SOUTHERN REGION GRMP

SITE INSPECTION FORM

SITE NUMBER AND NAME:		HIGHWAY & KM:	PREVIOUS INSPECTION DATE:	INSPECTION DATE:
S056-4 West Gorge Creek, West of Turner Valley		25002:02, 13.6	May 27, 2024	**May 27, 2025**
LEGAL DESCRIPTION: 12-36-019-05 W5M	NAD 83 COORDINATES: UTM 11 Northing 5614130 Easting 671333		RISK ASSESSMENT: Rockfall: PF: 14 CF: 6 TOTAL: 84	
MONTHLY AVERAGE DAILY TRAFFIC (MADT): May 2024 242 (west) & 232 (east) (Reference No. 55460220)			CONTRACTOR MAINTENANCE AREA (CMA): 521	

SUMMARY OF SITE INSTRUMENTATION:	INSPECTED BY:
None LAST READING DATE: N/A	Chris Gräpel (KCB) Jorge Rodriguez (KCB) Renato Macciotta (U of A) Alex Frotten (ATEC) Rishi Adhikari (ATEC)

PRIMARY SITE ISSUE: Rockfalls from the rock cutting on the north side of the highway, weathering coal seams, undermining more competent bedrock. And rockfalls are generated from the weathering of overburden at the brow of the slope.

APPROXIMATE DIMENSIONS: Rock cut is approximately 228 m long, ranging from 20 m to 40 m in height. On the south side of the highway, surface runoff erosion has undermined the safety barrier in one location.

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		Damage to pavement observed due to rockfalls.		X
Slope Movement		X	Rockfalls from the north slope of the highway		X
Erosion	X		Surface water runoff leading to slope erosion on southern side of highway. Erosion at the brow of the slope		X
Seepage		X	None observed.		X
Culvert Distress		X			X

COMMENTS
The rock slope on the north side of the highway consists of folded and fractured sandstone and conglomerate with claystone and interbedded coal seams (Photo 1). The toe ditch is shallow, and rockfalls have partially blocked the drainage. Weathering of the slope has resulted in rockfalls of various sizes (i.e. gravel to cobble size) falling close to the highway.
This site was included in the K-Country Rockfall Hazard Assessment completed by KCB in 2023. A draft report was submitted on September 18, 2023. The risk rating was re-assessed as part of the 2024 Section B inspection based on the results of the rockfall hazard assessment. Nevertheless, the probability factor was increased from 13 to 14 during the 2025 Inspections.
A large rock block, measuring up to 1.2 m x 1.0 m x 0.4 m, has been observed in the ditch since the 2024 inspection (WP01), approximately 1.5 m from the edge of the driving lane. On the west side, the bedrock appears to be underlaid by a colluvium deposit.
One large and fractured overhang block (Photo 2) of approximately 20 cu.m at 15 m height from the road appears to be marginally stable and could fall after heavy precipitation.
Erosion at the brow of the slope is causing debris to fall into the ditch and onto the highway (Photos 1, 3 and 4).
The MCI reported that rock falls appeared to be increasing in frequency and that the ditch was being cleaned out annually. However, the large rock block (WP01) found in the ditch was also observed during the 2024 Inspection (Photo 2).
Surface runoff from the highway is eroding the slope on the south side of the highway (Photo 6). Erosion has undermined the guardrail and reached the pavement edge at one location, but no pavement distress was visible in 2024 (WP02).
Bird swallows were observed flying around the cliff during the inspection (Photo 2); this could result in potential scheduling restrictions for remediation or maintenance activities.
Maintenance/Repair/Monitoring Recommendations: • The site should be regularly inspected by TEC's MCI and annually as part of the Southern Region GRMP Section B inspections. • Clean out the toe ditch regularly to maintain storage capacity for future rockfalls; and • Unplug the culvert beneath the road to minimize runoff erosion at the existing erosion site. • Installation of a rockfall fence partway up the rock slope to catch rocks with the potential to bounce onto the highway. • Install jersey barriers at the edge of the pavement to help prevent rockfall particles from reaching the highway.

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 Southern Region Geohazard Risk Management Program (Contract No. CON0022161) 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:

1. The report is to be read in full, with sections or parts of the report relied upon in the context of the whole report.
2. 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.
3. 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.
4. KCB should be consulted regarding the interpretation or application of the findings and recommendations in the report.
5. 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.

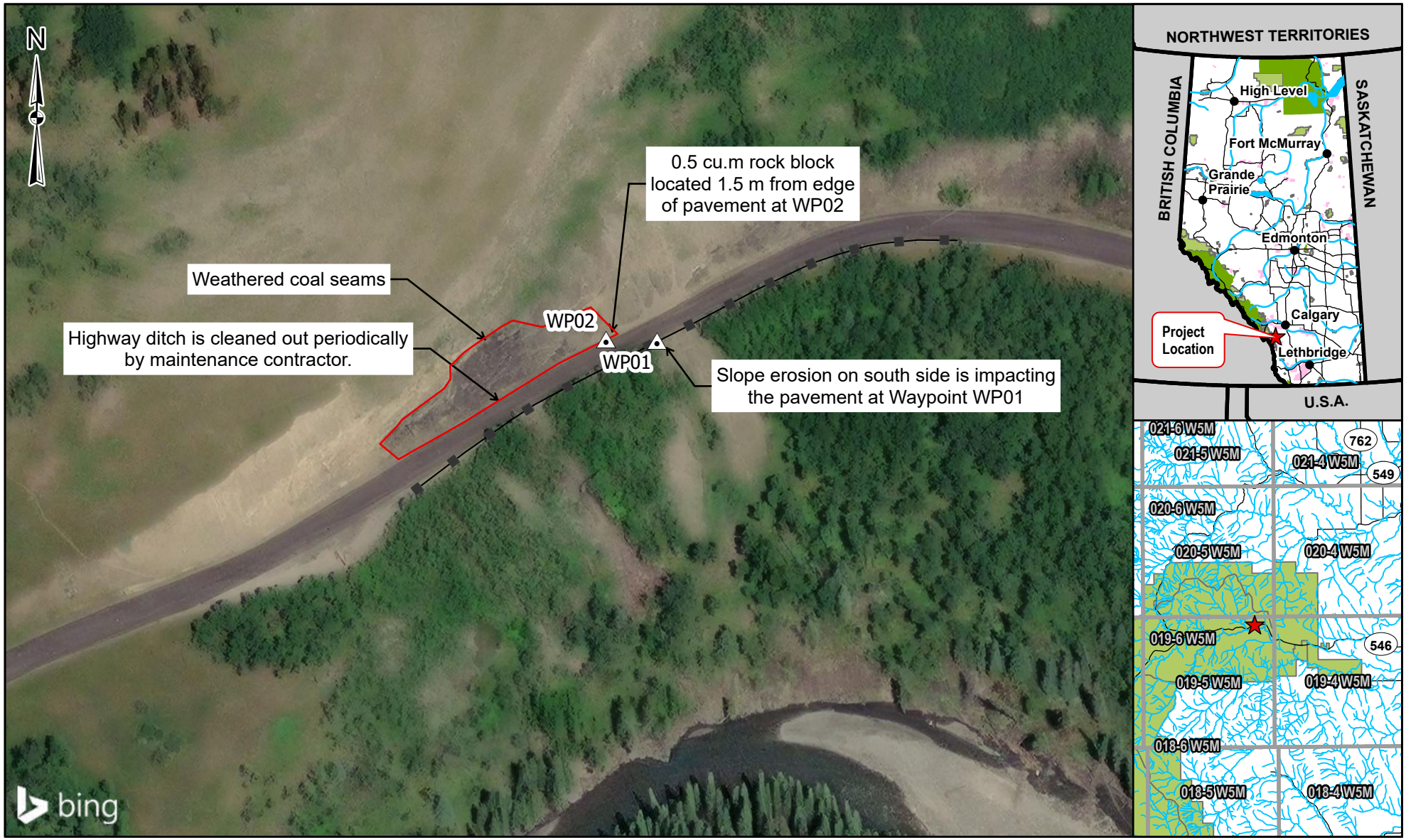
PROFESSIONAL ENGINEER ALBERTA
JORGE RODRIGUEZ NAVARRO
ID 222669
2025 Oct. 10
LICENSED TO PRACTICE

Jorge Rodriguez, Ph.D., M.Sc., P.Eng.
Geotechnical Engineer

PERMIT TO PRACTICE
KLOHN CRIPPEN BERGER LTD.

RM SIGNATURE: Pamela Jones
RM APEGA ID #: 187607
DATE: 10 Oct. 2025

PERMIT NUMBER: P009196
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)



Legend

- GPS Waypoint
- Guardrail

NOTES:
1. HORIZONTAL DATUM: NAD83
2. GRID ZONE: UTM ZONE 11N
3. IMAGE SOURCE: MAXAR 2025

CLIENT: Alberta

Klohn Crippen Berger

PROJECT: SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE: Site Plan
S056-IV West Gorge Creek Site IV
Sheep River Road

SCALE	PROJECT No.	FIG No.
1:1,500	A05116A03	1

File: Z:\AICGY\Alberta\A05116A03 ABT Southern Region GRMP\400 Drawings\2025\02_Pro_File\Section B\ABT_SouthernRegion_SectionB.aprx Date: 2025-09-08 11:22 AM Creator: NMirhadi

Photo 1 Rock slope north of highway. Photo was taken facing east on May 27, 2025.

Photo 2 **Weathered coal seams create a large rock overhang (orange line) on the north slope. Photo taken facing northwest on May 27, 2025.**

Photo 3 Rock slope north of highway. Photo taken facing northeast on May 27, 2025.

Photo 4 **Large rock block in the ditch on the north side of the highway, which was also observed in the 2024 Inspection. Photo taken facing west on May 27, 2025.**

Photo 5 **East end of rock slope north of highway. Photo taken facing northwest on May 27, 2025.**

Photo 6 **Surface runoff erosion on the south side of highway has undermined the guardrail and reached the pavement edge. There was no evidence of pavement cracks during the 2024 and 2025 inspections. Photo taken facing southeast on May 27, 2025.**