



Pre-Permitting Environmental / Socio-Economic Data Report Series

---

# Report Series L- Iliamna Lake Studies

## Report L-5 Laboratory Data Tables – Mussel Samples 2005-2007

*Submitted to the Alaska Department of Natural Resources October 2009*

*Preliminary data. Do not cite or quote.*

The Pebble Partnership is providing environmental and socio-economic baseline data collected to inform the development of the Pebble Project to state and federal agencies, project stakeholders and the general public prior to project permitting as part of its commitment to full and open disclosure.

A comprehensive Environmental Baseline Document (EBD) will subsequently be prepared and appended to future project permit applications. The EBD will also be made publicly available when complete.

Collected for the Pebble Partnership by:



HDR Alaska  
2525 C Street, Suite 305  
Anchorage, AK 99503

## 2004-2007 Iliamna Lake Mussel Results Summary

### Key:

**Bold Results** = Parameter undetected by test, value shown is 1/2 MDL or 1/2 MRL.

**Green Results** = Estimate result reported by laboratory below reporting limit (MRL).

**MDL** = Method Detection Limit.

**MRL** = Method Reporting Limit.

**NA** = Not Applicable.

If result was not detected at the lab MDL, the value shown is 1/2 MDL.

If result was validation flagged U or UJ, the value shown is 1/2 MRL.

Note: All results reported on dry weight basis, except total solids reported on wet weight basis.

2005-2007 Iliamna lake Study Mussel Tissue Sample Results

	Parameters	Total Solids	Total Lipids	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Zinc
	Basis	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	percent	percent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
<b>Bucket Lake, Mussel</b>																	
	<b>Sample Date</b>																
	06/16/05	3.58	0.25	0.004	2.91	0.013	1.06	0.90	6.4	0.85	0.192	0.36	1.22	0.8	0.052	0.011	165
	09/28/05	4.57	0.22	0.010	3.13	0.017	0.69	1.90	9.0	0.73	0.191	0.33	2.68	1.6	0.042	0.012	158
	09/12/06	4.08		0.009	3.02	0.010	0.67	1.00	8.1	0.88	0.282	0.33	2.83	1.7	0.052	0.011	216
	06/13/07	3.45	0.18	0.01	3.06	0.016	0.90	10.1	72.7	1.16	0.130	0.44	6.73	1.4	0.055	0.011	183
	<b>Mean</b>	3.92	0.22	0.008	3.03	0.014	0.83	3.48	24.0	0.90	0.199	0.37	3.37	1.4	0.050	0.011	181
	<b>Median</b>	3.83	0.22	0.010	3.04	0.015	0.80	1.45	8.6	0.86	0.192	0.35	2.76	1.5	0.052	0.011	174
	<b>St. Deviation</b>	0.51	0.04	0.003	0.09	0.003	0.18	4.44	32.5	0.18	0.063	0.05	2.36	0.4	0.006	0.001	26
	<b># of values</b>	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	<b>Minimum</b>	3.45	0.18	0.004	2.91	0.01	0.67	0.9	6.37	0.73	0.13	0.33	1.22	0.8	0.042	0.011	158
	<b>Maximum</b>	4.57	2	1	3.13	2	3	10.1	72.7	3	3	3	6.73	2	2	2	216
	<b>% of values undetected</b>			50%		25%											
	<b># of values between MDL and MRL</b>			2		3								1		4	
<b>Finn Bay, Mussel</b>																	
	<b>Sample Date</b>																
	06/14/05	4.45	0.30	0.014	2.83	0.015	0.46	0.70	8.3	0.26	0.123	0.83	1.40	2.4	0.043	0.009	145
	10/14/05	4.88	0.28	0.004	2.04	0.005	0.32	2.40	15.5	0.13	0.098	0.43	7.81	2.8	0.039	0.007	115
	09/11/06	5.05		0.007	2.61	0.010	0.58	0.40	7.5	0.07	0.125	0.45	3.80	3.4	0.041	0.007	190
	<b>Mean</b>	4.79	0.29	0.008	2.49	0.010	0.45	1.17	10.5	0.15	0.115	0.57	4.34	2.9	0.041	0.008	150
	<b>Median</b>	4.88	0.29	0.007	2.61	0.010	0.46	0.70	8.3	0.13	0.123	0.45	3.80	2.8	0.041	0.007	145
	<b>St. Deviation</b>	0.31	0.01	0.005	0.41	0.005	0.13	1.08	4.4	0.10	0.015	0.23	3.24	0.5	0.002	0.001	38
	<b># of values</b>	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	<b>Minimum</b>	4.45	0.28	0.004	2.04	0.005	0.321	0.4	7.54	0.073	0.0984	0.43	1.4	2.4	0.039	0.007	115
	<b>Maximum</b>	5.05	0.3	0.014	2.83	0.015	0.578	2.4	15.5	0.26	0.125	0.83	7.81	3.4	0.043	0.009	190
	<b>% of values undetected</b>			33%		33%											
	<b># of values between MDL and MRL</b>			2		2		1									3
<b>Flat Island, Mussel</b>																	
	<b>Sample Date</b>																
	06/14/05	4.23	0.39	0.012	2.86	0.012	0.64	0.15	9.1	0.11	0.071	0.63	1.13	2.9	0.052	0.009	130
	09/29/05	6.43	0.46	0.004	2.09	0.007	0.43	0.50	7.2	0.05	0.053	0.34	3.27	3.2	0.055	0.007	106
	09/11/06	6.00		0.009	2.60	0.010	0.85	0.20	10.6	0.11	0.085	0.46	2.25	4.0	0.052	0.006	145
	<b>Mean</b>	5.55	0.43	0.008	2.52	0.010	0.64	0.28	9.0	0.09	0.070	0.48	2.22	3.4	0.053	0.007	127
	<b>Median</b>	6.00	0.43	0.009	2.60	0.010	0.64	0.20	9.1	0.11	0.071	0.46	2.25	3.2	0.052	0.007	130
	<b>St. Deviation</b>	1.17	0.05	0.004	0.39	0.003	0.21	0.19	1.7	0.03	0.016	0.15	1.07	0.6	0.002	0.002	20
	<b># of values</b>	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	<b>Minimum</b>	4.23	0.39	0.004	2.09	0.007	0.429	0.15	7.15	0.05	0.0533	0.34	1.13	2.9	0.052	0.006	106
	<b>Maximum</b>	6.43	0.46	0.012	2.86	0.012	0.849	0.5	10.6	0.11	0.0847	0.63	3.27	4	0.055	0.009	145
	<b>% of values undetected</b>			33%		33%		67%									
	<b># of values between MDL and MRL</b>			2		2											3

Preliminary Data Only - Do Not Cite or Quote

2005-2007 Iliamna lake Study Mussel Tissue Sample Results

	Parameters	Total Solids	Total Lipids	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Zinc
	Basis	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Units	percent	percent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
<b>Whistlewing Bay, Mussel</b>																	
	<b>Sample Date</b>																
	06/16/05	4.39	0.20	0.019	4.95	0.018	1.05	1.40	7.3	0.14	0.110	0.64	1.87	2.5	0.040	0.010	165
	09/11/06	5.84		0.015	3.86	0.010	0.87	0.20	9.3	0.10	0.146	0.54	3.08	3.0	0.051	0.007	170
	<b>Mean</b>	5.12	0.20	0.017	4.41	0.014	0.96	0.80	8.3	0.12	0.128	0.59	2.48	2.8	0.046	0.009	168
	<b>Median</b>	5.12	0.20	0.017	4.41	0.014	0.96	0.80	8.3	0.12	0.128	0.59	2.48	2.8	0.046	0.009	168
	<b>St. Deviation</b>	1.03	NA	0.003	0.77	0.006	0.13	0.85	1.4	0.03	0.025	0.07	0.86	0.4	0.008	0.002	4
	<b># of values</b>	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	<b>Minimum</b>	4.39	0.2	0.015	3.86	0.01	0.865	0.2	7.29	0.095	0.11	0.538	1.87	2.5	0.04	0.007	165
	<b>Maximum</b>	5.84	0.2	0.019	4.95	0.018	1.05	1.4	9.28	0.14	0.146	0.64	3.08	3	0.051	0.01	170
	<b>% of values undetected</b>					50%		50%									
	<b># of values between MDL and MRL</b>			2		1										2	

Preliminary Data Only - Do Not Cite or Quote