



表 2 前処理方法

Oasis WAX	コンディショニング	
	0.1%NH <sub>3</sub> 含有メタノール	4 mL
	メタノール	4 mL
	精製水	4 mL
通水	内部標準添加試料	500 mL
	5 mL/min	
乾燥	窒素ガス通気	
溶出	0.1%NH <sub>3</sub> 含有メタノール	5 mL
	バックフラッシュ法	
濃縮	窒素ガス吹き付け	
試験溶液	定容 (1000倍濃縮)	0.5 mL

表 3 分析条件<sup>6)</sup>

カラム: InertSustain™ C18 5 μm	
2.1mmI.D. x 150mm	
移動相A液: 10 mM酢酸アンモニウム水溶液	
移動相B液: アセトニトリル	
グラジエント条件: B液.25%(1 min)	
+3%pt/min(25 min)	
B液.100%(4 min)	
-150%pt/min(0.5 min)	
B液.25%(9.5 min)	
流速: 0.2 mL/min	
カラム温度: 40°C	
注入量: 5 μL	
イオン化法: ESI(-)	
DL温度: 200°C	
ヒートブロック温度: 300°C	
インターフェース温度: 300°C	
ネブライザーガス流量: 3 L/min	
ドライイングガス流量: 5 L/min	
ヒーティングガス流量: 15 L/min	
m/z	
PFBS: 299>80, 299>99	PFHpA: 363>319, 363>119
PFHxS: 399>80, 399>99	PFOA: 413>369, 413>169
PFHpS: 449>80, 449>99	PFNA: 463>419, 463>219
PFOS: 499>80, 499>99	PFDA: 513>469, 513>219
PFDS: 599>80, 599>99	PFUdA: 563>519, 563>219
PFOS <sup>13</sup> C <sub>8</sub> : 507>80, 507>99	PFDoA: 613>569, 613>269
PFBA: 213>169, 213>69	PFTTrDA: 663>619, 663>169
PFPeA: 263>219, 263>69	PFTeDA: 713>669, 713>169
PFHxA: 313>269, 313>119	PFOA <sup>13</sup> C <sub>8</sub> : 421>376, 421>172

## 結果と考察

全調査結果を表4-1～表4-4に示した。

調査対象物質のうち、定量下限値を超えて検出されたのはPFBA、PFPeA、PFHxA、PFHpA、PFOA、PFNA、PFTTrDA、PFTeDA、PFOSの9物質、その内PFTTrDA、PFTeDAはそれぞれ0.5、0.6 ng/Lと定量下限値をわずかに超えたものが一度ずつである。

PFOS類縁物質はPFOS以外検出されなかった。

PFOA類縁物質では検出頻度、最高濃度のいずれの観点から見ても、短鎖の物質が中心であった。

過去の県内の調査結果<sup>2-3)</sup>でも同様の傾向が認められた。過去<sup>2)</sup>にも指摘されているとおり、より毒性が低いといわれる短鎖PFASの利用が進んでいることによると考えられる。

目標値が50 ng/L以下と定められているPFOS、PFOAの合計濃度は河川水で最大1.2 ng/L、湧水で最大5.4 ng/L。最大でも目標値のおよそ1/10と、その濃度は低かった。

令和2年度に全国の公共用水域で行われた環境省の調査<sup>5)</sup>では、PFOS、PFOAの合計濃度は中央値(平均値)が河川水78地点で7.55 ng/L (24 ng/L)、地下水及び湧水58地点で15 ng/L (205 ng/L)であった。この結果と比較しても今回調査地点の濃度が低いことが確認できた。

PFOS及びPFOA以外について、日本では目標値等が定められていないが、欧州連合では本調査対象物質に5物質を加え、PFTeDAを除いた20物質の合計濃度について、飲料水指令により100 ng/Lを基準として設定している<sup>7)</sup>。本調査で検出されたPFAS濃度の合計値の最大値は15.1 ng/Lであり健康に影響を及ぼす濃度ではないと考えられた。

これらのことからPFASは全ての調査地点で低濃度であり、良質な水資源であり、安心して利活用できることが明らかとなった。

①白州/尾白川では令和2年度、3年度のいずれにおいても3月期のみPFASの検出が認められた。目視比較によると調査地点は3月期に流量が少なくなっていたものの、PFBAに注目すると3月期には4.7～6.7 ng/L、その他の時期には0.5 ng/L未満であり10倍以上の濃度差がある。

河川水量の低下により希釈効果が失われた影響のみでこの濃度の差を説明するのは困難であり、3月期にのみ存在する流入源が存在すると考えられる。

この季節性の変動は④金峰山・瑞牆山源流2、⑤御岳昇仙峡1、⑥御岳昇仙峡2、⑦西沢溪谷でも認められた。また、検出濃度が低く判断できない⑦を除き、希釈効果のみでは濃度変動が説明しにくいことも①と同様である。

これらの地域はいずれも人為的汚染の影響が少ないと考えられる地点であるが、そのような地点でも大気中に存在する揮発性の高いフルオロテロマーアルコール (FTOH) 等の前駆物質が環境や生体中で分解されて生じたPFASが検出された事例<sup>8)</sup>が過去にも知られており、本調

査においてもそのような由来を持つPFASが検出されたと考えられた。

今回の調査した河川水の中で、③金峰山・瑞牆山源流1のみ、令和3年度6月期にPFASが検出されている。また、これ以外の時期、地点では比較的短鎖のPFASが中心に検出されているが、令和3年度6月期の③においては短鎖PFASが検出されずに中長鎖のPFASが検出されているという特徴があり、一過性の他とは異なる性質の流入源が存在したことを示唆している。

②八ヶ岳南麓湧水群では、令和3年12月にPFTeDAが検出限界をわずかに超えて検出されたのみで、その他全て不検出であった。同様に⑩忍野八海2でも令和2年6月にPFPeAが検出されたのみ、⑩忍野八海1ではすべての物質、調査時期で不検出であった。

⑧十日市場・夏狩湧水群1、⑨十日市場・夏狩湧水群2ではPFOSが恒常的に検出されており、PFOAも⑧では4回、⑨では毎回検出されている。炭素数9以下のPFOA類縁物質も⑨では高頻度に検出されており、⑧でもPFBAのみ2回検出されている。

⑧で検出されている物質の濃度を同時期の⑨での濃度と比較すると、1.8～3.7倍の範囲で常に⑨の濃度が高かった。また、⑨で検出されたが同時期の⑧で検出されていない物質に着目すると、令和2年6月及び9月のPFBAを除き、全ての時期、物質で下限値に満たないもののピークが認められた。

⑧、⑨は互いの直線距離が820 m程度と近傍であり、検出される物質や時期が類似していることから負荷源が共通であることが推測された。しかし検出濃度に差異が認められることから、十日市場・夏狩湧水群はPFASの濃度が異なる複数の地下水流が混合して湧出したもので、湧出地点によりその混合比が異なると考えられた。

⑧、⑨は、富士山体溶岩に浸透した降水が、溶岩と基盤岩との境界を流動し溶岩末端から湧出したもの<sup>9)</sup>であり、その流路は長大で、また流路となる溶岩の上は、人口密集地となっている部分も多い。

さらに、PFASは他の物質（COD、溶存有機炭素、多環芳香族炭化水素類、女性ホルモン様活性物質）と比べて、土壌による物理的吸着や微生物分解に伴う除去が生じにくく、地下水に移行しやすいとの指摘もあり<sup>10)</sup>、⑧、⑨は地表からの人為的影響を受けていることも考えられた。

## まとめ

県内で利活用されており未調査の水域におけるPFAS濃度状況を把握するために、11調査地点について令和2年6月から令和4年3月にかけて8回採水し分析を実施した。その結果、いくつかの調査地点からPFAS9物質が検出された。しかし、PFOS、PFOAの合計濃度は最大でも目標値の1/10程度の濃度であり、それ以外の物質を含めたものも、

欧州連合の飲用水の基準と比較して最大15.1%と低濃度であった。

また、令和2年度の環境省の調査結果と本調査結果を比較しても、PFOS、PFOAの合計濃度が低いことが確認できた。よって今回の調査地点におけるPFAS濃度は健康への影響がないと考えられるものであり、良質な水資源として安心して利活用できるものと考えられた。

河川水では、季節性の濃度変動が認められものの、単に河川の水量によると考えにくい事例が認められた。

湧水では⑧、⑨において、いずれも十分に低濃度であるものの調査地点が近傍にもかかわらずその濃度に1.8～3.7倍もの隔たりが認められた。当該地域にはほかに多数の湧水が存在するため、各湧水の濃度の調査を今後行うことも検討したい。

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表4-1 調査結果(ng/L) 定量下限値：0.5 ng/L 水質管理目標：PFOA、PFOS合算50 ng/L

①白州/尾白川	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	6.7	n.d.	n.d.	n.d.	4.7
PFPeA	n.d.	n.d.	n.d.	2.5	n.d.	n.d.	n.d.	2.0
PFHxA	n.d.	n.d.	n.d.	1.6	n.d.	n.d.	n.d.	1.1
PFHpA	n.d.	n.d.	n.d.	3.2	n.d.	n.d.	n.d.	2.3
PFOA	n.d.	n.d.	n.d.	1.1	n.d.	n.d.	n.d.	1.0
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.8
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
②八ヶ岳南麓高原湧水群	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFPeA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.6	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
③金峰山・瑞牆山源流1	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.7
PFPeA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOA	n.d.	n.d.	n.d.	n.d.	0.6	n.d.	n.d.	n.d.
PFNA	n.d.	n.d.	n.d.	n.d.	1.5	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTTrDA	n.d.	n.d.	n.d.	n.d.	0.5	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

表4-2 調査結果(ng/L) 定量下限値：0.5 ng/L 水質管理目標：PFOA、PFOS合算50 ng/L

<b>④金峰山・瑞牆山源流2</b>	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	2.0
PFPeA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.9
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.5
PFHpA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.9
PFOA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
<b>⑤御岳昇仙峡1</b>	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	6.7	n.d.	n.d.	n.d.	1.4
PFPeA	n.d.	n.d.	n.d.	2.8	n.d.	n.d.	n.d.	0.5
PFHxA	n.d.	n.d.	n.d.	1.7	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	2.7	n.d.	n.d.	n.d.	0.8
PFOA	n.d.	n.d.	n.d.	1.2	n.d.	n.d.	n.d.	0.7
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.7
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
<b>⑥御岳昇仙峡2</b>	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	1.6	n.d.	n.d.	n.d.	1.5
PFPeA	n.d.	n.d.	n.d.	0.6	n.d.	n.d.	n.d.	0.6
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	0.9	n.d.	n.d.	n.d.	0.9
PFOA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	0.5
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

表4-3 調査結果(ng/L) 定量下限値：0.5 ng/L 水質管理目標：PFOA、PFOS合算50 ng/L

⑦西沢溪谷	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	0.6	n.d.	n.d.	n.d.	n.d.
PFPeA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	0.6	n.d.	n.d.	n.d.	n.d.
PFOA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
⑧十日市場・夏狩湧水群1	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	n.d.	0.5	n.d.	n.d.	0.5
PFPeA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOA	n.d.	n.d.	n.d.	0.7	0.8	0.7	n.d.	0.7
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	1.0	1.1	1.0	1.5	0.6	0.7	0.6	0.7
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
⑨十日市場・夏狩湧水群2	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	0.6	0.7	n.d.	n.d.	0.9	1.1	0.9	0.9
PFPeA	0.6	0.5	n.d.	0.5	0.7	0.8	n.d.	0.7
PFHxA	0.7	0.7	n.d.	0.6	0.8	1.0	n.d.	0.7
PFHpA	0.8	0.8	n.d.	0.8	0.8	1.1	n.d.	0.8
PFOA	1.7	1.8	1.2	1.8	1.7	2.1	1.2	1.7
PFNA	n.d.	n.d.	n.d.	n.d.	0.5	0.6	n.d.	0.7
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	3.7	3.5	3.2	3.1	1.8	2.3	1.8	1.9
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

表4-4 調査結果(ng/L) 定量下限値：0.5 ng/L 水質管理目標：PFOA、PFOS合算50 ng/L

⑩忍野八海 1	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFPeA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
⑪忍野八海 2	R2.6	R2.9	R2.12	R3.3	R3.6	R3.9	R3.12	R4.3
PFBA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFPeA	0.8	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFNA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFUdA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDoA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTTrDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFTeDA	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFBS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHxS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFHpS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFOS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
PFDS	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.