GeoEngineers

February 26, 2009

MWH Americas, Inc.
2553 130th Avenue NE
Bellevue, Washington 98005

Attention: Bill Cutting

Subject: Addendum to Summary Letter
Alternative Hydraulic Analysis
Washington State Department of Fish and Wildlife
Voights Creek Fish Hatchery
Pierce County, Washington
File No. 3730-099-01

Comparison between the existing conditions (EC) and alternative proposed conditions (PC_ALT) Model Results (shown in Table 5 – Summary Letter dated February 25, 2009) indicates the proposed improvements will cause an increase of flood surface elevations greater than the 0.001 feet allowed by Pierce County codes. The maximum amount of rise computed is 0.025 feet at RS 12506. With the exception of five sections, the PC_ALT Model Results indicate a match or slight reduction of EC model elevations.

During a meeting with Pierce County staff on February 18, 2009, an additional alternative design concept and 2-dimensional (2-D) hydraulic modeling options were discussed. The additional design concept involves creating a flood conveyance channel on a private property north of the hatchery property. Several preliminary model runs for variously sized flood conveyance channels were conducted. The modeled results indicate that a 25-foot-wide channel would decrease flood elevations at all but one cross section, where an increase of 0.003 feet occurs. These results suggest that the 0-rise criterion could be met with some minor adjustments to conveyance channel dimensions. However, we understand that a flood easement will need to be negotiated with the adjacent property owner before further analyses can proceed.

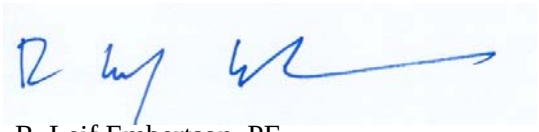
If modeled results for the additional design concept do not meet the 0-rise criterion, or the flood easement cannot be obtained, the propagation of increased flood elevations onto adjacent properties will be modeled using a 2-D hydraulic model. This action will be necessary to determine whether increased flood elevations extend beyond the hatchery properties onto private properties. Use of a 2-D model will typically yield more accurate flood inundation data over flood plain surfaces than the 1-D HEC-RAS model can provide.

1101 S Fawcett Ave
Suite 200
Tacoma, WA 98402
telephone 253.383.4940
facsimile 253.383.4923
website www.geoengineers.com

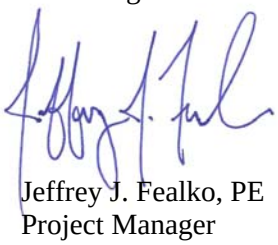
It was a pleasure to work with you on this project. If you have any questions regarding this addendum summary letter, please contact us.

Sincerely,

GeoEngineers, Inc.



R. Leif Embertson, PE
River Engineer



Jeffrey J. Fealko, PE
Project Manager

Mary Ann Reinhart, LG, LEG
Associate – Fluvial Geomorphologist & Geologist

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