



Pre-Permitting Environmental / Socio-Economic Data Report Series

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# Report Series E- Trace Elements (Sediments & Soils)

## Report E-5 Summary of Transportation Corridor Soil Analytical Results, 2004 - 2006

*Submitted to the Alaska Department of Natural Resources September 2008*

*Collected for the Pebble Partnership by: Bristol Environmental & Engineering Services Corporation*

*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 Do not cite or quote.*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.



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**Pebble Project**  
**Summary of Transportation Corridor**  
**Soil Analytical Results, 2004-2006**

Sample Station Location ID	Date Sampled	Aluminum (mg/Kg)	Antimony (mg/Kg)	Arsenic (mg/Kg)	Barium (mg/Kg)	Beryllium (mg/Kg)	Bismuth (mg/Kg)	Boron (mg/Kg)	Cadmium (mg/Kg)	Calcium (mg/Kg)	Chromium (mg/Kg)	Cobalt (mg/Kg)	Copper (mg/Kg)	Iron (mg/Kg)
TE01	17/08/2004	13200	ND	5.18	53.7	0.262	ND	7.95	0.129	1730	21.4	6.56	8.98	23200
TE02	17/08/2004	7030	0.144	1.92	40.7	0.12	ND	ND	0.131	1440	8.3	2.54	6.58	9020
TE03	17/08/2004	2740	ND	ND	50.6	ND	ND	ND	0.171	1480	3.84	1.48	7.37	5580
TE04	20/08/2004	6570	0.0981	2.5	49.7	0.142	ND	ND	ND	1450	6.8	2.07	7.37	10200
TE05	20/08/2004	8540	ND	ND	19.6	0.125	ND	ND	ND	1480	7.18	1.65	8.82	9100
TE06	20/08/2004	3910	ND	ND	28.4	ND	ND	ND	ND	3990	3.25	ND	10.7	1830
TE07	20/08/2004	7650	1.29	50.1	48.4	ND	ND	ND	ND	8130	5.65	1.41	12	5310
TE08	17/08/2004	24300	0.0622	1.47	23.3	0.229	ND	ND	0.188	2200	4.79	2.37	5.81	15000
TE09	17/08/2004	8540	0.119	1.56	24.4	0.234	ND	ND	0.0756	5590	4.41	4.3	8.73	22500
TE10	21/08/2004	5120	ND	ND	8.86	0.108	ND	ND	ND	2330	1.51	1.4	6.28	8630
TE11	21/08/2004	1350	ND	ND	8.36	ND	ND	ND	ND	469	1.17	0.629	2.06	2840
TE12	21/08/2004	2690	ND	ND	33.5	ND	ND	ND	0.593	4440	1.46	1.03	4.99	2960
TE13	19/08/2004	16500	ND	1.49	13.5	ND	ND	ND	ND	625	2.53	0.765	11	4920
TE14	19/08/2004	1680	ND	ND	23.3	ND	ND	ND	0.246	2160	0.925	0.756	3.18	2320
TE15	19/08/2004	5710	ND	ND	24.7	0.0968	ND	ND	ND	1970	3.42	1.06	6.7	3780
TE16	19/08/2004	6840	ND	ND	14.2	0.0704	ND	ND	ND	1010	3.63	1.22	4.45	6370
TE17	19/08/2004	18400	0.0547	3.11	30.6	0.149	ND	ND	ND	1860	9.05	2.89	18.2	19200
TE18	18/08/2004	24800	0.115	3.32	173	0.116	ND	ND	ND	10300	7.55	9.84	60.2	24000
	29/08/2006	250000	ND	1.89	221	0.0699	ND	2.52	ND	7560	3.33	7.52	66.3	14400
TE19	18/08/2004	17400	0.113	8.18	18	0.066	0.282	ND	0.253	3110	8.64	3.82	202	13400
	29/08/2006	8960	ND	3.45	45.3	ND	ND	5.93	ND	6880	5.44	6.56	76.6	12100
TE20	18/08/2004	11200	0.103	ND	29.8	0.272	ND	ND	0.341	1560	4.42	2.35	10.2	7260
	29/08/2006	2950	ND	ND	19.9	ND	ND	2.94	ND	1440	1.21	0.949	6.29	2670
TE21	28/08/2004	2270	ND	ND	10.5	ND		7.02	ND	776	1.32	0.665	5.07	2390
	28/08/2006	1440	ND	4.32	10.9	ND	ND	1.22	ND	1950	2.13	0.719	5.44	1560
TE22	28/08/2006	2580	0.146	5.53	21.8	ND	ND	1.67	0.278	2420	3.43	1.73	10.2	5100
TE23	29/08/2006	16300	0.0662	12.3	58.2	0.152	0.264	3.38	0.453	4870	71	19.5	77.6	20600
TE24	30/08/2006	2810	0.0795	2.68	17.2	ND	0.508	0.899	ND	1000	2.54	1.31	6.15	5560

mg/Kg milligram per kilogram

µg/Kg microgram per kilogram

ND not detected above method reporting limit

**Pebble Project**  
**Summary of Transportation Corridor**  
**Soil Analytical Results, 2004-2006**

Sample Station Location ID	Date Sampled	Lead (mg/Kg)	Magnesium (mg/Kg)	Manganese (mg/Kg)	Mercury (µg/Kg)	Molybdenm (mg/Kg)	Nickel (mg/Kg)	Potassium (mg/Kg)	Selenium (mg/Kg)	Silver (mg/Kg)	Sodium (mg/Kg)	Thallium (mg/Kg)	Tin (mg/Kg)
TE01	17/08/2004	6.3	3960	278	116	0.58	9.79	401	0.62	0.144	203	ND	1.82
TE02	17/08/2004	2.87	1800	111	71.6	ND	4.86	342	0.358	ND	124	ND	2.08
TE03	17/08/2004	2.19	453	45.6	120	ND	2.15	ND	0.53	0.263	ND	ND	2.83
TE04	20/08/2004	4.2	763	70.6	111	ND	3.19	307	0.577	0.18	355	ND	1.8
TE05	20/08/2004	2.77	351	52.8	135	ND	1.96	260	0.538	ND	508	ND	3.26
TE06	20/08/2004	1.52	298	25.1	102	ND	1.38	ND	1.41	ND	334	ND	6.53
TE07	20/08/2004	1.62	583	36.7	186	1.54	2.65	ND	2.06	ND	400	ND	3.56
TE08	17/08/2004	1.87	907	122	86.9	ND	1.86	161	0.716	0.184	402	0.0806	1.84
TE09	17/08/2004	2.8	3240	382	ND	ND	2.2	734	0.186	0.0997	147	ND	0.997
TE10	21/08/2004	1.41	497	84.7	41.2	0.631	0.88	196	0.349	ND	222	ND	1.91
TE11	21/08/2004	0.883	198	48.8	34	ND	0.463	204	ND	ND	186	ND	1.42
TE12	21/08/2004	1.09	287	19.4	91.8	ND	0.777	210	0.482	ND	344	ND	2.56
TE13	19/08/2004	1.47	117	21.3	107	ND	1.69	169	0.841	ND	275	ND	2.46
TE14	19/08/2004	0.723	254	13.8	ND	ND	0.718	152	ND	ND	301	ND	3.59
TE15	19/08/2004	1.11	658	33.8	46.3	ND	1.47	146	0.571	ND	313	ND	2.56
TE16	19/08/2004	1.44	372	63.8	67.6	ND	1.28	114	0.357	ND	304	ND	1.54
TE17	19/08/2004	2.25	1870	97.8	39.1	2.03	4.6	283	0.777	ND	419	ND	1.39
TE18	18/08/2004	2.25	7190	274	51.8	ND	6.95	2800	0.45	0.116	851	0.0111	1.16
	29/08/2006	2.74	5730	215	30.1	ND	4.72	2710	2.32	ND	662	0.109	1.37
TE19	18/08/2004	5.58	3410	133	99.5	2.28	4.87	360	1.05	1.03	368	ND	1.72
	29/08/2006	2.43	6200	669	42.3	ND	5.52	1040	4.24	ND	279	0.0534	2.85
TE20	18/08/2004	2.39	712	47.9	108	1.27	2.74	203	1.01	ND	401	ND	3.54
	29/08/2006	1.75	466	21	113	ND	1.78	257	4	ND	365	0.0285	2.89
TE21	28/08/2004	1.39	325	12.9	43.8	ND	ND	251	ND	ND	318	ND	2.14
	28/08/2006	2.12	849	12.1	75.6	ND	1.87	387	11	ND	398	0.0196	2.95
TE22	28/08/2006	2.31	1020	34.8	73.5	ND	2.84	434	11.5	ND	346	0.149	2.91
TE23	29/08/2006	7.37	12900	493	19.2	0.832	32.8	697	3.07	ND	292	0.107	1.32
TE24	30/08/2006	1.56	386	31.9	54.1	ND	1.55	257	7.03	ND	348	0.131	2.54

mg/Kg milligram per kilogram

µg/Kg microgram per kilogram

ND not detected above method reporting limit

**Pebble Project**  
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**Soil Analytical Results, 2004-2006**

Sample Station Location ID	Date Sampled	Vanadium (mg/Kg)	Zinc (mg/Kg)	Cyanide (mg/Kg)	Diesel Range Organics	Residual Range Organics (mg/Kg)	Total Organic Carbon (%)	Chloride (mg/Kg)	Fluoride (mg/Kg)	Sulfate (mg/Kg)	Nitrogen, Ammonia as N
TE01	17/08/2004	55.8	39.9	0.2			14.7	ND	ND	2.01	353
TE02	17/08/2004	23.6	29.1	0.2			15.1	ND	ND	8.54	336
TE03	17/08/2004	21.2	12.7	0.11	1520	9220	33.7	0.889	ND	1.43	275
TE04	20/08/2004	32.4	14.5	0.16			17.5	2.27	ND	2.38	403
TE05	20/08/2004	31.7	19.1	0.14			28.9	1.59	ND	4.78	384
TE06	20/08/2004	7.56	21.7	ND			45.7	9.69	ND	341	770
TE07	20/08/2004	26.7	15	0.09			33.9	3.06	1.37	42.5	1030
TE08	17/08/2004	48.7	23.3	ND			14.4	ND	0.845	1.93	286
TE09	17/08/2004	60.7	35.8	ND			0.131	0.441	0.311	1.19	5.62
TE10	21/08/2004	24.1	12.5	0.1			11.2	0.662	ND	1.08	349
TE11	21/08/2004	11.6	7.74	0.072			5.26	2.05	ND	ND	180
TE12	21/08/2004	10.6	34.3	0.049			22.7	1.63	ND	2.96	477
TE13	19/08/2004	12.7	5.85	0.21			28.1	3.99	ND	11	882
TE14	19/08/2004	7.05	6.64	0.095			17.1	2.13	ND	6.42	493
TE15	19/08/2004	21.2	8.49	0.11			9.7	6.13	1.16	6	327
TE16	19/08/2004	27.4	7.66	0.13			6.66	1.74	ND	5.04	254
TE17	19/08/2004	53.2	16.3	0.16			4.72	ND	ND	4.1	190
TE18	18/08/2004	93.9	39.4	0.21			4.51	0.6	ND	2.86	106
	29/08/2006	62.9	35.9	0.083			4.63	ND	ND	1.06	130
TE19	18/08/2004	35	39	0.71			30.9	5.02	ND	8.87	391
	29/08/2006	29.5	106	0.2			25.4	3.87	ND	7.07	696
TE20	18/08/2004	19.6	11.7	0.12	103	1270	17.2	8.89	1.19	6.77	336
	29/08/2006	8.96	8.78	0.047			21.3	5.28	ND	7.49	456
TE21	28/08/2004	7.28	5.92	0.11			7.95	17.6	ND	10.1	368
	28/08/2006	5.01	7.93	ND			27.9	1.89	ND	1.57	271
TE22	28/08/2006	14.1	16.7	0.053			14.1	ND	ND	4.21	254
TE23	29/08/2006	113	100	0.087			2.24	ND	ND	3.31	115
TE24	30/08/2006	19.5	8.76	0.047			13.8	ND	ND	3.19	299

mg/Kg milligram per kilogram

µg/Kg microgram per kilogram

ND not detected above method reporting limit