

May 29, 2008

**TO:** Michael Morrow / Ellie Ziegler

**FROM:** Jim Laughlin  
(206) 440-4643

**SUBJECT:** Eagle Harbor Hydroacoustic Pressure Monitoring Technical Memorandum.

This memo summarizes the preliminary results measured side-by-side with Jasco Research, Ltd. at the Eagle Harbor Maintenance Facility. Jasco Research, Ltd will submit the final comprehensive report at a later date to WSDOT/WSF.

This technical memorandum describes the data collected during pile driving efforts at the Eagle Harbor Maintenance facility on Bainbridge Island during the month of October 2005. Seven 24-inch diameter steel piles were monitored at different water depths. Piles were driven with a diesel hammer. Table 1 summarizes the results for each pile monitored. The bubble curtain was tested with the bubbles on and off during the pile driving events. No bubble curtain was used for piles 6 and 7. Peak sound levels ranged from 194 to 211 dB<sub>peak</sub>.

**Table 1: Summary Table of Monitoring Results.**

Pile #	Hydrophone Depth	Bubble Curtain Air ON/OFF	Absolute Peak (dB)	Number of Pile Strikes	Decibel Reduction
1	23 feet (midwater)	ON	204	12	6
		OFF	210	10	-
		ON	203	7	7
	37 feet (bottom)	ON	207	12	2
		OFF	209	10	-
		ON	207	7	2
2	17 feet (midwater)	ON	194	11	-
	32 feet (bottom)	ON	202	11	-
3	17 feet (midwater)	OFF	202	17	-
		ON	198	13	4
	32 feet (bottom)	OFF	204	17	-
		ON	198	13	6

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<b>Pile #</b>	<b>Hydrophone Depth</b>	<b>Bubble Curtain Air ON/OFF</b>	<b>Absolute Peak (dB)</b>	<b>Number of Pile Strikes</b>	<b>Decibel Reduction</b>
4	17 feet (midwater)	ON	196	20	-
	37 feet (bottom)	ON	199	20	-
5	17 feet (midwater)	ON	200	18	-
	32 feet (bottom)	ON	204	18	-
6	17 feet (midwater)	OFF	211	16	-
	32 feet (bottom)	OFF	209	16	-
7	17 feet (midwater)	OFF	210	10	-
	32 feet (bottom)	OFF	208	10	-

If you have any questions please call me at (206) 440-4643.

(jl):(jl)

Attachments

cc: day file  
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