

Muleshoe Ranch Road Crossing – East of Battle Mountain (UPRR MP 478.45-Salt Lake Subdivision-Main Route)

The Track No.1 Westward crosses Muleshoe Ranch Road east of Battle Mountain. The track crossing is made up of reinforced concrete panels through this paved road.

The concrete panels are relatively new and in generally good condition. The track immediately ahead of the crossing shows some deterioration mainly due to underlying subgrade instability. This condition requires minor maintenance to stabilize the trackbed and bring the top of rail profile to its original design elevation. The track in the area is ballasted using 119 RE rails sections continuously welded and fastened to timber ties by cut spikes. The ties spacing is 19 inches through the crossing. The track grade is relatively flat. Ballast material is mostly crushed river rock. There are train activated warning devices, gates, mast mounted flashing lights, and bells.

East of this crossing there is a turnout to a siding with manual switches. The siding is used to serve the aggregate batching crushing plant on the north side of the track



Figure 10 Muleshoe Ranch Road Crossing Track No. 1 – View Looking South Towards I-80

Private At-Grade Road Crossing – East of Battle Mountain
(UPRR MP 484.70-Elko Subdivision-Overland Route)

This is a private at-grade crossing of Track No.1 Westward east of Battle Mountain. This private crossing is not accessible from the public road. The track crossing is made up of solid timber panels through the dirt unpaved road. US DOT Crossing Inventory Information identifies the crossing as having signs “Private Railroad Crossing” with a stop sign. There are no train activated warning devices.

Private At-Grade Road Crossing East of Muleshoe Ranch Road East of Battle Mountain (UPRR MP 487.5-Elko Subdivision-Overland Route)

This is a private at-grade crossing Track No.1 Westward east of the Town of Battle Mountain. This private crossing is not easily accessible from the public road. The track crossing is made up of solid timber panels through the dirt unpaved road. US DOT Crossing Inventory Information identifies the crossing as having a “Private Railroad Crossing” sign and a stop sign. There are no train activated warning devices.

Private At-Grade Road Crossing at Barium Products Road East of Battle Mountain (UPRR MP 488.16-Elko Subdivision-Overland Route)

This is a private at-grade crossing of Track No.1 Westward east of Battle Mountain. This private crossing is not accessible from the public road. The track crossing is made up of solid timber panels through the dirt unpaved road. US DOT Crossing Inventory Information identifies the crossing as having a “Private Railroad Crossing” sign and a stop sign. There are no train activated warning devices.

Baker – Hughes INTEQ Road Crossing – East of Battle Mountain (UPRR MP 488.90-Elko Subdivision-Overland Route)

Track No.1 Westward crosses Baker – Hughes INTEQ Road east of Battle Mountain. The track crossing is made up of solid timber panels through this dirt unpaved road.

The timber panels show significant deterioration especially at the ends. Some timber crossing panels are loose and bolts are missing, which generally requires major maintenance efforts to repair. The track is ballasted using 136 RE rails sections continuously welded and fastened to timber ties by cut spikes. The tie spacing is 19 inches through the crossing. The track grade is

relatively flat, with grades between 0.03% and 0.035%. Ballast material is crushed river rock.

The crossing structure appears to have subsided, as shown by fine aggregate rising to the surface of the timber crossties. This condition is primarily due to heavy vehicular traffic through the crossing. There are train activated warning devices, gates, mast mounted flashing lights, and bells.



Figure 11 Baker-Hughes-INTEQ Crossing – Looking Towards the Facility – View shows timber panels and deteriorated track substructure



Figure 12 Baker-Hughes-INTEQ Crossing – Looking South Towards I-80

Private At-Grade Road Crossing at T Lazy S Ranch Road – East of Battle Mountain near Beowawe (UPRR MP 492.98-Elko Subdivision-Overland Route)

This is a private at-grade crossing of Track No.1 Westward east of Battle Mountain. This private crossing is not accessible from the public road. The track crossing is made up of solid timber panels through the dirt unpaved road. US DOT Crossing Inventory Information identifies the crossing as having a “Private Railroad Crossing” sign and a stop sign. There are no train activated warning devices.

2.2 Sidings

This section describes the location, use, and condition of railroad sidings in the corridor.

2.2.1 UPRR- Track No.2 Eastward

The UPRR track charts for Track No. 2 and field investigations identify five sidings and spur tracks. The heavily used industrial areas in North Battle Mountain generate substantial local freight activities. These spurs are located

such that each turnout is in the trailing movement. Inventories in this area include the following:

- 1) Russells siding
- 2) FMC Distribution industrial spur. This spur has a turnout at approximately MP 477.4
- 3) Rennox is just east of FMC with a turnout at MP 478.3. This spur branches to another track with both tracks stub ending at approximately MP 477.5
- 4) Jenkins is a two track siding. The main branch track has a turnout at MP 478.8 and again branches to another track. Both tracks end at approximately MP 478.4. This siding is used extensively by Dyno Nobel, which handles substances in support of the mining industry.
- 5) Kampos is a two-track siding with turnout at MP 491.2. The main branches split into another track and both stub end at approximately MP 490.6

2.2.2 UPRR- Track No.1 Westward

The UPRR track charts for Track No. 1 and field investigations within Lander County identify sidings and spur tracks occurring around Battle Mountain. Except for the double ended siding at MI Battle Mountain facility, all of the turnouts are in the trailing movement. Inventories in this area include the following: (all Milepost references are for Track No.1, per the UPRR track charts),

- 1) Piute siding
- 2) MI Battle Mountain Plant industrial spur. This spur has a No. 14 turnout at approximately MP 474.46. This is a multiple track siding with industrial spur accessible from both ends with No. 14 turnouts. MI ships barite by rail on a daily basis.
- 3) Chevron Oil Products industrial spur, which handles ethanol and diesel fuel
- 4) East of Reese Street is a two mile siding with a No. 10 turnout at MP 475.95
- 5) A spur with a turnout at Muleshoe Road
- 6) Rosny siding
- 7) Baker Hughes INTEQ with a turnout at MP 498.2. This siding serves the Argenta Mine and handles barite and drilling fluids.
- 8) Mosel Siding with a No. 10 turnout at MP 491.9

2.3 Switching Areas

Data survey of available information from UPRR indicates that there are areas where significant switching operations occur. The switching activity is due mainly

to loading and unloading of materials for the industrial uses along the lines. The switching is typically accomplished with the use of local trains. All other trains, including AMTRAK, pass through the county without stopping.

On the eastbound track, the main switching areas are at FMC Distribution and Rennox facilities. The FMC facilities are used in the distribution of sodium cyanide and other materials for the mining industry. The Rennox facility includes two sidings. There are other two sidings east of Rennox, but the sites were not accessible and no information is available regarding use or the nature of industry being handled in the area.

The main siding on the westbound track is on the west side of Battle Mountain. This is a very active siding for delivery of aggregates, mostly used for the construction industry. Another siding on the westbound line is at Baker-Hughes Inteq facility. There are other two sidings east of this area. Both of these are used for temporary storage of rail cars.

3.0 Potential Conflicts

Additional freight traffic can be expected if the Carlin or Mina routes are chosen for nuclear waste shipments to Yucca Mountain. As discussed in the section on switching movements, most trains pass through the county without stopping. These movements are coordinated with local service to avoid any delays to the passing through train. These through trains can be predicted accurately given the central dispatching of UPRR. In the event of a mechanical problem, accident or derailment, the major impact would be to the local service. Once the local service stops in a siding or is halted due to an issue on the mainline, security becomes a concern. Railroads have found that a moving train is less vulnerable to vandalism than stationary rail cars.

Maintenance of way activities, including regular and scheduled capital improvements, impact existing rail service. These activities should be scheduled around the local and through train schedules. To a lesser degree, maintenance activities in the immediate vicinity of the rail system in the public areas (by the city or county) will be affected. However, the more difficult issues to manage are activities or events that are unplanned, such as equipment failure, accidents, vandalism, and trespassing.

4.0 Safety Issues

The Federal Railroad Administration (FRA) Office of Safety Analysis maintains a database documenting railroad safety. This database documents both crossing accidents and mainline accidents reported to the FRA, as described below.

UPRR-Track No. 2

DOT 833441Y – 25 Ranch (Private) – MP 582.12 (6.93 miles west of North Battle Mountain) – Crossing Changed 8/20/02. This is listed as a private crossing but actually is a public road called Mote Rd.

- ◆ No Reported Accidents

DOT 833442F – North Battle Mountain Rd. (Public) – MP 589.05 (in North Battle Mountain) – Crossing Changed 8/20/02

- ◆ 6/20/02, 10:44PM – An eastbound train traveling at 79 mph struck an unoccupied motor vehicle. No injuries were reported although there was \$4,000 in property damage. This was reported by AMTRAK.

DOT 833443M – Private (Private) – MP 591.70 (6.65 miles east of North Battle Mountain) – Crossing Closed 3/11/94

- ◆ No Reported Accidents

DOT 833445B – T Lazy Ranch (Private) – MP 600.56 (11.51 miles east of North Battle Mountain) – Crossing Changed 8/20/02

- ◆ No Reported Accidents

DOT 833446H – T Lazy Ranch (Private) – MP 603.30 (14.25 miles east of North Battle Mountain) – Crossing Changed 8/20/02

- ◆ No Reported Accidents

DOT 833447P – Field-To-Field (Private) – MP 604.50 (15.45 miles east of North Battle Mountain) – Crossing Changed 8/20/02

- ◆ No Reported Accidents

UPRR-Track No. 1 – All Accidents Were SPRR Prior to UP Merger

DOT 762094G – N. Second Street(Public) – MP 475.05 (0.75 miles west of Battle Mountain) – Crossing Changed 8/20/02

- ◆ No Reported Accidents

DOT 740815T – Magnet Cove (Public) – MP 475.30 (1/2 mile west of Battle Mountain) – Closed 8/14/87

- ◆ 3/7/84, 9:15PM – An eastbound train traveling at 5 mph struck a vehicle. The driver of the motor vehicle stopped and then proceeded across crossing before being struck by the train. No injuries and \$250 in property damage were reported.
- ◆ 10/17/83, 7:50PM – A westbound train traveling at 45 mph struck a motor vehicle. There were two fatalities and \$5,000 in property damage reported by Western Pacific Railroad.
- ◆ 12/29/82, 3:00AM – A westbound train traveling at 5 mph struck an occupied motor vehicle. No injuries and \$750 in damage were reported.
- ◆ 5/1/80, 9:20AM – A westbound train traveling at 45 mph struck an occupied motor vehicle. No injuries and \$1,000 in damage were reported by Western Pacific Railroad.
- ◆ 8/3/78, 5:25PM – A westbound train traveling at 45 mph struck an occupied motor vehicle. No injuries and \$5,000 in damage were reported by Western Pacific Railroad.
- ◆ 1/9/78, 8:45AM – A westbound train traveling at 43 mph struck an occupied motor vehicle. No injuries and \$750 in damage were reported.
- ◆ 8/12/76, 3:50PM – A westbound train traveling at 25mph hit unoccupied motor vehicle in the crossing. Property damage was estimated at \$2,500.

DOT 740816A – Reese St (Public) – MP 475.90 (in Battle Mountain) – Crossing Changed 8/20/02

- ◆ 4/7/82, 8:57PM – A westbound train traveling at 10 mph struck an occupied motor vehicle. No injuries and \$100 in damage were reported.

DOT 740817G – Muleshoe Ranch (Private) – MP 478.40 (2.6 miles east of Battle Mountain) – Closed 3/11/94

- ◆ 7/26/77, 7:50PM – A westbound train traveling at 1 mph struck an occupied motor vehicle. No injuries and \$350 in damage were reported.

DOT 912007S – Muleshoe Ranch Rd. (Public) – MP 478.45 (2.65 miles east of Battle Mountain) – Crossing Changed 12/3/98

- ◆ No Reported Accidents

DOT 740818N – Near Battle Mountain (Private) – MP 484.70 (8.9 miles east of Battle Mountain) – Crossing Changed 8/20/02

- ◆ No Reported Accidents

DOT 740819V – East of Muleshoe (Private) – MP 487.50 (11.7 miles east of Battle Mountain) – Crossing Changed 8/20/02

- ◆ No Reported Accidents

DOT 740820P – Barium Products (Private) – MP 488.16 (12.36 miles east of Battle Mountain) – Crossing Changed 8/20/02

- ◆ No Reported Accidents

DOT 740821W – Inteq Products (Private) – MP 488.90 (13.1 miles east of Battle Mountain) – Crossing Changed 8/20/02

- ◆ 4/18/77, 8:15AM – A westbound train traveling at 50 mph struck an occupied motor vehicle. No injuries and \$2,000 in damage were reported by Western Pacific Railroad.

DOT 740822D – T Lazy Ranch (Private) – MP 492.98 (17.18 miles east of Battle Mountain) – Crossing Changed 8/20/02

- ◆ 11/14/93, 10:50AM – A westbound train traveling at 47 mph struck an occupied motor vehicle. One fatality and \$2,600 in damage were reported.

Corridor Accidents

A survey of accident history along the corridor over the last ten years indicates three reported accidents in Lander County. The database provides only the County in which the accident occurred, not a specific location.

- ◆ 10-05-02, a 17 mph freight train had ten cars derail due to track conditions. It caused \$19,523 in railroad equipment damage and \$103,324 in track damage. There were no injuries.
- ◆ 3-1-01, a 50 mph freight train had one car derail due to equipment failure. There was \$19,048 in railroad equipment damage and \$350,737 in track damage. There were no injuries.

- ◆ 6-25-01, a 46 mph freight train had 43 cars derail due to track conditions. There was \$1,391,144 in railroad equipment damage and \$358,194 in track damage. There were no injuries.

5.0 Summary of Operational Conditions

Both rail lines are generally in the same condition. Both tracks have all wood ties with small ballast of various types, which appears to be a combination of quartz and volcanic rock. The ties display moderate wear and are spaced at 19 inches, the UPRR standard for heavy haul railroads with wood ties. This tie spacing distributes the heavy loads more effectively than wider spacing and provides a better transition to the crossing panels.

The on-site inspection was done on both tracks at multiple locations and for grade crossings, as reported in Section 2.1. This assessment was conducted by visual observation. If a more detailed assessment is required, a complete inspection using track inspection instrumentation would be required. Among the observations are the following:

1. Overall, the condition of the trackbed is satisfactory for Class 4 operation.
2. There is deterioration of the trackbed due the heavy vehicular traffic at road/highway grade crossings. Heavy vehicular traffic causes the trackbed to subside, creating a pocket in which moisture can accumulate. When subjected to repeated rail wheel load, this pocket will allow fine aggregates to migrate up into the ballast surface, a process known as track pumping. This was evident on several crossings. Over time, this will allow for vertical movement of the ties and crossing panel.
3. The rail corridor is one of the oldest in the western United States. The track contains ballast, which is a mixture of different types of crushed stone. The ties are wood and fairly aged. There are timber ties with visible splits. The ties are spaced at 19 inches (most places observed) allowing for distribution of the train weight through the ballast.

6.0 Corridor Switching Movements

6.1 UPRR-Track No. 2 Eastward

East of North Battle Mountain is FMC Distribution. The distribution center displays a sign reading "Warning Cyanide." Cyanide is a chemical used in local

mining processing. There is an industrial spur that provides ingredients for the manufacturing of these chemicals.

Track areas farther east did not appear to be accessible from public roads. Another area is called Kampos. This area is not easily accessible to ascertain what industries are being served.

6.2 UPRR-Track No. 1 Westward

North Second Street has a two track crossing. The second track is an industrial siding servicing the MI Battle Mountain Plant, an aggregate batching plant. This is also an area where switching movements are made for local service.



Figure 13 Crossing Near MI Battle Mountain Plant

East of Reese Street is a two mile siding accessible only on the west side. This is a hand thrown switch and is used by the local service for temporary car storage.

There is an abandoned siding located east of Muleshoe. This siding appeared to have been used for aggregate or ballast shipments. At Baker-Hughes-Inteq there is an active siding providing material delivery to the factory. East of Baker-Hughes-Inteq is a 1 mile siding accessible only on the west end. The purpose of this siding was not clear, although it may be used in conjunction with switching movements at Baker-Hughes-Inteq.

7.0 Access to Rail Line for Emergency Response

7.1 UPRR-Track No. 2

Access to the rail tracks is limited between the Humboldt-Lander County line and Mote Road. Mote Road is a dirt (farm/county) road crossing the track at Russell, as described in Section 2.1.1. An industrial complex is located east towards North Battle Mountain. Access is limited to authorized personnel. From this point towards the east, the track right-of-way is not accessible. Available mapping indicates another point of access is in Eureka County at Dunphy.

7.2 UPRR-Track No. 1

Access from the Lander County line to Battle Mountain is limited and there appear to be no public roads. North of I-80 east of Battle Mountain, a paved frontage road parallels the track throughout the remainder of the county. This road can be accessed easily from several points in an emergency. As the UPRR Track No. 1 is located very closed to I-80 and traverses Battle Mountain, direct track access can be made though the various public and private crossings, as well as on multiple dirt roads that directly parallel the track.

8.0 Water Resources & Soil Characteristics

This section describes the waterway, floodplain, wetland, and soil characteristics.

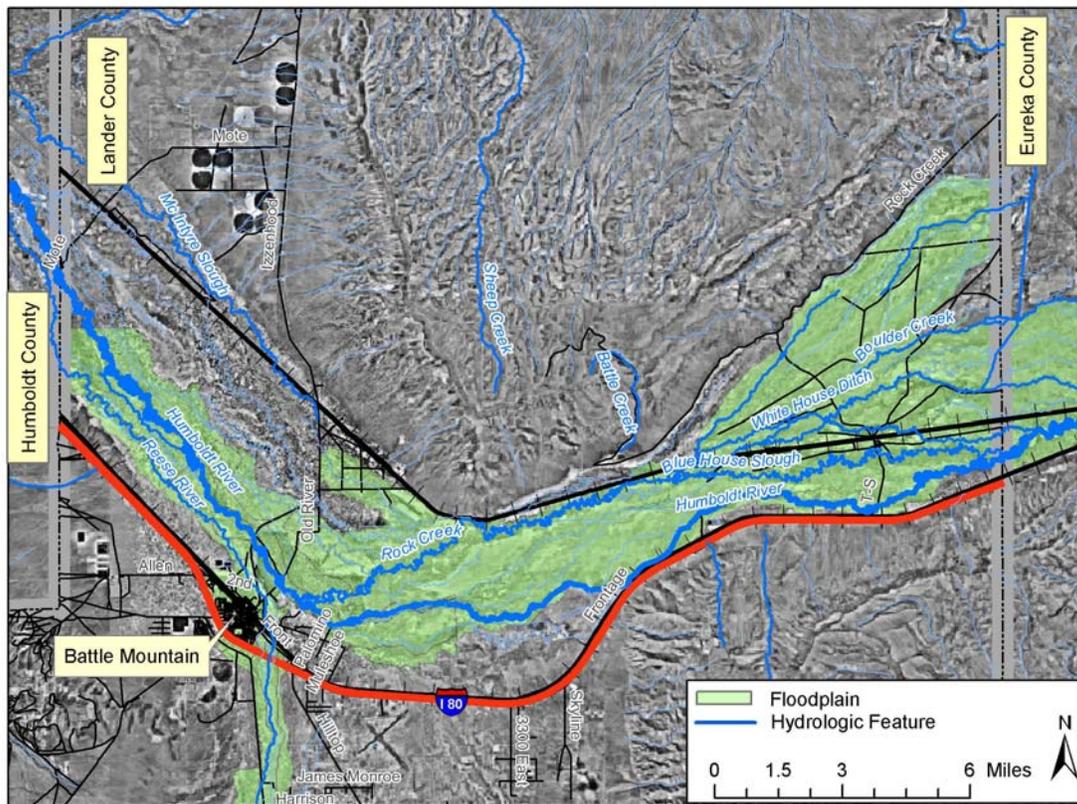
8.1 Floodplains and Waterways

The two UPRR tracks are separated by the Humboldt River. The tracks cross Rock Creek, Boulder Creek, Reese River, McIntyre Slough, Blue House Ditch, White House Ditch, plus an additional seven unnamed hydrologic features. The U.S. Geological Survey (USGS) provides water discharge records for the Humboldt River and Rock Creek. The base flow and peak flow for these waterways in the study corridor are shown in Table 1. Much of the rail corridor in Lander County is located in or adjacent to the 100 year floodplain. The 100 year floodplain and waterways are shown in Figure 14.

Table 1 Water Discharge, Cubic Feet per Second				
	2005		1897-2005 – Humboldt River 1918-2005 – Rock Creek	
	Annual Mean	Maximum Peak Flow	Annual Mean	Maximum Peak Flow
Humboldt River	837	4,320 (May 24, 2005)	363	5,800 (May 3 1952)
Rock Creek	108	2,140 (May 17, 2005)	40	4,800 (February 11, 1962)

Source: USGS, 2005

Figure 14 Waterways and Floodplains



8.2 Wetlands

Information about wetlands is provided by the US Fish and Wildlife Service National Wetlands Inventory (NWI) program. Wetlands are pervasive in the floodplain of the Humboldt River between and north of the two UPRR tracks. The two types of wetlands in this area are freshwater emergent wetlands and freshwater forested/shrub wetlands, which are described in Table 2. The location of wetlands in the corridor is shown in Figure 15.