

Arthur D. Little, Inc.

Environmental Monitoring and Analysis

Minerals Management Service - Shelikof Strait and Outermost Cook Inlet

1997 Final Data (Surrogate Corrected) - SRM - PAH

Field ID	SRM 1941a				SRM 1941a			
Lab ID	BV-S-85SRM				BV-S-82SRM			
SDG	SDGS002				SDGS001			
File	DY0525.D				DY0613.D			
Sample Type	SRM				SRM			
Matrix	Sediment				Sediment			
Sample Size	5.07 g				4.92 g			
Weight Basis	DRY				DRY			
Associated Blank	BV-S-83PB				NA			
Field Date	NA				NA			
Extract Date	NA				NA			
Analysis Date	9/22/1998				10/2/1998			
Min Reporting Limit	2.5				10			
Units	ug/Kg	T	%D	Q	ug/Kg	T	%D	Q
PAH								
Naphthalene	380	1010	-62	62	560	1010	-44	&
C1-Naphthalenes	130				210			
C2-Naphthalenes	160				270			
C3-Naphthalenes	130				210			
C4-Naphthalenes	86				180			
Acenaphthylene	63				67			
Acenaphthene	26				29			
Biphenyl	43				57			
Fluorene	48	97.3	-51	51	60	97.3	-38	&
C1-Fluorenes	49				59			
C2-Fluorenes	85				100			
C3-Fluorenes	180				210			
Anthracene	140	184	-24	24	130	184	-29	
Phenanthrene	280	489	-43	43	320	489	-34	
C1-Phenanthrenes/anthracenes	220				260			
C2-Phenanthrenes/anthracenes	200				240			
C3-Phenanthrenes/anthracenes	140				210			
C4-Phenanthrenes/anthracenes	170				250			
Dibenzothiophene	34				39			
C1-Dibenzothiophenes	50				52			
C2-Dibenzothiophenes	100				110			
C3-Dibenzothiophenes	99				120			
Fluoranthene	660 L	981	-33	33	690	981	-30	
Pyrene	530 L	811	-35	35	540	811	-33	
C1-Fluoranthenes/pyrenes	310				360			
C2-Fluoranthenes/pyrenes	280				330			
C3-Fluoranthenes/pyrenes	160				180			
Benzo[a]anthracene	360	427	-16	16	320	427	-25	
Chrysene	420	592	-29	29	400	592	-32	
C1-Chrysenes	200				210			
C2-Chrysenes	140				120			
C3-Chrysenes	120				89			
C4-Chrysenes	59				54			
Benzo[b]fluoranthene	800 L	979	-18	18	850	979	-13	
Benzo[k]fluoranthene	190	361	-47	47	240	361	-34	
Benzo[e]pyrene	420	553	-24	24	440	553	-20	
Benzo[a]pyrene	450	628	-28	28	430	628	-32	
Perylene	290	452	-36	36	280	452	-38	&
Indeno[1,2,3,-c,d]pyrene	460	501	-8.2	8.2	360	501	-28	
Dibenzo[a,h]anthracene	94	73.9	27	27	72	73.5	-2	
Benzo[g,h,i]perylene	360	525	-31	31	340	525	-35	
Total PAH	9100				10000			
d8-Naphthalene	69				58			
d10-Acenaphthene	90				75			
d10-Phenanthrene	102		32		89			
d12-Benzo[a]pyrene	97				75			

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Field ID	SRM 1941a				SRM 1941a			
Lab ID	BV-S-93SRM				BV-S-99SRM			
SDG	SDGS003				SDGS004			
File	DZ6362.D				DY0629.D			
Sample Type	SRM				SRM			
Matrix	Sediment				Sediment			
Sample Size	4.94 g				5.06 g			
Weight Basis	DRY				DRY			
Associated Blank	BV-S-91PB				BV-S-97PB			
Field Date	NA				NA			
Extract Date	9/24/1998				9/25/1998			
Analysis Date	10/3/1998				10/6/1998			
Min Reporting Limit	10				9.9			
Units	ug/Kg	T	%D	Q	ug/Kg	T	%D	Q
PAH								
Naphthalene	470	1010	-53	&	520	1010	-48	&
C1-Naphthalenes	170				200			
C2-Naphthalenes	200				260			
C3-Naphthalenes	170				220			
C4-Naphthalenes	130				220			
Acenaphthylene	110				83			
Acenaphthene	35				33			
Biphenyl	57				59			
Fluorene	65	97.3	-33		56	97.3	-42	&
C1-Fluorenes	73				65			
C2-Fluorenes	120				130			
C3-Fluorenes	230				260			
Anthracene	190	184	3.3		170	184	-7.6	
Phenanthrene	370	489	-24		390	489	-20	
C1-Phenanthrenes/anthracenes	310				330			
C2-Phenanthrenes/anthracenes	310				310			
C3-Phenanthrenes/anthracenes	250				230			
C4-Phenanthrenes/anthracenes	320				280			
Dibenzothiophene	45				48			
C1-Dibenzothiophenes	60				62			
C2-Dibenzothiophenes	130				140			
C3-Dibenzothiophenes	150				160			
Fluoranthene	900	981	-8.2		930	981	-5.2	
Pyrene	720	811	-11		760	811	-6.3	
C1-Fluoranthenes/pyrenes	490				500			
C2-Fluoranthenes/pyrenes	420				420			
C3-Fluoranthenes/pyrenes	260				200			
Benzo[a]anthracene	410	427	-4		450	427	5.4	
Chrysene	490	592	-17		500	592	-16	
C1-Chrysenes	260				250			
C2-Chrysenes	200				150			
C3-Chrysenes	160				130			
C4-Chrysenes	160				81			
Benzo[b]fluoranthene	1100	979	12		1000	979	2.1	
Benzo[k]fluoranthene	340	361	-5.8		350	361	-3	
Benzo[e]pyrene	580	553	4.9		540	553	-2.4	
Benzo[a]pyrene	570	628	-9.2		540	628	-14	
Perylene	360	452	-20		330	452	-27	
Indeno[1,2,3,-c,d]pyrene	550	501	9.8		530	501	5.8	
Dibenzo[a,h]anthracene	120	73.9	62	&	110	73.5	50	
Benzo[g,h,i]perylene	500	525	-4.8		460	525	-12	
Total PAH	13000				12000			
d8-Naphthalene	51				56			
d10-Acenaphthene	70				73			
d10-Phenanthrene	85				80			
d12-Benzo[a]pyrene	80				83			

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Field ID	SRM 1941a
Lab ID	BW-S-25SRM
SDG	SDGS005
File	DY6100.D
Sample Type	SRM
Matrix	Sediment
Sample Size	5.04 g
Weight Basis	DRY
Associated Blank	BW-S-23PB
Field Date	NA
Extract Date	9/29/1998
Analysis Date	10/10/1998
Min Reporting Limit	9.9
Units	ug/Kg
	T %D Q

PAH				
Naphthalene	490	1010	-51	&
C1-Naphthalenes	200			
C2-Naphthalenes	240			
C3-Naphthalenes	200			
C4-Naphthalenes	140			
Acenaphthylene	89			
Acenaphthene	33			
Biphenyl	59			
Fluorene	61	97.3	-37	&
C1-Fluorenes	66			
C2-Fluorenes	110			
C3-Fluorenes	280			
Anthracene	160	184	-13	
Phenanthrene	390	489	-20	
C1-Phenanthrenes/anthracenes	330			
C2-Phenanthrenes/anthracenes	260			
C3-Phenanthrenes/anthracenes	260			
C4-Phenanthrenes/anthracenes	290			
Dibenzothiophene	45			
C1-Dibenzothiophenes	56			
C2-Dibenzothiophenes	130			
C3-Dibenzothiophenes	120			
Fluoranthene	870	981	-11	
Pyrene	710	811	-12	
C1-Fluoranthenes/pyrenes	460			
C2-Fluoranthenes/pyrenes	410			
C3-Fluoranthenes/pyrenes	200			
Benzo[a]anthracene	420	427	-1.6	
Chrysene	520	592	-12	
C1-Chrysenes	250			
C2-Chrysenes	140			
C3-Chrysenes	95			
C4-Chrysenes	64			
Benzo[b]fluoranthene	1000	979	2.1	
Benzo[k]fluoranthene	340	361	-5.8	
Benzo[e]pyrene	550	553	-0.5	
Benzo[a]pyrene	530	628	-16	
Perylene	340	452	-25	
Indeno[1,2,3,-c,d]pyrene	530	501	5.8	
Dibenzo[a,h]anthracene	110	73.9	49	
Benzo[g,h,i]perylene	460	525	-12	

Total PAH 12000

d8-Naphthalene	64
d10-Acenaphthene	72
d10-Phenanthrene	76
d12-Benzo[a]pyrene	77

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1997 Final Data (Surrogate Corrected) - SRM - PAH

Field ID	SRM 1941a				SRM 1974a			
Lab ID	BW-S-43SRM				BW-S-76SRM			
SDG	SDGS006				SDGT001			
File	DY0701.D				DZ7062.D			
Sample Type	SRM				SRM			
Matrix	Sediment				TISSUE			
Sample Size	4.93 g				1.77 g			
Weight Basis	DRY				DRY			
Associated Blank	BW-S-41PB				BW-S-74PB			
Field Date	NA				NA			
Extract Date	10/6/1998				10/9/1998			
Analysis Date	10/18/1998				11/18/1998			
Min Reporting Limit	10				7.1			
Units	ug/Kg	T	%D	Q	ug/Kg	T	%D	Q
PAH								
Naphthalene	480	1010	-52	&	22	23.5	-6.4	
C1-Naphthalenes	210				12			
C2-Naphthalenes	250				22			
C3-Naphthalenes	200				28			
C4-Naphthalenes	200				49			
Acenaphthylene	85				15			
Acenaphthene	33				3.6 J			
Biphenyl	61				3.2 J			
Fluorene	50	97.3	-49	&	7.8			
C1-Fluorenes	68				22			
C2-Fluorenes	100				54			
C3-Fluorenes	260				210			
Anthracene	150	184	-18		24	6.1	290	&
Phenanthrene	360	489	-26		24	22.2	8.1	
C1-Phenanthrenes/anthracenes	270				46			
C2-Phenanthrenes/anthracenes	270				120			
C3-Phenanthrenes/anthracenes	300				170			
C4-Phenanthrenes/anthracenes	290				170			
Dibenzothiophene	48				2.6 J			
C1-Dibenzothiophenes	63				17			
C2-Dibenzothiophenes	130				81			
C3-Dibenzothiophenes	170				110			
Fluoranthene	110	981	-89	&	190	164	16	
Pyrene	63	811	-92	&	170	152	12	
C1-Fluoranthenes/pyrenes	450				140			
C2-Fluoranthenes/pyrenes	400				110			
C3-Fluoranthenes/pyrenes	220				61			
Benzo[a]anthracene	400	427	-6.3		32	32.5	-1.5	
Chrysene	470	592	-21		81	94.9	-15	
C1-Chrysenes	270				44			
C2-Chrysenes	120				30			
C3-Chrysenes	110				17			
C4-Chrysenes	63				ND			
Benzo[b]fluoranthene	1100	979	12		100	46.4	120	&
Benzo[k]fluoranthene	340	361	-5.8		30	20.2	49	&
Benzo[e]pyrene	540	553	-2.4		140	84	67	&
Benzo[a]pyrene	530	628	-16		18	15.6	15	
Perylene	350	452	-22		8.3	7.68	8.1	
Indeno[1,2,3,-c,d]pyrene	600	501	20		22	14.2	55	&
Dibenzo[a,h]anthracene	120	73.9	62		5.3 J			
Benzo[g,h,i]perylene	490	525	-6.7		40	22	82	&
Total PAH	11000				2500			
d8-Naphthalene	63				40			
d10-Acenaphthene	63				65			
d10-Phenanthrene	70				78			
d12-Benzo[a]pyrene	69				49			

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Field ID	SRM 1974a				SRM 1974a			
Lab ID	BW-S-83SRM				CJ-S-06SRM			
SDG	SDGT002				SDGT003			
File	DY1246.D				DX1783.D			
Sample Type	SRM				SRM			
Matrix	TISSUE				TISSUE			
Sample Size	1.62 g				1.61 g			
Weight Basis	DRY				DRY			
Associated Blank	BW-S-81PB				CJ-S-04PB			
Field Date	NA				NA			
Extract Date	10/13/1998				4/30/1999			
Analysis Date	11/24/1998				5/14/1999			
Min Reporting Limit	15				16			
Units	ug/Kg	T	%D	Q	ug/Kg	T	%D	Q
PAH								
Naphthalene	21	23.5	-11		10 JB	23.5	-57	&
C1-Naphthalenes	17				6.9 J			
C2-Naphthalenes	22				13 J			
C3-Naphthalenes	34				25			
C4-Naphthalenes	120				56			
Acenaphthylene	12 J				0.43 J			
Acenaphthene	4.1 J				3.4 J			
Biphenyl	5.1 J				1.9 J			
Fluorene	7.4 J				2.8 J			
C1-Fluorenes	19				15 J			
C2-Fluorenes	63				47			
C3-Fluorenes	210				91			
Anthracene	22	6.1	260	&	14 J	6.1	130	&
Phenanthrene	26	22.2	17		17	22.2	-23	
C1-Phenanthrenes/anthracenes	54				44			
C2-Phenanthrenes/anthracenes	140				130			
C3-Phenanthrenes/anthracenes	190				180			
C4-Phenanthrenes/anthracenes	180				140			
Dibenzothiophene	2.7 J				3 J			
C1-Dibenzothiophenes	16				15 J			
C2-Dibenzothiophenes	81				65			
C3-Dibenzothiophenes	130				100			
Fluoranthene	200	164	22		170	164	3.8	
Pyrene	180	152	19		150	152	-1	
C1-Fluoranthenes/pyrenes	150				130			
C2-Fluoranthenes/pyrenes	120				96			
C3-Fluoranthenes/pyrenes	54				52			
Benzo[a]anthracene	34	32.5	4.6		34	32.5	4.6	
Chrysene	96	94.9	1.2		73	94.9	-23	
C1-Chrysenes	42				35			
C2-Chrysenes	30				27			
C3-Chrysenes	ND				12 J			
C4-Chrysenes	ND				ND			
Benzo[b]fluoranthene	120	46.4	160	&	62	46.4	34	
Benzo[k]fluoranthene	40	20.2	98	&	16	20.2	-21	
Benzo[e]pyrene	170	84	100	&	100	84	19	
Benzo[a]pyrene	22	15.6	41	&	18	15.6	15	
Perylene	7 J	7.68	-8.8		7.3 J	7.68	-4.9	
Indeno[1,2,3,-c,d]pyrene	28	14.2	97	&	17	14.2	20	
Dibenzo[a,h]anthracene	5.8 J				3.7 J			
Benzo[g,h,i]perylene	44	22	100	&	24 B	22	9.1	
Total PAH	2700				2000			
d8-Naphthalene	122				79			
d10-Acenaphthene	128 &				82			
d10-Phenanthrene	143 &				91			
d12-Benzo[a]pyrene	74				78			