Hayden Station Post-Closure Plan

Public Service Company of Colorado, an Xcel Energy Company

Hayden Station Ash Disposal Facility
Project No. 98286

December 2018

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prepared for

Public Service Company of Colorado,
an Xcel Energy Company
Hayden Station Ash Disposal Facility
Hayden, Colorado

Project No. 98286

December 2018

prepared by

Burns & McDonnell Engineering Company, Inc.
Denver, Colorado

INDEX AND CERTIFICATION

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Report Index

Qualified Professional Engineer Certification

In accordance with 40 CFR Section 257.104(d)(4), I hereby certify, as a Professional Engineer in the state of Colorado, that the information in this document was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse by Public Service Company of Colorado, an Xcel Energy Company or others without specific verification or adaptation by the Engineer.

Bradley A. Coleman, PE
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Date: 12/21/18

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
CCR landfill	Ash Disposal Facility
CCR	coal combustion residual
CFR	Code of Federal Regulations
CQA	Construction Quality Assurance
GWMP	Groundwater Monitoring Plan
PSCo	Public Service Company of Colorado, an Xcel Energy Company
RCRA	Resource Conservation and Recovery Act
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

This Post-Closure Plan has been prepared for the coal combustion residuals (CCR) landfill located at the Public Service Company of Colorado (PSCo), an Xcel Energy Company, Hayden Station. Hayden Station is a 446-megawatt coal-fired, steam turbine power plant owned and operated by PSCo. The station is located at 13125 U.S. Highway 40, Hayden, Colorado 81639. The CCR landfill location is shown on Figure 1-1.

This plan was prepared to comply with the requirements of the U.S. Environmental Protection Agency's (USEPA's) CCR Rule for disposal of CCR under Subtitle D of the Resource Conservation and Recovery Act (RCRA). The final rule was published in the Federal Register, Volume 80 Number 74 on April 17, 2015, and became effective on October 19, 2015.

1.1 Facility Description

The CCR landfill is located on Routt County Road 27 approximately one mile south of Colorado Highway 40 in Routt County, Colorado. A site map is included as Figure 1-2. The CCR landfill is in an unincorporated portion of Routt County. The location is approximately 5 miles east of Hayden, Colorado and 20 miles west of Steamboat Springs, Colorado. The CCR landfill is generally located in the west half of Section 16 and the east half of Section 17, Township 6 North, Range 87 West of the 6th Principal Meridian, Routt County, Colorado. The service area for the CCR landfill is limited to the Hayden Station power plant. Wastes are not accepted from any other source.

The CCR landfill is an unlined ash monofill. The wastes accepted at the CCR landfill consist of coal ash, air emission control byproducts, water intake silt, excavation soils and coal impurities. The area inside the permitted boundary of the CCR landfill consists of approximately 154 acres of which approximately 136 acres is used for ash disposal and approximately 18 acres for storm water control structures, access roads, and borrow area.

1.2 Regulatory Requirements

This plan has been prepared to fulfill the requirements of 40 Code of Federal Regulation (CFR) Section 257.104(d). Section 257.104(d) requires:

- A description of the required monitoring and maintenance activities and the frequency at which activities will be performed;

- The name address, telephone number and e-mail address of the person or office to contact about the facility during the post-closure care period; and

- A description of the planned uses of the property during the post-closure period.

2.0 MONITORING AND MAINTENANCE

The Hayden CCR landfill will be capped as cells reach their final capacity. The minimum 30-year post-closure period will begin once the landfill is completely closed and the final cap has been installed on any remaining areas.

Site monitoring and maintenance will consist of semi-annual groundwater monitoring, periodic inspections, and scheduled and periodic maintenance activities.

2.1 Post-Closure Care

An inspection of the CCR landfill will be made semi-annually during the first five years of the post-closure period. Thereafter, an inspection will be conducted annually for a minimum of the 30-year post closure period. CCR landfill inspections will include observations for cover integrity (e.g., erosion of final cover or problems with vegetative quality), storm water drainage, and CCR landfill security features. If the inspection reveals problems, appropriate corrective measures will be taken as necessary to maintain the effectiveness and integrity of the cover system and drainage features.

Cover vegetation will be monitored as part of site inspections and will be reseeded and amended as necessary.

2.2 Groundwater Monitoring

Consistent with the requirements of 40 CFR §257.90 through 257.98, PSCo has prepared a site-specific groundwater monitoring system and plan. The groundwater monitoring system, sampling, analytical analysis and reporting procedures are described in the Groundwater Monitoring System Certification as posted to the facility CCR Operating Record.

All sampling, packaging, shipping, testing and reporting of groundwater monitoring during the post-closure care period will be in accordance with the facility's Groundwater Monitoring System Certification.

2.3 Landfill Maintenance

PSCo will be responsible for the overall maintenance of the landfill once it is closed. Specific items on the closed CCR landfill surface which require observation are:

- Erosion effects/side slope sloughing and rills;
- Vegetation deterioration;

- Settling/subsidence areas; and
- Washouts.

Locations of noteworthy observations will be recorded on a site map with reference (distance) to easily recoverable site features such as monitoring wells or down chutes.

Routine final cover maintenance will include reseeding as necessary. Bare, sparsely covered, and drought-damaged areas shall be reseeded as soil moisture content returns to normal levels.

Simple maintenance related to the items identified above may include the following:

- Fill ruts and gullies in eroded side slope areas and regrade to match design condition.
- Fill and grade areas of subsidence on the final cap with soils to match existing surface grading.

Localized subsidence or surface depressions (visual or as evidenced by the presence of puddles following a rainstorm) will require backfilling and regrading to proper drainage.

Drainage swales should be checked for the presence of obstructions, erosion, ponding of water, and excessive siltation.

Routine drainage swale maintenance will include clearing obstructions, and cleaning of silt and debris. When accumulated debris/silt obstruct flow, the sediment will be removed using mechanical means. Drainage swales may also need regrading or reconstruction to eliminate standing water.

Groundwater monitoring wells will be visually inspected for the following at each monitoring event:

- Erosion or biotic intrusion around the base;
- Damage to locking well caps;
- Integrity of well seals; and
- Integrity of any well markers or protective structures.

Areas of erosion at groundwater monitoring wells will be filled with compatible soil materials graded to drain and covered with vegetative growth or other surface treatment to prevent erosion. Damaged well caps, concrete pads, and well seals should be repaired and/or replaced. Wells damaged below grade levels may need to be evaluated further and possibly replaced.

3.0 POST-CLOSURE SITE CONTACT

In accordance with 257.104(d)(ii), the owner must provide the name address, telephone number and e-mail address of the person or office to contact about the facility during the post-closure care period.

Hayden Station CCR landfill is owned and operated by PSCo, 1800 Larimer Street, Denver, Colorado 80202. Table 3-1 lists post-closure site contact information.

Table 3-1. Post-Closure Site Contact

Name	Telephone	Department	E-mail
Jennifer McCarter	303-294-2228	Environmental Services	Jennifer.McCarter@xcelenergy.com

4.0 POST-CLOSURE USE

In accordance with 257.104(d)(iii) the post-closure plan must provide a description of the planned uses of the property during the post-closure period.

There is no current post-closure use planned for the Hayden CCR landfill. The stabilized landfill with final cover will be open range for wildlife and other passive uses.

5.0 REFERENCES

Federal Register, 2018. *Subpart D – Standards for the disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, 40 C.F.R. § 257.104*.

FIGURES

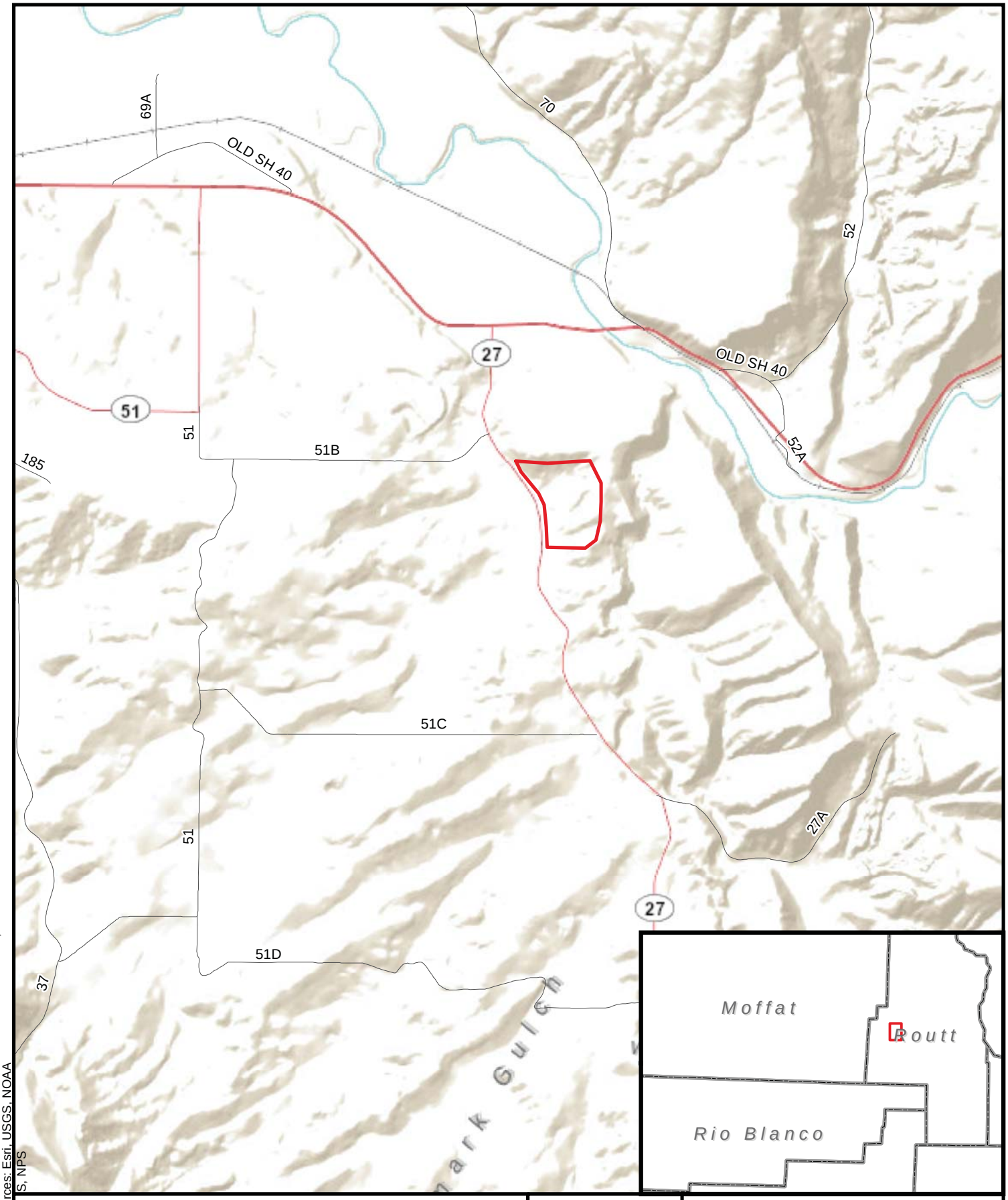


FIGURE 1-1

FACILITY LOCATION
HAYDEN STATION
ASH DISPOSAL FACILITY

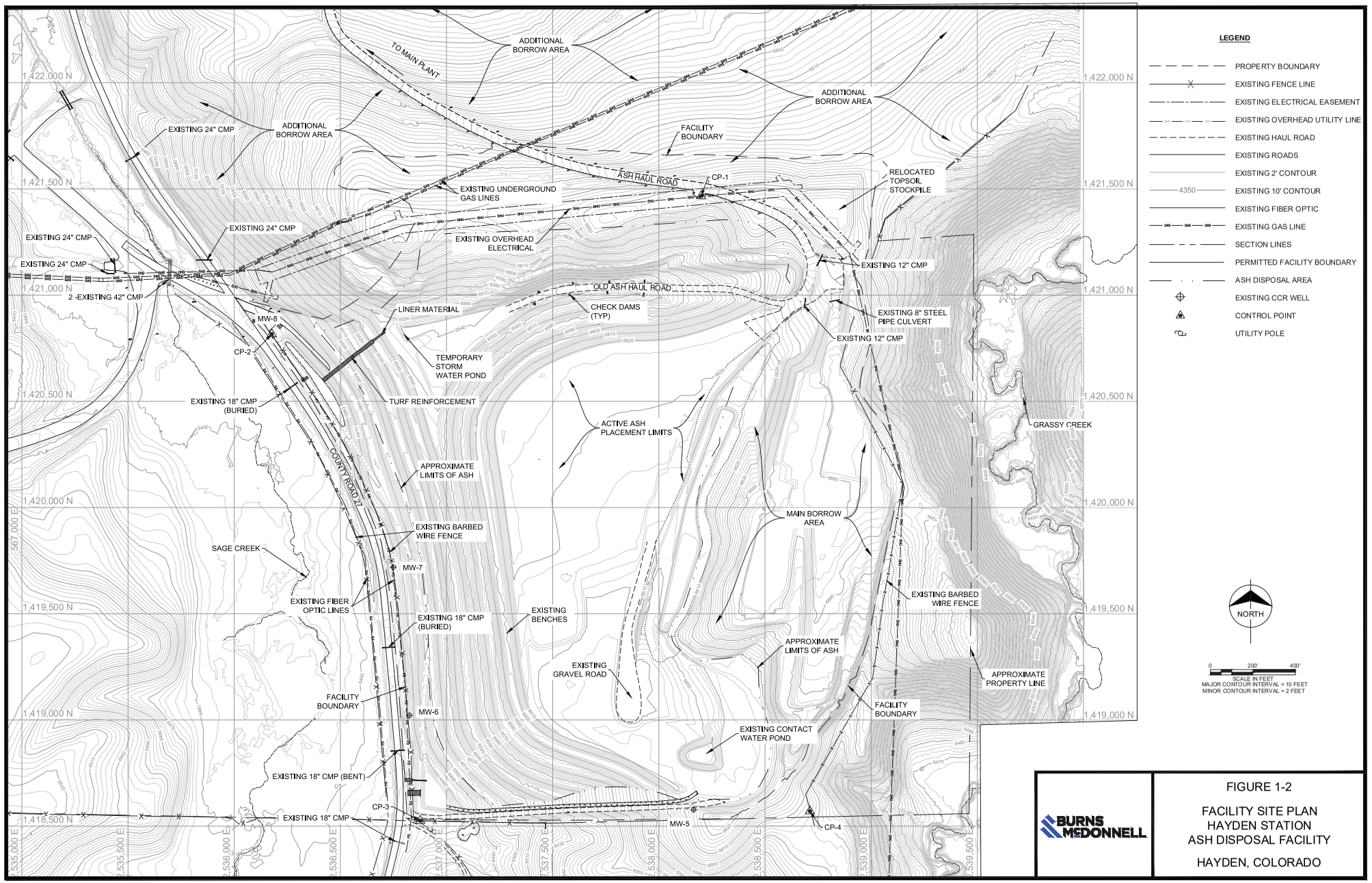
HAYDEN, COLORADO

Path: Z:\Clients\ENS\PSCCO\98286_HaydenEDOP\Studies\GeospatialArcDocs\Hayden CO Ash Disposal.mxd tmccarthick 10/9/2018

Service Layer Credits: Sources: Esri, USGS, NOAA
S, NPS

Source:

Issued: 10/9/2018



BURNS McDONNELL

FIGURE 1-2

FACILITY SITE PLAN
HAYDEN STATION
ASH DISPOSAL FACILITY

HAYDEN, COLORADO

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