

## SECTION A – FILE REVIEW

### Site Location

- ▶ This site is located on Highway 549:02, 6 km from the junction of Highway 549 and Highway 22, approximately 6.2 km west of Millarville, Alberta.
- ▶ 05-21-03 W5M
- ▶ UTM Coordinates: Easting 5626439, Northing 683867 (NAD83, Zone 11U)
- ▶ NTS Mapsheet 82J/16

### Chronological Background

Table 1A provides a chronological background for this site.

### Site Geology, Hydrogeologic and Geomorphologic Setting

The site was first inspected by Amec in June 2012 during a call-out request made by AT.

At the site, the highway is a paved, two-lane undivided roadway along a bearing of approximately 090 (east/west). A meandering creek (Threepoint Creek) runs along the south of the highway.

The published geology maps indicates the site location lies within a region mapped as the Upper Cretaceous Belly River-St. Mary River Succession which records the changes from the marine Bearpaw Formation shales to the nonmarine Belly River group interbedded sandstone and siltstones<sup>1</sup>. The published surficial geology for this location consists of predominantly ice-contact, fine grained lacustrine deposits deposited in supraglacial and ice-walled lakes or in proglacial lakes floored by ice<sup>2</sup>. Surrounding the site, there are localised patches of draped moraine on bedrock uplands and plans, slightly modified by ice and stream erosion.

There is no hydrogeological information for this site with the exception of seepage observed at the base of the bank at the East Site.

### Description of Past Site Problems

No records of past site problems were not located for this site.

### Description of Past Investigations

No records of past investigations were located for this site.

<sup>1</sup> Hamilton, W.N., Price, M.C., Langenberg, C.W. (compilers), 1999; Geological Map of Alberta, Alberta Geological Survey, Alberta Energy and Utilities Board, Map No. 236, Scale 1:1,000,000.

<sup>2</sup> Shetsen, I., 1987; Quaternary Geology, Southern Alberta, Alberta Research Council, Natural Resources Division, Terrain Sciences Department, Scale 1:50,000.

## Description of Mitigative Measures Implemented

No major mitigative measures undertaken to date.

**Table A1 – S45 – Highway 549:02, Threepoint Creek  
 Chronological Background**

Date	Description
2012	June – Call-out inspection by AMEC at the request of AT. East site bank exposure on the south side of the road for approximately 60 to 80 m. West site bank exposure is approximately 40 to 50 m long. Recommended risk level of 22 for the east site and 24 for the west site were assigned. Recommendations included a hydrotechnical assessment, annual inspections, and potential mitigation including armouring the bank or channel re-alignment.
2013	May – annual site inspection by AMEC and AT personnel. Site condition relatively unchanged from 2012. Risk Level reduced to 18 for both the east and west site. No change to recommendations.
2014	May – annual site inspection by AMEC and AT personnel. East site relatively unchanged. Increased retrogression at the west site. Risk Level for East and West sites set to 14 and 22 respectively. Recommendations included installing a guardrail at the west site, hydrotechnical assessment, bank armouring, potential permanent repair including gabion basket wall and bank armouring.
2015	May – annual site inspection by AMEC and AT personnel. No significant retrogression observed at the east site. Recent bank instabilities at the west site, with as many as 14 fence posts undermined due to bank erosion. No changes to recommended risk level for either site. Recommendations include installing a guard rail at the west site, hydrotechnical assessment, and bank armouring.