

**Arthur D. Little, Inc.**

Environmental Monitoring and Analysis

**Minerals Management Service - Shelikof Strait and Outermost Cook Inlet**

1997 Final Data (Surrogate Corrected) - Source Samples - PAH

Field ID	97-BB-01-01-00-PHC-C	97-CR-01-01-00-PHC-S	97-CT-01-01-00-PHC-O	97-HH-01-01-00-PHC-S
Lab ID	97C3660	97C1164	97C2281	97C1257
SDG	SDGSOD	SDGSOD	SDGSOD	SDGS008
File	DY7209.D	DY7201.D	DY7208.D	DZ2182.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Coal	Sediment	Oil	Sediment
Sample Size	23.2 g	23.2 g	5.05 mg	18.2 g
Weight Basis	DRY	DRY	OIL	DRY
Associated Blank	BP-S-30PB	BO-S-35PB	BP-S-30PB	BL-S-07PB
Field Date	11/9/1997	7/15/1997	8/14/1997	7/16/1997
Extract Date	12/23/1997	12/23/1997	12/18/1997	8/6/1997
Analysis Date	1/4/1998	1/3/1998	1/3/1998	8/31/1997
Min Reporting Limit	0.0086	0.0011	5	0.00069
Units	ug/g	ug/g	ug/g	ug/g
<b>PAH</b>				
Naphthalene	0.027	0.0024 B	950 L	0.0034 B
C1-Naphthalenes	0.061	0.0033	1900	0.0037
C2-Naphthalenes	0.61	0.005	2700	0.014
C3-Naphthalenes	0.7	0.0031	1800	0.015
C4-Naphthalenes	1.8	ND	1000	0.066
Acenaphthylene	ND	ND	ND	ND
Acenaphthene	0.11	ND	28	0.0026
Biphenyl	0.016	0.001 J	110	0.0013 B
Fluorene	0.042	0.00066 J	160	0.0027
C1-Fluorenes	0.092	0.0011 J	340	0.0033
C2-Fluorenes	0.08	ND	390	0.0074
C3-Fluorenes	0.074	ND	370	0.011
Anthracene	0.0045 J	0.00018 J	19	0.0019
Phenanthrene	0.047	0.0033	340	0.01
C1-Phenanthrenes/anthracenes	0.24	0.0033	790	0.016
C2-Phenanthrenes/anthracenes	0.21	0.0046	860	0.018
C3-Phenanthrenes/anthracenes	0.13	ND	470	0.015
C4-Phenanthrenes/anthracenes	0.2	ND	310	0.23
Dibenzothiophene	0.013	0.00047 J	33	0.0016
C1-Dibenzothiophenes	0.02	0.00046 J	79	0.003
C2-Dibenzothiophenes	ND	ND	100	0.0039
C3-Dibenzothiophenes	ND	ND	64	0.0038
Fluoranthene	0.039	0.00062 J	8.6	0.015
Pyrene	0.04	0.00069 J	22	0.015
C1-Fluoranthenes/pyrenes	0.11	0.0014	160	0.023
C2-Fluoranthenes/pyrenes	ND	0.0012 J	210	0.016
C3-Fluoranthenes/pyrenes	ND	ND	180	0.0096
Benzo[a]anthracene	ND	0.0004 J	18	0.004
Chrysene	0.017	0.00077 J	43	0.0049
C1-Chrysenes	ND	0.00078 J	99	0.012
C2-Chrysenes	ND	ND	130	0.0084
C3-Chrysenes	ND	ND	78	0.0091
C4-Chrysenes	ND	ND	53	0.0042
Benzo[b]fluoranthene	ND	0.00044 J	6.6	0.0049
Benzo[k]fluoranthene	ND	0.00025 J	0.9 J	0.0013
Benzo[e]pyrene	ND	0.00049 J	13	0.0033
Benzo[a]pyrene	0.0031 J	0.0002 J	2.1 J	0.0023
Perylene	0.47	0.00089 J	4.4 J	0.22
Indeno[1,2,3,-c,d]pyrene	ND	ND	ND	0.0014
Dibenzo[a,h]anthracene	NA	ND	3.2 J	ND
Benzo[g,h,i]perylene	NA	0.0003 J	3.9 J	0.0048
Total PAH	5.2	0.037	14000	0.79
d8-Naphthalene	74	62	82	61
d10-Acenaphthene	80	76	89	73
d10-Phenanthrene	89	81	91	74
d12-Benzo[a]pyrene	76	81	94	69

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1997 Final Data (Surrogate Corrected) - Source Samples - PAH

Field ID	97-PW-01-01-00-PHC- FE	97-S-01-01-00-PHC-S	97-TB-01-01-00-PHC- PW	97-HH-01-01-04-PHC- S
Lab ID	97C1975	97C1540	97C2282	97C1256
SDG	SDGW001	SDGSOD	SDGW002	SDGS008
File	DZ2513.D	DY7205.D	DZ2514.D	DZ2181.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Water	Sediment	Produced Water	Sediment
Sample Size	1.08 L	24.6 g	0.94 L	19.2 g
Weight Basis	VOLUME	DRY	VOLUME	DRY
Associated Blank	BL-S-81PB	BO-S-35PB	BM-S-29PB	BL-S-07PB
Field Date	8/12/1997	7/26/1997	8/26/1997	7/16/1997
Extract Date	8/18/1997	12/23/1997	9/2/1997	8/6/1997
Analysis Date	9/25/1997	1/3/1998	9/25/1997	8/31/1997
Min Reporting Limit	0.012	0.00051	0.013	0.00065
Units	ug/L	ug/g	ug/L	ug/g
<b>PAH</b>				
Naphthalene	0.48	0.001 B	130 L	0.003 B
C1-Naphthalenes	0.43	0.00084 B	100 L	0.003 B
C2-Naphthalenes	0.57	ND	45	0.011
C3-Naphthalenes	0.5	ND	21	0.013
C4-Naphthalenes	0.32	ND	10	0.069
Acenaphthylene	0.0033 J	ND	ND	ND
Acenaphthene	0.17	ND	0.92	0.0025
Biphenyl	0.093	0.00051 J	5.1 L	0.0014 B
Fluorene	0.18	0.00026 J	6.4 L	0.003
C1-Fluorenes	0.12	ND	4.8	0.0028
C2-Fluorenes	0.15	ND	4.8	0.0073
C3-Fluorenes	0.25	ND	3.9	0.012
Anthracene	0.16	ND	0.2	0.0011
Phenanthrene	0.72	0.0011 B	7.6 L	0.0083
C1-Phenanthrenes/anthracenes	0.29	0.00078	8.8 L	0.017
C2-Phenanthrenes/anthracenes	0.24	ND	8.4 L	0.017
C3-Phenanthrenes/anthracenes	0.13	ND	5.3 L	0.013
C4-Phenanthrenes/anthracenes	0.1	ND	4.1	0.023
Dibenzothiophene	0.088	ND	0.49	0.0014
C1-Dibenzothiophenes	0.2	ND	0.84 L	0.0026
C2-Dibenzothiophenes	0.15	ND	1 L	0.0037
C3-Dibenzothiophenes	0.12	ND	0.78 L	0.0041
Fluoranthene	0.35	0.00015 J	0.096	0.014
Pyrene	0.28	0.00026 J	0.34	0.012
C1-Fluoranthenes/pyrenes	0.11	ND	1.6	0.023
C2-Fluoranthenes/pyrenes	0.036	ND	2.4	0.014
C3-Fluoranthenes/pyrenes	0.035	ND	2.4	0.0093
Benzo[a]anthracene	0.079	ND	0.28	0.0019
Chrysene	0.065	ND	0.57	0.0037
C1-Chrysenes	0.021	ND	1.3	0.012
C2-Chrysenes	ND	ND	2	0.007
C3-Chrysenes	ND	ND	1.3	0.0073
C4-Chrysenes	ND	ND	1	0.0067
Benzo[b]fluoranthene	0.045	ND	0.088	0.003
Benzo[k]fluoranthene	0.015 J	ND	0.02	0.00051 J
Benzo[e]pyrene	0.026	ND	0.14	0.0026
Benzo[a]pyrene	0.03	ND	0.028	0.0015
Perylene	0.0098 J	0.0032	0.068	0.21
Indeno[1,2,3,-c,d]pyrene	0.026	ND	ND	0.0015
Dibenzo[a,h]anthracene	ND	ND	0.032	ND
Benzo[g,h,i]perylene	0.014 J	ND	0.048	0.0079
Total PAH	6.6	0.0081	380	0.76
d8-Naphthalene	62	75	69 L	63
d10-Acenaphthene	72	80	75	67
d10-Phenanthrene	75	82	76	70
d12-Benzo[a]pyrene	66	30 &	79	61

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Field ID	97-S-01-02-00-PHC-S	97-CR-02-01-00-PHC-S	97-RV-02-01-00-PHC-O	97-CR-03-01-00-PHC-S
Lab ID	97C1541	97C1165	97C1440	97C1166
SDG	SDGSOD	SDGSOD	SDGSOD	SDGSOD
File	DY7206.D	DY7202.D	DY7207.D	DY7203.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Sediment	Sediment	Diesel Fuel	Sediment
Sample Size	21.3 g	22.1 g	5.37 mg	22.2 g
Weight Basis	DRY	DRY	OIL	DRY
Associated Blank	BO-S-35PB	BO-S-35PB	BP-S-30PB	BO-S-35PB
Field Date	7/26/1997	7/15/1997	7/16/1997	7/15/1997
Extract Date	12/23/1997	12/23/1997	12/18/1997	12/23/1997
Analysis Date	1/3/1998	1/3/1998	1/3/1998	1/3/1998
Min Reporting Limit	0.00059	0.00056	4.6	0.00056
Units	ug/g	ug/g	ug/g	ug/g
<b>PAH</b>				
Naphthalene	0.001 B	0.0032	840 L	0.0021 B
C1-Naphthalenes	0.00093 B	0.0046	3100	0.0025
C2-Naphthalenes	ND	0.0046	5600	0.0031
C3-Naphthalenes	ND	0.003	5400	0.0023
C4-Naphthalenes	ND	ND	4400	ND
Acenaphthylene	ND	ND	ND	ND
Acenaphthene	ND	ND	65	ND
Biphenyl	0.00053 J	0.00091	370	0.00075 J
Fluorene	ND	0.00057 J	350	0.00042 J
C1-Fluorenes	ND	0.00046 J	880	0.00047 J
C2-Fluorenes	ND	ND	1300	ND
C3-Fluorenes	ND	ND	960	ND
Anthracene	ND	0.000096 J	31	0.000051 J
Phenanthrene	0.001 B	0.0024	1000 L	0.0017
C1-Phenanthrenes/anthracenes	0.00069 J	0.0029	1600	0.0023
C2-Phenanthrenes/anthracenes	ND	0.0036	1000	0.0031
C3-Phenanthrenes/anthracenes	ND	ND	230	0.0011
C4-Phenanthrenes/anthracenes	ND	ND	64	ND
Dibenzothiophene	ND	0.00032 J	840	0.00027 J
C1-Dibenzothiophenes	ND	0.00042 J	1400	0.00025 J
C2-Dibenzothiophenes	ND	ND	1200	ND
C3-Dibenzothiophenes	ND	ND	460	ND
Fluoranthene	0.00021 J	0.00026 J	ND	0.00022 J
Pyrene	0.00026 J	0.00046 J	10	0.00037 J
C1-Fluoranthenes/pyrenes	ND	0.0011	23	0.00085
C2-Fluoranthenes/pyrenes	ND	0.0015	ND	0.00096
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	0.0002 J	ND	0.00016 J
Chrysene	ND	0.00049 J	ND	0.0004 J
C1-Chrysenes	ND	0.00057 J	ND	0.00048 J
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	0.0003 J	ND	0.00023 J
Benzo[k]fluoranthene	ND	0.00006 J	ND	0.000044 J
Benzo[e]pyrene	ND	0.00031 J	ND	0.00027 J
Benzo[a]pyrene	ND	0.00009 J	ND	0.00004 J
Perylene	0.002	0.0019	ND	0.0015
Indeno[1,2,3,-c,d]pyrene	ND	ND	ND	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	0.0003 J	ND	0.0002 J
Total PAH	0.0066	0.035	31000	0.026
d8-Naphthalene	61	60	93	52
d10-Acenaphthene	70	70	94	64
d10-Phenanthrene	77	80	90	81
d12-Benzo[a]pyrene	38 &	77	85	78

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1997 Final Data (Surrogate Corrected) - Source Samples - PAH

Field ID	97-CR-04-01-00-PHC-S
Lab ID	97C1167
SDG	SDGSOD
File	DY7204.D
Sample Type	SAMP
Matrix	Sediment
Sample Size	22 g
Weight Basis	DRY
Associated Blank	BO-S-35PB
Field Date	7/15/1997
Extract Date	12/23/1997
Analysis Date	1/3/1998
Min Reporting Limit	0.00057
Units	ug/g

PAH	
Naphthalene	0.0034
C1-Naphthalenes	0.0045
C2-Naphthalenes	0.006
C3-Naphthalenes	0.0037
C4-Naphthalenes	ND
Acenaphthylene	ND
Acenaphthene	ND
Biphenyl	0.0012
Fluorene	0.00052 J
C1-Fluorenes	0.00085
C2-Fluorenes	ND
C3-Fluorenes	ND
Anthracene	0.000093 J
Phenanthrene	0.0032
C1-Phenanthrenes/anthracenes	0.004
C2-Phenanthrenes/anthracenes	0.0046
C3-Phenanthrenes/anthracenes	0.0019
C4-Phenanthrenes/anthracenes	ND
Dibenzothiophene	0.00052 J
C1-Dibenzothiophenes	0.00055 J
C2-Dibenzothiophenes	ND
C3-Dibenzothiophenes	ND
Fluoranthene	0.00039 J
Pyrene	0.00068 J
C1-Fluoranthenes/pyrenes	0.0016
C2-Fluoranthenes/pyrenes	0.0021
C3-Fluoranthenes/pyrenes	ND
Benzo[a]anthracene	0.00022 J
Chrysene	0.00077
C1-Chrysenes	0.00093
C2-Chrysenes	ND
C3-Chrysenes	ND
C4-Chrysenes	ND
Benzo[b]fluoranthene	0.0004 J
Benzo[k]fluoranthene	0.000043 J
Benzo[e]pyrene	0.0005 J
Benzo[a]pyrene	0.00012 J
Perylene	0.0037
Indeno[1,2,3,-c,d]pyrene	ND
Dibenzo[a,h]anthracene	ND
Benzo[g,h,i]perylene	0.00046 J

Total PAH	0.047
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d8-Naphthalene	61
d10-Acenaphthene	73
d10-Phenanthrene	82
d12-Benzo[a]pyrene	76