

WEST RICHMOND HILL PUMPING STATION – GROUND IMPROVEMENT

PROPERTY: THE REGIONAL MUNICIPALITY OF YORK
GENERAL CONTRACTOR: KENAI DAN CONTRACTING LTD
SCOPE OF WORK: LOW PRESSURE GROUTING SOIL STABILIZATION

INTRODUCTION

This Job Report is about a soil stabilization using grouting beneath the existing reservoir foundation and slab along the alignment of the proposed 1050 mm outlet pipe in the West Richmond Hill Pumping Station, between the elevations 256.800 and 254.600.

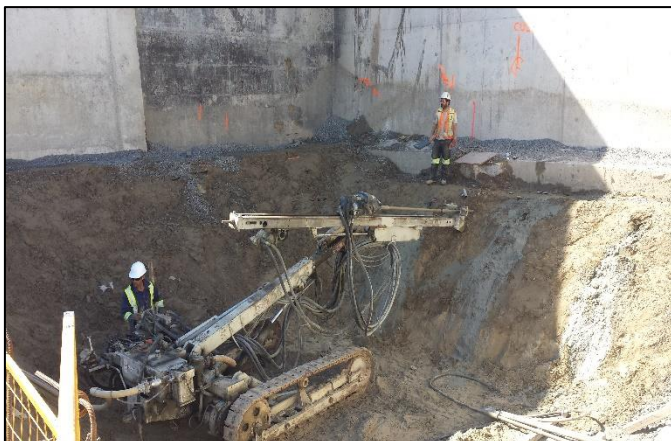
SCOPE OF WORK

The Works of SITE Canada was to improve the soil characteristics to minimize the settlements on the foundations and also to minimize the ground loss during the tunneling operation below the wall of the reservoir and also to allow a safe excavation of the new pit in the existing reservoir.

The soil stabilization was executed by low pressure grouting in withdraw method by steps of 50 cm with volume control, according the design sequence grouting grid.

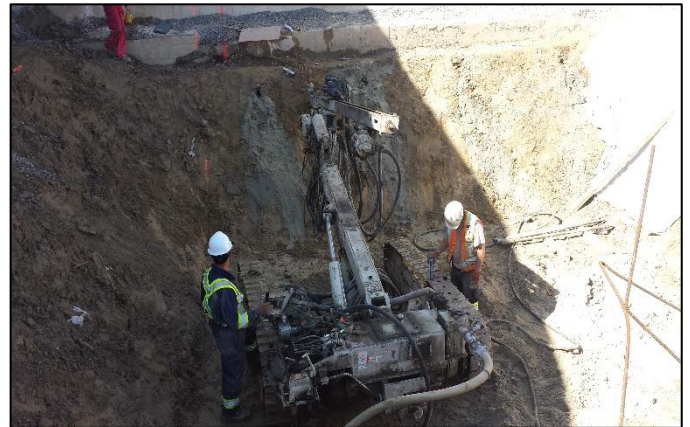
The holes were drilled with a pneumatic air track equipped with a top hammer. The Machine drive the column of T45 hollow rod bars with a 73 mm diameter sacrificial bit, until the end of the borehole. In this operation we used only the percussion of the top hammer. Any rotation is used to drive the column.

When the length of the design has reached the withdraw of the column it split the sacrificial bit from the rest of the column and the T45 rod bars start working as a grouting line, and the system are now ready to start the grouting operation.



The Grouting has been performed by steps of half meter. For each step we grout until we reach the first of the two values:

- Volume of grout - 40 liters
- Maximum pressure - 5 bar



This process is repeated each half meter with the same refusal criterion.

The process is repeated until the final step approximately 1.0 m from the top of the borehole.

