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PUMP TESTING OF ENOS LAKE WELL

Nanoose Peninsula, British Columbia

for

RANCH POINT UTILITIES LTD.

by

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INTRODUCTION

This report summarises the work done to test pump a dug well on the shore of Enos Lake. The well is designed to supply water for the Ranch Point Subdivision which is part of District Lot 78 of the Nanoose Lands District.

A twenty-four hour pump test was run at 60 Imperial gallons per minute and based on data obtained from this test the well is rated at a minimum of 60 Imperial gallons per minute.

WELL CONSTRUCTION

The well is a dug well which was dug by the owner. Construction was not carried out under our company supervision. Figure 1 provides a schematic diagram based on information provided by Van Horne Realty Ltd.

The well is 17 feet deep and was dug using a back hoe which had excavated a pit into the salts sands and gravels. The well is lined with 36-inch concrete well casing. Two seepage trenches were constructed parallel to the lake. These trenches were partially back filled with crushed rock material and are designed to intercept the maximum groundwater flow which would seep from clean gravel seams in the natural ground.

PUMP TESTING

Well Hydraulics

A centrifugal pump was set up alongside the well with the pump suction at a depth of 16 feet below ground surface. A discharge pipe was laid along the ground to discharge the flow directly into Enos Lake. The static water level was 9.65 feet below datum and approximately 9.5 feet below general ground surface.

When the pump was turned on the water levels in the pumped well were measured. The water level dropped 0.2 feet in the first 10 minutes of pumping and remained stable for the remainder of the 24 hour test. The pump discharges were checked at regular intervals and a near constant flow of 60 Imperial gallons per minute was maintained.

At the end of the test the pump was turned off and the recovery of the water in the well recorded. The well returned to its static water level in within 6 minutes. The drawdown versus time relationship of the well indicates that most of the pumped water has infiltrated from Enos Lake. The gravel seams in the ground around the well are very permeable, with a transmissibility of 120,000 gpd/ft, and are connected to the lake. The lake gauge reading at the D.N.D. pump house was 0.6 feet. This level did not change during the pump test.

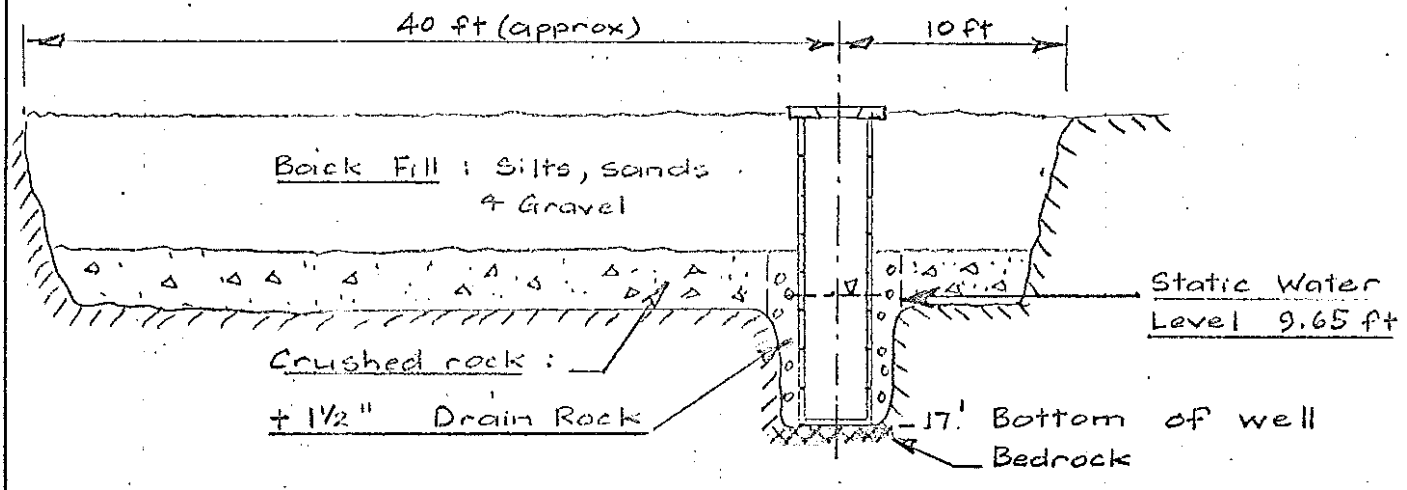
Water Temperatures

The water temperatures were recorded in the pumped well, the edge of the lake and in a pit approximately 60 feet from the well. The changes of temperature with time are shown in figure 2. There is a very definite relationship between the lake and pumped water temperatures. The lake water temperatures averaged 63°F and the well water temperatures averaged approximately 61°F. There was no change in temperature of the groundwater in the pit, this temperature remained at a constant 52°F.

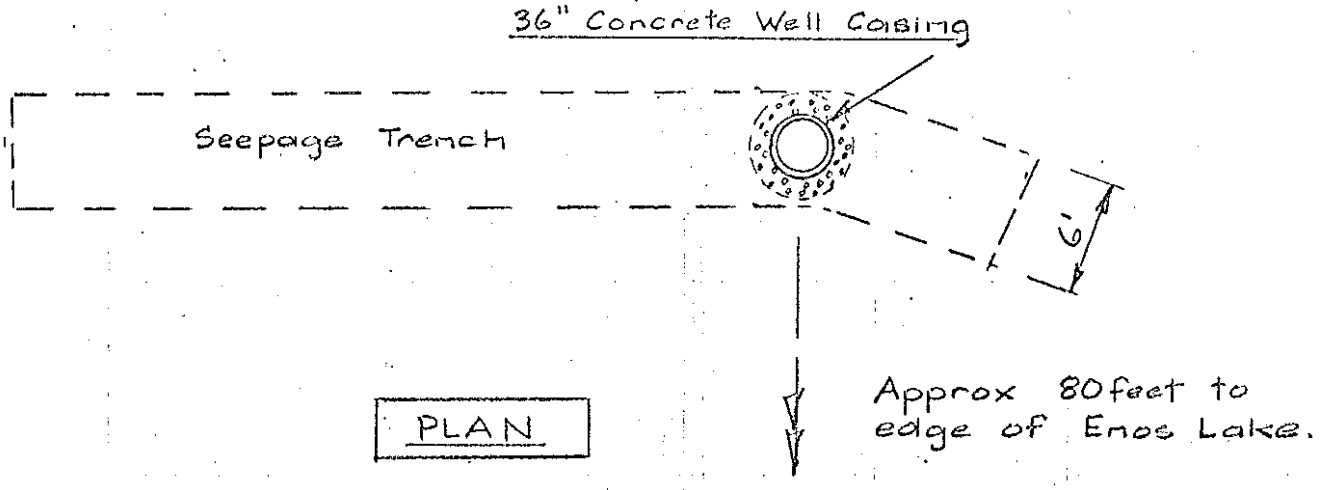
From the above data we can conclude that a large proportion of the pumped water infiltrated from the lake.

Water Quality

We understand that a chemical analysis has been run on a sample of the water from an adjacent pit with acceptable results. The water is clear and clean with no visual evidence of algae growths.



ELEVATION "AA"



PLAN

NOTES

1) The details of the well construction are apreximate only and are based on information supplied by Van Horne Realty Ltd.

SCALE : 1" = 10 feet

Ranch Point Utilities Ltd	Schematic Diagram of Enos Lake Well	ROBINSON, ROBERTS & BROWN LTD CONSULTING GROUNDWATER GEOLOGISTS NORTH VANCOUVER, CANADA
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Ranch Point Utilities Ltd	Changes of Water Temp with Time	ROBINSON, ROBERTS & BROWN LTD. CONSULTING GROUNDWATER GEOLOGISTS NORTH VANCOUVER, CANADA
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