Stantec

Memo

To:	Babak Nikbakhtan	From:	Ryley Dewar
	Lexi Development Group		Stantec
File:	Water Supply Confirmation	Date:	November 2, 2017

Reference: Water Supply Confirmation at 899 Esquimalt Street

Dear Mr. Babak Nikbakhtan,

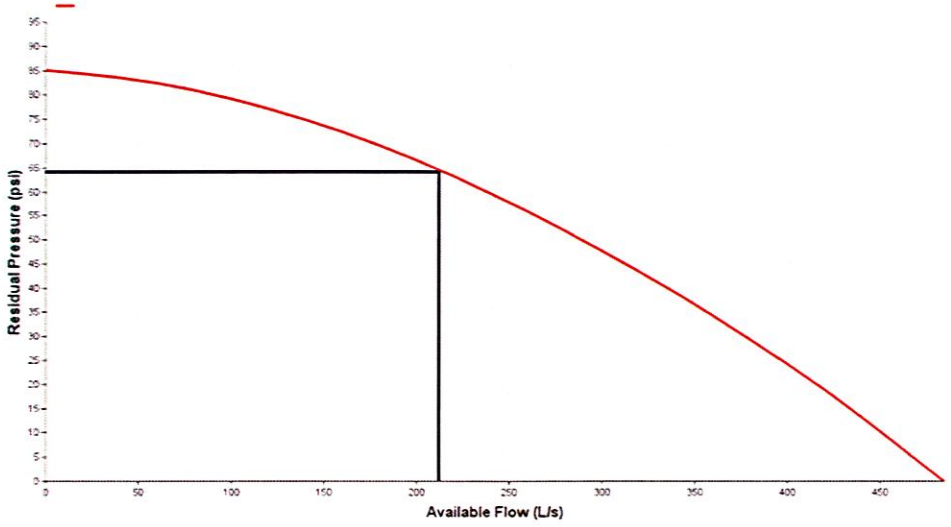
Stantec has confirmed that the existing water supply provides adequate flow and pressure for firefighting purposes at the proposed development at 899 Esquimalt Street, Esquimalt, BC.

The estimated maximum daily demand provided by the mechanical engineer, Ben Ng of Norman Disney & Young, on October 23rd, 2017, is 160 GPM, or 10.1L/s. The fire flow demand is assumed to be 200L/s, which is a conservative estimate for a mixed use development. The fire flow demand was estimated using the total floor area and the Fire Underwriters Survey. The required fire flow will be confirmed by the mechanical engineer. The governing flow is the maximum daily flow plus the fire flow demand, which is 210.1L/s.

The hydrant information provided by the City of Victoria at Hydrant E 40 indicated that the water main adjacent to the proposed site has a hydraulic grade line (HGL) of 85 metres. The hydrant is at an elevation of 25 metres. The static pressure is 85 psi, and maximum day demand pressure is 84 psi.

Using the hydrant curve provided by the City of Victoria, the residual pressure in the water main at a flow of 210.1L/s is 64 psi, or 45 metres. Please see figure below for interpolation of the hydrant curve.

Hydrant Curve for hydrant E40 (MDD+FF)



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The hydrant flow test results were provided by Paul Marynaik of the City of Victoria. The hydrant flow tests are derived from a hydraulic model used to predict maximum daily demand and to create the hydrant curves.

According to Section 4.2.2: Minimum Fires Flow Required of the Capital Regional District's (CRD) Engineering Specifications and Standard Drawings, the recommended minimum residual pressure in the pipe during fire flows is 20 psi, or 14m. Therefore, the existing water supply provides adequate water supply and pressure for firefighting purposes.

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Hydrant E 40 is connected to a water main with the hydraulic grade line (HGL) of 85 meters:

- Hydrant ground elevation = 25 m
- Static pressure = 85 psi
- Maximum day demand = 84 psi
- Hydrant curve attached.

This data is for information only. The City does not guarantee these pressures. A hydraulic water model is used to predict maximum day demand pressures and to create the hydrant curves. The City uses detector checks on fire services. Plumbing inspection requires these losses in your calculation. The City uses Febco series 800 detector checks and the following link will provide you the specifications http://www.febcoonline.com/Products/800.

If you have any further questions please don't hesitate to contact me.

Thank you

Paul Marynaik, AScT.
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