

# **ALBERTA INFRASTRUCTURE AND TRANSPORTATION INSTRUMENTATION MONITORING RESULTS FALL 2007**

## **SECTION C**

### **PEACE REGION (PEACE RIVER / HIGH LEVEL)**

#### **SITE PH24: HWY 64:02, CLEAR RIVER EAST HILL (SITE 8)**

#### **1. OBSERVATIONS**

##### **1.1 Field Program and Instrumentation Status**

One slope inclinometer (SI05-3) and three pneumatic piezometers (PN05-1, -2, and -3), were read at Hwy 64:02 Clear River East Hill Site 8 location on October 11, 2007 by Mr. Muhammad S. Iqbal, M.Sc., of Thurber Engineering Ltd. (Thurber).

The SI was read using an RST Digitilt probe with 2 ft depth interval and an RST hand-held readout. Inclinometer reading depths were defined as per cable markings with respect to the top of the inclinometer clamps. The pneumatic piezometers were read using a Petur pneumatic piezometer reader supplied by RST Instruments.

#### **2. INTERPRETATION AND RECOMMENDATIONS**

##### **2.1 General**

SI plots with A and B directions are presented in Section D and are summarized below. Where movement has been recorded the resultant plot (X direction, if applicable) and a rate of movement have also been provided.

##### **2.2 Zones of Movement**

Zones of new movement were not observed in the SI since the last set of readings in the Spring 2007.

Zones of old movement are summarized in Table PH24-1 at the end of this report. This table also provides a historical account of the total movement, the depth of movement, and the maximum rate of movement that has occurred at this site since the initialization of the slope inclinometers.

## **2.3 Interpretation of Monitoring Results And Recommendations**

### **2.3.1.1 Interpretation:**

Slope indicator 05-3, which was installed downslope of the visible toe roll of the slide mass, has registered an incremental movement of 7.8 mm since the previous readings, as well as a rate of movement of 20.5 mm/yr over a depth of 4.6 to 6.4 m. This rate of movement follows the previous trend exhibited by this instrument. The current rate of movement is the maximum historic rate.

As shown on Table PH24-2, the piezometric elevation registered in all three pneumatic piezometers has increased, ranging from an increase of 0.4 m in PN05-2 to 1.47 m in PN05-1. These water level changes appear to be related to seasonal fluctuations.

### **2.3.1.2 Recommendations:**

The instruments should be monitored again in the Spring 2008.

## **3. INSTRUMENTATION REPAIRS**

No instrument repairs are required.

**TABLE PH24-1**  
**Fall 2007 – Clear River East Hill (Site 8)**  
**Slope Inclinerometer**  
**Instrumentation Reading Summary**

Date Monitored: Oct 11, 2007

INSTRUMENT #	DATE INITIALIZED	TOTAL CUMULATIVE RESULTANT MOVEMENT AT NOTED DEPTH SINCE INITIAL READING (mm)	MAXIMUM RATE OF MOVEMENT (mm/y)	CURRENT STATUS	DATE OF PREVIOUS READING	INCREMENTAL MOVEMENT SINCE PREVIOUS READING (mm)	RATE OF MOVEMENT (mm/y)	CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/y)
SI05-2	25 Jan, 2005	N/A	N/A	Sheared off at 5.8 m	May 26, 2005	N/A	N/A	N/A
SI05-3	25 Jan, 2005	30.3 mm over 4.6 to 6.4 m depth in 295° direction	20.5 mm/yr between May and October, 2007	Operational	May 26, 2007	7.8	20.5	10.0

**TABLE PH24-2**  
**Fall 2007 – Clear River East Hill (Site 8)**  
**Pneumatic Piezometer**  
**Instrumentation Reading Summary**

Date Monitored: Oct 11, 2007

INSTRUMENT #	DATE INITIALIZED	TIP DEPTH (m)	GROUND ELEV. (m)	CURRENT STATUS	MAXIMUM PORE PRESSURE (kPa)	MEASURED PORE PRESSURE (kPa)	CURRENT WATER LEVEL BGS (m)	PREVIOUS WATER LEVEL BGS (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
PN05-1 (29922)	25 Jan,2005	9.6	553.496	Active	47.6 on 19 Feb, 2005	42	5.33	6.8	+1.47
PN05-2 (29923)	25 Jan,2005	8.5	550.175	Active	32.0 on 26 May, 2005	32	5.2	5.6	+0.4
PN05-3 (29924)	25 Jan,2005	8.5	542.724	Active	71.0 on 21 Oct, 2005	70	1.32	2.4	+1.08

Figure PH24-1 in Section D provides a sketch of the approximate locations of the monitoring instrumentation for this site

NOTES:

- SP - standpipe (for water level monitoring, 1" diameter PVC);
- PN - pneumatic piezometer;
- BGS - below ground surface

**ALBERTA INFRASTRUCTURE AND  
TRANSPORTATION  
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FALL 2007  
DATA PRESENTATION**

**SECTION D**

**PEACE REGION (PEACE RIVER / HIGH LEVEL)**

**SITE PH24: HWY 64:02, CLEAR RIVER EAST HILL (SITE 8)**