

Appendix C. Summary of Large Ship Sampling for Priority Pollutants

The method detection limit (MDL) is the lowest value that a method can reliably detect. ADEC only evaluated priority pollutants that had a median that was equal to or greater than the MDL. This approach eliminated pollutants with a majority of non-detects.

All data is given in ug/l (ppb).

Table 1. Priority Pollutants in Large Ship Blackwater – Medians At Least MDL (Numbers in bold exceed AWQS.)

ANALYTE	AK Water Quality Standard ¹	MDL	BW 2003 (Table 7 A - C in Large Ship Appendix)	BW 2002 (Table 9 – 10 in Large Ship Appendix)	BW 2001 (Table 40 - 42 in Large Ship Appendix) ²	BW 2000 Table 53 – 55 in Large Ship Appendix.) ³
Number of Samples			35	9	6	24
Acetone	n/a	2.5	6.7	6.15	<MDL	<MDL
Bis(2-	18.0	0.50	<MDL	<MDL	1.65	1.90

¹ ADEC, Alaska Water Quality Criteria Manual for Toxic and other Deleterious Organic & Inorganic Substances, May 15, 2003, Table IV or V available at <http://www.state.ak.us/local/akpages/ENV.CONSERV/dawq/wqs/pdf/70wqsmanual.pdf> Fecal coliform standards for consumption of raw aquatic life and pH for aquaculture from ADEC Water Quality Standards, 18 AAC 70, <http://www.state.ak.us/dec/title18/wpfiles/70mas.pdf> For carcinogens, the values are from the “Compilation of the USEPA Water Quality Criteria for the Priority Toxic Pollutants” By K. McKerney. September 1997. The most conservative standard is listed.

² The dissolved metals were not reported. The DEC took the total recoverable metals values as dissolved. This is the most conservative approach.

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Ethylhexyl)Phthalate						
Bromodichloromethane	n/a	0.50	<MDL	<MDL	0.60	1.90
Bromoform	3,600.0	0.50	<MDL	<MDL	<MDL	3.30
Diethylphthalate	23,000.0	0.50	<MDL	<MDL	0.70	<MDL
Chloroform	5,700.0	0.50	1.3	1.20	7.60	9.85
di-n-butyl phthalate	2,700.0	1.0	<MDL	1.80	2.35	1.55
Toluene	n/a	0.50	<MDL	0.55	<MDL	0.26
Arsenic, dissolved	36.0	0.15	1.22	0.78	20.92	Not Tested
Chromium, dissolved	50.0	0.15	1.43	5.59	1.65	<MDL
Copper, dissolved	3.1	0.15	10.70	7.72	133.85	225.00
Lead, dissolved	8.1	0.15	0.33	1.10	1.99	<MDL
Nickel, dissolved	8.2	0.15	12.60	16.70	20.50	<MDL
Selenium, dissolved	71.0	0.15	1.05	0.94	56.66	Not tested
Zinc, dissolved	81.0	0.15	109.5	195.50	169.50	425.00

n/a = There is no water quality standard for this pollutant. The pollutant is neither toxic nor carcinogenic.

Table 2. Priority Pollutants in Large Ship Graywater – Medians At Least MDL (Numbers in bold exceed AWQS.)

ANALYTE	AK Water Quality Standard	MDL	GW 2003 (Table 6 in Large Ship Appendix)	GW 2002 (Tables 20 - 24 in Large Ship Appendix)	GW 2001 (Tables 34-37)	GW 2000 (Tables 48-50)
Number of samples			2	17	15	34
1,2,4-trimethylbenzene	n/a	0.50	0.85	<MDL	Not tested	Not tested
Acetone	n/a	3.20 ⁴⁰	34.00	54.50	Not tested	Not tested
Bis (2ethylhexyl) phthalate	18	1.00	<MDL	13.00	8.90	<MDL
Bromoform	3,600	0.50	<MDL	0.43	<MDL	<MDL
2 – Butanone	n/a	1.50	<MDL	4.75	Not tested	Not tested
Chloroform	5,700	0.50	<MDL	60.50	19.0	13.5
Benzoic Acid	n/a	25.00	<MDL	205.00	<MDL	<MDL
Benzyl Alcohol	n/a	0.65	186.50	19.50	<MDL	<MDL
Butylbenzyl phthalate	3,000	1.00	<MDL	0.18	<MDL	<MDL
Diethylphthalate	23,000	1.00	<MDL	5.35	7.9	<MDL
Bromodichloromethane	n/a	0.50	<MDL	4.05	1.6	<MDL
Dibromochloromethane	n/a	0.50	<MDL	<MDL	<MDL	<MDL

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di-n-butyl phthalate	2,700	1.00	<MDL	1.55	2.2	<MDL
M&p Xylenes	n/a	0.28	7.35	1.08	Not tested	Not tested
O-xylene	n/a	0.50	1.69	<MDL	Not tested	Not tested
Antimony, dissolved	4,300	0.15	<MDL	0.22	0.748	<MDL
Arsenic, dissolved	36.0	0.15	0.89	2.03	0.559	<MDL
Chromium, dissolved	50.0	0.15	0.36	4.37	3.87	<MDL
Copper, dissolved	3.1	0.15	1.95	31.65	255	31.01
Lead, dissolved	8.1	0.15	<MDL	2.13	2.75	<MDL
Nickel, dissolved	8.2	0.15	2.21	12.70	15.00	<MDL
Selenium, dissolved	71.0	0.15	<MDL	4.20	1.28	<MDL
Zinc, dissolved	81.0	0.15	41.35	264.50	270.00	<MDL ⁴

*10X MDL

⁴ The maximum sample result is 2860, the average of all samples is 353.85 but the median is below the minimum detection limit (MDL) because of many non detects.