

<b>SITE NUMBER AND NAME:</b> GP036 Rock Fall S McIntyre Mine		<b>HIGHWAY &amp; KM:</b> 40:36, 12.061	<b>PREVIOUS INSPECTION DATE:</b> May 25, 2020	<b>INSPECTION DATE:</b> July 21, 2021
<b>LEGAL DESCRIPTION:</b> NW 04-58-08-W6M	<b>NAD 83 COORDINATES:</b> UTM Northing Easting 11 5984469 359856		<b>RISK ASSESSMENT:</b> PF: 15 CF: 4 TOTAL: 60	
<b>AVERAGE ANNUAL DAILY TRAFFIC (AADT):</b> 900 (north) & 1120 (south) (Reference No. 25592)			<b>CONTRACT MAINTENANCE AREA (CMA):</b> 504	

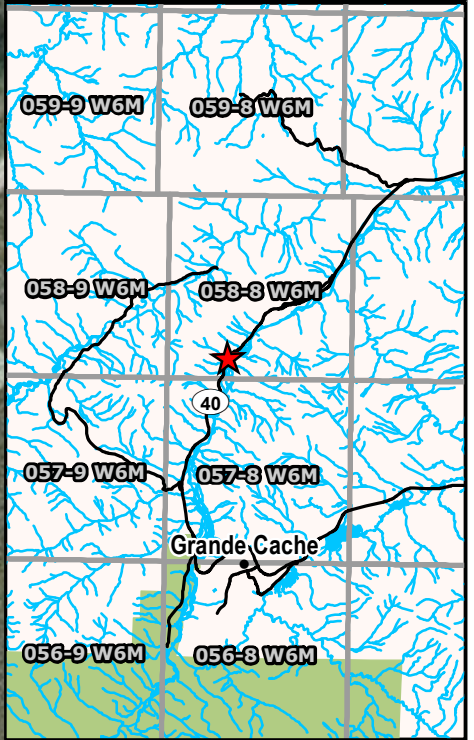
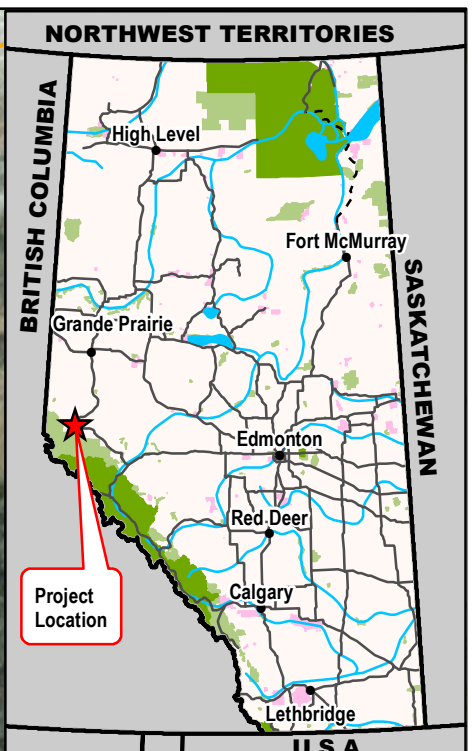
<b>SUMMARY OF SITE INSTRUMENTATION:</b>  There is no instrumentation at the GP036 site  LAST READING DATE: N/A	<b>INSPECTED BY:</b> Chris Grapel James Lyons Roger Skirrow (AT) Rocky Wang (AT) Ed Szmata (AT) Max Shannon (AT) Dwayne Lowen (AT MCI) Renato Macciotta (KCB/UofA)
<b>PRIMARY SITE ISSUE:</b> Talus deposits from the rock slope constrict the west highway ditch, and falling rocks causing a traffic hazard. Buried gas line below ditch limits depth that ditch can be excavated or cleaned out.	
<b>APPROXIMATE DIMENSIONS:</b> About 250 m overall length, by approximately 30 m high	
<b>DATE OF ANY REMEDIAL ACTION:</b> Lock blocks placed adjacent to guardrail around 2010	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X			X
Slope Movement	X		Debris flow near south extent of site	X	
Erosion	X			X	
Seepage		X			X
Culvert Distress	X		Centreline culvert was partially blocked	X	

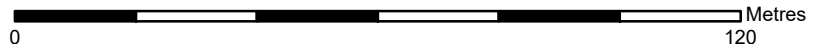
<b>COMMENTS</b>
<u>Rockfall site</u>
- Brow of slope has dilated deteriorating rock mass, some blocks of more intact bedrock are getting undermined by erosion of weak, closely fractured and sheared rock and coal. Overburden above bedrock is also failing.
- Coal and sheared/closely-fractured rock appears to fall as gravel sized particles, but larger blocks are eventually undermined and fall as large particle.
- AT says the depth of the "channels" where weaker rock has been removed seem deeper this year. This could result in a higher incidence of rockfall in the future.
- Bench at mid-slope and talus cones on mid-slope bench could be a launch point for particles from brow rolling down talus slope and launching out onto road
- Rockfall particles up to 1.5 m x 1.0 m x 0.75 m, estimated average particle size of 0.5 x 0.5 x 0.5 m

<ul style="list-style-type: none"> <li>- Rock strike on guardrail deflected guardrail and pushed it towards traffic</li> </ul>	
<ul style="list-style-type: none"> <li>- Wide ditch, about 7 m wide, gets cleaned out once a year. Ditch has not been cleaned out since last year, material in ditch is about 1 year accumulation</li> </ul>	
<ul style="list-style-type: none"> <li>- Centreline culvert at WP 0105 blocked with debris, some rockfall particles removed at time of site visit</li> </ul>	
<ul style="list-style-type: none"> <li>- Usually 10 to 15 cu.m. gets cleaned out each year, occasional particles big enough to need a loader to remove them, fall onto the road, don't usually make it past centreline</li> </ul>	
<ul style="list-style-type: none"> <li>- Some of the concrete lock blocks are deteriorating and will eventually need to be replaced</li> </ul>	
<u>Debris Flow site</u>	
<ul style="list-style-type: none"> <li>- Located at WP 0106 – major event in 2005</li> </ul>	
<ul style="list-style-type: none"> <li>- Other debris flow sites along this section of highway were addressed by the slope above being mined. This site has not been mined above, so it could generate additional debris flows.</li> </ul>	
<ul style="list-style-type: none"> <li>- Approximately 20 cu.m. of debris in the ditch.</li> </ul>	
<u>Maintenance Recommendations</u>	
<ul style="list-style-type: none"> <li>- AT should continue to clean the ditch regularly to maintain rockfall or debris flow storage volume to reduce the potential for material reaching the highway.</li> </ul>	
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<p>Chris Gräpel, M.Eng., P.Eng. Senior Civil Engineer, Associate</p>	

Time: 15:01:22 PM  
 Date: October 05, 2021  
 File: Z:\A\EDM\A05116A01\ABT\_Grande Prairie South GRMP\400 Drawings\GIS\MXD\2021\Section B\GP036\_210929.mxd



- Legend**
- GPS Waypoint (July 21, 2021)
  - GPS Track (July 21, 2021)
  - Jersey Barrier
  - Guardrail



**NOTES:**  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 11N  
 3. IMAGE SOURCE: Microsoft BING Maps

CLIENT

*Alberta*

Klohn Crippen Berger

PROJECT	GRANDE PRAIRIE SOUTH REGION GEOHAZARD RISK MANAGEMENT PROGRAM	
TITLE	Site Plan GP036 Rock Fall South of McIntyre Mine Hwy 40:36, km 12.061	
SCALE	PROJECT No.	FIG No.
1:1,250	A05116A01	1

**Photo 1** Overview of the GP036 site, indicating Hwy 40, railway tracks, concrete lock blocks, and decommissioned coal mine shaft entrance (indicated by red circle). Note the overburden above the brow of the rock slope is failing (yellow circle). Photo taken July 21, 2021 facing south.



**Photo 2** Deflection in guardrail caused by a particle falling down the slope. Photo taken July 21, 2021 facing south. Note some lock blocks are deteriorating.



**Photo 3** Rockfall debris observed in the west (southbound) ditch at WP105. Photo taken July 21, 2021 facing southwest.



**Photo 4** Concrete jersey barriers installed on the west side of the guardrail, in the west (southbound) ditch. Photo taken July 21, 2021 facing north.



**Photo 5** Warning sign installed near the base of the slope in the west (southbound) ditch. Note gas line marker in ditch. Photo taken July 21, 2021 facing north.



**Photo 6** Erosion gully located at the south end of the GP036 site at debris flow location (WP 106). Photo taken July 21, 2021 facing west.

