

LIU & ASSOCIATES, INC.

Geotechnical Engineering

Engineering Geology

Earth Science

February 25, 2016

Mr. Mike Appleby
Clearwater Homes, LLC
14227 Evergreen Way
Stanwood, WA 98292

Dear Mr. Appleby:

Subject: Impact of Infiltration trenches on adjacent properties
Woodinville 10 Subdivision
NE 205th Street & 132nd Avenue NE
Woodinville, Washington
L&A Job No. 15-028

The east portion of the site is covered by piles of slashed vegetation and brush under its currently condition. Storm runoff in this area would infiltrate into the ground unimpeded. As we understand that under the current pre-development condition, the adjacent houses have not experienced groundwater intrusion. This means the current flow pattern of groundwater does not intercept the adjacent houses.

Two test pits excavated on the east side of the project site encountered an advance outwash deposit of moderately high permeability at about 7.5 feet deep. Trickle of groundwater (about 0.1 gpm) was encountered at 9.0 to 9.5 feet in these test pits. The test pits were excavated on March 23, 2015, when groundwater level was normally near its highest. The trickle groundwater should have minimal impact on the capability of the advance outwash deposit to allow water to seep through. Stormwater disposed into

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infiltration trenches would flow vertical downward much faster than it would spread laterally.

According to the design plans prepared by Insight Engineering Co., infiltration trenches to be installed in the east portion of the subject project to dispose stormwater are to be set back 50 feet from the east boundary of the project site. The adjacent houses are set back about 20 feet from the subject project site's east boundary. Therefore, there is about 70 feet space between the infiltration trenches and the adjacent houses. At this distance, stormwater introduced into infiltration trenches should be able to fan out and merge into the current groundwater flow pattern before it reaches the adjacent houses. Therefore, it is our conclusion that, barring extreme storm events, there should be little or no possibility for stormwater disposed into infiltration trenches to seep into the adjacent houses.

Please contact us if you have questions.



Yours very truly,
LIU & ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read "J. S. Liu".

J. S. (Julian) Liu, Ph.D., P.E.
Principal

LIU & ASSOCIATES, INC.