

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - Liver samples - PAH

Field ID	98-1-23A-01-00-PHC-T-H	98-1-23A-01-00-PHC-T-PC	98-1-23A-01-00-PHC-T-S	98-1-23A-02-00-PHC-T-H
Lab ID	98D2212RE	98D2228RE REF	98D2209RE REF	98D2211
SDG	SDGT003	SDGT003	SDGT003	SDGT001
File	DX1788.D	DX2160.D	DX2145.D	DZ7079.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	3.06 g	3.06 g	8.23 g	4.02 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	CJ-S-04PB	CJ-S-04PB	CJ-S-04PB	BW-S-74PB
Field Date	7/2/1998	7/2/1998	7/2/1998	7/2/1998
Extract Date	4/30/1999	4/30/1999	4/30/1999	10/9/1998
Analysis Date	5/14/1999	6/5/1999	6/4/1999	11/19/1998
Min Reporting Limit	8.2	16	6.1	6.2
Units	ug/g	ug/g	ug/g	ug/g

PAH				
Naphthalene	0.013 B	0.0077 JB	0.0087 B	0.027 B
C1-Naphthalenes	ND	0.012 J	0.0052 J	0.012 B
C2-Naphthalenes	ND	0.016	0.0075	0.02
C3-Naphthalenes	ND	0.0085 J	0.0062	ND
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	0.0075 J	0.004 J	0.00056 J	0.0089
Acenaphthene	0.0058 J	0.0019 J	0.0014 J	0.0021 J
Biphenyl	0.004 J	0.0029 J	0.003 J	0.0041 J
Fluorene	0.0086	0.0019 JB	0.0025 J	0.0054 J
C1-Fluorenes	ND	ND	ND	ND
C2-Fluorenes	ND	ND	ND	ND
C3-Fluorenes	ND	ND	ND	ND
Anthracene	0.0025 J	0.0006 J	0.00092 J	ND
Phenanthrene	0.0085 B	0.0042 JB	0.0044 JB	0.0099 B
C1-Phenanthrenes/anthracenes	ND	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	ND	0.00069 J	ND	0.0025 J
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.0026 JB	0.0015 JB	0.0017 JB	0.0022 JB
Pyrene	0.00084 JB	0.001 JB	0.0014 JB	0.0012 JB
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	0.00087 J	ND
Benzo[k]fluoranthene	ND	ND	0.00034 J	ND
Benzo[e]pyrene	ND	ND	0.00064 J	ND
Benzo[a]pyrene	ND	ND	0.00036 J	ND
Perylene	ND	ND	ND	ND
Indeno[1,2,3,-c,d]pyrene	0.02	0.00072 JB	0.00067 JB	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	0.0012 JB	0.0011 JB	0.016 B
Total PAH	0.073	0.065	0.047	0.11
d8-Naphthalene	93	69	83	103
d10-Acenaphthene	94	72	82	105
d10-Phenanthrene	81	75	83	104
d12-Benzo[a]pyrene	21 &	49	63	27 &

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Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - Liver samples - PAH

Field ID	98-1-23A-02-00-PHC-T-PC	98-1-23A-03-00-PHC-T-H	98-1-23A-03-00-PHC-T-PC	98-1-23A-04-00-PHC-T-H
Lab ID	98D2216	98D2210	98D2214RE	98D2213RE REF
SDG	SDGT002	SDGT001	SDGT003	SDGT003
File	DY1249.D	DZ7078.D	DX1827.D	DX2147.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	6.96 g	4.84 g	3.87 g	3.88 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	BW-S-81PB	BW-S-74PB	CJ-S-04PB	CJ-S-04PB
Field Date	7/2/1998	7/2/1998	7/2/1998	7/2/1998
Extract Date	10/13/1998	10/9/1998	4/30/1999	4/30/1999
Analysis Date	11/24/1998	11/19/1998	5/16/1999	6/4/1999
Min Reporting Limit	3.6	5.2	6.4	13
Units	ug/g	ug/g	ug/g	ug/g
PAH				
Naphthalene	0.019 B	0.022 B	0.0019 JB	0.0097 JB
C1-Naphthalenes	0.0057 B	0.0086 B	ND	0.013
C2-Naphthalenes	0.01	0.013	ND	ND
C3-Naphthalenes	0.0077	ND	ND	ND
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	ND	0.0061	0.002 J	0.012 J
Acenaphthene	0.002 J	0.0019 J	0.0018 J	0.0015 J
Biphenyl	0.0028 JB	0.0045 J	0.0017 J	0.0045 J
Fluorene	0.0032 JB	0.0048 J	0.0018 JB	0.003 J
C1-Fluorenes	0.0021 J	ND	ND	ND
C2-Fluorenes	0.0076	ND	ND	ND
C3-Fluorenes	ND	ND	0.066	ND
Anthracene	0.0011 J	0.0037 J	0.001 J	0.0017 J
Phenanthrene	0.008 B	0.0075 B	0.0037 JB	0.0067 JB
C1-Phenanthrenes/anthracenes	0.0022 J	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	ND	0.003 J	ND	0.0021 J
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.0026 JB	0.0023 JB	0.0011 JB	0.0017 JB
Pyrene	0.00099 JB	0.001 JB	0.00075 JB	0.00065 JB
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND
Benzo[k]fluoranthene	ND	ND	ND	ND
Benzo[e]pyrene	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND
Perylene	ND	ND	ND	ND
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	ND	0.0032 JB	ND
Total PAH	0.075	0.078	0.085	0.056
d8-Naphthalene	61	66	85	68
d10-Acenaphthene	69	82	78	70
d10-Phenanthrene	69	80	83	74
d12-Benzo[a]pyrene	36	34 &	20 &	49

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1997 Final Data (Surrogate Corrected) - Liver samples - PAH

Field ID	98-1-23A-04-00-PHC-T-PC	98-2-14A-01-00-PHC-T-AF	98-2-14A-01-00-PHC-T-H	98-2-14A-01-00-PHC-T-PC
Lab ID	98D2215RE	98D2195	98D2225RE REF	98D2218RE REF
SDG	SDGT003	SDGT001	SDGT003	SDGT003
File	DX1828.D	DZ7063.D	DX2157.D	DX2152.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	3.65 g	6.2 g	1.42 g	2.97 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	CJ-S-04PB	BW-S-74PB	CJ-S-04PB	CJ-S-04PB
Field Date	7/2/1998	7/1/1998	7/1/1998	7/1/1998
Extract Date	4/30/1999	10/9/1998	4/30/1999	4/30/1999
Analysis Date	5/16/1999	11/18/1998	6/5/1999	6/5/1999
Min Reporting Limit	11	4	35	17
Units	ug/g	ug/g	ug/g	ug/g

PAH

Naphthalene	0.0048 JB	0.012 B	0.023 J	0.016 J
C1-Naphthalenes	0.013	ND	0.021 J	0.018
C2-Naphthalenes	ND	ND	0.043	0.021
C3-Naphthalenes	ND	ND	ND	0.012 J
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	0.00092 J	0.0012 J	0.018 J	0.0076 J
Acenaphthene	0.00087 J	ND	0.019 J	0.0032 J
Biphenyl	0.0023 J	0.0028 J	0.0064 J	0.0041 J
Fluorene	0.002 JB	0.0038 J	0.0057 J	0.0017 JB
C1-Fluorenes	ND	ND	ND	ND
C2-Fluorenes	ND	ND	ND	ND
C3-Fluorenes	ND	ND	ND	ND
Anthracene	0.0013 J	0.00071 J	0.0011 J	0.0014 J
Phenanthrene	0.0046 JB	0.0049 B	0.01 JB	0.0046 JB
C1-Phenanthrenes/anthracenes	ND	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	ND	ND	0.0033 J	ND
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.0014 JB	0.0018 JB	0.0024 JB	0.0017 JB
Pyrene	0.0006 JB	0.00096 JB	0.0022 JB	0.0013 JB
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	0.0027 J	ND
Benzo[k]fluoranthene	ND	ND	0.0008 J	ND
Benzo[e]pyrene	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND
Perylene	ND	ND	ND	ND
Indeno[1,2,3,-c,d]pyrene	ND	ND	0.002 JB	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND
Benzo[g,h,i]perylene	0.0038 JB	ND	0.0037 JB	ND

Total PAH	0.036	0.028	0.16	0.092
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d8-Naphthalene	86	55	65	56
d10-Acenaphthene	82	68	64	61
d10-Phenanthrene	88	70	67	61
d12-Benzo[a]pyrene	28 &	45	38	39

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Field ID	98-2-14A-02-00-PHC-T-H	98-2-14A-02-00-PHC-T-PC	98-2-14A-03-00-PHC-T-H	98-2-14A-03-00-PHC-T-PC
Lab ID	98D2224	98D2219RE	98D2223RE REF	98D2217RE REF
SDG	SDGT002	SDGT003	SDGT003	SDGT003
File	DY1258.D	DX1831.D	DX2156.D	DX2151.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	3.97 g	3.43 g	2.18 g	2 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	BW-S-81PB	CJ-S-04PB	CJ-S-04PB	CJ-S-04PB
Field Date	7/1/1998	7/1/1998	7/1/1998	7/1/1998
Extract Date	10/13/1998	4/30/1999	4/30/1999	4/30/1999
Analysis Date	11/24/1998	5/16/1999	6/5/1999	6/5/1999
Min Reporting Limit	6.3	7.3	23	25
Units	ug/g	ug/g	ug/g	ug/g

PAH

Naphthalene	0.03 B	0.0048 JB	0.014 J	0.034
C1-Naphthalenes	0.016 B	ND	ND	0.024 J
C2-Naphthalenes	0.04	ND	ND	0.05
C3-Naphthalenes	ND	ND	ND	0.022 J
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	ND	0.0028 J	0.018 J	0.012 J
Acenaphthene	ND	0.0011 J	0.0046 J	0.0032 J
Biphenyl	ND	0.002 J	0.0095 J	0.006 J
Fluorene	ND	0.002 JB	0.0048 J	0.0035 J
C1-Fluorenes	ND	ND	ND	ND
C2-Fluorenes	ND	ND	ND	ND
C3-Fluorenes	ND	ND	ND	ND
Anthracene	ND	0.0017 J	0.0037 J	0.0018 J
Phenanthrene	0.014 B	0.0038 JB	0.011 JB	0.0071 JB
C1-Phenanthrenes/anthracenes	ND	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	ND	ND	0.0035 J	0.0018 J
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.0025 JB	0.0012 JB	0.0033 JB	0.0022 JB
Pyrene	0.0059 J	0.00055 JB	0.0015 JB	0.0014 JB
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	0.0023 J	ND	ND	ND
Chrysene	0.002 J	ND	ND	ND
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	0.002 J	ND
Benzo[k]fluoranthene	ND	ND	0.00051 J	ND
Benzo[e]pyrene	0.0053 J	ND	0.0048 J	ND
Benzo[a]pyrene	ND	ND	0.0028 J	ND
Perylene	ND	ND	ND	0.0081 J
Indeno[1,2,3,-c,d]pyrene	ND	ND	0.0021 JB	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND
Benzo[g,h,i]perylene	0.026 B	0.0014 JB	0.0021 JB	0.0043 JB
Total PAH	0.14	0.021	0.088	0.18
d8-Naphthalene	60	61	42	46
d10-Acenaphthene	56	59	43 &	52
d10-Phenanthrene	57	65	46	54
d12-Benzo[a]pyrene	41	25 &	29 &	38

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1997 Final Data (Surrogate Corrected) - Liver samples - PAH

Field ID	98-2-14A-04-00-PHC-T-H	98-2-14A-04-00-PHC-T-PC	98-2-14A-05-00-PHC-T-H	98-2-14A-05-00-PHC-T-PC
Lab ID	98D2226RE	98D2222RE	98D2227RE	98D2221
SDG	SDGT003	SDGT003	SDGT003	SDGT002
File	DX1837.D	DX1833.D	DX1838.D	DY1255.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	2.54 g	2.03 g	2.42 g	5.37 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	CJ-S-04PB	CJ-S-04PB	CJ-S-04PB	BW-S-81PB
Field Date	7/1/1998	7/1/1998	7/1/1998	7/1/1998
Extract Date	4/30/1999	4/30/1999	4/30/1999	10/13/1998
Analysis Date	5/16/1999	5/16/1999	5/16/1999	11/24/1998
Min Reporting Limit	9.8	12	10	4.6
Units	ug/g	ug/g	ug/g	ug/g
PAH				
Naphthalene	0.014	0.0062 JB	0.008 JB	0.016 B
C1-Naphthalenes	ND	ND	0.0074 J	0.0075 B
C2-Naphthalenes	ND	ND	0.024	0.0094
C3-Naphthalenes	ND	ND	0.017	ND
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	0.0029 J	0.0059 J	0.0011 J	ND
Acenaphthene	0.0024 J	0.0025 J	0.003 J	0.0019 J
Biphenyl	0.0042 J	0.0018 J	0.0021 J	0.0026 JB
Fluorene	0.0072 J	0.0024 J	0.0029 J	0.0035 JB
C1-Fluorenes	ND	ND	ND	ND
C2-Fluorenes	ND	ND	ND	ND
C3-Fluorenes	ND	ND	ND	ND
Anthracene	0.00094 J	0.00094 J	0.001 J	0.00094 J
Phenanthrene	0.015	0.0074 JB	0.0072 JB	0.0089 B
C1-Phenanthrenes/anthracenes	ND	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	ND	ND	ND	ND
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.0035 JB	0.002 JB	0.0028 JB	0.0059 B
Pyrene	0.0013 JB	0.0012 JB	0.003 JB	0.0022 JB
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	0.0016 J
Chrysene	ND	ND	ND	0.0009 J
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	0.0023 JL	ND	ND	0.0028 J
Benzo[k]fluoranthene	0.00077 JL	ND	ND	0.0011 J
Benzo[e]pyrene	ND	ND	ND	0.0017 J
Benzo[a]pyrene	ND	ND	ND	0.0022 J
Perylene	ND	ND	ND	ND
Indeno[1,2,3,-c,d]pyrene	0.0017 JLB	ND	0.0016 JB	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND
Benzo[g,h,i]perylene	0.0036 JLB	0.0034 JB	ND	0.0011 JB
Total PAH	0.06	0.034	0.081	0.07
d8-Naphthalene	85	74	89	47
d10-Acenaphthene	78	72	88	60
d10-Phenanthrene	82	78	92	63
d12-Benzo[a]pyrene	28 &L	39	76	26 &

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1997 Final Data (Surrogate Corrected) - Liver samples - PAH

Field ID	98-2-14A-06-00-PHC-T-PC	98-3-1A-01-00-PHC-T AF	98-3-1A-01-00-PHC-T BC	98-3-1A-01-00-PHC-T H
Lab ID	98D2220RE REF	98D2198	98D2201	98D2200
SDG	SDGT003	SDGT001	SDGT001	SDGT001
File	DX2154.D	DZ7066.D	DZ7073.D	DZ7068.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	3.79 g	7.34 g	6.97 g	5.54 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	CJ-S-04PB	BW-S-74PB	BW-S-74PB	BW-S-74PB
Field Date	7/1/1998	6/29/1998	6/29/1998	6/29/1998
Extract Date	4/30/1999	10/9/1998	10/9/1998	10/9/1998
Analysis Date	6/5/1999	11/18/1998	11/19/1998	11/18/1998
Min Reporting Limit	10	3.4	3.6	4.5
Units	ug/g	ug/g	ug/g	ug/g
PAH				
Naphthalene	0.01 B	0.014 B	0.014 B	0.047 B
C1-Naphthalenes	0.0083 J	ND	0.0056 B	0.016 B
C2-Naphthalenes	0.0073 J	ND	0.007	0.036
C3-Naphthalenes	ND	ND	ND	0.03
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	0.003 J	0.0014 J	0.0012 J	0.002 J
Acenaphthene	0.0016 J	0.00077 J	0.0015 J	ND
Biphenyl	0.0015 J	0.0022 J	0.0028 J	0.012
Fluorene	0.0014 JB	0.003 J	0.0032 J	0.011
C1-Fluorenes	ND	ND	ND	ND
C2-Fluorenes	ND	ND	ND	ND
C3-Fluorenes	ND	ND	ND	ND
Anthracene	0.00069 J	0.001 J	0.0011 J	0.0029 J
Phenanthrene	0.0053 JB	0.0052 B	0.0065 B	0.017
C1-Phenanthrenes/anthracenes	ND	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	ND	0.0015 J	0.0016 J	0.0046
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.002 JB	0.0018 JB	0.0018 JB	0.004 JB
Pyrene	0.0015 JB	0.0011 JB	0.00086 JB	0.026
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND
Benzo[k]fluoranthene	ND	ND	ND	ND
Benzo[e]pyrene	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND
Perylene	ND	ND	ND	ND
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	ND	0.0014 JB	0.0069 B
Total PAH	0.042	0.032	0.048	0.22
d8-Naphthalene	53	63	75	55
d10-Acenaphthene	55	77	87	69
d10-Phenanthrene	56	77	84	67
d12-Benzo[a]pyrene	34 &	51	57	20 &

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - Liver samples - PAH

Field ID	98-3-1A-01-00-PHC-T H	98-3-1A-01-00-PHC-T PC	98-3-1A-01-00-PHC-T PC	98-3-1A-01-00-PHC-T S
Lab ID	98D2200DUP	98D2204 RE	98D2204DUP RE	98D2199
SDG	SDGT001	SDGT003	SDGT003	SDGT001
File	DZ7072.D	DX1785.D	DX1786.D	DZ7067.D
Sample Type	SAMP	SAMP	QC	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	5.59 g	3.87 g	3.8 g	8.99 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	BW-S-74PB	CJ-S-04PB	CJ-S-04PB	BW-S-74PB
Field Date	6/29/1998	6/29/1998	6/29/1998	6/29/1998
Extract Date	10/9/1998	4/30/1999	4/30/1999	10/9/1998
Analysis Date	11/19/1998	5/14/1999	5/14/1999	11/18/1998
Min Reporting Limit	8.9	6.4	6.6	2.8
Units	ug/g	ug/g	ug/g	ug/g

PAH

Naphthalene	0.031 B	0.004 JB	0.0031 JB	0.012 B
C1-Naphthalenes	ND	ND	ND	0.0034 B
C2-Naphthalenes	ND	ND	ND	0.0051
C3-Naphthalenes	ND	ND	ND	ND
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	0.0018 J	0.0035 J	0.003 J	0.00075 J
Acenaphthene	ND	0.0008 J	0.00072 J	0.001 J
Biphenyl	0.0077 J	0.0025 J	0.0023 J	0.0018 J
Fluorene	0.0086 J	0.0017 JB	0.002 JB	0.0027 J
C1-Fluorenes	ND	ND	ND	ND
C2-Fluorenes	ND	ND	ND	ND
C3-Fluorenes	ND	ND	ND	0.0092
Anthracene	0.0028 J	0.0018 J	0.0022 J	0.001 J
Phenanthrene	0.011	0.0039 JB	0.0039 JB	0.0039 B
C1-Phenanthrenes/anthracenes	ND	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	ND	ND	ND	ND
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.0039 JB	0.0015 JB	0.0016 JB	0.0038 B
Pyrene	0.0033 JB	0.00066 JB	0.00074 JB	0.00064 JB
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND
Benzo[k]fluoranthene	ND	ND	ND	ND
Benzo[e]pyrene	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND
Perylene	ND	ND	ND	ND
Indeno[1,2,3,-c,d]pyrene	ND	ND	0.0024 JB	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND
Benzo[g,h,i]perylene	0.2	0.002 JB	0.0021 JB	2.7 E

Total PAH	0.27	0.022	0.024	2.7
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d8-Naphthalene	74	97	84	67
d10-Acenaphthene	102	94	83	87
d10-Phenanthrene	91	93	83	82
d12-Benzo[a]pyrene	28 &	24 &	21 &	52

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - Liver samples - PAH

Field ID	98-3-1A-02-00-PHC-T	98-3-1A-02-00-PHC-T	98-3-1A-03-00-PHC-T	98-3-1A-03-00-PHC-T
	H	PC	H	PC
Lab ID	98D2197	98D2203	98D2196	98D2202RE REF
SDG	SDGT001	SDGT001	SDGT001	SDGT003
File	DZ7065.D	DZ7075.D	DZ7064.D	DX2142.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Matrix	Liver Composite	Liver Composite	Liver Composite	Liver Composite
Sample Size	5.27 g	5.98 g	5.25 g	3.81 g
Weight Basis	DRY	DRY	DRY	DRY
Associated Blank	BW-S-74PB	BW-S-74PB	BW-S-74PB	CJ-S-04PB
Field Date	6/29/1998	6/29/1998	6/29/1998	6/29/1998
Extract Date	10/9/1998	10/9/1998	10/9/1998	4/30/1999
Analysis Date	11/18/1998	11/19/1998	11/18/1998	6/4/1999
Min Reporting Limit	4.7	4.2	4.8	13
Units	ug/g	ug/g	ug/g	ug/g

PAH

Naphthalene	0.026 B	0.012 B	0.019 B	0.0047 JB
C1-Naphthalenes	ND	0.0051 B	ND	0.0056 J
C2-Naphthalenes	ND	0.0072	ND	ND
C3-Naphthalenes	ND	ND	ND	ND
C4-Naphthalenes	ND	ND	ND	ND
Acenaphthylene	ND	0.0018 J	0.0046 J	0.0023 J
Acenaphthene	ND	0.0012 J	ND	0.0024 J
Biphenyl	0.0045 J	0.0018 J	0.0045 J	0.0015 J
Fluorene	0.0057	0.0031 J	0.0055	0.001 JB
C1-Fluorenes	ND	ND	ND	ND
C2-Fluorenes	ND	ND	ND	ND
C3-Fluorenes	ND	ND	ND	ND
Anthracene	0.002 J	ND	0.0013 J	0.00069 J
Phenanthrene	0.008 B	0.0042 B	0.0091 B	0.0036 JB
C1-Phenanthrenes/anthracenes	ND	ND	ND	ND
C2-Phenanthrenes/anthracenes	ND	ND	ND	ND
C3-Phenanthrenes/anthracenes	ND	ND	ND	ND
C4-Phenanthrenes/anthracenes	ND	ND	ND	ND
Dibenzothiophene	0.0033 J	0.00072 J	ND	ND
C1-Dibenzothiophenes	ND	ND	ND	ND
C2-Dibenzothiophenes	ND	ND	ND	ND
C3-Dibenzothiophenes	ND	ND	ND	ND
Fluoranthene	0.0021 JB	0.0022 JB	0.0025 JB	0.0013 JB
Pyrene	0.00094 JB	0.0014 JB	0.0011 JB	0.00075 JB
C1-Fluoranthenes/pyrenes	ND	ND	ND	ND
C2-Fluoranthenes/pyrenes	ND	ND	ND	ND
C3-Fluoranthenes/pyrenes	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
C1-Chrysenes	ND	ND	ND	ND
C2-Chrysenes	ND	ND	ND	ND
C3-Chrysenes	ND	ND	ND	ND
C4-Chrysenes	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND
Benzo[k]fluoranthene	ND	ND	ND	ND
Benzo[e]pyrene	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND
Perylene	ND	ND	ND	ND
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	0.00093 JB	ND	0.0016 JB

Total PAH	0.052	0.042	0.048	0.025
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d8-Naphthalene	58	73	57	87
d10-Acenaphthene	78	89	71	89
d10-Phenanthrene	77	88	74	93
d12-Benzo[a]pyrene	47	51	45	40