)
OSCEOLA (EAST) DITCH, WHITE PINE, NEVADA (PHOTO #7)
OSCEOLA (EAST) DITCH, WHITE PINE, NEVADA (PHOTO #8)