

GEOHAZARD RISK ASSESSMENT
CENTRAL REGION

SITE C57: H41:14 PAVEMENT DISTRESS

LEGAL LOCATION: **SE 18-37-6-W4**

REFERENCE LOCATION
ALONG HIGHWAY: **km 22**

UTM COORDINATES: **N 5780380 E 510040 (NAD83)**

AT FILE: **H41:14**

AT PLAN & PROFILE:

Date of Initial Observation: 1978

Date of Previous Inspection: May 18, 2010

Inspected By: Klohn Crippen Berger Ltd.

Date of Current Inspection: **June 19, 2012**

Inspected By: Klohn Crippen Berger Ltd.

Instruments Installed: none

Risk Assessment: **PF(9) * CF(2) =18**

Last Updated by: Klohn Crippen Berger Ltd.
Date: June 19, 2012

Location and General Description of Instability

The site is located in the Neutral Hills on Highway 41:14 about 6 km south of the intersection with Highway 599 and about 22 km north of Consort, Alberta. The highway is severely distressed over a length of about 400 m corresponding with the topographical low of the area and on either side of the intersection with a local road.

Geotechnical Conditions

The Neutral Hills are an example of glaciotectionism where a glacier has deformed and thrust the shale bedrock of the Bearpaw Formation. Mixed and contorted bedrock, combined with tills, have been ice-thrusted into hills and ridges. These blocks or slabs may be up to 100 m thick.

No available site specific subsurface exploration data nor any geotechnical subsurface investigation has been carried out along the extent of distressed road section.

Chronology (Refer to Section G for Further Information)

1978

The highway was constructed in 1978 and problems were encountered virtually immediately in this section, with patching in small areas starting in 1979 and larger patches in 1984. The distress observed in the road continued to the point of surface separation and a full width patch, 40 mm thick was placed over the full section.

May 2010

During the May 2010 inspection, the following observations were noted:

- Despite a number of full width patches, the road surface is highly uneven and a 70 km/hr speed restriction is in effect. The greatest dip is located at the south end of the site and is adjacent to a large bulge in the east ditch slope.
- Deep cracks were observed in the highway surface
- The ditch vegetation was relatively dense and indicative of wet soil conditions.
- A single culvert was located and discharges to the west. The downstream end was blocked with soil and vegetation.