

## Attachment 2 to Supporting Document 2

Occurrence of perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS) in foods and water sampled from contaminated sites

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## Summary

On 8 August 2016, FSANZ undertook a data call seeking any data on the occurrence of PFOS, PFOA and PFHxS in food and water in Australia and New Zealand. FSANZ received 10 data sets in response with most data being environmental samples from contaminated sites. The majority of samples were seafood. All data received were included in a combined data set and, following data cleaning and transformation, were used to create a final analytical data set representing foods from contaminated areas for use in dietary exposure calculations. Data from a contaminated area (RAAF Base Williamstown) were used to create an analytical data set for drinking water.

There were a number of limitations in the occurrence data; most data were based on environmental samples not foods and some animal based food data were estimated from serum measurements. There were major gaps in the data including for poultry meat, cereal grains and oils. Some data had poor metadata and were subject to little auditing or validation prior to submission. A large number of data were non detects, with different limits of detection (LOD) and/or limits of quantification (LOQ) and/or limits of reporting (LOR) used to analyse samples.

Foods in the final analytical data set were assigned a food category and food classification. For each chemical, lower, middle and upper bound values were assigned to each individual analytical record, based on that record's reported LOR (assigning zero,  $\frac{1}{2}$  LOR, LOR respectively), prior to calculating lower, middle and upper bound mean and median concentrations for each food classification.

Mean upper bound analytical results for PFOS were highest for rabbit meat, finfish liver, cattle meat and mammalian offal. Similarly, upper bound median concentrations were highest for rabbit meat, mammalian offal, cattle meat and finfish liver.

PFOA was reported at concentrations below reporting limits for most samples. Mean upper bound analytical results for foods with detections were highest for molluscs and freshwater fish.

PFHxS analyses were less frequently reported than the other two chemicals. There were no detections for diadromous and marine fish, honey and offal and most fruit and vegetables. Mean upper bound concentrations were highest for cattle meat, rabbit meat and eggs.

Due to the limited number of PFHxS analyses, the total number of analyses for the sum of PFOS and PFHxS (PFOS + PFHxS combined) was reduced. Reduced numbers of analyses resulted in changed distributions of concentrations. Mean and median concentrations of PFOS + PFHxS combined in crustaceans and freshwater fish were markedly higher than those reported for PFOS alone. Mean and median PFOS + PFHxS combined results were slightly higher or lower for marine fish and molluscs, compared to PFOS results only.

## 1 Background

On the 8 August 2016, FSANZ undertook a data call seeking any data on the occurrence of PFOS, PFOA and PFHxS in food and water in Australia and New Zealand (Appendix 1 Call for Data).

In addition to existing data, FSANZ also called for any other relevant information on the occurrence of PFOS, PFOA and PFHxS in food and water in different locations, including reports and other publications. FSANZ also expressed interest in any current, ongoing or planned surveys that may produce data that could help inform the risk assessment.

In particular, FSANZ was seeking published and unpublished data on occurrence in all (fresh and packaged) foods and beverages, including drinking water. We were interested in data from geographical areas that may have been contaminated with PFOS, PFOA and PFHxS as well as data from the general food supply in Australia and New Zealand. In other countries, PFOS, PFOA and PFHxS had been reported as occurring most frequently in fish and other seafood and in meat and meat products (liver in particular), refer to Attachment 1.

### 1.1 Response to data call

FSANZ received 10 data sets in response to the data call (Table 1). The majority of data received were in formats that had to be manipulated before inclusion in an analytical data set. Data included results from environmental samples from contaminated sites, 'control' sites, non-contaminated sites and the general food supply. The majority of samples were seafood, such as finfish, crustaceans and shellfish.

## 2 Data cleaning and transformation

FSANZ data governance processes were followed in reformatting, cleaning and aggregating data.

All data received were included in a combined data set and evaluated for suitability for use in a final 'analytical data set' for use in dietary exposure calculations.

Some food or water sample data sets or individual records (individual analytical result for PFOS, PFOA or PFHxS for each food or water sample analysed) in the combined data set were excluded from the occurrence data set for contaminated sites for the following reasons:

1. the record did not have analytical results for one or any of the three chemicals of interest
2. the record was based on a laboratory or inter-laboratory validation sample
3. the sample was identified as seafood hepato, stomach or frame, as these items are not commonly consumed. Fish liver samples were included in the data set as, although not commonly consumed by the general population, they may be consumed by some sub-populations.
4. where duplicate or triplicate samples could be identified, the average of the primary and duplicate or triplicate analytical results for the three chemicals were calculated and included in the analytical data set and the original duplicate/triplicate samples excluded
5. the sample was identified as a net drag fish/seafood sample, excluded as these are not consumed
6. the nature of the sample could not be determined (i.e. not identified as fish, crustacean or mollusc)
7. the sample was identified as coming from the general food supply, 'control' site or non-contaminated site
8. the sample was of unknown origin (could not be identified as coming from a contaminated or non contaminated site).

Non-food samples that were provided as part of the data call were not included in the analytical data set as these are not relevant for human dietary exposure estimates.

All records in the final analytical data set were then converted to micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ). Where necessary, milk samples were converted to a weight basis using an appropriate specific gravity.

Sheep and cow serum concentrations were divided by a factor of 12 to convert them into concentrations that may occur in muscle tissue<sup>1</sup>. The use of this factor is supported by limited occurrence data in serum and muscle tissue from the same animals (lamb and cow), provided to FSANZ in response to the data call, which also indicated an approximate 12-fold factor of difference between serum and muscle PFOS, PFOA and PFHxS values.

## 2.1 Treatment of analytical results reported as <LOD, <LOQ or <LOR

A large proportion of the data received reported analytical concentrations less than the limit of detection (LOD), quantification (LOQ) or reporting (LOR). For some of these data, it was not clear if the reported value (e.g. <0.001 mg/kg) was for a limit of reporting, detection or quantification. Therefore, all analytical results reported as "<" were assumed to be <LOR.

Where results were reported as <LOR, a numerical value was assigned to allow derivation of a representative summary (median) analytical result for each food class for use in the dietary exposure calculations.

For contaminants that could potentially be widely distributed in the environment, it may not be reasonable to assume that where a food analytical result is reported as <LOR, the chemical is not present in the food. To account for this uncertainty, a number of values can be assigned to <LOR results. For the purpose of this assessment, the following values were assigned:

- Lower bound – analytical results <LOR equal zero
- Middle bound – analytical results <LOR equal ½ LOR value
- Upper bound – analytical results <LOR equal LOR value

As the analytical data received in response to the data call came from a number of different sources, laboratories, analytical methods and were for a range of matrices, there was a range of LOR values. Lower, middle and upper bound values were assigned to each individual analytical record, based on that record's reported LOR, prior to calculating lower, middle and upper bound median concentrations for each food classification.

Where duplicate/triplicate samples were reported as <LOR, lower, middle and upper bound values were calculated for each individual record prior to calculating lower, middle and upper bound mean values for that duplicate/triplicate record.

## 2.2 Composite samples and 'average concentrations'

Information provided on compositing of analytical samples was variable, both within and between data sets received. For the majority of food classifications (fruits, vegetables, sheep and cow serum, milks, eggs, water etc.), analytical results were derived from individual samples. For fish, mollusc and crustacean food classifications, analytical samples were derived from composite samples where the number of samples that made up the composite analytical sample may or may not have been identified, single samples or the nature of the analytical sample was not identified at all. No additional transformation of the data to take into account composite analytical samples was undertaken due to this lack of consistent identification of the nature of the sample.

For the milk and meat mammalian classifications, one data set was provided with only summary (average) PFOS, PFOA and PFHxS concentration data, based on a number of individual food sample analyses. In order to weight these data appropriately prior to deriving median concentration values from all results for each food classification, replicate records representing the number of samples used in each average result were created and assigned the average concentration.

## 2.3 Calculation of PFOS + PFHxS values

For the sub-set of foods with analytical results for PFOS and PFHxS, the sum of PFOS and PFHxS values for each individual food analytical sample were calculated by first assigning lower, middle and upper bound values for all PFOS and PFHxS results reported as <LOR. Lower, middle and upper bound PFOS + PFHxS combined values were then calculated by summing PFOS and PFHxS values. Lower, middle and upper bound median PFOS + PFHxS combined values were then calculated for each food classification.

<sup>1</sup> Personal communication: Jochen F Mueller, Entox, University of Queensland

For a large proportion of fish, crustaceans and molluscs samples only PFOS and PFOA were analysed and not PFHxS. For these food classifications, PFOS + PFHxS combined records were only included where both PFOS and PFHxS were analysed in the same sample. Exclusion of approximately three quarters of the PFOS results had the effect of changing the distribution of analytical results, which affected the value at which the median concentration fell.

PFOS + PFHxS combined was assigned 'not detected' where analytical results were <LOR for both PFOS and PFHxS. PFOS + PFHxS combined was 'quantified' where analytical results were >LOR for either PFOS and PFHxS, or both.

### 3 Limitations

There are a number of limitations in the occurrence data that can be described:

- There were a high number of samples for which PFHxS was not analysed, in particular for fish, crustaceans and molluscs.
- Most data were based on environmental sampling and do not necessarily reflect food as sold to the public or consumed (e.g. raw milk, raw fish etc.). However, as PFOS, PFOA and PFHxS are highly stable chemicals it is likely that food processing, preparation or cooking would not greatly affect their concentration in the final food 'as consumed'.
- Sampling was selective rather than randomised and is not representative of the total food supply available to the populations of interest. Therefore, a dietary exposure assessment for the whole Australian population or sub-populations living in proximity to contaminated sites has not been conducted.
- There were limited data on PFOS, PFOA and PFHxS concentrations in animal meat. Most data that were used to estimate occurrence in meat were estimated from serum measurements using a conversion factor of 1/12.
- There are major gaps in the data including offal, poultry meat, cereal grains, oils and fats.
- Some of data included in the analytical data set had poor metadata and were subject to little auditing or validation prior to submission.
- There was a wide range of limits of reporting between data sets and food matrices. This has a major impact on estimated lower, middle and upper bound medians.

### 4 Analytical data set

The combined data set comprised 9 published or unpublished data sets (Table 1) and one data set provided to FSANZ on a confidential basis. The complete data set contained a total 1314 individual food and 545 water samples. Of food samples, PFHxS was not analysed for 665 samples, PFOS for 17 samples and PFOA for 7 samples. For water samples, PFHxS was not analysed for 454 samples and PFOS and PFOA for one sample.

Following data clean up and transformation, the final analytical data set consisted of a total of 816 individual food samples, with 453 analytical results for PFHxS, 816 results for PFOS and 800 for PFOA. Overall, PFOA had the highest number of results reported as <LOR (91%) followed by PFHxS (57%) and PFOS (19%). Analysed foods were allocated to 21 food classifications. For PFOS and PFOA, the majority of analyses were undertaken on marine fish, crustaceans and molluscs, followed by freshwater fish and mammalian meat. For PFHxS, more analytical results were provided for mammalian meat, followed by molluscs, marine fish and freshwater fish.

Data from a contaminated area (RAAF Base Williamstown) was used to create an input data set for drinking water in a contaminated area. Data were extracted from the analytical results listed in the Off-Site Human Health Risk Assessment report (Refer to Tables 6 and 7 of the report) which reported 393 water 'contaminated site' samples that were analysed for PFOS and PFOA. Twenty-five of these samples were analysed for PFHxS. For the majority of samples PFOS and PFOA were reported as <LOR (92% and 97%, respectively). PFHxS was measured at levels greater than the LOR in one of the 25 samples.

#### 4.1 Food Categories and classifications

The analysed foods from contaminated areas that were available for creating the analytical data set were assigned a food category and food classification (Table 2) based on the description of the food provided. Classifications were assigned at two levels to allow additional analysis of the data where appropriate. For example, the food *Oysters* was assigned to the level 1 class *Molluscs* and level 2 class *Oysters*, and the food *sheep meat* to the level 1 class *Meat mammalian* and the level 2 class *sheep meat*. Lower, middle and upper bound median PFOS, PFOA and PFHxS values were calculated from the analysed foods assigned to for each food classification.

Crustaceans, finfish, fish liver and molluscs represented the level 1 class *Fish and seafood*. Finfish were further broken down into three classes: diadromous, freshwater and marine fish.

Mammalian meat, milk, honey, mammalian offal and eggs represented animal products. Mammalian meat was further broken down into cattle, rabbit and sheep meat. It should be noted that concentrations of PFOS, PFOA and/or PFHxS in mammalian meat were both measured directly and estimated from serum concentrations. Milk records were from both cows and sheep and classified separately. PFOS, PFOA and/or PFHxS concentrations in offal were not calculated separately for different organs (liver and kidney).

Few results were submitted for fruit and vegetables. A single analysed food type may therefore represent the relevant fruit and vegetable classification, with the exception of citrus fruit, where more data were available.

Water samples of bore and tank water from a contaminated area were used to derive median concentration levels for drinking water, no distinction was made between types as this was impractical because of the large number of non-detects (see Table 3). Results from ground water samples were not included assuming people living in proximity to contaminated areas did not drink it.

OCCURRENCE OF PERFLUOROOCTANE SULFONATE (PFOS), PERFLUOROOCTANOIC ACID (PFOA) AND PERFLUOROHEXANE SULFONATE (PFHxS) IN FOODS AND WATER SAMPLED FROM CONTAMINATED SITES

**Table 1. Summary of data sets received in response to the data call**

Name	Description
<b>Off-site Human Health Risk Assessment (HHRA), RAAF Williamtown (Published)</b>	Analysis of a range of fruit, vegetables, honey, eggs, bore water and tank water sourced from properties adjacent to the Williamtown RAAF. Results reported as part of the Off Site HHRA, RAAF Williamtown NSW, Stage 2B Environmental Investigation (Department of Defence, 9 August 2016, Revision 1 Final) <a href="http://www.defence.gov.au/ID/williamtown/Documents.asp">http://www.defence.gov.au/ID/williamtown/Documents.asp</a>
<b>NSW PFC survey (Unpublished)</b>	Survey of a range of crab, prawn, oyster, water and fish undertaken in late 2015-early 2016 with samples taken from creek and estuary sites surrounding the Williamtown RAAF site and other identified 'control' sites. Results used to inform the RAAF Williamtown Off-Site HHRA and provided to FSANZ by the NSW Food Authority in response to the data call.
<b>NSW Imported seafood survey (Unpublished)</b>	February 2016 survey of 52 imported fresh or frozen fish and prawn samples purchased from local Sydney retail outlets, conducted by the NSW Food Authority, with results provided to FSANZ in response to the data call.
<b>WA mussels (Unpublished)</b>	Analytical data for 2 mussel samples, provided to FSANZ by the Western Australia Department of Health in response to the FSANZ data call.
<b>Human Health Risk Assessment, Army Aviation Centre, Oakey (Published)</b>	Survey of a range of fruit, vegetable, eggs, fish, rabbit, cow and sheep milk and cow and sheep serum sourced from properties adjacent to the Army Aviation Centre, Oakey, Queensland. Results reported as part of the Stage 2C Environmental Investigation - HHRA, Army Aviation Centre Oakey (AACO), Oakey QLD (Department of Defence, September 2016, Final Report) <a href="http://www.defence.gov.au/ID/Oakey/Documents.asp">http://www.defence.gov.au/ID/Oakey/Documents.asp</a>
<b>Chemical Monitoring Initiative: Persistent Organic Pollutants (POPs) in biota and sediments from NSW (Unpublished)</b>	Survey to undertake exploratory investigations on the levels of a range of chemicals of concern in fish, bird eggs, kangaroo and sediment samples from Sydney Harbour. Fish analytical results provided to FSANZ by the Australian Department of the Environment and Energy in response to the data call.
<b>Investigation of PFOS, PFOA and PFHxS in marine fish and invertebrates (Unpublished)</b>	Survey of fish and invertebrates in Adelaide rivers and estuaries undertaken by the South Australian (SA) Environment Protection Authority (EPA) in May 2016. Analytical results provided to FSANZ by the SA EPA in response to the data call.
<b>Contaminant assessment of estuarine fish (Unpublished)</b>	Survey of fish in Adelaide rivers and estuaries undertaken by the SA EPA in May 2012. Analytical results provided to FSANZ by the SA EPA in response to the data call.
<b>PFOS, PFOA and PFHxS testing in sediment and aquatic foods from Darwin Harbour (Published)</b>	Survey of molluscs, crustaceans and sediment sourced from local creeks leading into Darwin Harbour, undertaken in mid-2016, commissioned by the Northern Territory Department of Health (NT DoH). Report provided to FSANZ by NT DoH in response to the data call <a href="https://ntepa.nt.gov.au/waste-pollution/compliance/pfas-investigation">https://ntepa.nt.gov.au/waste-pollution/compliance/pfas-investigation</a>



OCCURRENCE OF PERFLUOROOCTANE SULFONATE (PFOS), PERFLUOROOCTANOIC ACID (PFOA) AND PERFLUOROHEXANE SULFONATE (PFHxS) IN FOODS AND WATER SAMPLED FROM CONTAMINATED SITES

**Table 2. Analysed foods from contaminated areas included in food categories and classifications**

<b>Food Category</b>	<b>Food Classification</b>	<b>Analysed foods from contaminated areas included in classification</b>
<b>Fish and Seafood</b>	<i>Crustaceans of all species</i>	Prawns (unspecified prawn, king prawn, school prawn), crab (unspecified crab, blue swimmer crab, mud crab), yabbie
	<i>Finfish</i>	Diadromous, freshwater, marine fish
	Diadromous fish	Barramundi, Salmon
	Freshwater fish	Basa, silver biddy, bony bream carp, golden perch, tandanus, pangasius
	Marine fish of all species	Atlantic cod, yellowfin bream, flathead, hoki, king dory, luderick, sand whiting, sea mullet, other fish products
	<i>Fish of all species - liver</i>	Finfish liver
	<i>Molluscs</i>	Mussels, oysters, cockles, periwinkles, 'long bums', terebralia
<b>Animal products</b>	<i>Meat mammalian</i>	Cattle, rabbit, sheep meat
	Cattle meat	Cattle and calf muscle tissue, tissue levels calculated from serum
	Rabbit meat	Rabbit tissue
	Sheep meat	Sheep and lamb muscle tissue, tissue levels calculated from serum
	<i>Milk</i>	Cattle and sheep milk
	Cattle milk	Milk from cows
	Sheep milk	Milk from ewes
	<i>Honey</i>	Honey
	<i>Offal mammalian</i>	Lamb liver and kidney
	<i>Poultry eggs</i>	Chicken eggs
<b>Fruit and vegetables</b>	<i>Vegetables</i>	
	Cucurbits	Pumpkin
	Herbs	Lemon thyme
	Leafy vegetables	Silverbeet
	Other fruiting vegetables	Tomatoes
	Root and tuber vegetables	Sweet potatoes
	Spices	Ginger root
	Stalk and stem vegetables	Celery
	<i>Fruit</i>	
	Berries and other small fruits	Strawberries
	Citrus fruits	Lime, orange, mandarin, lemon
	Pome fruits	Apple
	Tropical fruit - edible peel	Olive
<b>Water</b>	<i>Drinking water</i>	Bore and tank water

**Table 3. Summary of the final contaminated site data set**

PFOS, PFOA and PFHxS	Range of reported Limits of Reporting for foods* (µg/kg or µg/L)	Analysed foods		Analysed water	
		Total number of records	Number (%) of non-detected results	Total number of records	Number (%) of non-detected results
PFOS	<0.3-5	816	157 (19%)	393	363 (92%)
PFOA	<0.04-5	800	731 (91%)	393	383 (97%)
PFHxS	<0.09-5	453	257 (57%)	25	24 (96%)
PFOS+PFHxS	NA	453	111 (25%)	24	24 (100%)

\* Reporting limit for water was <0.02 µg/L; NA not applicable as a calculated value

## 4.2 PFOS data

There were 816 food records available with PFOS concentrations, 19% (157) were non-detects (Table 3). For water, there were 393 records; in the majority (92%) of samples no PFOS was detected (Table 3). Most food samples were categorised as 'fish and seafood' and 'animal products' such as meat, milk and eggs (Table 4). There were fewer records on fruits and vegetables.

Mean and median (lower, middle and upper bound values), minimum and maximum analytical results for PFOS are given in Table 5. Mean upper bound PFOS concentrations were highest for rabbit meat (80.63 µg/kg), finfish livers (73.69 µg/kg), cattle meat (68.18 µg/kg) and mammalian offal (60.4 µg/kg). Similarly, median upper bound PFOS concentrations were highest for rabbit meat (66.5 µg/kg), mammalian offal (60.4 µg/kg), cattle meat (54.17 µg/kg) and finfish livers (39.5 µg/kg).

Generally, for all classifications with measured levels of PFOS, median values were lower than mean values, as means were influenced by one or two very high results, particularly where the total number of samples was lower. Larger differences between mean and median results occurred for freshwater fish, finfish liver, cattle meat, rabbit meat and sheep milk, all of which had high maximum levels (310, 240, 175, 120 and 113.3 µg/kg, respectively).

## 4.3 PFOA data

Similar to PFOS, PFOA was most frequently analysed in water (393 analyses) marine fish (223 analyses), crustaceans (141 analyses), sheep meat (79 analyses) and molluscs (76 analyses) (Table 6). A much higher proportion of samples were at concentrations <LOR than PFOS.

PFOA was at concentrations <LOR for all samples in all fruit and vegetables, diadromous fish, marine fish, rabbit meat, sheep meat, milks, honey, mammalian offal and eggs (Table 4). Molluscs had the highest number of measured concentrations >LOR (47% of the 76 analyses) followed by cattle meat (37% of the 19 analyses) and crustaceans (16% of the 141 analyses).

Mean and median (lower, middle and upper bound values), minimum and maximum analytical results for PFOA are given in Table 6. Mean upper bound PFOA concentrations (for food classifications with some analytical results >LOR), were highest for molluscs (2.11 µg/kg) and freshwater fish (1.12 µg/kg). Due to the high number of results <LOR, middle and upper bound mean and median values were strongly influenced by the value of the LOR. LORs ranged from 0.3 µg/kg for finfish, crustaceans and molluscs to 3 µg/kg for other classifications.

It should be noted that for some classifications there were a range of LORs, for example, all 28 poultry egg samples were reported at <LOR, but LORs were at 2, 3 and 5 µg/kg, giving an upper bound mean of 3.25 µg/kg.

#### 4.4 PFHxS data

Overall, PFHxS analyses were less frequently reported than the other two chemicals. Unlike PFOS and PFOA, there were comparatively fewer water samples that were analysed for PFHxS (25 samples) and only one detection was reported (Table 7). Similar to PFOS and PFOA, finfish (86 analyses), and mammalian meat (115 analyses) were more heavily represented than fruits and vegetables (Table 7).

There were no detections of PFHxS for diadromous and marine fish, honey and offal. Most fruit and vegetables had no detected levels of PFHxS, with the exceptions of leafy vegetables and stalk and stem vegetables. Mean upper bound PFHxS concentrations were highest for cattle meat (13.31 µg/kg), rabbit meat (4.94 µg/kg) and eggs (4.27 µg/kg). Other foods with comparatively high concentrations were crustaceans, fish liver and sheep meat. While there were some comparatively high upper bound means in some vegetables (e.g. spices, berries), this has to be viewed in the context of the low numbers of detections reported and small sample numbers.

#### 4.5 Sum of PFOS and PFHxS data

As described above, due to the limited number PFHxS analyses in finfish, molluscs and crustaceans, the total number of foods with analyses for PFOS + PFHxS combined was reduced compared to all PFOS analyses (Table 5), particularly for marine fish (224 analyses for PFOS compared to 43 for PFOS + PFHxS combined), and crustaceans (141 compared to 18) (Table 8).

As the majority of PFHxS analytical results were <LOR, results for PFOS + PFHxS combined were similar to or slightly higher than PFOS only results when deriving middle and upper bounds. However, in some cases the reduced numbers of analyses for resulted in changed distributions of concentrations that affected mean and median concentrations across all bounds.

In particular, mean and median concentrations, for PFOS + PFHxS combined were markedly higher than those for PFOS only for crustaceans: upper bound mean and median values for PFOS were 6.58 µg/kg and 2.6 µg/kg, respectively, compared to 17.76 µg/kg and 16.1 µg/kg respectively for PFOS + PFHxS combined.

Similarly, in freshwater fish, upper bound mean and median values for PFOS were 29.08 µg/kg and 3.45 µg/kg, respectively, compared to 59.51 µg/kg and 43.5 µg/kg respectively for PFOS + PFHxS combined. Mean and median PFOS + PFHxS combined results were closer in value for marine fish and molluscs, compared to PFOS results only.

Water also had many more samples analysed for PFOS (393), compared to PFHxS (25). However, as almost all results for both PFOS and PFHxS were <LOR, mean and median PFOS + PFHxS combined results reflected the sum of LOR values<sup>2</sup>.

<sup>2</sup> One of the 25 water samples analysed for PFHxS had a concentration >LOR. However, this sample was not analysed for PFOS or PFOA and was therefore excluded from calculating PFOS+PFHxS.

Table 4. Total number of analysed samples, number of non-detects (ND) and % of non-detects (%ND) each reported food classification

Food Category	Food Classification			PFHxS			PFOS			PFOA			PFOS+PFHxS		
	ND	% ND	Total	ND	% ND	Total	ND	% ND	Total	ND	% ND	Total	ND	% ND	Total
<b>Fish and Seafood</b>	Crustaceans of all species	4	22	18	4	3	141	119	84	141	0	0	0	0	18
	Finfish	78	91	86	51	16	311	307	99	311	15	17	15	17	86
	Diadromous fish	3	100	3	0	0	3	3	100	3	0	0	0	0	3
	Freshwater fish	32	80	40	21	25	84	81	96	84	9	23	9	23	40
	Marine fish of all species	43	100	43	30	13	224	223	100	223	6	14	6	14	43
	Finfish – liver only	3	25	12	0	0	12	11	92	12	0	0	0	0	12
	Molluscs	35	57	61	10	13	76	40	53	76	6	10	6	10	61
	Meat mammalian	9	8	115	0	0	115	95	93	102	0	0	0	0	115
	Cattle meat	0	0	32	0	0	32	12	63	19	0	0	0	0	32
	Rabbit meat	0	0	4	0	0	4	4	100	4	0	0	0	0	4
<b>Animal Products</b>	Sheep meat	9	11	79	0	0	79	79	100	79	0	0	0	0	79
	Milk	12	67	18	3	17	18	18	100	18	3	17	3	17	18
	Cattle milk	5	83	6	2	33	6	6	100	6	2	33	2	33	6
	Sheep milk	7	58	12	1	8	12	12	100	12	1	14	1	14	7
	Honey	1	100	1	1	100	1	1	100	1	1	100	1	100	1
	Offal mammalian	20	100	20	0	0	20	20	100	20	0	0	0	0	20
	Poultry eggs	15	50	30	7	23	30	28	100	28	7	23	7	23	30

OCURRENCE OF PERFLUOROOCCTANE SULFONATE (PFOS), PERFLUOROOCCTANOIC ACID (PFOA) AND PERFLUOROHEXANE SULFONATE (PFHxS) IN FOODS AND WATER SAMPLED FROM CONTAMINATED SITES

Food Category	Food Classification	PFHxS			PFOS			PFOA			PFOS+PFHxS		
		ND	% ND	Total	ND	% ND	Total	ND	% ND	Total	ND	% ND	Total
<b>Fruits and Vegetables</b>	Vegetables	33	73	45	34	76	45	45	100	45	32	71	45
	Cucurbits	4	100	4	4	100	4	4	100	4	4	100	4
	Herbs	1	100	1	1	100	1	1	100	1	1	100	1
	Leafy vegetables	7	70	10	9	90	10	10	100	10	7	70	10
	Other fruiting vegetables	12	100	12	12	100	12	12	100	12	12	100	12
	Root and tuber vegetables	7	100	7	7	100	7	7	100	7	7	100	7
	Spices	1	100	1	1	100	1	1	100	1	1	100	1
	Stalk and stem vegetables	1	10	10	0	0	10	10	100	10	0	0	10
	<i>Fruit</i>	47	100	47	47	100	47	47	100	47	47	100	47
	Berries and other small fruits	1	100	1	1	100	1	1	100	1	1	100	1
Fruit	Citrus fruits	34	100	34	34	100	34	34	100	34	34	100	34
	Pome fruits	2	100	2	2	100	2	2	100	2	2	100	2
	Tropical fruit - edible peel	10	100	10	10	100	10	10	100	10	10	100	10
<b>Water</b>		24	96	25	363	92	393	383	97	393	24	100	24

Table 5. Estimated mean, median (lower, middle and upper bound), maximum and minimum concentrations of PFOS ( $\mu\text{g}/\text{kg}$ ) in each reported food classification

Food Category	Food Classification	Analyses		Mean PFOS concentration			Median PFOS Concentration				
		Count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound	Minimum	Maximum
Fish and Seafood	Crustaceans of all species	141	4	6.57	6.58	6.58	2.6	2.6	2.6	<LOR	48
	Finfish	311	51	10.47	10.51	10.55	2.3	2.3	2.3	<LOR	310
	Diadromous fish	3	0	6.50	6.50	6.50	5	5	5	4.5	10
	Freshwater fish	84	21	28.93	29.00	29.08	3.45	3.45	3.45	<LOR	310
	Marine fish of all species	224	30	3.61	3.63	3.65	1.95	1.95	1.95	<LOR	31
	Finfish – Liver only	12	0	73.69	73.69	73.69	39.5	39.5	39.5	0.81	240
	Molluscs	76	10	3.91	3.93	3.95	1.05	1.05	1.05	<LOR	35
	Meat mammalian	115	0	26.26	26.26	26.26	9.17	9.17	9.17	1.62	175
	Cattle meat	32	0	68.18	68.18	68.18	54.17	54.17	54.17	8.33	175
	Rabbit meat	4	0	80.63	80.63	80.63	66.5	66.5	66.5	64	120
Animal products	Sheep meat	79	0	6.48	6.48	6.48	4.92	4.92	4.92	1.62	28.3
	Milk	18	3	10.36	10.44	10.53	2.9	2.9	2.9	<LOR	113.3
	Cattle milk	6	2	3.95	4.12	4.29	2.37	2.37	2.37	<LOR	11.33
	Sheep milk	12	1	13.56	13.61	13.65	2.9	2.9	2.9	<LOR	113.3
	Honey	1	1	0	1.50	3.00	-	-	-	<LOR	<LOR
	Offal mammalian	20	0	60.4	60.4	60.4	60.4	60.4	60.4	26	94.8
	Poultry eggs	30	7	16.66	17.15	17.63	7.15	7.15	7.15	<LOR	48

OCCURRENCE OF PERFLUOROOCCTANE SULFONATE (PFOS), PERFLUOROOCCTANOIC ACID (PFOA) AND PERFLUOROHEXANE SULFONATE (PFHxS) IN FOODS AND WATER SAMPLED FROM CONTAMINATED SITES

Food Category	Food Classification	Analyses		Mean PFOS concentration			Median PFOS Concentration			Minimum	Maximum
		Count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound		
<b>Fruit and vegetables</b>	<i>Vegetables</i>										
	Cucurbits	4	4	0	0.5	1	0	0.5	1	<LOR	<LOR
	Herbs	1	1	0	1.5	3	-	-	-	<LOR	<LOR
	Leafy vegetables	10	9	0.11	0.56	1.01	0	0.5	1	<LOR	1.1
	Other fruiting vegetables	12	12	0.00	1.45	2.90	0	1.5	3	<LOR	<LOR
	Root and tuber vegetables	7	7	0	1.41	2.82	0	1.5	3	<LOR	<LOR
	Spices	1	1	0	1.5	3	-	-	-	<LOR	<LOR
	Stalk and stem vegetables	10	0	4.37	4.37	4.37	3.85	3.85	3.85	2	7.8
	<i>Fruit</i>										
	Berries and other small fruits	1	1	0	1.5	3	-	-	-	<LOR	<LOR
<b>Fruit</b>	Citrus fruits	34	34	0	1.19	2.38	0	1.5	3	<LOR	<LOR
	Pome fruits	2	2	0	1.5	3	-	-	-	<LOR	<LOR
	Tropical fruit - edible peel	10	10	0	0.5	1	0	0.5	1	<LOR	<LOR
<b>Water</b>		393	363	0.29	0.30	0.31	0	0.01	0.02	<LOR	72.35

“-“ insufficient samples to derive median value

Table 6. Estimated mean, median (lower, middle and upper bound), maximum and minimum concentrations of PFOA ( $\mu\text{g}/\text{kg}$ ) in each reported food classification

Food Category	Food Classification	Analyses		Mean PFOA concentration			Median PFOA Concentration				
		Count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound	Minimum	Maximum
Fish and Seafood	<i>Crustaceans of all species</i>	141	119	0.07	0.21	0.35	0	0.15	0.3	<LOR	0.79
	<i>Finfish</i>	310	307	0.02	0.27	0.53	0	0.15	0.3	<LOR	2.7
	<i>Diadromous fish</i>	3	3	0	0.15	0.3	0	0.15	0.3	<LOR	<LOR
	<i>Freshwater fish</i>	84	81	0.08	0.60	1.12	0	0.15	0.3	<LOR	2.7
	<i>Marine fish of all species</i>	223	223	0	0.15	0.30	0	0.15	0.3	<LOR	<LOR
	<i>Fish of all species - Liver</i>	12	11	0.03	0.21	0.39	0	0.2	0.32	<LOR	0.34
	<i>Molluscs</i>	76	40	1.95	2.03	2.11	0	0.22	0.3	<LOR	47
	<i>Meat mammalian</i>	102	95	0.004	0.12	0.23	0	0.02	0.04	<LOR	0.12
	<i>Cattle meat</i>	19	12	0.02	0.06	0.11	0	0.03	0.04	<LOR	0.12
	<i>Rabbit meat</i>	4	4	0	1	2	0	1	2	<LOR	<LOR
Animal products	<i>Sheep meat</i>	79	79	0	0.08	0.17	0	0.02	0.04	<LOR	<LOR
	<i>Milk</i>	18	18	0	0.26	0.51	0	0.26	0.52	<LOR	<LOR
	<i>Cattle milk</i>	6	6	0	0.26	0.52	0	0.26	0.52	<LOR	<LOR
	<i>Sheep milk</i>	12	12	0	0.25	0.51	0	0.26	0.52	<LOR	<LOR
	<i>Honey</i>	1	1	0	1.5	3	-	-	-	<LOR	<LOR
	<i>Offal mammalian</i>	20	20	0	0.75	1.5	0	0.75	1.5	<LOR	<LOR
	<i>Poultry eggs</i>	28	28	0	1.63	3.25	0	1.5	3	<LOR	<LOR



OCURRENCE OF PERFLUOROOCCTANE SULFONATE (PFOS), PERFLUOROOCCTANOIC ACID (PFOA) AND PERFLUOROHEXANE SULFONATE (PFHxS) IN FOODS AND WATER SAMPLED FROM CONTAMINATED SITES

Food Category	Food Classification	Analyses		Mean PFOA concentration			Median PFOA Concentration							
		Count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound	Minimum	Maximum			
<b>Fruit and vegetables</b>	<i>Vegetables</i>													
	Cucurbits	4	4	0	1	2	0	1	2	<LOR	<LOR	<LOR	<LOR	<LOR
	Herbs	1	1	0	1.5	3	-	-	-	<LOR	<LOR	<LOR	<LOR	<LOR
	Leafy vegetables	10	10	0	1	2	0	1	2	<LOR	<LOR	<LOR	<LOR	<LOR
	Other fruiting vegetables	12	12	0	1.45	2.90	0	1.5	3	<LOR	<LOR	<LOR	<LOR	<LOR
	Root and tuber vegetables	7	7	0	1.41	2.82	0	1.5	3	<LOR	<LOR	<LOR	<LOR	<LOR
	Spices	1	1	0	1.5	3	-	-	-	<LOR	<LOR	<LOR	<LOR	<LOR
	Stalk and stem vegetables	10	10	0	1	2	0	1	2	<LOR	<LOR	<LOR	<LOR	<LOR
	<i>Fruit</i>													
	Berries and other small fruits	1	1	0	1.5	3	-	-	-	<LOR	<LOR	<LOR	<LOR	<LOR
<b>Water</b>	Citrus fruits	34	34	0	1.33	2.67	0	1.5	3	<LOR	<LOR	<LOR	<LOR	<LOR
	Pome fruits	2	2	0	1.5	3	-	-	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR
	Tropical fruit - edible peel	10	10	0	0.5	1	0	0.5	1	<LOR	<LOR	<LOR	<LOR	<LOR
		393	383	0.01	0.02	0.03	0	0.01	0.02	<LOR	<LOR	<LOR	<LOR	1.99

“-“ insufficient samples to derive median value

Table 7. Estimated mean, median (lower, middle and upper bound), maximum and minimum concentrations of PFHxS (µg/kg) in each reported food classification

Food Category	Food Classification	Analyses		Mean PFHxS concentration			Median PFHxS concentration			Minimum	Maximum
		count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound		
Fish and Seafood	<i>Crustaceans of all species</i>	18	4	2.74	2.83	2.93	1.95	1.95	1.95	<LOR	13
	<i>Finfish</i>	86	78	0.13	0.48	0.83	0	0.5	1	<LOR	2.2
	<i>Diadromous fish</i>	3	3	0	0.50	1.00	0	0.5	1	<LOR	<LOR
	<i>Freshwater fish</i>	40	32	0.29	0.69	1.09	0	0.5	1	<LOR	2.2
	<i>Marine fish of all species</i>	43	43	0	0.28	0.57	0	0.25	0.5	<LOR	<LOR
	<i>Fish of all species - liver</i>	12	3	2.69	2.82	2.94	2.55	2.55	2.55	<LOR	6.5
	<i>Molluscs</i>	61	35	0.62	0.73	0.84	0	0.25	0.5	<LOR	4.8
	<i>Meat mammalian</i>	115	9	5.28	5.32	5.36	2.83	2.83	2.83	<LOR	27.5
	<i>Cattle meat</i>	32	0	13.31	13.31	13.31	9.08	9.08	9.08	0.01	27.5
	<i>Rabbit meat</i>	4	0	4.94	4.94	4.94	4.43	4.43	4.43	2	8.9
Animal products	<i>Sheep meat</i>	79	9	2.05	2.11	2.16	0.34	0.50	1.00	<LOR	14.17
	<i>Milk</i>	18	12	0.54	0.70	0.87	0	0.26	0.52	<LOR	5.15
	<i>Cattle milk</i>	6	5	0.21	0.42	0.64	0	0.26	0.52	<LOR	1.24
	<i>Sheep milk</i>	12	7	0.70	0.85	0.99	0	0.26	0.52	<LOR	5.15
	<i>Honey</i>	1	1	0	1.50	3	-	-	-	<LOR	<LOR
	<i>Offal mammalian</i>	20	20	0	0.75	1.50	0	0.75	1.50	<LOR	<LOR
	<i>Poultry eggs</i>	30	15	1.77	3.02	4.27	0.85	2.5	5	<LOR	5.1

OCCURRENCE OF PERFLUOROOCCTANE SULFONATE (PFOS), PERFLUOROOCCTANOIC ACID (PFOA) AND PERFLUOROHEXANE SULFONATE (PFHxS) IN FOODS AND WATER SAMPLED FROM CONTAMINATED SITES

Food Category	Food Classification	Analyses		Mean PFHxS concentration			Median PFHxS concentration			Minimum	Maximum	
		count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound			
<b>Fruit and vegetables</b>	<i>Vegetables</i>											
		Cucurbits	4	4	0	0.5	1	0	0.5	1	<LOR	<LOR
		Herbs	1	1	0.00	1.5	3	-	-	-	<LOR	<LOR
		Leafy vegetables	10	7	0.46	0.83	1.19	0	0.5	1	<LOR	2.4
		Other fruiting vegetables	12	12	0	1.44	2.88	0	1.5	3	<LOR	<LOR
		Root and tuber vegetables	7	7	0.00	1.41	2.82	0	1.5	3	<LOR	<LOR
		Spices	1	1	0.00	1.5	3.00	-	-	-	<LOR	<LOR
		Stalk and stem vegetables	10	1	1.25	1.3	1.35	1.25	1.25	1.25	<LOR	2.4
		<i>Fruit</i>										
		Berries and other small fruits	1	1	0	1.50	3.00	-	-	-	<LOR	<LOR
	Citrus fruits	34	34	0	1.19	2.37	0	1.5	3	<LOR	<LOR	
	Pome fruits	2	2	0	1.50	3	-	-	-	<LOR	<LOR	
	Tropical fruit - edible peel	10	10	0	0.5	1	0	0.5	1	<LOR	<LOR	
<b>Water</b>		25	24	0.013	0.022	0.031	0	0.01	0.02	<LOR	0.13	

“-” insufficient samples to derive median value

Table 8. Estimated mean, median (lower, middle and upper bound), maximum and minimum concentrations of PFOS + PFHxS combined (µg/kg) in each reported food classification

Food Category	Food Classification	Analyses		Mean PFOS+PFHxS conc.			Median PFOS+PFHxS conc.				
		count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound	Minimum	Maximum
<b>Fish and Seafood</b>	<i>Crustaceans of all species</i>	18	0	17.56	17.66	17.76	16.1	16.1	16.1	1.49	51.1
	<i>Finfish (all)</i>	86	15	28.90	29.31	29.72	4.35	4.6	4.85	<LOR	312.2
	<i>Diadromous fish</i>	3	0	6.5	7	7.5	5	5.5	6	4.5	10
	<i>Freshwater fish</i>	40	9	58.48	59.00	59.51	42.5	43	43.5	<LOR	312.2
	<i>Marine fish of all species</i>	43	6	2.94	3.25	3.55	1.1	1.35	1.6	<LOR	19
	<i>Fish of all species - Liver</i>	12	0	76.38	76.51	76.63	41.2	41.2	41.2	0.81	246.5
	<i>Molluscs</i>	61	6	5.28	5.41	5.54	1.5	1.75	1.86	<LOR	38.4
	<i>Meat mammalian</i>	115	0	31.50	31.55	31.58	12.42	12.42	12.42	1.75	202.50
	<i>Cattle meat</i>	32	0	81.48	81.48	81.48	63.67	63.67	63.67	42.44	202.50
	<i>Rabbit meat</i>	4	0	85.56	85.56	85.56	75.13	75.13	75.13	66.0	126
<b>Animal products</b>	<i>Sheep meat</i>	79	0	8.53	8.58	8.64	5.8	5.8	5.8	1.75	42.5
	<i>Milk</i>	18	3	10.89	11.15	11.40	2.9	3.15	3.4	<LOR	118.45
	<i>Cattle milk</i>	6	2	4.15	4.54	4.93	2.37	2.63	2.884	<LOR	12.57
	<i>Sheep milk</i>	12	1	14.26	14.45	14.64	2.9	3.15	3.4	<LOR	118.45
	<i>Honey</i>	1	1	0	3	6	-	-	-	<LOR	<LOR
	<i>Offal mammalian</i>	20	0	60.4	61.15	61.9	60.4	61.15	61.9	26.0	94.8
	<i>Poultry eggs</i>	30	7	18.44	20.17	21.90	8	9.25	10.8	<LOR	52.8

OCURRENCE OF PERFLUOROOCCTANE SULFONATE (PFOS), PERFLUOROOCCTANOIC ACID (PFOA) AND PERFLUOROHEXANE SULFONATE (PFHxS) IN FOODS AND WATER SAMPLED FROM CONTAMINATED SITES

Food Category	Food Classification	Analyses		Mean PFOS+PFHxS conc.			Median PFOS+PFHxS conc.							
		count	ND	Lower Bound	Middle Bound	Upper Bound	Lower Bound	Middle Bound	Upper Bound					
<b>Fruit and vegetables</b>	<i>Vegetables</i>													
	Cucurbits	4	4	0	1	2	0	1	2	<LOR	<LOR	<LOR	<LOR	
	Herbs	1	1	0	3	6	-	-	-	<LOR	<LOR	<LOR	<LOR	
	Leafy vegetables	10	7	0.57	1.385	2.2	0	1	2	<LOR	<LOR	<LOR	3.5	
	Other fruiting vegetables	12	12	0	2.89	5.78	0	3	6	<LOR	<LOR	<LOR	<LOR	
	Root and tuber vegetables	7	7	0	2.82	5.64	0	3	6	<LOR	<LOR	<LOR	<LOR	
	Spices	1	1	0	3	6	-	-	-	<LOR	<LOR	<LOR	<LOR	
	Stalk and stem vegetables	10	0	5.62	5.67	5.72	4.75	4.75	4.95	3.1	9.4			
		<i>Fruit</i>												
	Berries and other small fruits	1	1	0	3	6	-	-	-	<LOR	<LOR	<LOR	<LOR	
Citrus fruits	34	34	0	2.37	4.75	0	3	6	<LOR	<LOR	<LOR	<LOR		
Pome fruits	2	2	0	3	6	-	-	-	<LOR	<LOR	<LOR	<LOR		
Tropical fruit - edible peel	10	10	0	1	2	0	1	2	<LOR	<LOR	<LOR	<LOR		
<b>Water</b>		24	24	0	0.02	0.04	0	0.02	0.04	<LOR	<LOR	<LOR	<LOR	

“-“ insufficient samples to derive median value

## Appendix 1 Call for Data

5 August 2016

### Call for data on the perfluorinated compounds perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS) in food

Perfluorinated compounds (PFCs) are fluorinated hydrocarbons. PFCs are bioaccumulative in animals and humans, and persistent in the environment due to the strength of the carbon-fluorine bonds in their structure.

PFCs are used in industrial applications such as fire-fighting foams and can be detected in various environmental media and matrices, including food. Studies undertaken in a number of countries have shown that most people may be exposed to low levels of PFCs from a number of sources, including the air, indoor dust, food, water, and various consumer products.

In response to the 2015 Senate Inquiry into contamination at various locations around Australia resulting from legacy use of perfluorinated chemicals in fire-fighting foam, the Department of Health is facilitating the development of health based guidance values (HBGVs) as soon as practical. These HBGVs will be used for assessing public health risks from consuming food and water contaminated by these chemicals.

As part of its response, the Department of Health has asked its portfolio agency, Food Standards Australia New Zealand (FSANZ) to develop HBGVs for perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS), to estimate potential exposure of the population to these compounds from food and beverages, and then to investigate possible risk management measures which may be employed to manage the risk of these contaminants.

#### Scope of data call

The collection of accurate, up-to-date and comparable data is required for risk assessment and for risk management decisions. FSANZ needs data for the assessments it carries out on a wide range of chemical contaminants that are sometimes present in food. Chemical contaminants may occur in food due to food production, distribution, packaging or preparation in the home. They might also be present in the environment naturally or as a result of a variety of industrial or agricultural activities.

FSANZ is seeking any data on the occurrence of PFOS, PFOA and PFHxS in food and water in Australia and New Zealand. These represent the main PFCs of interest.

In particular, we are seeking published and unpublished data on occurrence in fresh and packaged foods and beverages. We are interested in data from geographical areas that may have been contaminated as well as data from the general food supply in Australia and New Zealand. In other countries, these contaminants were most frequently found in fish and other seafood and in meat and meat products (liver in particular). However FSANZ is seeking data for all foods, including drinking water.

In addition to existing data, FSANZ also calls for any other relevant information on the occurrence of PFOS, PFOA and PFHxS in food and water in different locations, including reports and other publications. FSANZ is also interested in any current, ongoing or planned surveys that may produce data that could help inform the risk assessment.

FSANZ reviews all chemical contaminant data provided for quality and utility and consults with the data providers to address any data issues or questions. Data may be used directly or for validating existing data. Data provided are securely stored in our internal databases.

### **Privacy and confidentiality**

The FSANZ data governance framework requires that data must be managed in accordance with legislative and legal requirements, including requirements relating to data security and protection of personal information, intellectual property, business confidentiality and legal professional privilege.

FSANZ protects data against inappropriate or unauthorised use, access or disclosure. As an agency engaged in data projects FSANZ gives active consideration to protecting privacy. Privacy risks are managed in all facets of a data call following the rules and best practice established in the APS.

### **How to provide data**

FSANZ follows best practice by requesting data in a machine readable spreadsheet format to avoid errors. If possible, we would prefer to receive data in the format of the attached [Data entry form](#). Please consult the attached [Instruction sheet](#) for data field definitions before entering your data on the data entry form.

Please note that some columns in the data entry form have pre-set dropdown lists to populate the form. In some cases, data formats are enforced to assist with consistent data entry.

Please submit your data by email to FSANZ (details provided in the data call).

### **When to provide data by**

FSANZ requests that data be provided as soon as is practicable or by close of business, [Friday 2 September 2016](#).

### **More information**

If you are unable to provide data in this format and/or require more details on this data call contact FSANZ (details provided in the data call).