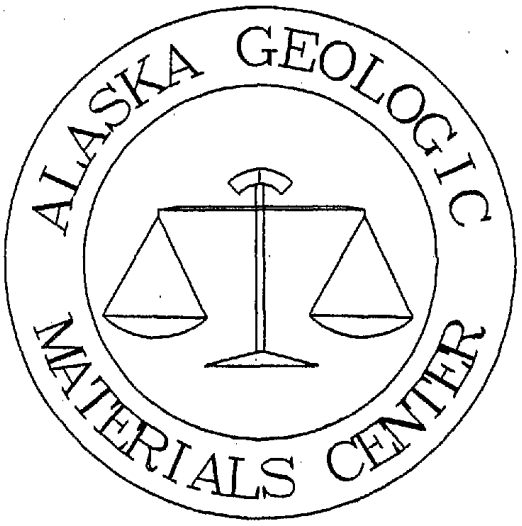
Apatite fission track data derived from core from the following Barrow Arch wells:

Husky Oil NPR Operations (U.S.G.S.) Tulageak T. W. No. 1 (2,940' - 2,945');
Husky Oil NPR Operations (U.S.G.S.) J. W. Dalton T. W. No. 1 (4,680' - 4,686');
Husky Oil NPR Operations (U.S.G.S.) East Simpson T. W. No. 2 (2,401' - 2,421';
6,047' - 6,066'; and 6,705' - 6,713'); and
U. S. Navy Fish Creek T. W. No. 1 (6,005' - 6,011').



Received 21 January 1994

Total of 9 pages in report

Alaska Geologic Materials Center Data Report No. 220

John M. Murphy
814 Arbor Ave.; Unit H
Ft. Collin, CO 80526
303-282-9570

December 29, 1993

Dr. John Reeder
Curator, Geological Materials Center
Alaska State Division of Geological and Geophysical Surveys
P.O. Box 772116
Eagle River, AK 99577

Hi John,

The following table shows the apatite yields and data from samples yielding apatite (enclosed) from some wells on the Barrow Arch. Data from the in-situ vitrinite reflectance samples noted in my letter of 31 August 1993 will be forwarded separately by ARCO, by either S. Bergman or J. Decker. The residues of the processed samples have already been forwarded to you.

AFTA (n=13)	Apatite?	AFT Data	Depth (ft.)	Well Name
93BA1	NO	NO	2318-2330	South Barrow No. 13
93BA2	NO	NO	2322-2345	South Barrow No. 17
93BA3	NO	NO	2233-2242	South Barrow No. 19
93BA4	NO	NO	2416-2422	Iko Bay No. 1
93BA5	YES	YES	2940-2945	Tulageak No. 1
93BA6	NO	NO	3788-3797	"
93BA7	YES	YES	4680-4686	J.W. Dalton No. 1
93BA8	NO	NO	7981-7990	"
93BA9	YES	YES	2401-2410	East Simpson No. 2
93BA10	YES	YES	6057-6066	"
93BA11	YES	YES	6705-6713	"
93BA12	NO	NO	7185-7191.5	"
93BA13	YES	YES	6005-6011	Fish Creek No. 1

Individual grain-age data sheets follow, with the confined track length data table compiled separately. Should you need to contact me I will be away in Bolivia from 8 January through mid-February so will not be available then.

Sincerely;

John M. Murphy
Consultant

	A	B	C	D	E	F	G
1	**Table of Track**	**Lengths**					
2							
3	**Sample Number ->**	**93BA5**	**93BA7**	**93BA9**	**93BA10**	**93BA11**	**93BA13**
4	Track Length Class						
5	0-1	0	0	0	0	0	0
6	1-2	0	0	0	0	0	0
7	2-3	0	0	0	0	1	0
8	3-4	0	1	1	1	3	0
9	4-5	3	2	1	0	2	1
10	5-6	0	1	0	2	1	2
11	6-7	3	3	0	1	1	1
12	7-8	3	0	0	3	1	4
13	8-9	2	2	0	7	8	7
14	9-10	6	14	0	18	7	11
15	10-11	15	13	4	24	6	22
16	11-12	18	20	5	17	8	19
17	12-13	24	17	20	15	14	9
18	13-14	10	9	23	12	7	9
19	14-15	6	4	21	0	3	8
20	15-16	1	2	14	2	0	1
21	16-17	0	0	5	0	0	0
22	17-18	0	0	0	0	0	0
23	18-19	0	0	0	0	0	0
24	19-20	0	0	0	0	0	0
25	Total Tracks	91	88	94	102	62	94
26	Mean Length	11.45	11.04	12.52	10.8	10.34	10.94
27	Error (2-Sigma)	0.26	0.25	0.2	0.2	0.38	0.22
28	Standard Deviation	2.49	2.33	1.96	2.02	3	2.17
29							
30							
31							

93BA5 Apatite Tulageak Core 1 (2940-2945')

IRRADIATION LU197-01 COUNTED BY: JMM

No.	Ns	Ni	Na	RATIO	U(ppm)	RHOs	RHOi	F.T.AGE(Ma)
1	68	182	100	0.374	18.4	1.038E+06	2.778E+06	104.8 ± 17.4
2	70	107	36	0.654	30.1	2.968E+06	4.537E+06	182.5 ± 32.0
3	20	84	100	0.238	8.5	3.053E+05	1.282E+06	67.0 ± 17.6
4	25	75	60	0.333	12.7	6.360E+05	1.908E+06	93.6 ± 23.0
5	5	12	200	0.417	0.6	3.816E+04	9.159E+04	116.8 ± 63.0
6	28	71	100	0.394	7.2	4.274E+05	1.084E+06	110.6 ± 26.4
7	12	17	100	0.706	1.7	1.832E+05	2.595E+05	196.7 ± 76.0
8	38	25	100	1.520	2.5	5.801E+05	3.816E+05	416.3 ±112.9
9	87	210	70	0.414	30.4	1.897E+06	4.579E+06	116.2 ± 17.8
10	9	25	100	0.360	2.5	1.374E+05	3.816E+05	101.1 ± 40.2
	362	808			8.5	5.720E+05	1.277E+06	

Area of basic unit = 6.551E-07 cm-2

CHI SQUARED = 22.03253 WITH 9 DEGREES OF FREEDOM
P(chi squared) = 0.0 %
CORRELATION COEFFICIENT = 0.886
VARIANCE OF SQR(Ns) = 5.912797
VARIANCE OF SQR(Ni) = 14.76578
Ns/Ni = 0.448 ± 0.028
MEAN RATIO = 0.541 ± 0.118

Pooled Age = 125.5 ± 13.3 Ma
Mean Age = 151.3 ± 35.3 Ma
Central Age = 133.6 ± 21.7Ma
% Variation = 44.08%

Ages calculated using a zeta of 12250 ± 1000 for SRM963a glass
RHO D = 4.619E+04cm-2; ND = 1907

93BA05 Apatite **WITHOUT 416 Ma GRAIN** Tulageak Core 1 (2940-2945')

IRRADIATION WY-83/84-93 COUNTED BY: JMM

No.	Ns	Ni	Na	RATIO	U(ppm)	RHOs	RHOi	F.T.AGE(Ma)
1	68	182	100	0.374	18.4	1.038E+06	2.778E+06	104.8 ± 17.4
2	70	107	36	0.654	30.1	2.968E+06	4.537E+06	182.5 ± 32.0
3	20	84	100	0.238	8.5	3.053E+05	1.282E+06	67.0 ± 17.6
4	25	75	60	0.333	12.7	6.360E+05	1.908E+06	93.6 ± 23.0
5	5	12	200	0.417	0.6	3.816E+04	9.159E+04	116.8 ± 63.0
6	28	71	100	0.394	7.2	4.274E+05	1.084E+06	110.6 ± 26.4
7	12	17	100	0.706	1.7	1.832E+05	2.595E+05	196.7 ± 76.0
8	87	210	70	0.414	30.4	1.897E+06	4.579E+06	116.2 ± 17.8
9	9	25	100	0.360	2.5	1.374E+05	3.816E+05	101.1 ± 40.2
	324	783			9.2	5.711E+05	1.380E+06	

Area of basic unit = 6.551E-07 cm-2

CHI SQUARED = 8.861479 WITH 8 DEGREES OF FREEDOM
P(chi squared) = 1.6 %
CORRELATION COEFFICIENT = 0.931
VARIANCE OF SQR(Ns) = 6.600624
VARIANCE OF SQR(Ni) = 15.17458

Ns/Ni = 0.414 ± 0.027
MEAN RATIO = 0.432 ± 0.050

Pooled Age = 116.0 ± 12.5 Ma
Mean Age = 121.2 ± 17.4 Ma
Central Age = 115.2 ± 12.4Ma
% Variation = 21.35%

Ages calculated using a zeta of 12250 ± 1000 for SRM963a glass
RHO D = 4.619E+04cm-2; ND = 1907

93BA7 Apatite JW Dalton Core 2 (4680-4686')

IRRADIATION WY-85/86-93 COUNTED BY: JMM

No.	Ns	Ni	Na	RATIO	U(ppm)	RHOs	RHOi	F.T.AGE(Ma)
1	12	41	60	0.293	1.1	4.844E+04	1.655E+05	82.3 ± 27.1
2	3	7	42	0.429	0.3	1.730E+04	4.036E+04	120.1 ± 82.9
3	35	144	28	0.243	8.3	3.027E+05	1.246E+06	68.4 ± 13.0
4	68	368	49	0.185	12.1	3.361E+05	1.819E+06	52.1 ± 7.0
5	2	12	30	0.167	0.6	1.615E+04	9.688E+04	47.0 ± 35.9
6	7	29	40	0.241	1.2	4.238E+04	1.756E+05	67.9 ± 28.7
7	62	144	42	0.431	5.5	3.575E+05	8.304E+05	120.7 ± 18.6
8	6	37	36	0.162	1.7	4.036E+04	2.489E+05	45.7 ± 20.2
9	52	95	25	0.547	6.1	5.038E+05	9.203E+05	153.0 ± 26.7
10	9	34	36	0.265	1.5	6.055E+04	2.287E+05	74.5 ± 28.0
11	16	56	45	0.286	2.0	8.611E+04	3.014E+05	80.3 ± 22.9
12	34	79	50	0.430	2.5	1.647E+05	3.827E+05	120.6 ± 24.9
13	6	25	50	0.240	0.8	2.906E+04	1.211E+05	67.5 ± 30.7
14	1	13	60	0.077	0.3	4.036E+03	5.247E+04	21.7 ± 22.6
15	4	24	50	0.167	0.8	1.938E+04	1.162E+05	47.0 ± 25.4
16	42	210	50	0.200	6.7	2.034E+05	1.017E+06	56.3 ± 9.6
17	9	65	48	0.138	2.2	4.541E+04	3.280E+05	39.1 ± 13.9
18	10	34	24	0.294	2.3	1.009E+05	3.431E+05	82.7 ± 29.8
19	13	27	24	0.481	1.8	1.312E+05	2.725E+05	134.8 ± 45.6
20	9	48	49	0.188	1.6	4.448E+04	2.372E+05	52.8 ± 19.2
21	31	117	50	0.265	3.8	1.502E+05	5.667E+05	74.5 ± 15.2
22	1	9	15	0.111	1.0	1.615E+04	1.453E+05	31.4 ± 33.1
23	2	5	36	0.400	0.2	1.345E+04	3.364E+04	112.2 ± 93.9
24	6	52	24	0.115	3.5	6.055E+04	5.247E+05	32.6 ± 14.1
25	1	5	36	0.200	0.2	6.727E+03	3.364E+04	56.3 ± 61.7
26	17	51	25	0.333	3.3	1.647E+05	4.941E+05	93.6 ± 26.3
27	11	89	60	0.124	2.4	4.440E+04	3.592E+05	34.9 ± 11.2
28	2	19	16	0.105	1.9	3.027E+04	2.876E+05	29.7 ± 22.1
29	12	47	20	0.255	3.8	1.453E+05	5.691E+05	71.8 ± 23.3
30	2	10	12	0.200	1.3	4.036E+04	2.018E+05	56.3 ± 43.7
31	9	56	36	0.161	2.5	6.055E+04	3.767E+05	45.3 ± 16.3
	494	1952			2.7	1.024E+05	4.048E+05	

Area of basic unit = 4.129E-06 cm-2

CHI SQUARED = 37.05626 WITH 30 DEGREES OF FREEDOM
P(chi squared) = 0.0 %
CORRELATION COEFFICIENT = 0.866
VARIANCE OF SQR(Ns) = 4.237297
VARIANCE OF SQR(Ni) = 14.4042
Ns/Ni = 0.253 ± 0.013
MEAN RATIO = 0.249 ± 0.022

Pooled Age = 71.2 ± 4.0 Ma
Mean Age = 70.2 ± 6.3 Ma
Central Age = 70.2 ± 6.4Ma
% Variation = 34.11%

Ages calculated using a zeta of 12250 ± 100 for SRM963a glass
RHO D = 4.619E+04cm-2; ND = 1907

93BA9 Apatite E. Sipmson #2 Core 1 (2401-2410')

IRRADIATION 93BA9.AGE COUNTED BY: JMM

No.	Ns	Ni	Na	RATIO	U(ppm)	RHOs	RHOi	F.T.AGE(Ma)
1	21	78	20	0.269	39.5	1.603E+06	5.953E+06	75.7 ± 18.7
2	7	49	28	0.143	17.7	3.816E+05	2.671E+06	40.3 ± 16.3
3	3	13	28	0.231	4.7	1.636E+05	7.087E+05	65.0 ± 41.6
4	1	6	30	0.167	2.0	5.088E+04	3.053E+05	47.0 ± 50.8
5	11	42	16	0.262	26.6	1.049E+06	4.007E+06	73.7 ± 25.0
6	3	31	20	0.097	15.7	2.290E+05	2.366E+06	27.3 ± 16.5
7	8	72	24	0.111	30.4	5.088E+05	4.579E+06	31.4 ± 11.7
8	24	71	25	0.338	28.8	1.465E+06	4.335E+06	94.9 ± 22.5
9	14	51	16	0.274	32.3	1.336E+06	4.866E+06	77.2 ± 23.4
10	6	21	28	0.286	7.6	3.271E+05	1.145E+06	80.3 ± 37.2
11	19	198	54	0.096	37.1	5.371E+05	5.597E+06	27.1 ± 6.5
12	6	25	6	0.240	42.2	1.526E+06	6.360E+06	67.5 ± 30.7
13	4	12	21	0.333	5.8	2.908E+05	8.723E+05	93.6 ± 54.1
14	36	125	28	0.288	45.2	1.963E+06	6.815E+06	81.0 ± 15.4
15	39	152	25	0.257	61.6	2.381E+06	9.281E+06	72.2 ± 13.1
16	3	13	25	0.231	5.3	1.832E+05	7.938E+05	65.0 ± 41.6
17	25	155	100	0.161	15.7	3.816E+05	2.366E+06	45.5 ± 9.9
18	6	26	18	0.231	14.6	5.088E+05	2.205E+06	65.0 ± 29.5
19	32	158	16	0.203	100.0	3.053E+06	1.507E+07	57.0 ± 11.1
20	7	43	24	0.163	18.1	4.452E+05	2.735E+06	45.9 ± 18.7
21	32	73	35	0.438	21.1	1.396E+06	3.184E+06	122.8 ± 26.2
22	14	118	30	0.119	39.8	7.124E+05	6.004E+06	33.5 ± 9.5
23	17	50	40	0.340	12.7	6.488E+05	1.908E+06	95.5 ± 26.9
24	4	10	28	0.400	3.6	2.181E+05	5.452E+05	112.2 ± 66.4
25	19	47	21	0.404	22.7	1.381E+06	3.416E+06	113.4 ± 30.9
26	16	36	30	0.444	12.2	8.141E+05	1.832E+06	124.5 ± 37.5
27	8	16	36	0.500	4.5	3.392E+05	6.784E+05	139.9 ± 60.7
28	17	38	60	0.447	6.4	4.325E+05	9.668E+05	125.3 ± 36.7
29	5	10	12	0.500	8.4	6.360E+05	1.272E+06	139.9 ± 76.7
30	2	20	32	0.100	6.3	9.541E+04	9.541E+05	28.2 ± 20.9
31	5	12	16	0.417	7.6	4.770E+05	1.145E+06	116.8 ± 62.2
32	4	23	24	0.174	9.7	2.544E+05	1.463E+06	49.0 ± 26.6
	418	1794			19.8	6.966E+05	2.990E+06	

Area of basic unit = 6.551E-07 cm-2

CHI SQUARED = 36.18573 WITH 31 DEGREES OF FREEDOM
P(chi squared) = 0.0 %
CORRELATION COEFFICIENT = 0.781
VARIANCE OF SQR(Ns) = 2.117999
VARIANCE OF SQR(Ni) = 10.20448
Ns/Ni = 0.233 ± 0.013
MEAN RATIO = 0.271 ± 0.022

Pooled Age = 65.6 ± 3.9 Ma
Mean Age = 76.1 ± 6.4 Ma
Central Age = 70.1 ± 6.3Ma
% Variation = 33.44%

Ages calculated using a zeta of 12250 ± 1000 for SRM963a glass
RHO D = 4.619E+04cm-2; ND = 1907

93BA10 Apatite E. Simpson #2 Core 2 (6047-6066')

IRRADIATION WY-89-93 COUNTED BY: JMM

No.	Ns	Ni	Na	RATIO	U(ppm)	RHOs	RHOi	F.T.AGE(Ma)
1	11	104	100	0.106	10.5	1.679E+05	1.588E+06	29.9 ± 9.8
2	2	8	80	0.250	1.0	3.816E+04	1.526E+05	70.3 ± 55.9
3	4	43	60	0.093	7.3	1.018E+05	1.094E+06	26.3 ± 13.9
4	8	57	50	0.140	11.5	2.442E+05	1.740E+06	39.6 ± 15.3
5	7	77	90	0.091	8.7	1.187E+05	1.306E+06	25.7 ± 10.4
6	12	162	36	0.074	45.6	5.088E+05	6.869E+06	20.9 ± 6.5
7	48	448	90	0.107	50.4	8.141E+05	7.598E+06	30.2 ± 5.3
8	7	128	60	0.055	21.6	1.781E+05	3.256E+06	15.5 ± 6.1
9	1	14	60	0.071	2.4	2.544E+04	3.562E+05	20.2 ± 21.0
10	1	2	49	0.500	0.4	3.115E+04	6.231E+04	139.9 ±171.8
11	4	46	24	0.087	19.4	2.544E+05	2.926E+06	24.6 ± 13.0
12	4	61	30	0.066	20.6	2.035E+05	3.104E+06	18.5 ± 9.7
13	3	40	30	0.075	13.5	1.526E+05	2.035E+06	21.2 ± 12.8
14	6	60	40	0.100	15.2	2.290E+05	2.290E+06	28.2 ± 12.3
15	8	34	48	0.235	7.2	2.544E+05	1.081E+06	66.2 ± 26.6
16	2	72	64	0.028	11.4	4.770E+04	1.717E+06	7.9 ± 5.7
17	2	16	28	0.125	5.8	1.090E+05	8.723E+05	35.3 ± 26.6
18	5	58	49	0.086	12.0	1.558E+05	1.807E+06	24.3 ± 11.5
19	4	50	50	0.080	10.1	1.221E+05	1.526E+06	22.6 ± 11.9
20	63	457	90	0.138	51.4	1.069E+06	7.751E+06	38.9 ± 6.2
21	3	43	35	0.070	12.4	1.308E+05	1.875E+06	19.7 ± 11.9
22	7	45	50	0.156	9.1	2.137E+05	1.374E+06	43.9 ± 18.2
23	25	368	90	0.068	41.4	4.240E+05	6.242E+06	19.2 ± 4.3
24	2	41	50	0.049	8.3	6.106E+04	1.252E+06	13.8 ± 10.0
25	5	136	64	0.037	21.5	1.193E+05	3.244E+06	10.4 ± 4.8
26	6	50	80	0.120	6.3	1.145E+05	9.541E+05	33.9 ± 14.9
27	21	228	100	0.092	23.1	3.206E+05	3.480E+06	26.0 ± 6.3
28	7	109	25	0.064	44.1	4.274E+05	6.655E+06	18.1 ± 7.2
29	11	175	80	0.063	22.2	2.099E+05	3.339E+06	17.8 ± 5.7
30	13	101	70	0.129	14.6	2.835E+05	2.202E+06	36.3 ± 11.1
31	13	155	70	0.084	22.4	2.835E+05	3.380E+06	23.7 ± 7.1
	315	3388			18.6	2.610E+05	2.808E+06	

Area of basic unit = 6.551E-07 cm-2
CHI SQUARED = 20.6935 WITH 30 DEGREES OF FREEDOM
P(chi squared) = 3.1 %
CORRELATION COEFFICIENT = 0.934
VARIANCE OF SQR(Ns) = 2.456724
VARIANCE OF SQR(Ni) = 23.64121
Ns/Ni = 0.093 ± 0.005
MEAN RATIO = 0.111 ± 0.016

Pooled Age AGE = 26.2 ± 2.7 Ma
Mean Age = 31.3 ± 5.2 Ma
Central Age = 25.6 ± 2.0Ma
% Variation = 20.47%
Ages calculated using a zeta of 12250 ± 1000 for SRM963a glass
RHO D = 4.619E+04cm-2; ND = 1907

93BA11 Apatite E. Simpson #2 Core 4 (6705-6713')

IRRADIATION WY-91/92-93 COUNTED BY: JMM

No.	Ns	Ni	Na	RATIO	U(ppm)	RHOs	RHOi	F.T.AGE(Ma)
1	23	25	24	0.920	10.5	1.463E+06	1.590E+06	255.2 ± 76.8
2	4	43	18	0.093	24.2	3.392E+05	3.647E+06	26.3 ± 13.9
3	4	23	40	0.174	5.8	1.526E+05	8.777E+05	49.0 ± 26.9
4	5	45	32	0.111	14.2	2.385E+05	2.147E+06	31.4 ± 15.0
5	11	22	30	0.500	7.4	5.597E+05	1.119E+06	139.9 ± 53.0
6	20	103	28	0.194	37.2	1.090E+06	5.615E+06	54.7 ± 14.1
7	51	211	30	0.242	71.2	2.595E+06	1.074E+07	68.0 ± 12.1
8	8	42	32	0.190	13.3	3.816E+05	2.004E+06	53.7 ± 21.2
9	8	53	36	0.151	14.9	3.392E+05	2.247E+06	42.6 ± 16.5
10	3	9	21	0.333	4.3	2.181E+05	6.542E+05	93.6 ± 62.9
11	3	19	28	0.158	6.9	1.636E+05	1.036E+06	44.5 ± 27.9
12	18	62	32	0.290	19.6	8.586E+05	2.958E+06	81.6 ± 22.9
13	8	61	50	0.131	12.4	2.442E+05	1.862E+06	37.0 ± 14.3
14	12	133	40	0.090	33.7	4.579E+05	5.076E+06	25.5 ± 8.0
15	15	21	25	0.714	8.5	9.159E+05	1.282E+06	199.0 ± 69.4
16	4	6	20	0.667	3.0	3.053E+05	4.579E+05	185.9 ±121.0
17	12	30	30	0.400	10.1	6.106E+05	1.526E+06	112.2 ± 39.5
18	6	25	32	0.240	7.9	2.862E+05	1.193E+06	67.5 ± 31.2
19	4	9	24	0.444	3.8	2.544E+05	5.724E+05	124.5 ± 75.6
20	12	37	40	0.324	9.4	4.579E+05	1.412E+06	91.1 ± 31.2
21	5	15	28	0.333	5.4	2.726E+05	8.178E+05	93.6 ± 49.0
22	6	26	24	0.231	11.0	3.816E+05	1.654E+06	65.0 ± 29.9
23	12	31	25	0.387	12.6	7.327E+05	1.893E+06	108.6 ± 38.1
24	2	33	30	0.061	11.1	1.018E+05	1.679E+06	17.1 ± 12.6
25	12	88	64	0.136	13.9	2.862E+05	2.099E+06	38.5 ± 12.3
26	3	21	24	0.143	8.9	1.908E+05	1.336E+06	40.3 ± 25.1
27	6	20	32	0.300	6.3	2.862E+05	9.541E+05	84.3 ± 39.9
28	3	83	32	0.036	26.3	1.431E+05	3.959E+06	10.2 ± 6.1
29	1	26	25	0.038	10.5	6.106E+04	1.588E+06	10.9 ± 11.1
30	6	35	40	0.171	8.9	2.290E+05	1.336E+06	48.3 ± 21.7
31	14	30	15	0.467	20.3	1.425E+06	3.053E+06	130.7 ± 43.7
	301	1387			14.8	4.831E+05	2.226E+06	

Area of basic unit = 6.551E-07 cm-2

CHI SQUARED = 55.30558 WITH 30 DEGREES OF FREEDOM
P(chi squared) = 0.0 %
CORRELATION COEFFICIENT = 0.738
VARIANCE OF SQR(Ns) = 1.515821
VARIANCE OF SQR(Ni) = 6.727523
Ns/Ni = 0.217 ± 0.014
MEAN RATIO = 0.280 ± 0.037

Pooled Age = 61.1 ± 6.5 Ma
Mean Age = 78.7 ± 12.4 Ma
Central Age = 67.5 ± 8.6Ma
% Variation = 57.59%
Ages calculated using a zeta of 12250 ± 1000 for SRM963a glass
RHO D = 4.619E+04cm-2; ND = 1907

93BA13 Apatite Fish Creek #1 Core 64/65 (6005-6011')

IRRADIATION WY-94/95-93 COUNTED BY: JMM

No.	Ns	Ni	Na	RATIO	U(ppm)	RHOs	RHOi	F.T.AGE(Ma)
1	29	208	49	0.139	43.0	9.034E+05	6.480E+06	39.3 ± 8.5
2	5	37	18	0.135	20.8	4.240E+05	3.138E+06	38.1 ± 18.4
3	6	44	14	0.136	31.8	6.542E+05	4.798E+06	38.5 ± 17.1
4	5	21	60	0.238	3.5	1.272E+05	5.343E+05	67.0 ± 33.8
5	28	102	50	0.274	20.7	8.548E+05	3.114E+06	77.2 ± 17.7
6	9	45	16	0.200	28.5	8.586E+05	4.293E+06	56.3 ± 21.1
7	1	12	16	0.083	7.6	9.541E+04	1.145E+06	23.5 ± 24.6
8	1	13	35	0.077	3.8	4.361E+04	5.670E+05	21.7 ± 22.6
9	4	34	49	0.118	7.0	1.246E+05	1.059E+06	33.2 ± 17.8
10	15	127	60	0.118	21.4	3.816E+05	3.231E+06	33.3 ± 9.5
11	7	20	18	0.350	11.2	5.936E+05	1.696E+06	98.3 ± 44.0
12	2	18	64	0.111	2.8	4.770E+04	4.293E+05	31.4 ± 23.5
13	3	10	40	0.300	2.5	1.145E+05	3.816E+05	84.3 ± 56.0
	115	691			14.3	3.590E+05	2.157E+06	

Area of basic unit = 6.551E-07 cm-2
CHI SQUARED = 7.394046 WITH 12 DEGREES OF FREEDOM
P(chi squared) = 11.3 %
CORRELATION COEFFICIENT = 0.901
VARIANCE OF SQR(Ns) = 2.057863
VARIANCE OF SQR(Ni) = 11.73058
Ns/Ni = 0.166 ± 0.017
MEAN RATIO = 0.175 ± 0.025

Pooled Age = 46.9 ± 6.2 Ma
Mean Age = 49.4 ± 8.1 Ma
Central Age = 47.7 ± 6.0Ma
% Variation = 19.79%

Ages calculated using a zeta of 12250 ± 1000 for SRM963a glass
RHO D = 4.619E+04cm-2; ND = 1907