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cc: A. J. Dahl - 353
E. W. Harrh - Nil400
L. J. Papa - 269
Pral File
I.C.

810-578

AR226-1611

January 18, 1982

TO: DR. Y. L. POWER - PPD, Parkersburg

FROM: S. S. STAFFORD S.S. Stafford

ANALYSIS OF BLOOD SAMPLES FOR PERFLUOROOCTANOATE
(Job No. 810-578; PRAL Nos. 81-6006-6034,81-6148-6162,
Notebook Nos. E27433,E26238,E27432)

As requested in your letters of 12/15 and 12/29/81 to L. J. Papa, the 44 blood samples submitted then have been analyzed for perfluorooctanoate (C_8) by the usual gas chromatographic method ES-567. Results and sample identification are given in the attached table.

Attachment
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Key Words:
Perfluorooctanoate
GC
Blood Analysis

TABLE I

CONCENTRATION OF PERFLUOROOCTANOATE IN BLOOD (a)

Sample				GC Analysis	(b)
PRAL No.	Date Sampled	P.R.No.	Name	Date Analyzed	$[C_8]$, μg F/g blood
81-6006	12/1/81	W.S.	[redacted]	12/21/81	0.16
81-6007	12/1/81	W.S.		12/21/81 & 1/5/82	0.50
81-6008	12/1/81	W.S.		12/21/81	0.34
81-6009	12/1/81	656		12/21/81	0.096
81-6010	12/2/81	4755		12/21/81	0.011
81-6011	12/2/81	3869		12/22/81	2.8
81-6012	12/2/81	3737		12/22/81	0.36
81-6013	12/3/81	W.S.		12/21/81	0.15
81-6014	12/3/81	3892		12/22/81	1.2
81-6015	12/3/81	760		12/22/81	0.18
81-6016	12/4/81	4756		1/5/82	0.021
81-6017	12/4/81	4049		1/5/82	0.82
81-6018	12/7/81	3448		1/5/82	0.64
81-6019	12/7/81	4312		1/5/82 & 1/8/82	0.36
81-6020	12/7/81	W.S.		1/5/82	0.066
81-6021	12/7/81	W.S.		1/5/82	0.12
81-6022	12/7/81	W.S.		1/5/82	0.13
81-6023	12/8/81	W.S.		1/5/82	0.039
81-6024	12/8/81	3022		1/5/82	0.21
81-6025	12/8/81	W.S.		1/5/82	0.36
81-6026	12/9/81	3495		1/6/82	0.080
81-6027	12/9/81	4706		1/6/82	0.64
81-6028	12/9/81	4015		1/6/82 & 1/8/82	1.4
81-6029	12/9/81	3621		1/6/82 & 1/8/82	1.1
81-6030	12/10/81	4528		1/6/82 & 1/8/82	1.7
81-6031	12/11/81	1816		1/6/82	0.21
81-6032	12/11/81	927		1/6/82	0.59
81-6033	12/14/81	3964		1/6/82	0.05
81-6034	12/14/81	3354		1/6/82	0.14

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TABLE I

CONCENTRATION OF PERFLUOROOCTANOATE IN BLOOD (a)

Sample PRAL No.	Date Sampled	P.R.No.	Name	GC Analysis Date Analyzed	(b) [C_8], µg F/g blood
81-6148	12/15/81	1850	[redacted]	1/6/82	0.22
81-6149	12/16/81	4106		1/7/82	1.8
81-6150	12/17/81	4493		1/7/82	0.54
81-6151	12/17/81	W.S.		1/8/82	0.91
81-6152	12/17/81	W.S.		1/7/82	0.034
81-6153	12/17/81	3744		1/7/82	0.88
81-6154	12/18/81	1698		1/7/82	0.63
81-6155	12/18/81	4720		1/7/82	0.099
81-6156	12/18/81	W.S.		1/7/82	0.14
81-6157	12/18/81	3383		1/7/82	0.23
81-6158	12/18/81	3611		1/7/82	0.17
81-6159	12/21/81	W.S.		1/7/82 & 1/8/82	0.092
81-6160	12/21/81	W.S.		1/7/82	0.027
81-6161	12/21/81	W.S.		1/8/82	1.0
81-6162	12/23/81	1959		1/8/82	0.34
81-4872	10/7/81	4720		1/8/82	0.035 (c)

(a) Analysis as described in Lab Method ES-567 ("Determination of Perfluorooctanoic Acid in Blood, Gas Chromatographic Method", S. Stafford, 4/3/81), using the packed column GC analysis with perfluoro-n-octanoic acid as calibration standard.

(b) Although the analysis is specifically for perfluorooctanoate (acid or salts), concentrations are given in ppm fluorine for comparison with the results of total organic fluorine analyses. (ppm F = 0.688 x ppm perfluorooctanoic acid) Estimated uncertainty is ± 10% relative standard deviation. The lower limit for quantitation is 0.007 µgF/g. The detection limit is ~ 0.004 µgF/g, but concentrations in that range cannot be well quantitated and are reported as < 0.007. None detected (n.d.) is reported for samples with [C_8] $\lesssim$ 0.004 ppm., which cannot be distinguished from reagent background.

(c) Previously analyzed sample, reanalyzed for comparison with repeat sample 81-6155; result of the original analysis (10/26/81) was 0.039.