

Site 45 – Highwood River Recreation Area Rock Cut

This site consists of a rock cut along the north side of the highway and just west of the parking area for the Highwood River Recreation Area. The maximum height of the near-vertical rock cut is approximately 8 to 10 m and it exposes bedded shale and coal (Photo 1). The dip of the bedding is down towards the west and roughly parallel to the highway. Therefore, from a slope stability perspective, the bedding of the rock is oriented favorably with respect to the highway.

At the time of the inspection in September 2005, rockfall debris consisting of gravel to boulder sized particles was present in the central portion of the ditch and there was an apron of accumulated debris along the toe of the cut slope. No rockfall debris was noted between the central portion of the ditch and the edge of the pavement. The pavement did not show any signs of damage from previous rockfalls.

The width and depth of the ditch are typically 7 and 1.25 m, respectively. The existing ditch exceeds the minimum width specified by the ditch sizing criteria shown on Figure B1 in Appendix B, however it does not meet the minimum depth criteria for the maximum height of the cut slope. However, the existing ditch is judged to be sufficiently large based on the extra width along with the lack of evidence of rockfalls reaching the road.

AMEC recommends the following Risk Level factors for this site using the rockfall frequency-severity matrix:

- Probability Factor of 13 based on observations of debris from several rockfalls judged to have occurred in the past year.
- Consequence Factor of 1 based on no visual evidence of past rockfalls reaching the paved surface of the road.

Therefore, the recommended Risk Level for this site is 13.

As a proactive measure, it is recommended that the rockfall debris be cleaned out from the ditch at this site in order to keep the Consequence Factor from rising due to future debris accumulation. The cleaning of rockfall debris from the ditch at this site should be treated as an ongoing maintenance item.



Photo 1 – Facing west along Highway 541 at the Highwood River Recreation Area Rock Cut site. Rockfall debris from the cut slope has accumulated along the toe of the slope. There were no signs of rockfall damage to the road surface and the existing ditch appears to be of sufficient size to contain the rockfall debris provided that it is cleaned out as necessary.