

SITE NUMBER AND NAME: <b>S056-IV West Gorge Creek, West of Turner Valley</b>		HIGHWAY & KM: Sheep River Road	PREVIOUS INSPECTION DATE: May 6, 2019	INSPECTION DATE: <b>July 5, 2021</b>
LEGAL DESCRIPTION: 12-36-019-05 W5M	NAD 83 COORDINATES: UTM Northing Easting 11 5614130 671333		RISK ASSESSMENT: PF: 13 CF: 3 TOTAL: 39 (Rockfall)	
MONTHLY AVERAGE DAILY TRAFFIC (MADT): June 2017 360 (west), 300 (east). (Ref. No. 55460220)			CONTRACTOR MAINTENANCE AREA (CMA): 27	

SUMMARY OF SITE INSTRUMENTATION:  None  LAST READING DATE: N/A	INSPECTED BY: Chris Gräpel (KCB) Chris Morgan (KCB) Alex Frotten (AT) Roger Skirrow (AT)
PRIMARY SITE ISSUE: Rock slope adjacent to the highway with ongoing sloughing. Rocks from the slope are falling onto the road.	
APPROXIMATE DIMENSIONS: Rock face north of highway is approximately 120 m long. 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			X
Erosion	X		Surface water runoff leading to slope erosion on southern side of highway.		X
Seepage		X	None observed.		X
Culvert Distress		X			X

<b>COMMENTS</b>
The rock slope on the north side of the highway consists of folded and fractured sandstone and conglomerate with claystone layers. The toe ditch is shallow and rocks are falling onto the highway. Rock blocks up to 0.7 m x 0.4 m x 0.5 m are present in the ditch.
During the 2021 inspection, it appeared that the toe ditch below the rock slope had recently been cleaned out. The excavated material had been stockpiled near a pull-out to the west of the site.
The MCI reported that rock falls appeared to be increasing in frequency and that the ditch was being cleaned out regularly.
A culvert under the road is present at the east end and is plugged with a rock.
Surface runoff from the highway is eroding the slope on the south side of the highway. Erosion has undermined the safety barrier and reached the pavement edge at one location, but no pavement distress was visible in 2021.

Recommendations:

Short-Term

- 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.

Long-Term

- Rock slope analysis to evaluate rockfall potential and routes;
- Scaling of portions of the rock slope where the rock slope is directly adjacent to the road to create a rock fall ditch; and
- Installation of rockfall fence partway up the rock slope to catch rocks with the potential to bounce onto the roadway.

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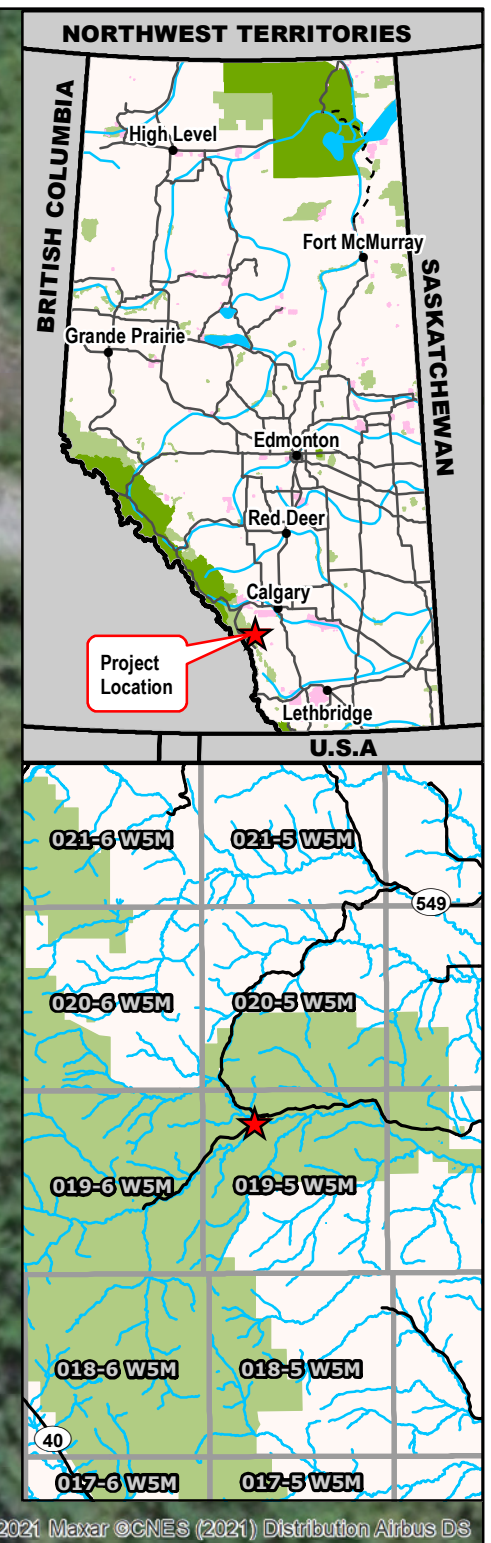
- (i) The report is to be read in full, with sections or parts of the report relied upon in the context of the whole report.
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- (iii) KCB should be consulted regarding the interpretation or application of the findings and recommendations in the report.



2021-11-24

Chris Morgan, M.Sc., P.Eng.  
Senior Geotechnical Engineer





**Legend**  
 ▲ GPS Waypoint (May 6, 2019)

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 0 50 Metres

NOTES: 1. HORIZONTAL DATUM: NAD83 2. GRID ZONE: UTM Zone 11N 3. IMAGE SOURCE: Bing Maps 2019, Microsoft Corporation.	CLIENT 	PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM	
		TITLE Site Plan S056-IV West Gorge Creek Site IV Sheep River Road	
SCALE 1:1,000	PROJECT No. A05116A03	FIG No. 1	

Time: 10:15:20 AM  
 Date: October 08, 2021  
 File: Z:\AUCY\Alberta\A05116A03\ABT\_Southern Region GRMP\400 Drawings\2021\Section B figures\MXD\WestGorgeCreek\_IV\_211008.mxd



**Photo 1** Rock slope north of highway. Photo was taken facing west on July 5, 2021.



**Photo 2** Rock slope north of highway. Rock fall ditch appeared to have been cleaned out recently. Photo was taken facing east on July 5, 2021.





**Photo 3** Rock slope north of highway. Photo taken facing northeast on July 5, 2021.



**Photo 4** Rock block in the ditch on the north side of the highway. Photo taken on July 5, 2021.





**Photo 5** Surface runoff erosion on the south side of highway has undermined the safety barrier and reached the pavement edge. There was no evidence of pavement crack during the 2021 inspection. Photo taken facing south on July 5, 2021.



**Photo 6** Rock fall debris from ditch cleanup has been stockpiled in an area to the west of the site. Photo taken on July 5, 2021.

