GEOHAZARD ASSESSMENT PROGRAM

PEACE RIVER / HIGH LEVEL AREA



2010 INSPECTION

THURBER ENGINEERING LTD.
GEOTECHNICAL = ENVIRONMENTAL = MATERIALS

Site Number	Location	า		Name		ŀ	lwy	km	
PH11	North of	Тои	vn of Peace	Whitemud	River (Stations 7	743:02	Approx.	
	River			42+600 an	d 43+200)			42.6 and	
								43.2	
Legal Description	Legal Description				UTM Co-ordinates				
36-87-21-5				11V N 6272376 E 486574					
			Date	PF	CF		Total		
Previous Inspe	ction:	M	lay 19, 2009	11	2	22 (22 (Station 42+600)		
				9	2	18 (18 (Station 43+200)		
Current Inspec	tion:	June 03, 2010		N/A	N/A	N/A	N/A (Station 42+600)		
				9	2	18 (18 (Station 43+200)		
Road AADT:			100		Year:		2009		
Inspected By:		(Do	Don Proudfoot and Gustavo Padros, Thurber Engineering)						
		(Ro	oger Skirrow	, Neil Kjellai	nd, Ted Pru	ue and Ed	Szmata,	Alberta	
		Tra	ansportation)						
Report Attachments:		✓	Photograph	is 🔽 P	lans	🗆 Mainte	Maintenance Items		
			1						
Primary Site Is	Backslope	Backslope and sideslope slumping.							
Dimensions:			See drawing						
Date of any remediation:			Earthworks for new culvert installation at Station 42+600 were being carried out at the time of inspection.						
Maintenance:			None in the	e last year.		•	Worse	Worsened?	
Observations:				Descri	ption		Yes	No	
□ Pavement Distress			- Gravel road (not affected by movement)						
			STATION 42+600:						
			■ Co	ntinued bac	kslope slur	nping on			
			the	south end	of the site,	leading to			
			det	oris build up	at the ditc	h.			
			 No changes were noted on the size 						
Slope Movement			of the 2009 sideslope slump, which						
			was still visible as the earthworks						
			had not reached that area.						
			STATION 43+200-						
			Additional shallow sloughing of						
			- Au	ale slope	iow slough				
			STATION 42+600						
Erosion			■ Mir	nor erosion	in east ditc	h at the		V	
			SOL	uth end of th	ne site.				

Erosion	 Minor erosion in east ditch at the south end of the site. 	2
Seepage		
Culvert Distress		
C Other		

Instrumentation:

None

Assessment (Refer to Figure PH11-1):

STATION 42+600:

- The installation of a new culvert was being carried out at the time of inspection by a combination of auger boring, pipe ramming and open excavation. There had been some issues with seepage, boulders and skin friction during installation of the pipe by auger boring/pipe ramming. Apparently a sink hole developed in the southeast sideslope of the highway above the culvert and was backfilled with soil. A local slide developed between the highway and open trench section between the culvert and highway.
- No change in the 2009 side slope slump west of the highway.
- 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.

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 following recommendations were provided during the site visit to Vince of Forest Trotter who was the Contractor in charge of the culvert replacement work.
 - Flatten the steep cut slope on the west side of the road as soon as possible, before his planned sheet pile installation or further work, to reduce the risk of a possible failure extending back to the highway.
 - Grout the old abandoned culvert pipe completely.
 - New fill for embankment flattening should be benched into the existing fill after stripping the side slopes.
 - Extend the remaining open trench pipe in sections, backfilling each before excavating the next, to maintain some buttress support to the active slide area present near the proposed outlet of the replacement culvert.
- (b) A careful inspection of the site should be carried out again during the 2011 geohazard visit to assess whether there are any issues related to the culvert installation problems that need to be dealt with as part of the contract warrantee.

- (c) Backslope failure west of the highway:
 - Clean ditch on the short term. Dispose of dirt outside 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 or as part of the existing culvert work if additional borrow is required to complete the work.

(d) 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.