

PENTAGON ENGINEERING LTD.

142 PENROSE COURT
PENTICTON, BC, V2A 9B6
TELEPHONE: (250) 809-9933
E-MAIL: P-ENG@OUTLOOK.COM

Date: July 30, 2018

City of Penticton

171 Main Street
Penticton, BC, V2A 5A9

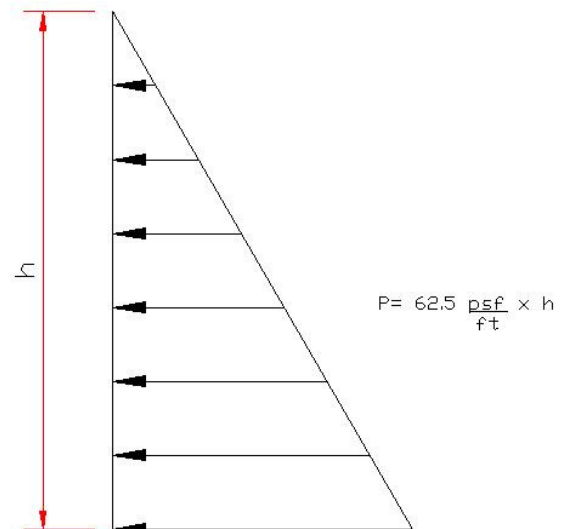
Via email: randy.craig@penticton.ca

Attention: **Randy Craig**, AWWTP Supervisor

RE: Penticton AWWTP – Alternate Measures of Control (AMC), Lower Screw Pump Sump

Dear Mr. Craig,

Our analysis of the Influent Gates finds that they were designed to a triangular pressure distribution of 62.5 pounds per square foot / foot of water as follows:



The material is aluminum 6061-T6; all gates have a minimum safety factor of 2.0.

Given the analysis above, the gates are of adequate engineering, construction and maintenance to hold back the head applied to it for the time required to be in the confined space. The analysis of the gate as a control measure assumes that all gates leak. However, there is no expectation that a properly installed and maintained gate will fail catastrophically if no work is being performed on it which these gates are. It is recognized that systems will often permit some leakage; a means of pumping out the fluid should be undertaken. The upstream and downstream water should be continuously monitored and if the level rises too high that space should be evacuated.

Given these facts it is our opinion that the proposed AMC for entering the Lower Screw Pump Sump confined space is adequate. This AMC is adequate for three years and after that time it should be revisited to ensure its adequacy.

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Per:

Rob Linder, P.Eng.
Director