

<b>SITE NUMBER AND NAME</b> S051 Pekisko Bank Erosion		<b>HIGHWAY &amp; KM</b> 540:02, 4.624	<b>PREVIOUS INSPECTION DATE</b> May 9, 2023	<b>INSPECTION DATE</b> <b>May 28, 2024</b>
<b>LEGAL DESCRIPTION</b> 08-14-17-02 W5M	<b>NAD 83 COORDINATES</b> UTM    Northing    Easting 11      5590158    701158		<b>RISK ASSESSMENT</b> PF: 10    CF: 10    TOTAL: 100	
<b>AVERAGE ANNUAL DAILY TRAFFIC (AADT):</b> 780 (east) (Ref. No. 71130)			<b>CONTRACTOR MAINTENANCE AREA (CMA):</b> 27	

<b>SUMMARY OF SITE INSTRUMENTATION:</b>  There is no instrumentation at the S051 bank erosion site.  LAST READING DATE: N/A	<b>INSPECTED BY:</b> Chris Grapel (KCB) Peter Roy (KCB) Renato Macciotta (U of A) Alex Frotten (TEC) Kristen Tappenden (TEC)
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**PRIMARY SITE ISSUE:** Bank erosion on the outside of a sharp (110° attack angle) meander bend. The head scarp has encroached onto highway right-of-way and undermined the highway ditch re-directing ditch flows onto the failed slopes.

**APPROXIMATE DIMENSIONS:**  
Bank erosion is approximately 100 m long with fence undermined for a length of approximately 24 m, head scarp located approximately 5 m away from edge of pavement.

**DATE OF ANY REMEDIAL ACTION:** N/A

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	N/A – none observed		X
Slope Movement	X		Tension cracking in highway ditch near the west end of the site	X	
Erosion	X		Large scour hole due to surface water runoff erosion along the outside bend of the creek. Ongoing gully erosion occurring where the ditch discharges water onto the slide surface	X	
Seepage		X	N/A – none observed		X
Culvert Distress		X	N/A – none observed		X

**COMMENTS**

No distress in pavement has been observed.

The height of the embankment is approximately 5 m to 6 m.

The erosion feature appears to have enlarged between the 2023 and 2024 inspections. The head scarp has extended towards the highway past the fence (undermining the fence) and is impacting the north (westbound) ditch. The erosion extending into the ditch is redirecting surface water flows into the failure zone, exacerbating erosion.

During the 2024 inspection, eight fence posts had been undermined and are hanging; an increase of two since the 2020 inspection, but the same amount since 2022. The fence is undermined for approximately 24 m.

A tension crack was observed near the west extent of the site.
The erosion has exposed a black utility cable that is owned by TELUS.
The erosion is impacting the north (westbound) ditch. The angle of attack for Pekisko Creek is 110°.
Erosion is retrogressing into the ditch and is within approximately 5 m of the high-tension cable barrier (HTCB).
Multiple slide blocks appear to be forming near the fence line and are expecting to eventually slide into the erosion feature, which will enlarge the erosion site and cause additional retrogression towards the highway.
<u>Maintenance/Repair/Monitoring Recommendations:</u>
<u>Short-Term</u>
<ul style="list-style-type: none"> <li>• The site should be regularly monitored by TEC's MCI, especially after significant precipitation events (e.g., freshet, increased rainfall, or prolonged rainfall).</li> <li>• The site should continue to be inspected as part of the Southern Region GRMP Section B inspections.</li> </ul>
<u>Long-Term</u>
<ul style="list-style-type: none"> <li>• A repair design has been prepared. The slope should be rebuilt using geogrid reinforced fill and the creek bank should be armoured (e.g., riprap). The north (westbound) ditch should be re-established during the repair and the fence repaired. Construction tentatively scheduled for 2025.</li> </ul>
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<p>Peter Roy., P.Eng. Civil Engineer</p>	
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**Photo 1** Creek erosion extending into highway ditch. Blocks falling into erosion feature. Photo was taken facing north on May 28, 2024.



**Photo 2** Bank erosion on the outside of a sharp meander bend. Fence line undermined. Utility cable exposed. Photo was taken facing west on May 28, 2024.





**Photo 3** Erosion extending along the meandering bend in the river. Note exposed bedrock near river level. Photo was taken facing southwest on May 28, 2024.



**Photo 4** View of erosion north of fence undermining. Ditch flows discharge into erosion area. Photo was taken facing north on May 28, 2024.

