



**PEACE REGION  
(GRANDE PRAIRIE DISTRICT – SOUTH) GRMP**



**SITE INSPECTION FORM**

<b>SITE NUMBER AND NAME:</b> GP048 Kleskun Creek Erosion		<b>HIGHWAY &amp; KM:</b> 733:02, 14.506	<b>PREVIOUS INSPECTION DATE:</b> June 16, 2022	<b>INSPECTION DATE:</b> <b>June 11, 2024</b>
<b>LEGAL DESCRIPTION:</b> SE 33-73-03-W6M	<b>NAD 83 COORDINATES:</b> UTM Northing Easting 11 6135882 412217		<b>RISK ASSESSMENT:</b> PF: 9 CF: 6 TOTAL: 54	
<b>AVERAGE ANNUAL DAILY TRAFFIC (AADT):</b> 940 (north) & 940 (south) (Reference No. 30730, 2023)			<b>CONTRACT MAINTENANCE AREA (CMA):</b> 504	

<b>SUMMARY OF SITE INSTRUMENTATION:</b>  There is no instrumentation at the GP048 site.  LAST READING DATE: N/A	<b>INSPECTED BY:</b> Chris Gräpel (KCB) Courtney Mulhall (KCB) Robert Senior (TEC) Rishi Adhikari (TEC) Babatunde Awokunle (TEC) Sacha Soltys (TEC) Darrell Westhaver (TEC)
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**PRIMARY SITE ISSUE:** Two erosion features on either side of Hwy 733:02 that were repaired in 2018. During an approximate 1:100-year flood event in 2018, repair (riprap-lined channel) on west side of highway failed resulting in an erosion gully that extends along west highway ditch and down west side of north highway embankment abutment. The highway embankment crosses Kleskun Creek just south of the site.

**APPROXIMATE DIMENSIONS:** Erosion feature is approximately 140-m long.

**DATE OF ANY REMEDIAL ACTION:** 2018 – beaver dam on west side of highway removed, culvert inlet on west side of highway plugged, both gullies on either side of highway filled, west highway ditch lined with rolled erosion control product, channel down west side of north highway embankment abutment to creek-bottom area armored with subrounded to rounded riprap, and natural slope above channel flattened. No remedial action since riprap-lined channel damaged by storm runoff flow in 2018.

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress	X		Several cracks present in pavement surface, which appear unrelated to erosion feature.		X
Slope Movement		X	None observed at time of 2024 inspection.		X
Erosion	X		Deep channel (approximately 0.3 m to 0.5 m deep, 1.0 m wide) eroded into west highway ditch undermining rolled erosion control product (Photos 3 and 4). Depth of erosion is similar to last year, maybe a bit deeper. Erosion of subgrade below former riprap-lined channel on west side of highway (Photo 2). Erosion gully on east side of highway appears unchanged with no signs of retrogression towards highway.		X
Seepage		X	None observed at time of 2024 inspection.		X
Culvert Distress		X	Culvert decommissioned.		X

**COMMENTS**

Kleskun Creek is a tributary of the Smoky River, and a mapped D watercourse with no restricted activity period (RAP). There is no fish occurrence information for the creek.

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Erosion gully in the west highway ditch upstream of former riprap-lined channel appears to have failed because the flow rates were too high for the rolled erosion control product (RECP) placed in the ditch. The flow rate in the west highway ditch was increased because the centreline culvert was blocked and decommissioned, diverting all flow down the west highway ditch. Also, removal of the beaver dam eliminated any flood attenuation offered by the beaver pond.

Almost all riprap from the previously riprap-lined portion of the ditch channel has been displaced and deposited in a pile near the bottom of the ditch channel exposing the underlying geotextile, which is damaged (Photos 1 to 3). Riprap appears to have failed because the riprap is undersized. The non-woven geotextile also appears to have been undermined, which could have been initiated by lower flows passing below the non-woven geotextile causing erosion of the subgrade.

Maintenance/Repair/Monitoring Recommendations:

- KCB has prepared a repair design for the site, which includes replacing the riprap-lined channel with a gabion basket drop structure, and re-shaping and backfilling areas of erosion in the west highway ditch with check trenches. The repair is tentatively scheduled for 2025 and is expected to take two to four weeks to complete. Estimate cost: approximately \$300,000 to \$400,000.
  - High-tension-cable barrier (HTCB) is located too far downslope from the highway and may not redirect motorist back onto highway (Photo 4). TEC should consider moving HTCB during repair work.

This report is an instrument of service of Klohn Crippen Berger (KCB). The report has been prepared for the exclusive use of Alberta Transportation and Economic Corridors (Client) for the specific application to the Peace Region (Grande Prairie District – South) Geohazard Risk Management Program (Contract No. CON0022166), and it may not be relied upon by any other party without KCB's written consent.

KCB has prepared this report in a manner consistent with the level of care, skill and diligence ordinarily provided by members of the same profession for projects of a similar nature at the time and place the services were rendered. KCB makes no warranty, express or implied.

Use of or reliance upon this instrument of service by the Client is subject to the following conditions:

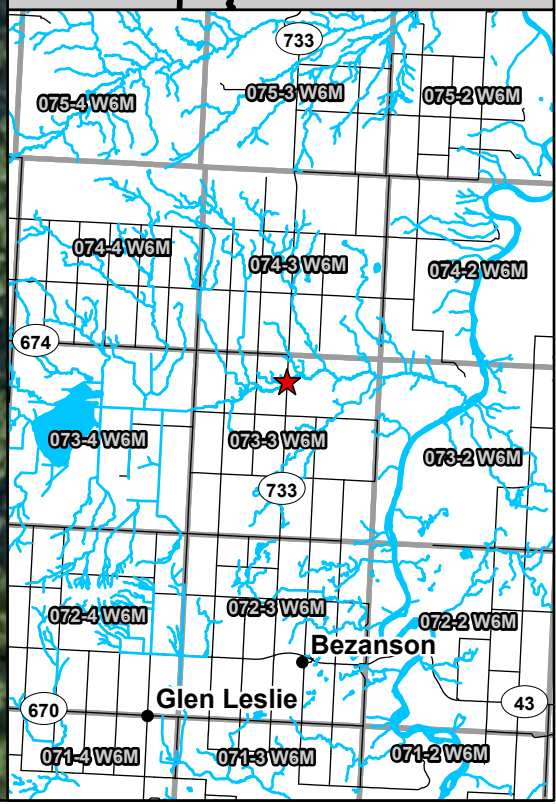
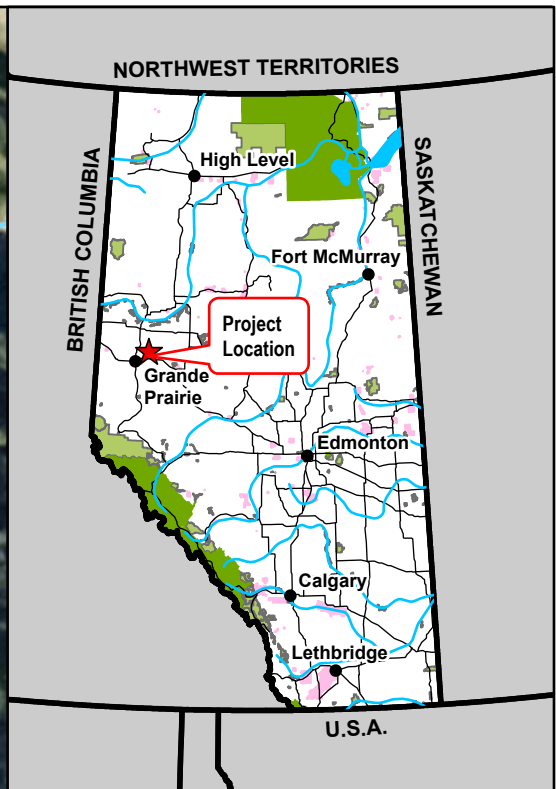
- (i) The report is to be read in full, with sections or parts of the report relied upon in the context of the whole report.
- (ii) The observations, findings and conclusions in this report are based on observed factual data and conditions that existed at the time of the work and should not be relied upon to precisely represent conditions at any other time.
- (iii) The report is based on information provided to KCB by the Client or by other parties on behalf of the client (Client-supplied information). KCB has not verified the correctness or accuracy of such information and makes no representations regarding its correctness or accuracy. KCB shall not be responsible to the Client for the consequences of any error or omission contained in Client-supplied information.
- (iv) KCB should be consulted regarding the interpretation or application of the findings and recommendations in the report.
- (v) This report is electronically signed and sealed and its electronic form is considered the original. A printed version of the original can be relied upon as a true copy when supplied by the author or when printed from its original electronic file.



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SITE INSPECTION FORM



<p>Courtney Mulhall, M.Sc., P.Eng. Geotechnical Engineer</p>	
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- Legend**
- Powerpole
  - ▶ Flow Direction
  - Watercourse
  - ✕✕ Fence
  - ⌵ Culvert
  - Guardrail
  - Erosion



NOTES:  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM ZONE 11N  
 3. IMAGE SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY  
 4. IMAGERY DOES NOT SHOW REPAIR COMPLETED IN 2018.

CLIENT

*Alberta*

**Klohn Crippen Berger**

PROJECT  
 PEACE REGION (GRANDE PRAIRIE DISTRICT-SOUTH)  
 GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE  
 Site Plan  
 GP048 - Kleskun Creek Erosion  
 Hwy 733:02, km 14.506

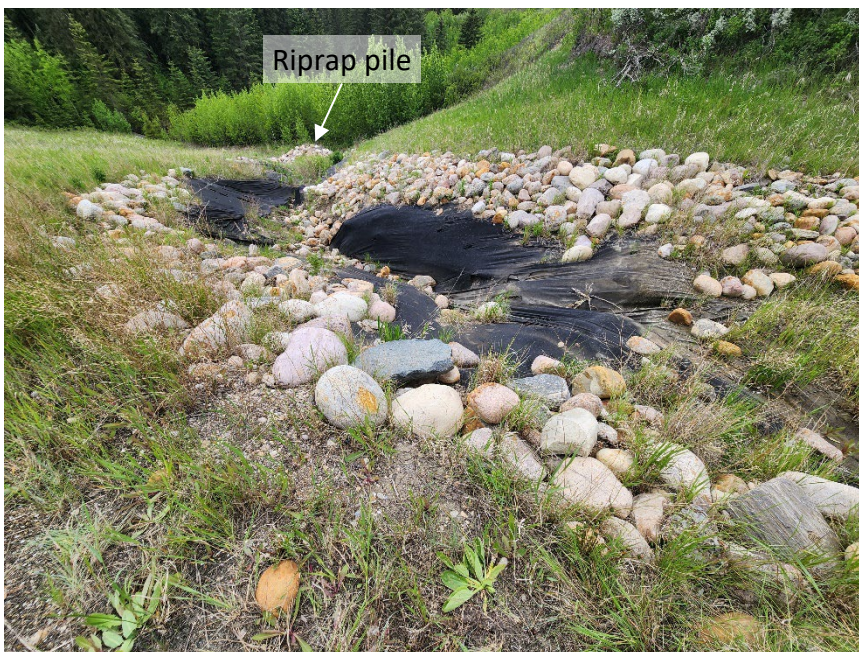
SCALE 1:1,250 PROJECT No. A05116A01 FIG No. 1

## Inspection Photographs

**Photo 1** Overview of GP048 site on west side of Hwy 733:02. Note displaced riprap deposited in pile near bottom of ditch channel. Photo taken June 11, 2024, facing northwest.



**Photo 2** Displaced riprap deposited in pile near bottom of ditch channel. Note exposed geotextile is damaged and undermined. Photo taken June 11, 2024, facing southwest.



**Photo 3** Channel eroded into bottom of ditch channel on west side of Hwy 733:02. Photo taken June 11, 2024, facing north.



**Photo 4** Channel eroded into bottom of ditch channel on west side of Hwy 733:02. Note guardrail located downslope of pavement edge. Photo taken June 11, 2024, facing south.

