

Office of Environmental Management – Grand Junction



Moab UMTRA Project Transportation Plan

Revision 7

August 2012



U.S. Department
of Energy

Office of Environmental Management

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Transportation Plan**

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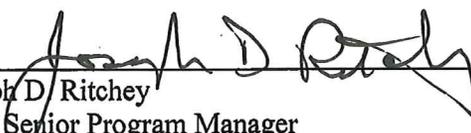
Review and Approval



Holli Davis
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8/20/2012
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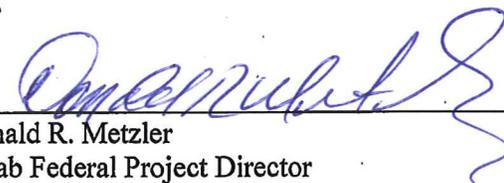


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Revision History

Revision No.	Date	Reason/Basis for Revision
0	August 2008	Initial issue.
1	October 2008	Updated to include truck transportation plans and requirements and a contacts list.
2	November 2008	Updated to reflect changes in contacts list, modifications to ERP references, and preparation of MOUs with local response organizations.
3	January 2009	Incorporated comments received from external stakeholders.
4	October 2009	Updated to reflect current operations.
5	May 2010	Updated to reflect current operations, emergency contacts, and Department of Transportation Special Permit Authorization DOT-SP 14283 (Appendix A). Update also includes minor revisions in Sections 1.3, 2.3, 2.4, 3.1, 3.2.2, and 3.3.4.
6	November 2010	Revision updates include content changes to Section 4.1.
7	August 2012	Updated to reflect current regulations, new RAC and associated titles, and current site configurations. Revision also includes expanded content in Section 2.2, Inspections.

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Appendix A. U.S. Department of Transportation Special Permit 14283 A-1

Acronyms and Abbreviations

CA	Contamination Area
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOE O	U.S. Department of Energy Order
DOT	U.S. Department of Transportation
EIS	Environmental Impact Statement
EM	Environmental Management
ERP	Emergency Response Plan
FPD	Federal Project Director
HASP	Health and Safety Plan
Hazmat	hazardous materials
I-70	Interstate Highway 70
MCEP	Motor Carrier Evaluation Program
RAC	Remedial Action Contractor or Contract
RCT	Radiological Control Technician
RRM	residual radioactive material
SR-279	State Route 279
TAC	Technical Assistance Contractor or Contract
UDOT	Utah Department of Transportation
UMTRA	Uranium Mill Tailings Remedial Action

1.0 Introduction

1.1 Purpose and Scope

This Transportation Plan describes operations that will ensure safe and successful staging and transportation of residual radioactive material (RRM) from the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project site in Utah to the disposal site at Crescent Junction, Utah. The primary mode of transportation is by rail; however, some RRM will be transported by truck. All transportation operations will be conducted in compliance with applicable federal, state, and local requirements governing materials transportation with any approved exemptions or alternatives. This plan will be reviewed periodically, but no less than annually, and modified as needed.

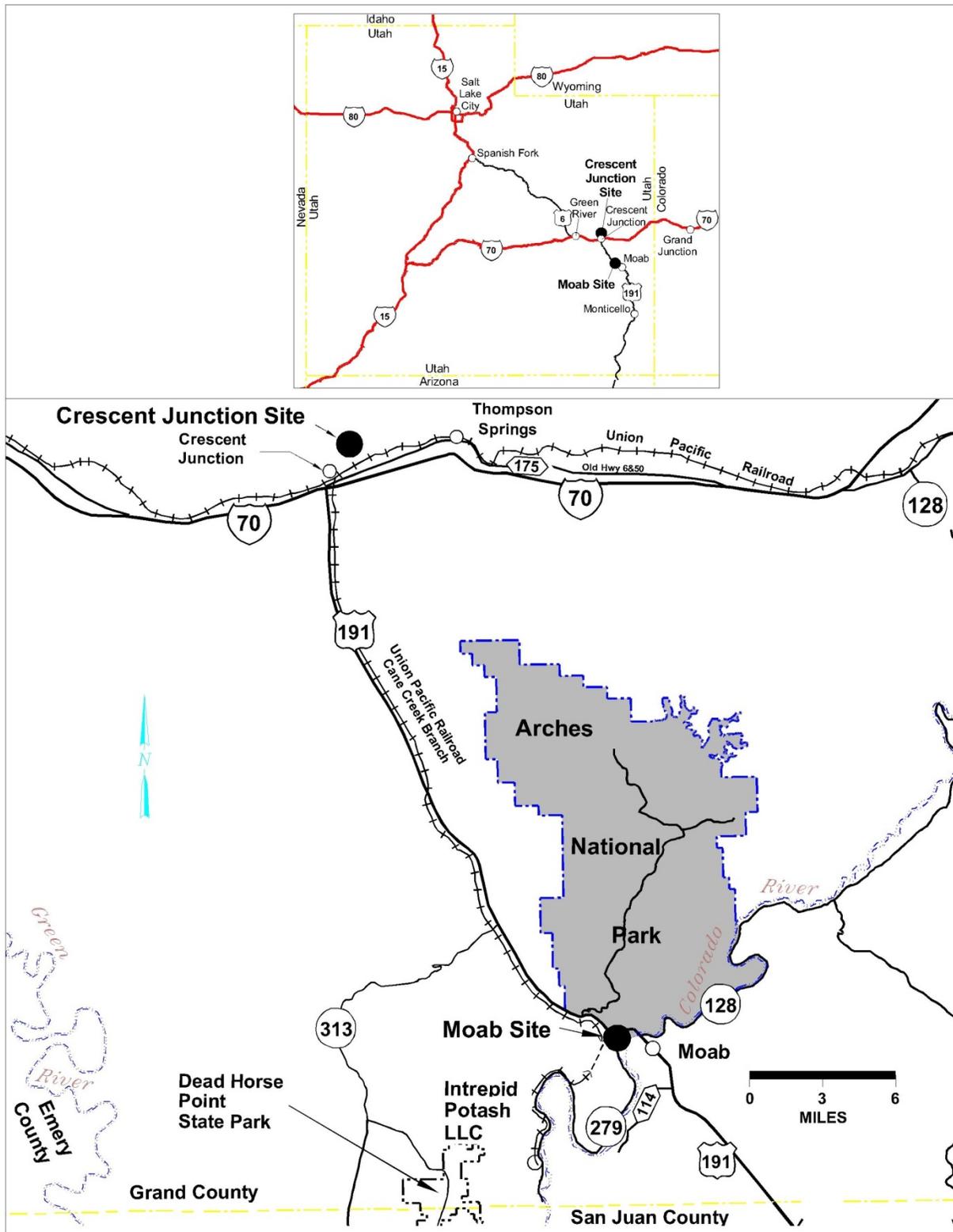
This plan is consistent with U.S. Department of Energy (DOE) Manual (M) 460.2-1A, “Radioactive Material Transportation Practices Manual,” and the Environmental Management (EM)-11 guidance memorandum, dated July 13, 2005, for preparation of transportation plans and notification requirements issued by EM-3 on April 24, 2008. As allowed in the guidance memorandum, this plan provides a graded approach to describing transportation and disposal of the Moab RRM, including on-site staging, logistics, and the material packaging configuration. This plan addresses the applicable topics recommended in the guidance memorandum. This plan also meets the intent of DOE Order (O) 460.1C, “Packaging and Transportation Safety,” and DOE O 460.2A, “Departmental Materials Transportation and Packaging Management.” Emergency response and associated notifications in the event of an incident are presented in the *Moab UMTRA Project Emergency/Incident Response Plan (ERP)* (DOE-EM/GJ1520). Interaction with the community and other stakeholders is presented in the *Moab UMTRA Project Public Participation Plan* (DOE-EM/GJ1542).

RRM is defined by the Uranium Mill Tailings Radiation Control Act of 1978 and the implementing regulations in Title 40 *Code of Federal Regulations* Part 192 (40 CFR 192) as: (1) waste that DOE determines to be radioactive in the form of tailings resulting from the processing of ores for the extraction of uranium and other valuable constituents of the ores; and (2) other wastes that DOE determines to be radioactive at a processing site that relate to such processing, including any residual stock of unprocessed ores or low-grade materials. At the Moab site, RRM includes soils, tailings, facility components, buildings or building materials, equipment, and other wastes. RRM from the Moab site will be shipped in accordance with U.S. Department of Transportation (DOT) Special Permit Authorization DOT-SP 14283 issued on February 25, 2008, and modified on April 20, 2010.

RRM is not low-level radioactive waste as per Section 11e(2) of the Atomic Energy Act, as amended. The tailings or waste produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content (i.e., uranium or thorium) is defined as a byproduct material.

1.2 Background

The Moab site (formerly known as the Atlas millsite) is a former uranium ore-processing facility located about 3 miles northwest of the city of Moab in Grand County, Utah (Figure 1), and lies on the western bank of the Colorado River at the confluence with the Moab Wash.



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Figure 1. Location of Moab and Crescent Junction Sites

The Moab site encompasses nearly 500 acres; a 130-acre, 16-million-ton uranium mill tailings pile occupies much of the western portion. Steep sandstone cliffs border the site on the north and southwest. The Colorado River forms the southeastern boundary of the site. U.S. Highway 191 parallels the northern site boundary, and State Route 279 (SR-279) crosses the western portion of the site. The entrance to Arches National Park is located less than 1 mile northwest of the site across U.S. Highway 191. Union Pacific Railroad Company (Union Pacific) rail traverses a small section of the site just west of SR-279, then enters a tunnel and emerges several miles to the southwest.

The Crescent Junction disposal site is located northeast of the junction of Interstate Highway 70 (I-70) and U.S. Highway 191 approximately 30 miles north of the Moab site. It was, in part, selected as the permanent disposal site for the Moab uranium mill tailings because of the excellent geologic setting and the proximity to rail and truck service. Five hundred acres at the Crescent Junction site were permanently transferred to DOE from the U.S. Department of Interior for the disposal cell.

On October 25, 2001, DOE assumed ownership of the Moab site. The DOE EM Grand Junction office in Colorado is responsible for reclamation of the site. In July 2005, DOE published the final Environmental Impact Statement (EIS) that presented the preferred remediation alternative of off-site disposal of the RRM at the proposed Crescent Junction disposal site using predominantly rail transportation. DOE issued the Record of Decision in September 2005 and amended it in February 2008 to include the option for more transport via trucking.

The Moab UMTRA Project has two prime contractors: the Remedial Action Contractor (RAC), and the Technical Assistance Contractor (TAC). The RAC scope of work includes transporting a portion of the tailings and handling day-to-day maintenance and operations at the Moab and Crescent Junction sites. The TAC provides technical and administrative support services to DOE.

1.3 Project Approach

The project approach is to excavate RRM at the Moab site and condition it to the desired soil moisture content for placement in the disposal cell. The conditioned RRM is top-loaded into containers, transported by trucks to the on-site Support Area, where the container receives a solid metal lid; at that point, the container can either go through the container rinse system or move directly to the station, where a radiological survey and integrity inspection of the container exterior is performed.

A radiological boundary separates the Support Area into a Contamination Area (CA) and an Uncontaminated Area. Once the container is radiologically released for transfer from the CA to the Uncontaminated Area and areas outside of project-control, it is placed on a separate truck, hauled up a dedicated road to the rail load-out area at a siding, and transferred to a railcar. To transport containers from the Support Area to the load-out area, the trucks use an underpass of SR-279 that was constructed in the winter of 2009 as an added safety measure to avoid truck crossings of public highway SR-279.

Once the designated number of containers are placed on railcars, Union Pacific engines pull the cars to a DOE siding near the Crescent Junction disposal cell about ½-mile east of the existing Brendel siding.

Each container is removed from the railcar, placed on a truck, and driven to the disposal cell. The containers are emptied via the rear dump gate, decontaminated or rinsed as necessary, radiologically surveyed, and released for the return trip to the Moab site.

Radiological surveys of the empty containers are not required by the special permit, but they have been deemed a best management practice by the project. A radiological survey consists of taking a smear or a large area wipe of the exterior of the container and obtaining an activity count using an appropriate meter to determine the level of removable contamination, if any.

RRM that cannot be sized to fit in a container will be transported via over-the-road trucks using DOE Motor Carrier Evaluation Program (MCEP)-approved motor carriers from the Moab site to the Crescent Junction site. RRM excavated from off-site properties in the Moab area, known as vicinity properties, may also be transported directly to the Crescent Junction disposal site by truck. Temporary shipment of containers by truck on U.S. Highway 191 may be performed in the event that rail shipments are suspended for an extended period. Trucks departing from the Moab site will enter U.S. Highway 191 from SR-279 or from the main site access road. Before any shipment of containers by truck on the highway, the project will coordinate with Grand County officials and the Utah Department of Transportation (UDOT).

1.4 Organizational Responsibilities

The roles and responsibilities of the Moab Project DOE staff are under the direction of the Federal Project Director (FPD). The FPD provides technical direction and guidance to the contractor for the safe, efficient, high-quality, and cost-effective execution of the project, including transportation of the RRM.

The DOE Facility Representative for the Moab UMTRA Project sites is the primary point-of-contact between DOE and the contractors for transportation activities. The DOE Facility Representative performs inspections, surveillances, and reviews in accordance with established procedures.

The RAC is responsible for excavating and disposing of RRM. The RAC Transportation/Security Manager is responsible for packaging and handling the RRM shipment before the shipment departs from the Moab site until it arrives at the Crescent Junction site.

In accordance with DOE policy, all RRM shipments from the Moab site are tracked using the Automated Shipment Approval System. The Transportation Manager or designee has the authority to approve requests for planned shipments in this system and is responsible for providing information on planned versus actual shipments and other shipment details to DOE Headquarters.

The TAC scope of work includes quality assurance and safety support, property management, and public affairs assistance to DOE for transportation activities.

DOE Headquarters provides guidance and support in coordinating with the DOT and cooperating organizations and in providing planning and training through the Transportation Emergency Preparedness Program.

On receipt of the shipping documents from the RAC, Union Pacific assumes responsibility for the rail shipment, in compliance with federal and state regulations and Association of American Railroads standards. Union Pacific relinquishes responsibility for the shipment back to the RAC on completion of delivery at the Crescent Junction site. RRM transported via over-the-road trucks is the responsibility of the carrier, who is also responsible for recovery of RRM resulting from a transportation incident or accident.

2.0 On-Site Material Management

2.1 Material Description

The primary material to be transported is tailings, which are the result of uranium extraction during the milling process. At the Moab site, the tailings were slurried to an unlined impoundment that accumulated over time, forming a pile. The tailings pile material is in a soil matrix varying in consistency from very dry and sand-like on the periphery to wet, muddy slimes inside the pile. Material is excavated and transported to drying beds located on top of the tailings pile for conditioning, which may include blending with drier material to reduce the moisture content to a range that is optimal for compaction in the disposal cell. The optimal moisture content easily meets the classification as a solid as defined by the “Standard Test Method for Determining Whether a Material is a Liquid or a Solid” (American Society for Testing and Materials D4359-90), which is a regulatory requirement by the DOT.

2.1.1 Managing Anomalies

The RAC chose to begin excavation in an area on the pile which, according to historical data, should avoid contact with debris from the former milling operations. However, through past UMTRA experience, some anomalies will be encountered throughout the pile. Work plans, as part of the Integrated Safety Management System, will address handling of unexpected items during excavation to minimize risking site personnel safety, harming the environment, or delaying the work.

2.1.2 Construction and Demolition Debris

Construction and demolition debris may be in the form of steel beams, concrete slabs, concrete blocks, piping, sheet metal, and demolished milling equipment. In addition, 17,000 vertical band drains (wicks) and manifolds are located a few feet below the surface near the center of the tailings pile. When these items are found during excavation of the pile, they will be sorted into the four groups listed below.

1. Items that will fit into containers as-is
2. Items that will have to be reduced in size before placement in containers
3. Over-sized items which may be trucked to the disposal cell
4. Potentially hazardous items that require additional characterization for safe materials handling

Items That Will Fit Into Containers

Smaller items that fit in containers will be hauled to one of the on-site stockpile areas until sufficient quantities are available to enable efficient filling of containers.

Items Requiring Size Reduction or Shipment by Truck

A specific work plan will be developed for larger items, such as lengths of steel beam and pipe or concrete slabs that may not pass under the tailgates of containers when they are emptied at the Crescent Junction disposal site. The work plan will address how these items will be reduced in size before transport, and/or separated for truck transport.

Potentially Hazardous Items

If unknown, potentially hazardous items are encountered during tailings pile excavation, the RAC will suspend work in that area until a specific work plan is developed to address the material. Items may include transite- and asbestos-containing insulation material commonly used in buildings during the period when the original site facilities were constructed.

2.1.3 Drums and Other Containers

The RAC does not expect to find hazardous materials in the form of drums and other containers, such as gas cylinders, during excavation. However, if such items are uncovered, they present more danger to site workers and the environment than demolition debris due to unknown content and condition of the container. Site workers are trained to observe the material being excavated, and if drums or other containers are identified, work will be suspended, and the RAC Operations/Site Manager and Health and Safety representatives will be notified. Excavation activities may be shifted away from the unidentified container until a hazard analysis and modification to the work plan have been completed and the workers briefed.



RRM Container Example

2.2 Packaging

The designs of packaging for RRM for rail transport are based on an existing 32-cubic-yard container (6.42-yard length by 2.63-yard depth by 2.0-yard height) and a 42-cubic-yard container (6.42-yard length by 2.63-yard depth by 2.7-yard height). The smaller container is loaded with about 33 tons of RRM, and the larger container is loaded with about 39 tons. The RRM containers are constructed of steel in compliance with DOT standards. The containers have a removable steel lid that locks in place. The dump doors have a waterproof gasket and locking mechanism.

2.2.1 Inspections

The exterior of each container is inspected for integrity at several points during the production process. These include before and after placement on a railcar, placement on a haul truck by a gantry crane or reach stacker, during the lidding or dumping process, and before and during radiological scanning. The interior of the container is inspected during the lidding process.

Each container is identified with a unique number and is placarded on all four sides with Radioactive-Yellow II signs in accordance with the special permit. The placards remain visible during transport to and from Crescent Junction. In addition, each container is marked on two opposite sides, in accordance with the special permit. The gross weight for the small containers is 87,800 pounds and for the larger containers is 89,450 pounds. The label is permanently applied to each container. The gross weight shown is the intended maximum weight of the filled container and lid.

2.2.2 Documentation By Railear

Documentation that accompanies each shipment, both to Brendel (Crescent Junction site) and back to Emkay (Moab site), includes railcar numbers, number of containers, and any other information required by regulation. The carrier also possesses a copy of the special permit, exclusive use instructions, and its emergency response plan during each shipment.

2.2.3 Documentation By Motor Carrier

Documentation that accompanies each shipment by motor carrier includes its origin and destination locations and all other information required by regulation. The carrier also possesses a copy of the special permit, exclusive use instructions, and its emergency response plan during each shipment.

**For Radioactive
Materials Use Only
RQ, RADIOACTIVE-LSA
UN3321
DOT-SP 14283**

Gross Weight: _____

Emergency Contact: _____

Emergency Phone: _____

Container Marking Example



Container Placard Example

Packaging for oversize debris, primarily from demolition of the former mill, is dump trucks or trailers with a soft cover. Trucks used to transport oversized material are loaded using an excavator, loader, or crane, depending on the type of material. The loading occurs inside of the CA, so care is taken to limit contact between the vehicle and the RRM. Following loading, a sturdy fabric cover is placed over the RRM, and the truck proceeds to a decontamination area for an exterior survey.

2.3 Radiological Surveys

The exterior of the filled containers is radiologically surveyed in accordance with the appropriate release procedures before the containers are released for transport to the Crescent Junction site. A row of survey racks holds containers while they are surveyed, and minor contamination is removed.

The racks support the containers 2 feet off the ground so that swipes of the bottom of containers can be obtained. A rolling stair/platform provides access to the top of the containers. Once a container is released, a reach stacker (intermodal container carrier) moves it from the rack to a staging area for filled containers that are awaiting transfer to the rail. Trucks used to haul oversized material are surveyed at a decontamination area before exiting the CA.

Data from the radiological surveys becomes part of the shipment documentation maintained by the Transportation Manager in accordance with 49 CFR 172.602(a) and 172.602(c)(2).

2.4 Container Movements

The rail container-filling process consists of the steps detailed below. Some of the areas described in this process are illustrated in Figure 2.

1. A truck is driven along the contaminated side of the CA boundary in the Support Area.
2. A reach stacker lifts an empty container with a lid from the uncontaminated side over the CA boundary and loads it onto the truck.
3. The truck proceeds into the lidding structure, where a crane removes the lid from the container. The truck travels up to the tailings pile to a stockpile of blended and prepared RRM, where the container is filled through the top.
4. A sampling of at least 10 percent of the containers is taken to a scale to verify the load is within acceptable limits.
5. The truck returns to the lidding structure, where a crane places a lid on the container and locks it in place.
6. The truck proceeds out of the lidding structure along the CA boundary to a location where the container can either go through the container rinse system or move directly to the radiological survey area, where a reach stacker will remove the container and place it on one of the eight racks that are located in a CA for a radiological survey and inspection.

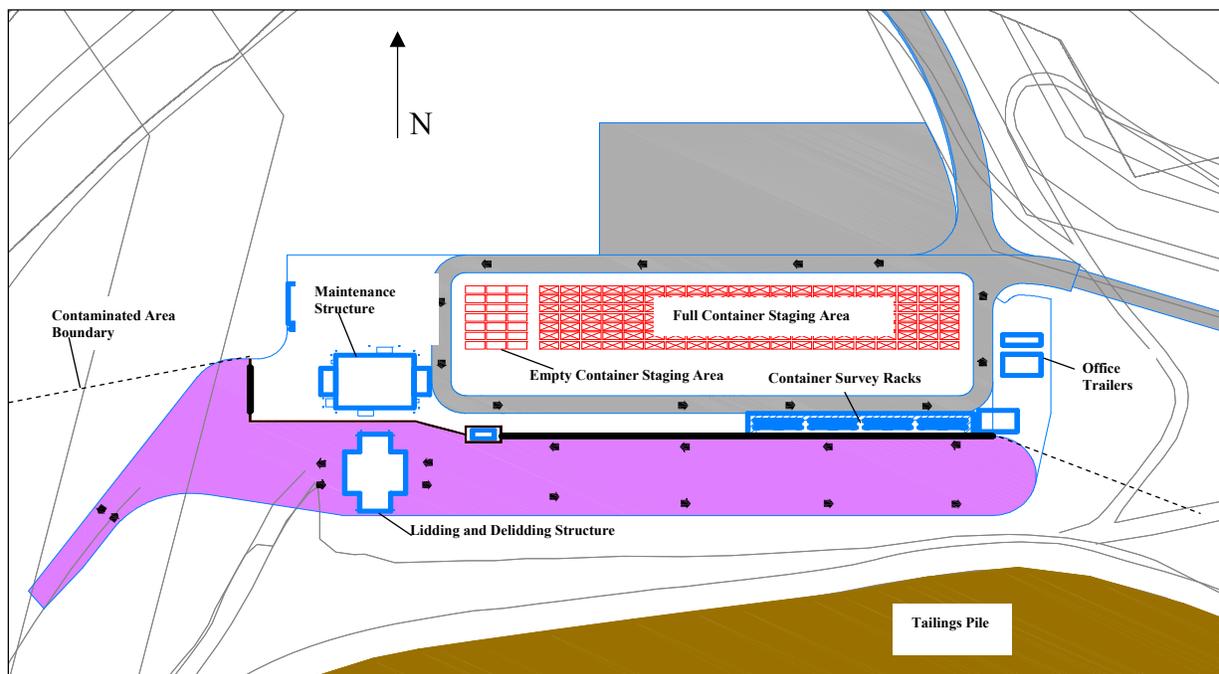


Figure 2. Moab Site Material Handling

At the beginning of each work shift, a truck leaves the Support Area at the Moab site, uses the SR-279 underpass, and goes up the haul road to the hillside load-out area. A gantry crane places an empty container on the truck from one of the railcars. The truck returns to the Support Area, where the container is transferred to a truck on the contaminated side to begin the container-filling process. Following the first truck of the shift, subsequent trucks go to the hillside load-out area carrying full containers and return with empty containers.

Through the course of the shift, the gantry crane(s) traverses from one end of the rail siding to the other, removing empty containers from the railcars and replacing them with full containers. Four containers are placed end-to-end to fill each railcar. At the end of the shift, when the train is loaded with full containers, it proceeds to the Crescent Junction site and parks the railcars on the open spur.

During the work shifts at the Crescent Junction site, the full containers are removed from the railcars using a reach stacker and placed on off-road trucks that haul the containers to the open area of the disposal cell. While on the trucks, the containers are emptied through an end gate, decontaminated as necessary, radiologically released, and driven to the rail spur, where reach stackers place them on railcars to be transported back to Moab. The locomotives from the train arriving from Moab are rearranged and connected to the railcars holding empty containers. The train then returns the empty containers to the Moab load-out area. Figure 3 shows the Crescent Junction site layout.

3.0 Off-Site Transportation

3.1 DOT and UDOT Requirements

DOT regulations for transportation of radioactive material are in 49 CFR 100-185, "Hazardous Materials Regulations." DOE received a DOT Special Permit Authorization, DOT-SP 14283 second revision, issued on April, 20, 2010 (see Appendix A), for transport of the Moab RRM. The permit expires on September 30, 2015. The permit applies to transport via rail or trucks and establishes alternative requirements for hazard communication and packaging of the RRM. The latest revision to the permit was issued to approve the use of generic shipping papers and exclusive use instructions.

The permit specifies that the shipping name for the material is radioactive material, low specific activity II, nonfissile or fissile-excepted, with hazard class/division 7, and identification number UN3321. The special permit also requires that uranium mill tailings to be shipped have an activity concentration of radium-226 no greater than 100 becquerels per gram (2,700 picocuries per gram). Sampling of the contents of individual packages is not required; activity concentrations may instead be determined by DOE-approved site sampling procedures. Further, there must be no leakage of radioactive material from the conveyance. There must be no loose tailings or other contaminated materials on the exterior surface of the covering at any time during transport under normal, non-accident conditions.

Training is provided for each hazardous materials (Hazmat) employee, as defined in 49 CFR 171.8. Training is provided for workers who perform a function subject to the special permit. These workers include truck drivers, heavy equipment (e.g., crane and reach stackers) operators, and Radiological Control Technicians (RCTs). The DOT Hazmat training covers the requirements and conditions of the special permit in addition to the requirements in 49 CFR 172.700-172.704 and 172.800.

Rail transport to the Crescent Junction site involves crossing several public roads that are under the jurisdiction of the DOT (49 CFR 200-299, “Federal Railroad Administration Regulations”). DOT requirements for rail transport apply to maintaining proper rail crossings and signage of the roadways. The locations of crossings are shown in Figure 4, and a description of each crossing is provided in Table 1.

Truck transport to the Crescent Junction site may involve utilizing SR-279, U.S. Highway 191, Old U.S. Highway 6 & 50 (Grand County Road 175), and County Road 223. UDOT requirements apply for highway operations, as specified in 49 CFR 300-399, “Federal Motor Carrier Safety Administration Regulations.”

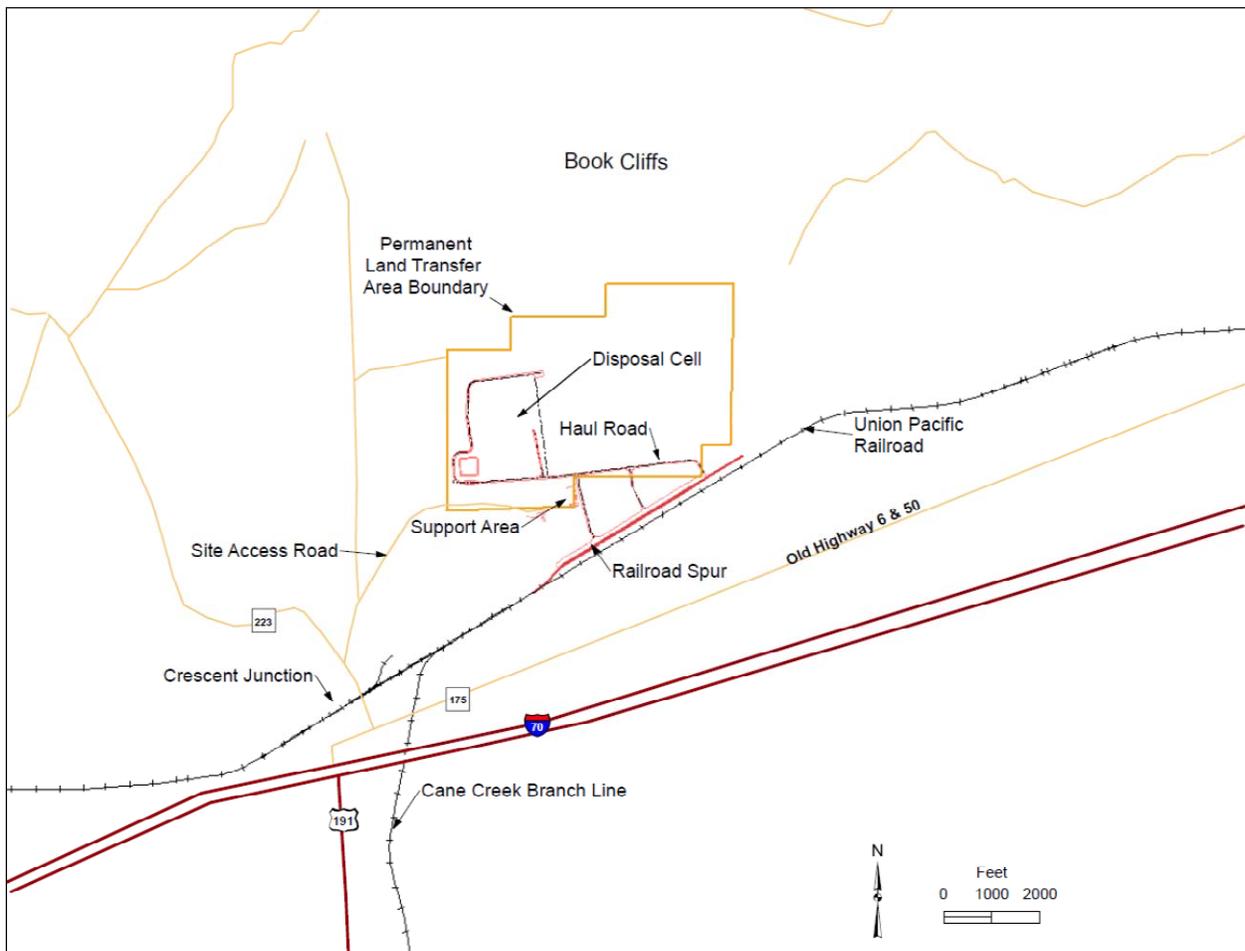


Figure 3. Crescent Junction Site Layout

3.2 Rail Materials Transport

3.2.1 Route

Off-site rail transport is from the hillside load-out area (Emkay siding) and will follow the existing Union Pacific Cane Creek Subdivision line 28.5 miles to the Green River Subdivision line (Subdivision line mile post 0 and Green River Subdivision line mile post 533). Rail transport continues east on the Green River Subdivision line for approximately 2,000 feet, where the new Crescent Junction siding branches to the north. The total distance from the Emkay siding to the Brendel siding is approximately 30 miles.

3.2.2 Schedule

Currently, one train runs daily Monday through Thursday with up to 144 containers. Railcars and containers may be added or reduced to achieve an optimal shipping schedule.

The Cane Creek Subdivision line is also used by Union Pacific to service Intrepid Potash – Moab, LLC (Potash) located at mile post 36 (see Figures 1 and 4). Potash uses the line for one shipment per week. The rail carrier coordinates with representatives of Potash to accommodate efficient rail shipments by both parties.

3.2.3 Risk

The risk analysis conducted as part of the EIS showed that the risks associated with rail transport were acceptable for both off-site workers and the public. Rail transport represents a low risk of public exposure to contaminated materials.

3.2.4 Shipping Weight Limit

Union Pacific has a shipping weight limit of 214.5 tons gross weight per railcar. The planned maximum weight of RRM per the taller container is 39.5 tons and 33 tons per the shorter container. Per the Special Permit, the maximum content weight for containers is 40 tons. Each railcar will hold four containers for a total weight, including the containers, of 176 tons.

3.3 Off-Site Truck Materials Transport

Over-the-road truck transport is planned for materials that cannot be effectively sized to fit in the containers. Over-the-road truck transport will be conducted by the DOE MCEP-approved motor carrier and in compliance with the UDOT and DOT regulations and the special permit.

3.3.1 Route

Trucks will follow a direct route from its origin to shipment delivery at either the Moab or Crescent Junction sites. Trucks will be directed through an established CA boundary to a dump area. Following dumping of RRM, the trucks will move to a survey/decontamination area before exiting the CA.

3.3.2 Schedule

Shipments of oversized materials stockpiled in an off-pile area at the Moab site began during the summer of 2009. Oversized materials in the tailings pile are not anticipated to be excavated for several years. Shipments of material from vicinity properties will be performed as appropriate; however, the limited quantity anticipated does not necessitate a schedule.

3.3.3 Risk

The risk analysis conducted as part of the EIS showed that the risks associated with truck transport were acceptable for both off-site workers and the public. Truck transport represents a low risk of public exposure to contaminated materials.

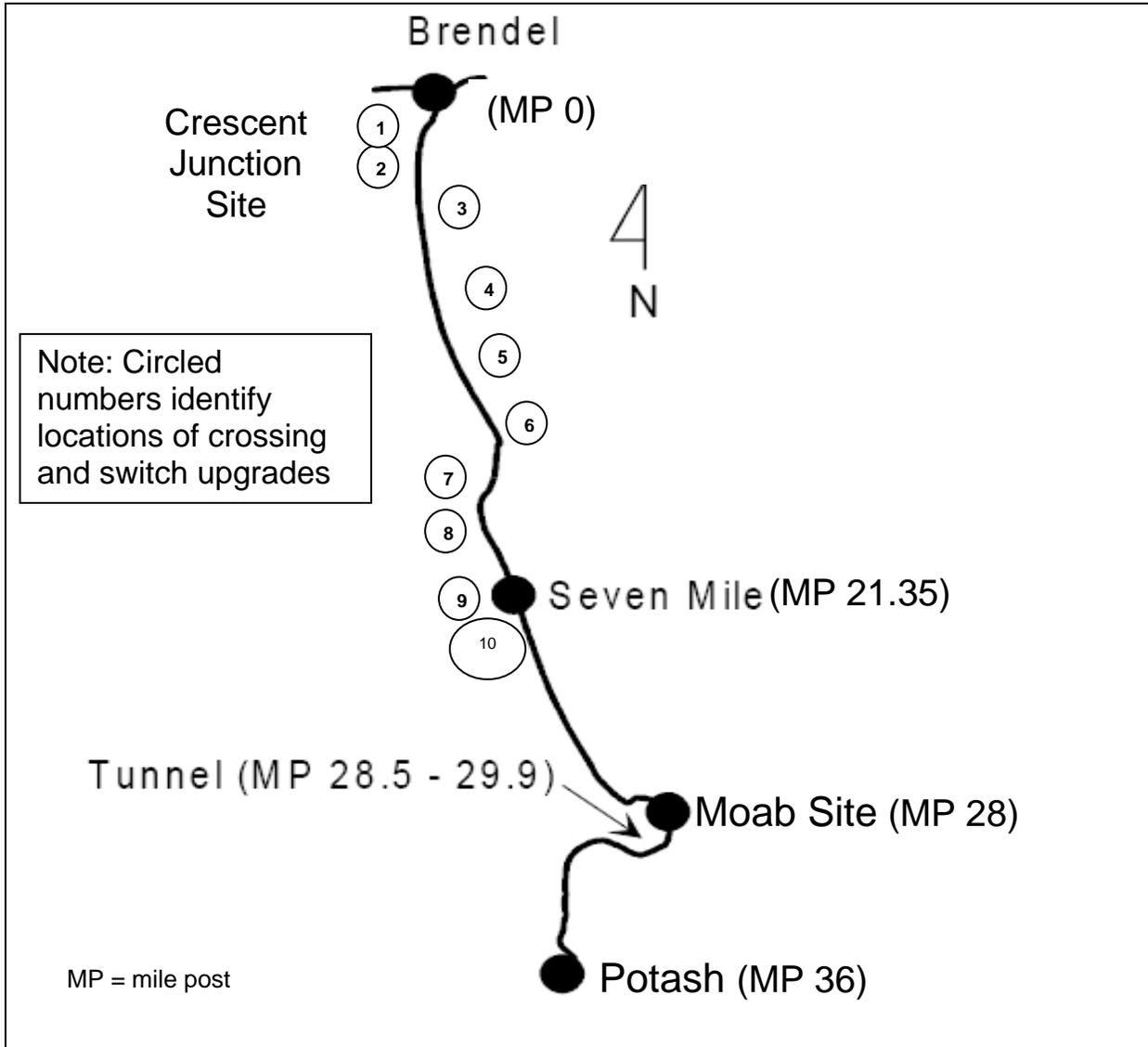


Figure 4. Railroad Route and Crossing Identification

Table 1. Rail Switch and Crossing Description

No.	Description
1	171G Brendel Road; flashing lights with gates
2	Brendel Switch at Green River Subdivision Line; electronic switch
3	170A Old Highway 6 & 50 MP 0.3; guardrail; flashing lights
4	172N Valley City Road MP 5.04
5	173V Rock Corral Road MP 9.03; stop signs on both sides
6	329S Blue Hills Road MP 14.99; stop signs on both sides
7	330L Mill Canyon crossing; flashing lights with gates
8	331T Thornburg Mine Road MP 20.30; flashing lights with gates
9	332A SR313 MP 21.35; flashing lights with gates
10	334N Gemini Bridges Road MP 22.5; stop signs on both sides

MP = mile post

3.3.4 Shipping Weight Limit

The maximum weight of RRM in containers hauled on trucks is 40 tons, 20 tons in a haul truck without a container, or 33 tons in haul truck with pup; these weights meet the standard DOT shipping weight limit for over-the-road trucks and Special Permit requirements.

4.0 Health and Safety

On-site transport work will be performed in compliance with the *Moab UMTRA Project Health and Safety Plan* (HASP) (DOE-EM/GJ1038). On-site workers will be trained to the requirements of the HASP and the applicable related site procedures. Off-site transport work will be performed by the carrier in accordance with its plans and procedures.

Each Hazmat employee associated with on-site or off-site transport employed either by the RAC or by a carrier will be trained to meet the requirements of DOT-SP 14283.

Radiation protection will be provided by RAC Radiation Control Technicians (RCTs). All work will comply with the requirements of the *Moab UMTRA Project Radiation Protection Program* (DOE-EM/GJ610) and will be conducted under an approved Radiation Work Permit.

Radiological support, including any personnel monitoring, boundary monitoring, entry and exit surveying, and radiological postings, will be provided by RCTs.

4.1 Security

Transport of RRM will comply with DOT requirements as applicable in 49 CFR 172.800, which address the purpose and applicability of safety and security plans. Employees in positions that involve access to and handling of the RRM, off-site access to RRM while it is in container, and security measures while shipments are en route, will pass a background check before employment in that position.

The *Moab UMTRA Project Transportation Security Plan* (DOE-EM/GJ1768) is available to employees responsible for carrying out the plan. All RAC, TAC, and carrier employees subject to the plan will be trained to it. The plan will be revised as necessary and will be managed as a controlled document.

5.0 Emergency Preparedness and Response

Response to emergencies involving transportation of the RRM will be handled according to the ERP and to the requirements of DOT-SP 14283. Section 4.0 of the ERP, Emergency Actions, includes a discussion of transportation incidents that addresses events involving rail or truck transport and outlines coordination among responders. Section 12.0 of the HASP addresses spill response.

5.1 Notification

The Transportation/Security Manager is responsible for communication and notifications regarding emergencies. In the event of an incident, the operator/driver will notify the Transportation/Security Manager via two-way radio or cell phone. The Transportation/Security Manager will make the appropriate additional notifications. Notifications following a transportation incident will include contacts delineated in the *Moab UMTRA Emergency Response Key Personnel/Agencies and Contact Information* (DOE-EM/GJ1757). The Transportation/Security Manager will follow the requirements stated in the April 24, 2008, memorandum from J.M. Owendoff (EM-3) for off-site transportation event notification and reporting and DOE M 460.2-1 as appropriate.

5.2 Emergency Preparedness

The Moab Fire Department has trained first responders who are prepared to mobilize for emergencies. Additionally, the RAC has trained personnel, supplies, and equipment available at the Moab and Crescent Junction sites to aid in an emergency.

5.3 Emergency Response

The following sections detail the roles and responsibilities of the emergency response resources supporting this plan.

5.3.1 Carriers

Carrier operators/drivers, if able, will make initial emergency notification, initiate incident scene control, provide assistance to first responders, and undertake other emergency actions in accordance with their policies or instructions. Union Pacific is the primary carrier.

5.3.2 First Responders

First responders to the incident scene will initiate response actions in accordance with local plans and procedures. First responders will likely be representatives from the Moab Fire Department or the Grand County Sheriff's Office.

5.3.3 State and County Resources

Emergency notification procedures make state and county resources available. State and county teams are activated by the Incident Commander or other appropriate state or local authority. A representative from the Moab Fire Department or the Grand County Sheriff's Office would likely be the Incident Commander.

Memoranda of Understanding have been executed with the Grand County Emergency Medical Services and Allen Memorial Hospital to establish roles and responsibilities for coordination of personnel and operations should an unplanned event occur and will be incorporated by reference.

5.3.4 DOE and Contractor Resources

The RAC Transportation/Security Manager has access to all site resources (personnel, equipment, and supplies) to mitigate an emergency situation. Additional resources are available from the DOE Region 6 Radiological Assistance Program team.

5.4 Recovery

The carrier has responsibility for recovery operations, including RRM cleanup. Recovery will not begin until the emergency situation has been stabilized. The RAC will assist the carrier or its designated recovery contractor in recovery operations where appropriate and in accordance with DOT-SP 14283.

6.0 Public Communications

Communication with the public regarding transportation of the RRM will be conducted in accordance with the *Public Participation Plan*. In the event of an emergency or incident involving RRM transportation, public notifications will be made as specified in the ERP.

7.0 Records

All transportation records will be retained in accordance with the *Moab UMTRA Project Records Management Manual* (DOE-EM/GJ1545).

8.0 References

- 40 CFR 192 (*Code of Federal Regulations*), U.S. Environmental Protection Agency, “Health and Environmental Standards for Uranium and Thorium Mill Tailings.”
- 49 CFR 100-185 (*Code of Federal Regulations*), U.S. Department of Transportation, “Hazardous Materials Regulations.”
- 49 CFR 171-172 (*Code of Federal Regulations*), U.S. Department of Transportation, “General Information, Regulations, and Definitions.”
- 49 CFR 200-209 (*Code of Federal Regulations*), U.S. Department of Transportation, “Federal Railroad Administration Regulations.”
- 49 CFR 300-399 (*Code of Federal Regulations*), U.S. Department of Transportation, “Federal Motor Carrier Safety Administration Regulations.”
- 42 U.S.C. 2011 et seq. (*United States Code*), Atomic Energy Act of 1989.
- 42 U.S.C. 7901 et seq. (*United States Code*), Uranium Mill Tailings Radiation Control Act of 1978.
- American Society for Testing and Materials, “Standard Test Method for Determining Whether a Material is a Liquid or a Solid” (D4359-90), 2005.
- DOE (U.S. Department of Energy) Environmental Management (EM-3) Memorandum, “Offsite Transportation Event Notification and Reporting,” J.M. Owendoff, April 24, 2008.
- DOE (U.S. Department of Energy) Environmental Management (EM-11) Memorandum, “Guidelines for Development of Environmental Management Transportation Plans,” F. Marcinowski, July 13, 2005.
- DOE (U.S. Department of Energy), “Final Programmatic Environmental Impact Statement for the Uranium Mill Tailings Remedial Action Ground Water Project” (DOE/EIS-0198).
- DOE (U.S. Department of Energy), DOE Manual 460.2-1A, 2008. “Radioactive Material Transportation Practices Manual.”
- DOE (U.S. Department of Energy), *Moab UMTRA Project Emergency/Incident Response Plan* (DOE-EM/GJ1520), August 2012.
- DOE (U.S. Department of Energy), *Moab UMTRA Project Emergency Response Key Personnel/Agencies and Contact Information* (DOE-EM/GJ1757), August 2012.
- DOE (U.S. Department of Energy), *Moab UMTRA Project Health and Safety Plan* (DOE-EM/GJ1038), August 2012.
- DOE (U.S. Department of Energy), *Moab UMTRA Project Public Participation Plan* (DOE-EM/GJ1542), January 2012.
- DOE (U.S. Department of Energy), *Moab UMTRA Project Radiation Protection Program* (DOE-EM/GJ610), September 2010.
- DOE (U.S. Department of Energy), *Moab UMTRA Project Records Management Manual* (DOE-EM/GJ1545), June 2011.
- DOE (U.S. Department of Energy), *Moab UMTRA Project Transportation Security Plan* (DOE-EM/GJ1768), August 2012.

DOE Order 460.1C, 2003. “Packaging and Transportation Safety.”

DOE Order 460.2A, 2004. “Departmental Materials Transportation and Packaging Management.”

DOE (U.S. Department of Energy), Record of Decision, September, 2005.

Appendix A.
U.S. Department of Transportation Special Permit 14283



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

SPECIAL PERMIT AUTHORIZATION

DOT-SP 14283

EXPIRATION DATE: September 30, 2015

GRANTEE: U.S. Department of Energy
Washington, DC

In response to your August 24, 2011 application for renewal of DOT-SP 14283, the grantee status to DOT-SP 14283 for U.S. Department of Energy is hereby renewed in accordance with 49 CFR § 107.109.

Copies of this special permit may be obtained by accessing the Office of Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. The most recent revision of the special permit supersedes all previous revisions of the special permit. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

If you have questions regarding this action please call the Office of Hazardous Materials Special Permits and Approvals at (202) 366-4535.

Issued in Washington D.C. on **October 12, 2011.**

for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

SPECIAL PERMIT AUTHORIZATION

DOT-SP 14283

EXPIRATION DATE: March 31, 2014

GRANTEE: Portage, Inc.
Idaho, ID

In response to your March 20, 2012 application for party status to DOT-SP 14283, Portage, Inc. is hereby granted party status to DOT-SP 14283 in accordance with 49 CFR § 107.107.

Copies of this special permit may be obtained by accessing the Office of Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. The most recent revision of the special permit supersedes all previous revisions of the special permit. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

If you have questions regarding this action please call the Office of Hazardous Materials Special Permits and Approvals at (202) 366-4535.

Issued in Washington D.C. on **April 26, 2012.**

for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

April 20, 2010



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 14283
(SECOND REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See individual authorization letter)
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of non-DOT specification bulk packages containing uranium mill tailings and debris with low levels of radioactivity from the former Atlas uranium processing facility in Moab, Utah and vicinity locations to a DOE owned disposal facility near Crescent Junction, Utah. This special permit authorizes alternative requirements for hazard communication and packaging. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with transportation in commerce.
 - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 172.203(g)(1) in that the reporting marks are waived, 172.302(a), 172.331, 172.332, and 174.59, in that the UN identification number is marked on two sides of each conveyance and intermodal container in the manner described in this special permit; §§ 172.310(b) and (c) in that packages must be transported without the package type and international vehicle registration code markings; § 172.403 in that a Radioactive label is not

April 20, 2010

required; § 173.427(b) in that alternative packaging is authorized; ~~§§ 173.443(c) and (d), 174.715(a), and 177.843(a)~~ and (b) in that railcars, trucks, or trucks and pups may continue to be used under this special permit to pick up another load without the indicated radiation surveys after unloading; and § 174.26(a) in that the rail carriers generic train list format may be used in that the material being transported is all the same type of Class 7 material being moved in a dedicated train consist.

5. BASIS: This special permit is based on the application of the U.S. Department of Energy dated November 4, 2009, submitted in accordance with § 107.105, and the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Radioactive material, low specific activity (LSA-II), <i>non fissile or fissile-excepted</i>	7	UN3321	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Authorized packagings are the rail car, intermodal container, haul truck, or pup-trailer, as described in the DOE application on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA). These packagings are considered equivalent to the packagings authorized in § 173.427(b) for LSA-II radioactive material.

- b. OPERATIONAL CONTROLS -

(1) Loaded rail cars, intermodal containers, haul trucks, and pup-trailers must be covered by a securely fastened hard cover or tarpaulin during transport. The covering used must ensure that there is no inadvertent release of the radioactive contents during transport under normal, non-accident conditions.

(2) All shipments under this special permit must be consigned as exclusive use. Exclusive use provisions in §§ 173.427(a)(6)(i) through (v) apply.

(3) Uranium mill tailings to be shipped by rail car, haul truck, haul truck with pup-trailer, or intermodal container under this special permit must have an activity concentration of radium-226 no greater than 100 Bq/g (2700 pCi/g). Sampling of the contents of individual packages is not required; activity concentrations may instead be determined by DOE-approved site sampling procedures. All material is to be shipped as "Radioactive material, low specific activity, LSA-II, UN3321."

(4) There must be no leakage of radioactive material from the conveyance. There must be no loose tailings or other contaminated materials on the surface of the covering at any time during transport under normal, non-accident conditions.

(5) Shipping paper descriptions of package contents shipped under this special permit must assume the presence of LSA-II radioactive material, and must use conservative (maximum) values for the total activity and Transport Index (TI) for the container used, based on full containers and a worst case total activity concentration of 10,530 pCi/g, as described in the application. Example conservative total activities and TIs are:

(i) Gondola rail car, content weight of 100 tons: total activity per rail car 0.035 TBq (0.956 Ci), TI 1.6.

(ii) Intermodal container, content weight of 40 tons: total activity per container 0.014 TBq (0.382 Ci), TI 1.4.

(iii) Haul truck, content weight of 20 tons: total activity per haul truck 0.007 TBq (0.191 Ci), TI 1.3.

(iv) Haul truck and pup, content weight of 33 tons: total activity per conveyance 0.012 TBq (0.318 Ci), TI 1.3.

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(v) Flatbed rail car carrying up to four intermodal containers, each with content weight of 40 tons: total activity per rail car 0.056 TBq (1.528 Ci), TI per container 1.4.

(6) Each rail car, intermodal container, truck, and pup-trailer must be plainly and durably marked on at least two opposite sides as follows:

For Radioactive Materials Use Only
RQ, RADIOACTIVE-LSA
UN3321
DOE-SP 14283
Gross Weight¹: _____
Emergency Contact²: _____
Emergency Phone²: _____

¹ The gross weight must be either the actual gross weight or the maximum possible for each type of container.

² The emergency contact and phone number are to be determined by the special permit grantee.

The size of the markings must be as specified in § 172.302(b).

(7) The markings must not be removed or covered until the conveyance, including any intermodal container, is radiologically released in accordance with the conveyance release requirements in §§ 174.715(a) or 177.843(a).

(8) Emergency Response:

(a) In the case of an event resulting in the release of radioactive material, the DOE must ensure that procedures are in place so that:

(i) spills are immediately reported to the DOE contractor responsible for the overall management of the specific clean up project;

(ii) the spill area is isolated to protect the public; and

(iii) the spill is cleaned up in an expeditious manner.

(b) The DOE must ensure that a record is kept in a central location of all incidents during use of this special permit which resulted in a spill, including date, time, mode of transport, an estimate of the volume and activity released, and any other details deemed pertinent. This information must be made available to the AAHMS upon request. A summary of this data must be submitted to DOT whenever renewal of this special permit is requested, and upon termination of the shipping campaign.

(c) Reporting requirements of §§ 171.15 and 171.16 apply.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modifications or changes are made to the package or its contents and it is reoffered for transportation in conformance with this special permit and the HMR.

b. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and rail freight.

10. MODAL REQUIREMENTS:

a. When transporting material under the conditions of this special permit by motor vehicle, the shipper must ensure that the truck driver has in their possession during transport a current copy of this special permit, the appropriate generic shipping paper, exclusive use instructions, and emergency response instructions.

b. When transporting material under the conditions of this special permit by rail freight, the shipper must ensure that the rail carrier has in their possession a current copy of this special permit, the appropriate generic shipping paper, the exclusive use and emergency response instructions. The rail carrier shall ensure that the train crew is provided with

April 20, 2010

a complete and accurate generic train list document for each train movement and instruct each affected train crew member on the applicable provisions of this special permit, the exclusive use and emergency response instructions.

c. For shipments by rail car, the rail carrier transporting the rail cars containing the material addressed in this special permit must ensure compliance with all applicable regulations in 49 CFR Chapter II, Parts 200 - 299 - Federal Railroad Administration, Department of Transportation, and in 49 CFR Part 174, except for those citations specifically exempted.

d. For shipments by truck, the carrier must ensure compliance with applicable regulations in 49 CFR Chapter III, Parts 300 - 399 - Federal Motor Carrier Safety Administration, Department of Transportation, and in 49 CFR Part 177, except for those citations specifically exempted.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

~~Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- "The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.~~

12. REPORTING REQUIREMENTS: As specified in paragraph 7.b.(8)(b) of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Ferate:Blackwell:dl