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November 9, 2020

Mayne Island Housing Society
Mayne Island BC

Attention: Deborah Goldman

Re: Preliminary Findings of Groundwater Investigations for Proposed Affordable Housing Project, Mayne Island

The following provides a brief summary of the results of recent groundwater investigations carried out in September and October 2020 for the above project. A detailed groundwater report is currently being prepared.

Well Construction

A new well was drilled on the subject property by Red Williams Well Drilling Ltd., on September 29, 2020 and completed to a depth of 140 feet (42.67 m) in fractured sandstone. The drilling encountered a major water-bearing fracture zone at a depth of 106 to 111 feet (32.31 to 33.83 m) that produced 20 USgpm (75.7 L/min) on preliminary testing. The initial non-pumping water level after completion was 25 feet (7.62 m) below ground.

Well Yield Testing

The well was pump tested for 72 hours between October 3 and October 6, 2020 by Red Williams Well Drilling Ltd., at a constant rate of 3 USgpm (11.36 L/min) and water level monitoring was carried out on the nearest neighbouring bedrock well and licensed spring on the property and on a private bedrock well off Maple Road. Drawdown in the pumped well at the end of the test was only 1.152 m (3.78 feet) below the non-pumping water level of 4.621 m (15.16 feet) below ground. Only 4.2 percent of the available drawdown in the well was utilized during the test at the pumping rate of 3 US gpm (11.36 L/min). The well is obviously more than capable of supplying the estimated demand of the project at 5.11 L/min (1.35 US gpm) with a very large safety factor. None of the neighbouring wells or spring monitoring during the test showed any signs of water level interference from the pumped well. Although capable of being pumped at rates in excess of 3 USgpm (11.36 L/min) the long-term sustainable well yield is determined to be 3 USgpm (11.36 L/min) at this time.

Water Quality

Water samples collected at the end of the pumping test and submitted for laboratory testing indicate the water is low in overall mineralization (TDS = 190 mg/L), with low sodium (42.1 mg/L), low chloride (7.8 mg/L) and no detectable coliform or E.coli bacteria. Dissolved manganese was reported at 349 parts per billion (ppb) exceeding the *Canadian Drinking Water Guideline* of 20 and 120 ppb. Manganese is ubiquitous in the groundwater of the Gulf Islands and can be treated with appropriate water treatment equipment.

Respectfully submitted,

Alan P. Kohut PEng.
Principal and Senior Hydrogeologist

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