

Office of Environmental Management – Grand Junction



Moab UMTRA Project
Crescent Junction Site Fugitive Dust Control Plan

Revision 4

September 2018



U.S. Department
of Energy

Office of Environmental Management

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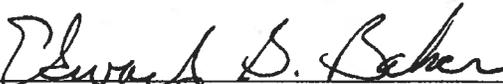
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Review and Approval



Edward B. Baker
RAC Acting Environmental Compliance Manager

8-28-18

Date



Matthew J. Udovitsch
TAC Quality Assurance and Environmental Compliance Manager

8-28-18

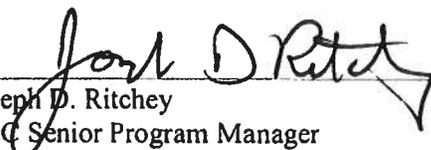
Date



Greg D. Church
RAC Project Manager

8/27/18

Date



Joseph D. Ritchey
TAC Senior Program Manager

8/30/18

Date

Revision History

Revision	Date	Reason for Revision
0	July 2006	Initial issue.
1	July 2014	Revision includes updates reflecting Project progress.
2	June 2016	Periodic update reflecting Project progress.
3	July 2017	Changed to a Project-wide document and updates made throughout.
4	September 2018	Revision includes updates reflecting Project progress.

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1.0 Introduction

This Plan complies with Utah Administrative Code Rule R307-205-8, “Emission Standards: Fugitive Emissions and Fugitive Dust, Tailings Piles and Ponds,” which requires owners or operators of an existing tailings operation to take steps to minimize fugitive dust resulting from grading, excavating, depositing, or natural erosion or other causes in association with such operation. This Plan describes the engineering and administrative controls used to minimize and control fugitive dust emissions from activities and operations conducted by the U.S. Department of Energy (DOE) at the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project Crescent Junction site. This site-specific Plan is updated as necessary to reflect dust controls for current and ongoing site activities and operations.

1.1 Site Description

The Crescent Junction site is located about 1 mile northeast of the junction of U.S. Highway 191 (US-191) and Interstate 70 (I-70), approximately 30 miles north of the Moab site (see Figure 1). The Crescent Junction site is the location for disposal of Moab site contaminated materials. The site occupies 936 acres and consists of a disposal cell, soil stockpile areas, support facilities, rail load-out area, roads, sediment basins, and a construction water pond (see Figure 2). The site is surrounded on three sides by land administered by the Bureau of Land Management (BLM). BLM has designated the area as access-limited to existing roads. The talus slopes of the Book Cliffs delineate the northern boundary. The Union Pacific Railroad bounds the property on the south.

1.2 Project/Site Information

Name of operation, physical site address, and owner/operator contact information is provided below.

Name of Operation

Moab UMTRA Project: Crescent Junction site

Physical Address of Operation

0.15 County Road 223, Thompson Springs, Grand County, Utah 84540

Owner

U.S. Department of Energy, Grand Junction office
200 Grand Avenue, Suite 500
Grand Junction, Colorado 81501
DOE Federal Cleanup Director: (970) 257-2115

Operator

Remedial Action Contractor (RAC)
North Wind Portage
200 Grand Avenue, Suite 319
Grand Junction, Colorado 81501
Project Manager: Greg Church (970) 257-2117
Crescent Junction Operations/Site Manager: Mike McCullough (435) 564-3425 extension 1003
On-call Manager (after hours): (970) 361-8335

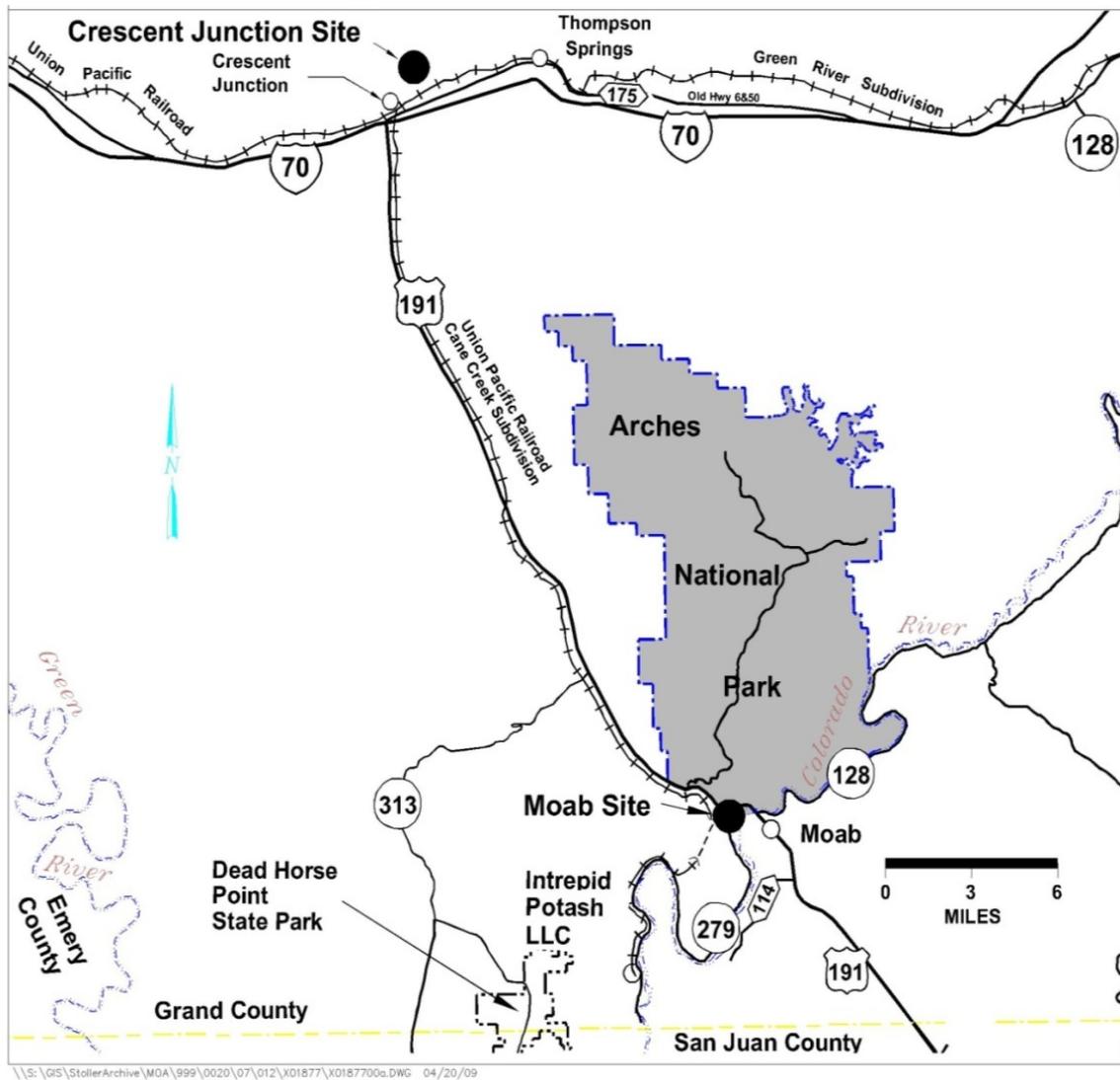


Figure 1. Location of Crescent Junction Site

1.3 Climate

The semiarid desert climate of the Crescent Junction site is characterized by hot summers and mild winters. The average annual temperature is about 57°F for a fairly moderate climate. January is the coldest month of the year, with low temperatures averaging 30°F. July is generally the warmest month, with high temperatures averaging 82°F. The relative humidity is low, often less than 50 percent during daytime hours. Average annual precipitation is 9 inches, distributed approximately equally among the seasons. Evaporation greatly exceeds annual precipitation, thus contributing to the likelihood of fugitive dust. Thunderstorms occur about 40 days per year. Prevailing winds in the Crescent Junction region are from the west.

1.4 Environmental Monitoring

In addition to the implementation of physical dust controls, DOE developed and implemented an Environmental Air Monitoring Program for the Project. This Program consists of sampling airborne radioparticulates, radon, and direct gamma radiation at various locations at on-site and off-site locations. Results are summarized in quarterly air monitoring reports.

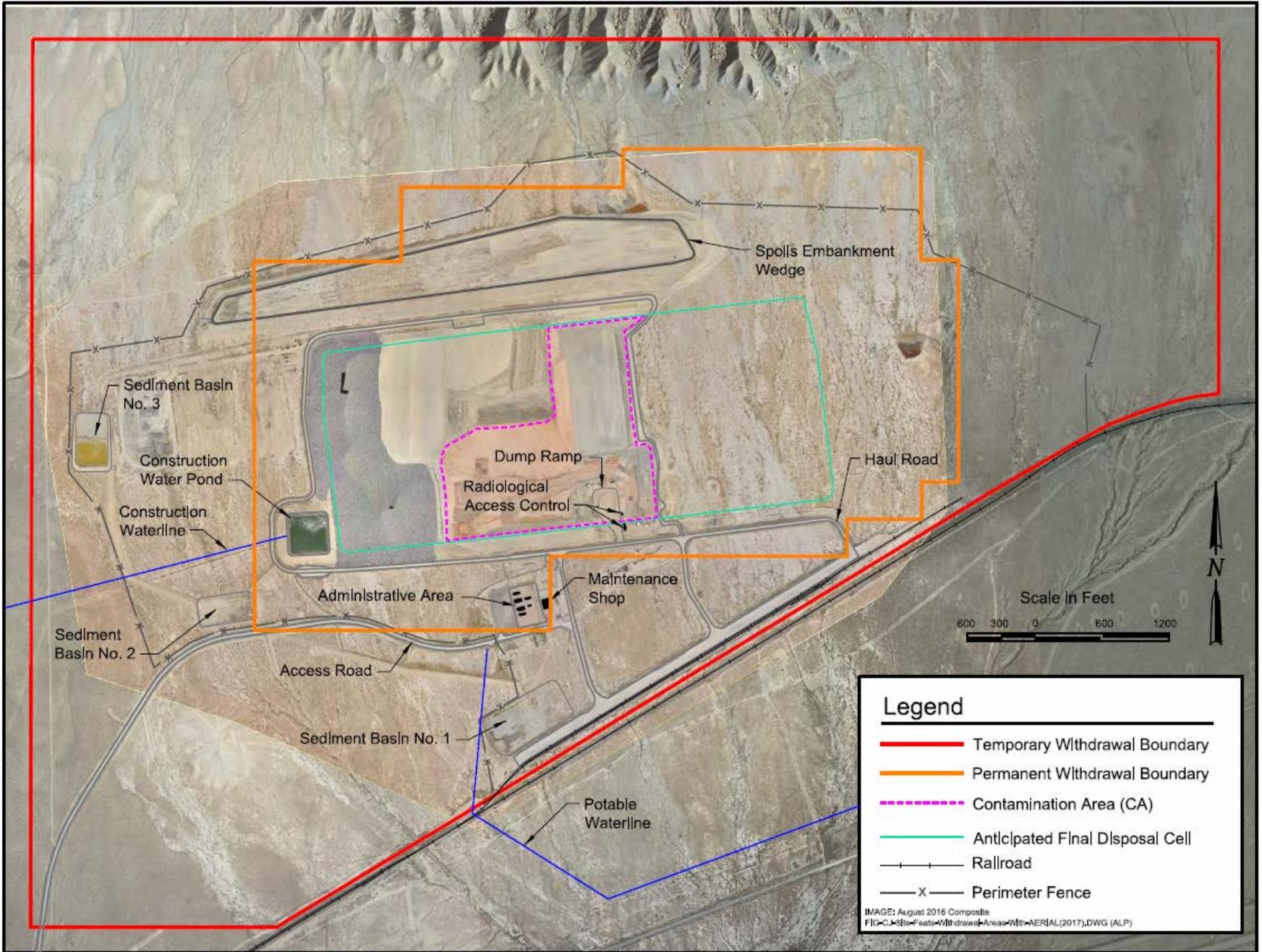


Figure 2. Crescent Junction Site Features

A meteorological monitoring station is located at the Crescent Junction site, and another one is located off-site near the junction of I-70 and US-191. Wind speed and direction data collected is used to determine when site-specific action levels have been exceeded and certain dust controls (e.g., the application of dust suppressants) should be initiated. In addition, personnel certified to read opacity measurements in the state of Utah are consulted to determine when active dust control measures should be initiated and when specific dust-generating activities (e.g., excavating, hauling, grading) should be discontinued.

2.0 Sources of Fugitive Dust

2.1 Tailings Disposal Process

Uranium mill tailings are a fine-grained, sand-like material that is susceptible to wind erosion. Tailings from the Moab site are primarily transported by rail in lidded containers to the Crescent Junction site, off-loaded from the railcars to haul trucks, driven to the disposal cell for dumping, and placed in the cell.

The cell is excavated in phases to a depth of approximately 25 feet below grade. To date, an area encompassing about 105 acres have been excavated. Excavated material is used for perimeter embankments, as cell cover material, and for a spoils embankment (wedge) located north of the cell.

Tailings are placed and compacted in layers in the cell. Once contaminated materials have reached design grade, a multi-layer cover of soil and rock is placed to prevent radon emanation and biointrusion and to stabilize the soil. About 30 acres have final cover rock, and another 35 acres have a compacted soil cover.

A description of the on-site activities and site conditions that may contribute to or generate fugitive dust emissions at the Crescent Junction site is provided below.

2.2 High-potential Source Areas and Activities

Certain portions of the site are considered high-potential sources of fugitive dust emissions. These areas are characterized by loose, poorly consolidated soils and sediments; poor vegetative cover; or high levels of current or future/anticipated activity or disturbance.

The container dump ramp and surrounding area has a high potential to create fugitive dust. Before compaction in the disposal cell, the tailings are unconsolidated, loose soils. Heavy equipment used for hauling, spreading, and compacting tailings creates fugitive emissions. During excavation of the cell and placement of excess excavated materials on the spoils and perimeter embankments, the potential for fugitive dust is also high.

Combined, the areas associated with uncompacted materials in the disposal cell and cell excavation comprise more than 2 percent of the total land surface at the site.

2.3 Moderate-potential Source Areas and Activities

Areas characterized by more stable, consolidated soil conditions, a greater percentage of vegetative cover, or lower levels of activity (about 11 percent of the site) are considered moderate-potential source areas. All designated site roads, except the access road, and the rail load-out area are moderate-potential dust source areas. In addition, stockpiled soil excavated from the disposal cell and cover layers other than rock layers are moderate-potential areas. Excavated portions of the cell not being used for tailings placement also have moderate dust-emission potential.

2.4 Low-potential Source Areas and Activities

The remainder of the site (approximately 87 percent of the site area) is not considered a significant source of fugitive dust emissions due to the low level of past or anticipated disturbance and the presence of vegetative, rock, or asphalt cover. Low-potential areas consist of vegetated rangeland along the site perimeter; sediment basins and the construction water pond; rock-covered portions of the disposal cell and its embankments; and asphalt-paved areas including the site access road, haul roads, employee parking lot, and support areas.

3.0 Fugitive Dust Emission Controls

DOE is responsible for monitoring and controlling fugitive dust emissions from the Crescent Junction site until all contaminated soils are placed in the disposal cell and all disturbed areas have been stabilized. Table 1 outlines the applicable regulatory limit/action, level, method of determination, and the appropriate response actions to control fugitive dust emissions at the Crescent Junction site.

Table 1. Fugitive Dust Limit/Action Level and Response Actions

Limit/Action Level	Method of Determination	Response Actions
Opacity cannot exceed 20 percent	Visual observation by EPA Method 9	Initiate application of water and suspend dust-generating activities.
Sustained wind speeds exceeding 20 mph	Real-time meteorological monitoring	Monitor visible emissions and alter or suspend dust-generating activities if necessary to maintain 20 percent or less opacity. If needed, initiate application of water.

EPA = U.S. Environmental Protection Agency

The response actions described below help minimize and control dust emissions to the most practical extent possible. Dust controls are implemented on a graded approach, depending on the potential for generation of fugitive dust. No dust controls are in place or planned for the low-potential source/activity areas.

Watering/Chemical Stabilization

Application of dust suppressants by water trucks is the main dust control measure used throughout the Crescent Junction site. Water from the construction pond has been successfully used as the primary dust control agent.

Use of various chemical dust suppressants (e.g., surfactants, salt-based soil conditioners) is an option if additional control is needed other than water; these products will be applied in accordance with their recommended end uses. Before application, site personnel shall evaluate if use of the dust suppressant could interfere with other site-monitoring activities or cause other harm to the environment.

Vegetative or Synthetic Covers

Native seed mixes and erosion control matting have been placed in disturbed areas as necessary to help stabilize the soil. The site access road, rail load-out area, employee parking lot, and haul roads to the disposal cell have been paved with asphalt to reduce dust.

Traffic Speed

Traffic speed is restricted to an appropriate level on all designated roads. This helps limit generation of fugitive dust.

Off-hours Dust Control

This Plan is in effect during all hours of operation at the Crescent Junction site. During non-business hours, there are no dust-generating activities. However, if high winds are observed at the on-site meteorological station, site personnel evaluate vulnerable areas and implement controls as appropriate to reduce off-hours emissions.

Covered Loads

Trucks used to haul materials from the Moab site to the Crescent Junction disposal cell will be tarped to avoid the loss of materials in transit. All loads shall be inspected to ensure they are properly covered before departure.

Decontamination Area

Before leaving the Contamination Area, all vehicles and equipment are decontaminated using a high-pressure power washer. This practice minimizes the potential for tracking of sediment or contaminants out of the area.

4.0 References

40 CFR 60 (Code of Federal Regulations), Appendix A-4, EPA Reference Method 9, "Visual determination of the opacity of emissions from stationary sources."

UAC R307-205-8 (Utah Administrative Code), "Emission Standards; Fugitive Emissions and Fugitive Dust; Tailings Piles and Ponds."