



Consultants in Natural Resources and the Environment

Cultural Resource Survey Strontia Springs Reservoir Hydroelectric Controls Upgrade Douglas County, Colorado

Prepared for—

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Submitted to—

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USFS Permit No. CAN715HR
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ERO Project No. 7105

June 2018

Colorado Historical Society - Office of Archaeology and Historic Preservation
Colorado Cultural Resource Survey
Cultural Resource Survey Management Information Form

I. PROJECT SIZE

Total federal acres in project	0.52	Total federal acres surveyed	0.52
Total state acres in project		Total state acres surveyed	
Total private acres in project	1.48	Total private acres surveyed	1.48
Total other acres in project		Total other acres surveyed	

II. PROJECT LOCATION

County: Douglas
USGS Quad Map: Kassler
Principal Meridian: 6th

Township	<u>7 S</u>	Range	<u>69 W</u>	Section	<u>21</u>		1/4 of	<u>NW</u>	1/4 of	<u>NW</u>	1/4
Township	<u>7 S</u>	Range	<u>69 W</u>	Section	<u>16</u>		<u>SE</u>	<u>1/4 of</u>	<u>SW</u>	<u>1/4 of</u>	<u>SW</u>

III. SITES

Smithsonian Number	Resource Type		Eligibility			Management Recommendations										
	Prehistoric	Historic	Paleontological	Unknown	Eligible	Not Eligible	Need Data	Contributes to a District	Non-supporting Linear Segment	Supporting Linear Segment	Preserve / Avoid	No Further Work	Monitor	Test	Excavate	Other
5DA26.1		X			X				X			X				

Abstract

Denver Water (DW) contracted ERO Resources Corporation (ERO) to conduct a cultural resource survey for the Federal Energy Regulatory Commission Strontia Springs Reservoir Hydroelectric and Controls Upgrade project at the Strontia Springs Dam in Waterton Canyon on land owned by DW and the Pike-San Isabel National Forest (PSINF). The project would install a switchyard that would encompass a 50-foot by 30-foot footprint and 1,650 feet of electrical duct banks. Based on the PSINF review of a work plan submitted by ERO, the area of potential effect (APE) is the footprint of the switchyard (50 feet by 30 feet), the length of the Lower Dam Access Road between the proposed switchyard and the dam outlet works, and Waterton Canyon Road between the proposed switchyard and a gauge house; totaling about 2 acres.

Because the project is located on federal lands, it is therefore an undertaking subject to compliance with Section 106 (54 U.S.C. § 306108) of the National Historic Preservation Act (54 U.S.C. § 300101 et seq.) (NHPA, 1966, as amended) and its implementing regulations under 36 Code of Federal Regulations (CFR) 800.

One previously documented segment of the Denver, South Park & Pacific (DSP&P) Railroad (5DA22.1) is within the APE, and ERO rerecorded and expanded the segment. The DSP&P Railroad has been determined eligible for listing in the National Register of Historic Places under Criterion A. However, segment 5DA22.1 has been widened and improved for use as an automobile road, which has adversely affected its historic integrity and is recommended nonsupporting to the eligibility of the entire site. No further work is necessary, and ERO recommends a determination of “no historic properties affected” pursuant to 36 CFR 800.4 (d) (1) of the NHPA.

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Cultural Resource Survey

Strontia Springs Reservoir Hydroelectric Controls Upgrade

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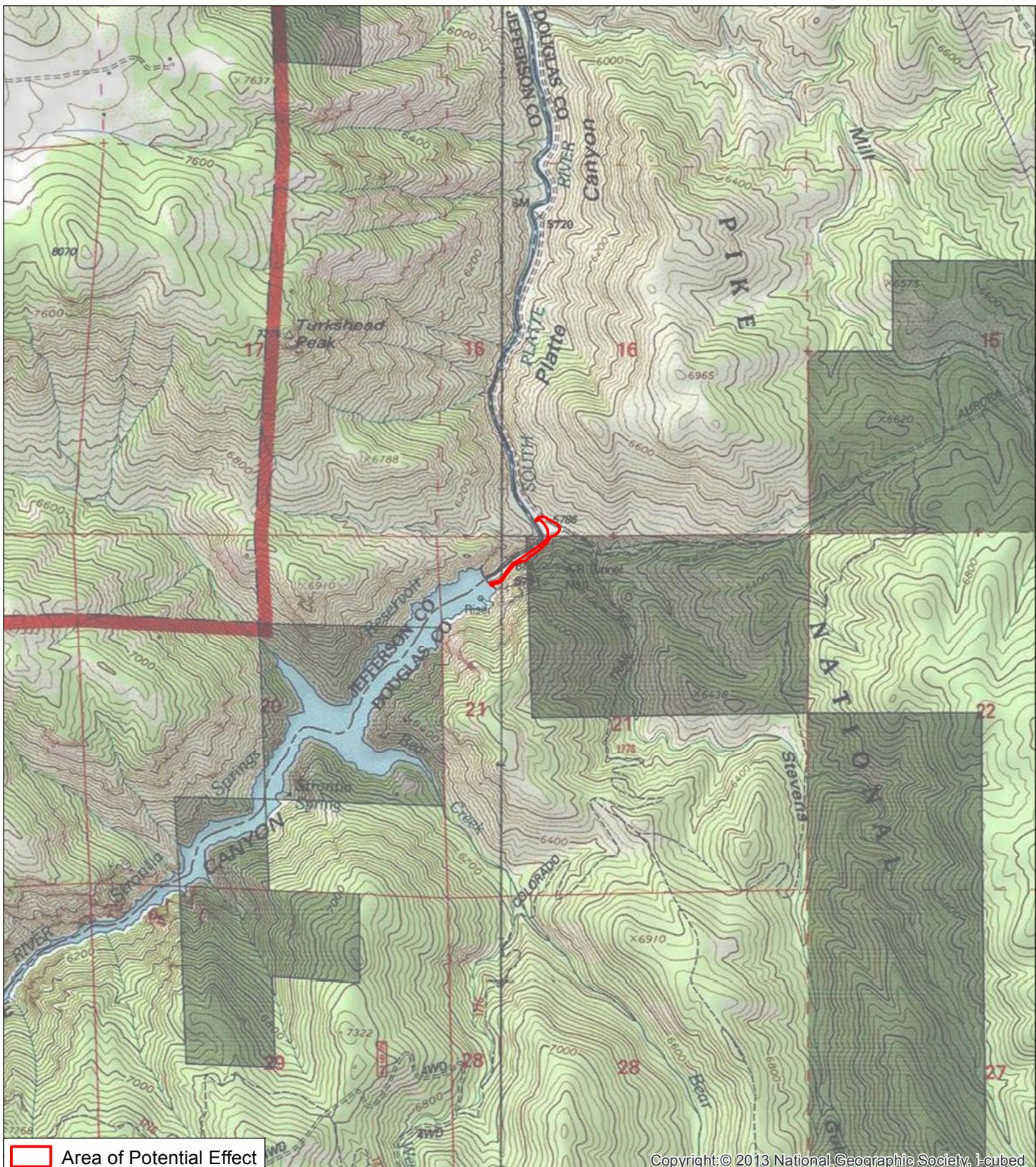
June 2018

Project Description

Denver Water (DW) contracted ERO Resources Corporation (ERO) to conduct a cultural resource survey for the Federal Energy Regulatory Commission Strontia Springs Reservoir Hydroelectric and Controls Upgrade project at the Strontia Springs Dam in Waterton Canyon on land owned by DW and the Pike-San Isabel National Forest (PSINF). The project would install a switchyard that would encompass a 50-foot (ft) by 30 ft footprint and 1,650 ft of electrical duct banks. The proposed switchyard would be located adjacent and to the southwest of the intersection of Waterton Canyon Road and the Lower Dam Access Road. Electrical duct banks would be installed underground along the Lower Dam Access Road for 1,300 ft between the switchyard and the dam outlet works, and 350 ft of electrical duct banks would be installed along Waterton Canyon Road between the proposed switchyard and an existing gauge house located on the northeast bank of the South Platte River. Because the project is located on federal lands, it is therefore an undertaking subject to compliance with Section 106 (54 U.S.C. § 306108) of the National Historic Preservation Act (54 U.S.C. § 300101 et seq.) (NHPA, 1966, as amended) and its implementing regulations under 36 Code of Federal Regulations (CFR) 800.

Based on the PSINF review of a work plan submitted by ERO, the area of potential effect (APE) is the footprint of the switchyard (50 ft by 30 ft), the length of the Lower Dam Access Road between the proposed switchyard and the dam outlet works, and Waterton Canyon Road between the proposed switchyard and a gauge house; totaling about 2 acres.

The APE is located on the Kassler 7.5-minute U.S. Geological Survey (USGS) quadrangle (Figure 1). The legal location is Township 7 South, Range 69 West, Sections 16 and 21 in the 6th Principal Meridian. ERO archaeologist Clive Briggs conducted a Class III cultural resource survey of the entire APE on April 18, 2018.



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SW 1/4 Section 16, T7S, R69W, 6th PM
NW 1/4 Section 21, T7S, R69W, 6th PM
USGS Kassler, CO Quad. (1969)
Douglas County, Colorado

0 1,000 2,000 feet
1:24,000



Figure 1
Project Location

Prepared for: Denver Water
and the PSINF
File: 7105 Fig1.mxd (CWB)
May 25, 2018

ERO
ERO Resources Corp.

Natural Environment

Contained within the Southern Rocky Mountains geological province, the project area is along the Front Range uplift north of Pikes Peak. Seventeen of Colorado's fifty-four 14,000-foot peaks are within this province, including Mt. Elbert, the highest mountain in the state. To the east of the province, beyond the high peaks and mountain valleys, are the plains of northeastern Colorado. The APE is within the upper South Platte River basin, the headwaters of which direct runoff from South Park and the surrounding mountain ranges north, west, and east of the town of Fairplay. The elevation in the APE ranges from 5,700 to 5,900 feet above sea level (asl) within the montane ecological zone.

Topographically, the APE includes upland landforms dissected by low-order streams and intermittent drainages that feed the South Platte River. Precambrian intrusive igneous rocks dominate the geology of the APE (Figure 2), which include granites associated with the Pikes Peak batholith, biotite gneiss, schist, and quartzite. Units associated with the Pikes Peak batholith include Pikes Peak, Mount Rosa, Windy Point, Redskin granites, and biotitic gneiss, schist, and Manitou Limestone near Manitou Springs (Tweto 1979).



Figure 2. Overview of the APE showing the intersection of Waterton Canyon Road and the Lower Dam Access Road, with Strontia Springs Reservoir dam in the background; the view is to the southwest.

The climate of the project area is inferred from climatic data collected at the Lake George (elevation 7,968 ft) and Cheesman Reservoir (elevation 6,890 ft) monitoring stations. Generally, the climate is characterized as temperate and dry. Average temperatures range from 8.2 degrees Fahrenheit (F) in January at Cheesman Reservoir and 18.5 degrees F at Lake George to 84 degrees F in July at Cheesman Reservoir and 63.5 degrees F at Lake George. The average precipitation for the project area is 16.51 inches per year (average range is 9.98 inches to 24.28 inches) with more than half of the precipitation occurring from June to September. Temperatures are colder and precipitation is greater at higher elevations (Colorado Climate Center 2018).

The APE is a modern roadway, but the vegetation growing along the margins of the APE consists of the ponderosa pine forest community with aspen found primarily in riparian environments. In addition to the dominant species of ponderosa pine and aspen, arboreal species include Douglas fir, limber pine, blue spruce, and juniper. Since the APE encompasses areas of ground disturbance associated with roadway development, the ground visibility is 100 percent.

Cultural Overview

The cultural overview is specific to historical cultural resources because there were no prehistoric cultural resources documented in the APE. For a regional prehistoric context see *Colorado Prehistory: A Context for the Platte River Basin* (Gilmore et al. 1999).

Historic Period (AD 1860 to 1968)

The Forest Reserve Act of 1891 was established by Congress to “set apart and reserve public lands wholly or in part covered with timber or undergrowth whether of commercial value or not, as public reservations” (Vance and Vance 2011). The Pikes Peak Timber Reserve was established quickly after the Forest Reserve Act was instated, effectively stopping all prospecting, logging, and homesteading within the reserve’s boundaries. Soon thereafter, two more reserves were formed (Plum Run and South Platte River), and both shared boundaries with the Pikes Peak Timber Reserve.

In 1905, under the guidance of forester Gifford Pinchot, the U.S. Forest Service was formed and the three adjacent reserves of Pikes Peak, Plum Run, and South Platte River were combined into one 1.2-million-acre park, and the area was officially named the Pike National Forest in 1907. Pinchot saw the reforestation of the area as crucial not only to the sustainability of the forest but to its utility as well. Despite nearly 15 years of preservation, the new national forest was more wasteland than woodland because of the devastating previous 20 years of deforestation. Pinchot set about providing guidelines requiring permits and permissions for use of the Pike National Forest, and by the 1930s, only a few logging companies remained in operation in the area (Mehls 1984). The Monument Nursery, which began in 1907 with the intent of reforesting the new forest, was in service for 58 years, and by the 1950s, the nursery had planted 40,000 acres of ponderosa pine, Douglas fir, spruce, and pine, restoring wildlife and erosion cycles to an otherwise stripped area.

The Development of Colorado Railroads

Railroads were first established in Colorado to access the mines in the Rocky Mountains. Before railroads were built, fur trappers and traders established trails through the state. In the years following the Louisiana Purchase, John Fremont was the first to explore routes through Colorado during the 1840s with the intent to establish a transcontinental railroad route from St. Louis to the Pacific Ocean. Later, in 1853, John Gunnison, who was also trying to establish a route for a central transcontinental railroad, led a party through Colorado along the Arkansas River. These early expeditions resulted in the drafting of maps of the region and the collection of information, but the reports of possible railroad routes were not of principal concern until the discovery of gold in the region (Fraser and Strand 1997).

Cherokee migrants, who were on their way to the California gold fields, were the first explorers to find gold in Colorado along the South Platte River. The Cherokee mined gold on their ancestral lands in northern Georgia, and they prospected during their migrations to California. In 1858, William Green Russell while in Sacramento heard about the Cherokee's discovery of gold, and he organized a small party to explore Colorado. Russell and his party discovered placer gold near the confluence of Cherry Creek and the South Platte River; others were soon to follow Russell's lead, and gold was discovered in Boulder Canyon near Gold Hill and in Clear Creek Canyon near Idaho Springs and around Blackhawk. Reports of the discovery of gold in Colorado spread rapidly, and 1859 marked the first gold rush to the state. During the first phase of the gold rush, 100,000 people traveled west along trail networks to the new towns at the mouth of placer-rich canyons, including Denver, Golden, Boulder, Colorado City, and Pueblo. Trails were established up the canyons to the mines, and many of the trails would later become railroad right-of-ways (Fraser and Strand 1997).

In 1859, before the gold rush was fully underway, interest emerged in establishing a transcontinental railroad through Denver, but by 1860 no railroad lines had been built. Several explorers continued to seek a railroad route through the mountains of Colorado; however, all reports emphasized the steep and rugged terrain, which discouraged development. Two transcontinental railroad acts of 1862 and 1864 provided a mechanism for federal subsidiaries and land grants for railroad development. The government gave the Union Pacific (UP) Railroad Company the contract to build a transcontinental line west from their Omaha line, which at the time was the furthest westward extension of a central railroad. Between 1863 and 1865, 40 miles of track were built west from Omaha. Independent and UP-sponsored expeditions searched to find a suitable route through the mountains of Colorado, but by 1867 the UP reported to the Secretary of the Interior that the mountainous topography was too strenuous for a transcontinental railroad to directly connect mining regions of Colorado to the rest of the country. Instead, a transcontinental route over the Continental Divide through southern Wyoming was preferred (Fraser and Strand 1997).

After the UP decided to build their line through Wyoming, the Denver Pacific (DP) and the Kansas Pacific (KP) Railroad companies joined efforts, and by 1870 a line was built to connect Denver with Cheyenne and Kansas. Denver was now connected via the DP line with the UP transcontinental line to the north

and to commercial points along the KP line to the east. This effort motivated construction of the first rail lines to the mines. In 1862, the Colorado Central (CC) Railroad developed a narrow-gauge line from Golden to Blackhawk, and by 1873 the CC had built a line to the coal fields of Boulder valley, which connected the new smelter in Blackhawk with the coal sources necessary to run the smelter (Fraser and Strand 1997).

The Denver, South Park & Pacific (DSP&P) Railroad

The DSP&P Railroad, incorporated in 1872, planned to build a narrow-gauge line to connect the mines of the central mountains with Denver. Plans were also made for the line to extend southwest into mining districts of the San Juan Mountains. John Evans, with the support of David Moffat, initiated the construction of the line in 1873, and so DS&P became the second railroad to connect Denver to the mines of central Colorado (Fraser and Strand 1997). The line extended from Denver along the South Platte River and then followed the North Fork of the South Platte River to South Park; by 1876 railroad construction through South Park was complete. This line also provided the ability to transport farm goods to markets in Denver for people living near the South Platte River (Fraser and Strand 1997; South Park Heritage 2013).

The narrow-gauge DSP&P Railroad was designed and constructed to establish a connection between Denver and Leadville during the Leadville mining boom (1874 through the 1890s). Former governor John Evans initiated the construction of the line in the early 1870s, but the line reached only from Denver to Morrison before construction was halted. Once the Leadville boom intensified, Evans decided to build west to Leadville through South Park. By 1878, the line had reached Bailey, and mule trains transported the freight on to Leadville. The following year the DSP&P was built to Trout Creek pass, located a fairly short distance northeast of Buena Vista. In 1878, Jay Gould tried to take over the line from Evans and he failed, but he obtained a sizeable portion of DSP&P stock. Gould also convinced Evans to slow down construction in order to allow the Denver & Rio Grande (D&RG) Railroad to be the first to reach Leadville. In 1880, the DSP&P was built to Buena Vista to join the D&RG line, which continued on to Leadville. In the same year, Gould obtained the primary interest in stock, and the DSP&P was constructed from Como to the mining camps of Breckenridge, Frisco, Dillon, and Keystone during the early 1880s. In 1884, Gould's DSP&P line was built from Frisco to Leadville, which established the full connection of the DSP&P between Denver and Leadville and offered an alternative to the D&RG line (Fraser and Strand 1997).

Traveling to Leadville via the DSP&P line was popular. Small-scale Pullman Palace cars were pulled by narrow-gauge engines through the Colorado Mountains from Denver to Leadville. Significant people in history, many of which made their fortunes in Leadville, rode the line. Such individuals include the "Carbonate Kings," Horace and Augusta Tabor; J.J. Brown and his wife Molly; the Guggenheims; Charles Boettcher; and Tom Walsh. Mr. Walsh was the owner of the Grand Hotel in Leadville and later was a mining partner with King Leopold of Belgium (Fraser and Strand 1997). One segment of the DSP&P railroad (5DA22.1) located in Waterton Canyon was redocumented during the survey.

Strontia Springs Dam and Reservoir

Strontia Springs Reservoir, owned and operated by DW, is situated along the South Platte River within Waterton Canyon west of Littleton. Construction of the dam was completed by 1983 with a spillway, outlet works, and a small hydroelectric plant. The concrete dam stands 243 ft above the South Platte River and forms a 1.7-mile-long lake that contains 98 surface-acres of water. Water from the reservoir is allocated to Denver and Aurora. Denver's water is diverted into a 3.4-mile-long tunnel east to the Foothills Water Treatment Plant (Denver Water 2018). Seven hundred acre-feet of water allocated to Aurora is diverted through tunnels to Rampart Reservoir and onward through the Rampart Parallel Pipelines to the city (Aurora Water 2018).

Methods

Historic Property Identification

This cultural resource survey provides compliance under Section 106 of the NHPA (and its implementing regulations under 36 CFR Part 800) by undertaking a “reasonable and good faith effort” to identify historic properties (defined as listed in or eligible for listing in the National Register of Historic Places (NRHP)) within the defined APE. Identification and documentation standards conform to federal land managing agency requirements and secondly to guidelines provided by the State Historic Preservation Officer (SHPO). In doing so, the standards imposed by the *Secretary of the Interior for the Identification, Documentation, and Evaluation of Historic Properties* are also met. All personnel supervising survey and documentation are listed on applicable federal and state permits and meet or exceed the *Secretary of the Interior’s Professional Qualification Standards* (36 CFR 61).

Historic properties may consist of buildings, structures, objects, or sites and can include districts, landscapes, and traditional cultural properties. The Department of the Interior’s National Park Service (NPS) has established an age criteria of 50 years for historic property evaluation and to be listed in the NRHP (but see criteria consideration (g) for an exception to the age guideline); in some instances, a federal agency will establish the age criteria at 45 years to account for the duration of the undertaking.

Cultural resources not identified during the OAHP file search and historical records were identified during pedestrian survey. This project used standard pedestrian survey transects spaced 15 to 20 meters (m) apart to identify unknown cultural resources within the APE. The APE is defined by the lead federal agency, generally in consultation with the SHPO, and means “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” (36 CFR 800.16).

Cultural Resource Documentation

ERO documents cultural resources according to a standardized approach to ensure consistency and accuracy. Sites are digitally photographed from multiple perspectives, and all significant tools, diagnostic artifacts, and features are photographed to scale. The site datum is also photographed if

physically established and directed by the land managing agency. Individual site maps are produced using a submeter and subcentimeter capable Trimble GeoXH Explorer global positioning system (GPS). Elements of the site map include all cultural features, diagnostic and point provenience artifacts (designated as field specimens (FS)), artifact concentrations, major vegetation breaks and contour topography, modern features and disturbances, and the site datum (whether physically established or for location reference).

All required forms are completed digitally in the field using a tablet. Archaeological resources and newly defined segments of linear resources such as ditches and railroads were documented using a Management Data Form (OAHP1400) and appropriate component form (prehistoric archaeology, historical archaeology, or linear); the boundaries of newly defined linear resource segments are limited to the extent of the resource within the APE plus a 100 ft buffer on either end per SHPO guidelines (however, linear resources are mapped to the extent possible when the Bureau of Land Management is the lead federal agency). Newly identified historical buildings and structures were documented on an Architectural Inventory Form (OAHP1403). Previously recorded cultural resources identified during the OAHP file search were revisited and reevaluated on OAHP form 1405; if the resource has not been reevaluated within the last 10 years and/or substantial changes have occurred to the resource since the previous evaluation, ERO rerecorded and reevaluated the resource by completing new state documentation forms. Location maps (Appendix A) and OAHP resource documentation forms (Appendix B) are provided to the land managing agency only and reside permanently with the agency and OAHP.

Historic Period Sites

Historic period sites include homesteads, ranching, or agricultural complexes; mining complexes; sites built under federal work programs; timber harvesting; and industry, among other site types. Age criteria is established for potential historic sites by referencing general land office (GLO) patents, county assessor records, state water division records, historical maps, and 15' USGS maps. Historical dumps and artifact scatters without features are evaluated on a case-by-case basis. A single artifact class within a dump, such as sanitary cans, is recorded as an isolated occurrence; conversely, dumps that exhibit diverse artifact classes and date prior to World War II may be documented as archaeological sites, given their information potential.

Linear structures such as water conveyance systems, transmission lines, trails, and roads are documented as sites. An isolated fence line is generally not recorded as a resource unless it demarcates a boundary significant to the history of the area and can be physically linked with a purposeful activity; an isolated fence line may also be documented as a feature of a larger resource. Depending on their cultural context, single or small clusters of mining prospect pits with no associated artifacts are documented as isolated finds due to their general ubiquity and limited information potential.

Criteria for Evaluation

Documented cultural resources are evaluated for their eligibility to be listed in the NRHP. NRHP significance criteria are codified under 36 CFR 60.4, summarized below:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

- a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) that are associated with the lives of persons significant in the past; or
- c) that embody the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possess high artistic value, or that represent a significant or distinguishable entity whose components may lack individual distinction; or
- d) that have yielded, or are likely to yield, information important in prehistory or history.

Cultural resources that do not meet the 50-year age criteria, but are integral parts of a historic district or carry exceptional importance to the history of the region are considered for eligibility under criteria consideration (g).

Certain kinds of properties are not usually considered for listing in the National Register: religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties achieving significance within the past fifty years" (NPS 1997). For a property to be eligible under a criteria consideration, the property must still qualify for one of the four criteria and must possess integrity.

Regional contexts (e.g., Church et al. 2007; Gilmore et al. 1999) are used to evaluate significance under Criterion D by determining whether a potential property has the potential to answer defined research questions and/or date to a defined period of significance. Historical sites representative of the built environment (i.e., buildings, structures, and engineered features) typically qualify for listing in the NRHP under at least one of the first three criteria (A–C). Archaeological sites typically qualify exclusively under Criterion D, with notable exceptions. An otherwise heavily disturbed site may still retain information potential from intact features (potential chronometric or subsistence data) or discrete areas of the site that retain physical integrity. Archaeological sites with significant sediment deposition remain potentially eligible for listing in the NRHP even without evaluative testing.

Sites evaluated as "needs data" may be eligible under one or more criteria but require further work to determine NRHP eligibility. Cultural resources recommended "needs data" include archaeological sites (either prehistoric or historical) suspected of containing buried cultural deposits or historical sites where additional research is necessary to ascertain significance. Sites that are evaluated as not eligible for listing in the NRHP do not meet any of the eligibility criteria and/or have lost physical integrity. Cultural resources are assessed for integrity only if the site meets one or more eligibility criteria. Eroded or

otherwise heavily disturbed archaeological sites are typically not considered eligible since the ability to convey significance in the form of intact cultural deposits (i.e., information potential) has been lost through natural or modern disturbances.

For a property to be eligible under one or more criteria, the property must possess physical integrity and retain most aspects of integrity: *location, design, setting, materials, workmanship, feeling, and association*. Most important of these for any building or structure are the aspects of location, design, materials and setting. Any building or structure that has been relocated/realigned no longer retains integrity of location, perhaps the most important aspect of integrity. The aspects of design and materials are important for demonstrating a building or structure's association with significant historical trends, and is required for a property to qualify under Criterion C. Considering most historical properties are still in use, a resource can retain integrity of design if materials have been maintained in-kind with the design of the original structure or building; for example, in-kind replacement of materials such as wood siding or railroad hardware would not diminish integrity of design. However, modern upgrades to earthen ditches such as the placement of modern diversion structures and concrete lining would diminish eligibility under Criterion C. The aspects of feeling and setting are intrinsically linked such that suburban development and modern intrusions may diminish the significance of ranching and agricultural complexes.

ERO uses the following generalized approach to assess integrity under Criterion D. Most archaeological sites are considered in their original *location* unless post-depositional processes, such as erosion, have transported artifacts away from their original context. Artifacts can also move both vertically and horizontally in subsurface contexts diminishing the aspect of location. The site retains *location* if no significant post-depositional processes have altered the primary context of the artifacts. The aspect of *design* is present if the relationship between features or activity loci is apparent and the spatial organization of the site is discernible; *design* may also be present in highly formalized tools such as projectile points, ceramic vessels, architecture, or individual features. *Setting* refers to the surrounding physical environment of a site, which may be affected by modern development or changes to the natural environment (such as important biotic species) through climate change or modern development. *Setting* is considered intact if the surrounding environment is similar to the environment during the time of occupation. The aspect of *materials* is almost always retained due to the nature of the archaeological record and the material culture that is inherent to archaeological sites. If there were no physical artifacts or features (i.e., *materials*) present, there would not be a site. *Workmanship* is retained by the presence of artifacts, architecture, or features emblematic of a particular culture or people such as a Puebloan kiva or Clovis projectile point. The aspect of *feeling* is difficult to ascertain for archaeological sites and is often dependent on Native American perspective. Very little of the physical features present during occupation of a prehistoric site still exists in the present to convey a property's character. A site that retains *association* can be linked to a particular cultural-historical period through the presence of diagnostic artifacts, architectural elements, or chronometric means.

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Each documented cultural resource described below is provided a recommendation of NRHP eligibility and evaluated for project effects. The lead agency will provide a determination of eligibility for each documented cultural resource based on ERO's recommendation and will provide a determination of project effect on historic properties. The lead agency will then provide SHPO an opportunity to review and provide comment regarding NRHP eligibility and project effects per 36 CFR 800.4 through 800.5. If, during consultation between the lead agency and SHPO, a determination of "adverse effect to historic properties" occurs, further consultation is required to resolve adverse effects.

File and Literature Review

ERO conducted a file and literature review for the project with the OAHP on December 27, 2017 (File Search No. 20790). ERO included a 1-mile buffer on the APE to include considerations for indirect effects and the regional context. General Land Office plats and historical topographic maps were also reviewed for potential cultural resources. A total of 7 previous inventories and 10 previously recorded sites are within 1 mile of the survey area. Five of the surveys were of block areas, some of which overlap. One linear survey (MC.LM.R289) occurred in 1973 along the South Platte River through the APE, and a linear survey conducted in 2014 (MC.FS.R588) along the South Platte River Road partially overlaps the northern edge of the project APE. About 33 percent of the project APE was previously surveyed by ERO in 2012 (Table 1).

Table 1. Previous cultural inventories within 1 mile of the APE.

State Project No.	Report Title (Date)	Institution
DA.FS.R29	<i>A Class II and III Cultural Resource Inventory of the Proposed South Platte Fuels Management Project, Pike National Forest, Douglas County (2011)</i>	Pike–San Isabel National Forest
DA.FS.R35	<i>Class III Cultural Resource Survey Strontia Springs Security Barrier Project, Pike – San Isabel National Forest, Douglas County (CRR# R2013021200019) (ERO #5306) (2012)</i>	ERO Resources Corporation
DA.FS.R8	<i>A Cultural Resource Survey of the Waterton Canyon Prescribed Fire Project, Douglas County, Colorado (CRR#12-542) (1988)</i>	Pike–San Isabel National Forest
MC.FS.R588	<i>Class III Cultural Resource Inventory for the Waterton Canyon Electrical Project in Jefferson and Douglas Counties, Colorado (USFS INFRA# R20140212000016) (2014)</i>	Tetra Tech EC, Inc.
MC.FS.R69	<i>A Cultural Resources Survey of the Waterton Research Prescribed Fire Project, Douglas and Jefferson Counties, Colorado (CRR# 12-704) (1992)</i>	Pike–San Isabel National Forest
MC.FS.R93	<i>A Cultural Resource Survey of the Waterton-Martin Marietta Prescribed Fire Project, Jefferson and Douglas Counties, Colorado (CRR# 12-890) (1993)</i>	Pike–San Isabel National Forest
MC.LM.R289	<i>A Report of the Archaeological Impact of the Proposed Foothills Project of the Denver Board of Water Commissioners (1973)</i>	University of Colorado Museum

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The 10 previously recorded sites within 1 mile of the APE include the DSP&P Railroad (5DA26/5JF363), of which two segments have been recorded within (5DA26.1) and near (5DA26.2) the APE, and the other nine sites include a foundation, a spring, a communication line, a habitation, a cairn, a road, a trail, a bridge, and the Denver and Rio Grande Railroad (Table 2). Segment 5DA26.1 of the DSP&P Railroad, recorded by ERO in 2012, overlaps the APE and was determined to be a nonsupporting segment. The next closest site is the habitation (5DA986) located 60 m north of the APE. During the survey, 5DA26.1 was rerecorded and expanded to extend through the APE.

A GLO records search indicates no historical survey plats for the area (6th Principal Meridian, T7S, R69W NW ¼, NW ¼, Section 21; SE ¼, SW ¼, Section 16) that map the DSP&P Railroad in this location.

Table 2. Previously recorded cultural resources within the APE or within 1 mile of the APE.

Smithsonian Site No.	Associated Report Nos.	Resource Type	NRHP Eligibility Status (Date)	Status
5DA23	MC.LM.R41, MC.E.R103, MC.E.R12	Foundation	Field not eligible (1973)	Within 1-mile APE buffer
5DA24	MC.E.R12, MC.LM.R134	Spring	No assessment (1973)	Within 1-mile APE buffer
5DA25	MC.E.R13, MC.E.R12, MC.LM.R388, MC.LM.R41	Communication Line	Field not eligible (1973)	Within 1-mile APE buffer
5DA26/5JF363	MC.CN.R3, MF.LM.R703, MC.E.R12	Denver South Park & Pacific Railroad	Field eligible (1992)	Within 1-mile APE buffer
5DA26.1	MC.LM.R289	Denver South Park & Pacific Railroad segment	Field eligible/ Determined nonsupporting (2013)	Rerecorded and expanded
5DA26.2	MC.LM.R289	Denver South Park & Pacific Railroad segment	Field not eligible/ nonsupporting (2014)	Within 1-mile APE buffer
5DA986	MC.LM.R289	Habitation	Officially not eligible (1992)	Located 60 m north of the APE
5DA1004	MC.FS.R69	Mill Gulch Logging Road	Officially not eligible (2014)	Within 1-mile APE buffer
5DA2933	DA.FS.R35	Cairn	Field not eligible (2011)	Within 1-mile APE buffer
5DA2944.1	MC.FS.R588	Colorado Trail segment	Officially not eligible (2011)	Within 1-mile APE buffer
5JF53	MC.FS.R69	Denver and Rio Grande Railroad	Field not eligible (1973)	Within 1-mile APE buffer
5JF54	MC.FS.R588	Bridge	No assessment (1973)	Within 1-mile APE buffer

Survey Results

ERO rerecorded one segment of the DSP&P railroad (5DA22.1).

Resource Descriptions

5DA22.1

Type: Denver, South Park & Pacific Railroad segment

Description: Segment 5DA22.1 of the DSP&P Railroad was originally recorded in 2012 by ERO (Briggs 2012). During the 2018 survey the entire segment was rerecorded and expanded to extend the length of the APE; the segment measures 0.26 mile by 30 ft to 60 ft wide. Cut into a steep and rocky slope, the segment is directly below the Strontia Springs Dam in Waterton Canyon, and the South Platte River is adjacent to the northwest. The original railroad grade has been widened and modified for use as the Lower Access Road to the dam and Waterton Canyon Road. The vegetation along the segment includes ponderosa, Gambel oak, juniper, kinnikinnick, and various grasses growing in colluvial sediments of unknown depth. The ground visibility along the segment ranges from 70 to 100 percent and the elevation ranges from 5,790 ft to 5,925 ft asl.

The western portion of the segment is 30 ft wide and is situated directly above the South Platte River, evidenced by a ledge cut into a steep and rocky slope and by four features consisting of iron and wooden fixtures for telegraph line glass insulators (F1–F4), which are connected to the rock face above the ledge. The features are spaced approximately 40 ft apart, and none of the glass insulators are present. F1 and F2 are newly recorded features, and F3 and F4 were originally documented in 2012 (identified as F1 and F2 in the original record). The original grade has been modified in this area by the development of the Lower Access Road for the Strontia Springs Dam. Originally, the grade most likely did not exceed 10 ft wide; thus, construction of the Lower Dam Access Road has significantly widened the grade with fill and rock material to 30 ft. Waterton Canyon Road overlays the northeast portion of the grade and further widened the original grade to a maximum width of 60 feet. A large amount of fill was brought into this location to widen the road and to build a recreation rest area. Therefore, the widening and reinforcement of fill along the entire segment has significantly compromised the historical character of this railroad segment.

F1 consists of single upright iron pole with wire support connected to the rock face high above the grade. Wooden fixtures for glass insulators are not present.

F2 through F4 each consist of wooden fixtures for telegraph line glass insulators. Each feature contains two opposed, carved, and tapered wooden posts attached to a single steel pipe, which is attached to the rock face at a drilled hole. Each feature also has an associated single iron support pole connected at a drilled hole.

NRHP Eligibility: The DSP&P Railroad has been determined eligible for listing in the NRHP under Criterion A. The railroad is associated with historical transportation, the mining industry, and the

development and settlement of central Colorado. However, ERO recommends that this segment does not support the eligibility of the entire linear resource because the segment has been widened and improved for automobile transportation, adversely affecting historic integrity of the segment. The original narrow-gauge railroad grade has been widened to a width of 30 to 60 ft and modified into Waterton Canyon Road and the Lower Access Road to Strontia Springs Dam.

Segment 5DA22.1 retains integrity of association and location because the segment extends along the original alignment of the railroad grade and is associated with the historical development of railroad transportation, industry, and commerce. Complete alteration of the railroad grade has adversely affected the aspects of design, workmanship, setting, materials, and feeling.

Management Recommendations: No further work.

Summary and Management Recommendations

One previously documented segment of the DSP&P Railroad (5DA22.1) is within the APE and ERO rerecorded and expanded the segment. The DSP&P Railroad has been determined eligible for listing in the NRHP under Criterion A. However, segment 5DA22.1 has been widened and improved for use as an automobile road, adversely affecting the historic integrity of the segment. The segment is recommended nonsupporting to the eligibility of the entire site. No further work is necessary, and ERO recommends a determination of “no historic properties affected” pursuant to 36 CFR 800.4 (d) (1) of the NHPA.

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Cultural Resource Survey
Strontia Springs Reservoir Hydroelectric Controls Upgrade
Douglas County, Colorado

Appendix A Cultural Resource Location Map
For Official Use Only: Disclosure of Site Locations Prohibited (43 CFR 7.18)

Cultural Resource Survey
Strontia Springs Reservoir Hydroelectric Controls Upgrade
Douglas County, Colorado

Appendix B OAHP Cultural Resource Documentation Forms
For Official Use Only: Disclosure of Site Locations Prohibited (43 CFR 7.18)