GEOHAZARD ASSESSMENT PROGRAM

PEACE RIVER / HIGH LEVEL AREA

2011 INSPECTION

Government of Alberta ■ Transportation

THURBER ENGINEERING LTD.

Site Number	Location	Name	Hwy	km
PH11	North of Town of Peace River	Whitemud River (Stations 42+600 and 43+200)	743:02	Approx. 42.6 and 43.2
Legal Description		**UTM Co-ordinates**		
36-87-21-5		11V N 6272376	E 486574	

	Date	PF	CF	Total
Previous Inspection:	June 03, 2010	N/A 9	N/A 2	N/A (Station 42+600) 18 (Station 43+200)
Current Inspection:	June 06, 2011	5 9	4 2	20 (Station 42+600) 18 (Station 43+200)
Road AADT:	100		**Year:**	2010
Inspected By:	(Don Proudfoot and Harjeet Panesar, Thurber Engineering) (Neil Kjelland and Ed Szmata, Alberta Transportation)			
Report Attachments:	☑ Photographs ☑ Plans ☐ Maintenance Items			

Primary Site Issue:	**Site repaired in 2010** – Original site issue was Backslope and sideslope slumping.		
Dimensions:	See drawing		
Date of any remediation:	**Earthworks for new culvert installation at Station 42+600 were completed in 2010.**		
Maintenance:	Installation of new culvert and sideslope construction.	**Worsened?**	
Observations:	**Description**	**Yes**	**No**
☐ Pavement Distress	Gravel road (not affected by movement)	☐	☐
☑ Slope Movement	STATION 42+600: ▪ Continued backslope slumping on the south end of the site, leading to debris build up at the ditch. More trees on slide. ▪ Sideslopes re-constructed in 2010, well groomed and no sign of visible instability. STATION 43+200: ▪ Additional shallow sloughing of shale slope. Some vegetation started to grow.	☐	☑
☑ Erosion	STATION 42+600: ▪ Minor erosion in east ditch at the south end of the site.	☐	☑
☐ Seepage		☐	☐
☐ Culvert Distress	A new culvert was installed in 2010	☐	☐
☐ Other		☐	☐

Instrumentation:

None

Assessment (Refer to Figure PH11-1)**:**

STATION 42+600:

- A new culvert was constructed using a combination of auger boring, pipe ramming and open excavation. A sinkhole which had developed during the construction of the new culvert was not visible at the time of 2011 inspection. The side slopes appeared to be well groomed, and the grass has started to grow. No signs of side slope instability were visible.

- The shallow slide located in the west backslope, at the south end of the site is also not presently affecting the highway but may block the drainage of the ditch.

- The culvert was constructed with corrugated steel pipes at the inlet and outlet installed by trenching. Three smooth wall steel pipe sections over the central part of the culvert were installed by auger boring and pipe ramming. The corrugated steel pipes and the smooth wall steel pipes were connected using cement collars. Accumulation of sediment was observed at the bottom of the culvert in the second smooth wall pipe and also water was ponded at the culvert on the upstream side of each joint.

STATION 43+200:

- The shale slope appears to have sufficient global stability and the spalling is considered to be more of a maintenance issue. There are no signs of movement in the roadway. The subdued scarp with a good vegetative cover indicates that the sideslope is currently stable.

Recommendations:

STATION 42+600:

(a) The slopes were remediated in 2010. The site should be monitored for another year as part of the geohazard assessment to check for any signs of potential instability.

(b) Backslope failure west of the highway:

- Clean ditch when required in the short term. Dispose of dirt outside the valley. Long term side slope requires a flatter angle with 3 m wide benches at 6 m height intervals. This could be done in conjunction with future grading work for highway alignment improvements.

(c) East ditch erosion:

- Repair by backfilling with compacted material and cover with coconut mat and synthetic ditch checks.

STATION 43+200:

- Continue to clean sloughed material from ditch when required.