

**SUMMARY REPORT**

**PER- AND POLY FLUOROALKYL SUBSTANCES (PFAS) LEACHATE STUDY  
FROM FLUORINATED HIGH-DENSITY POLYETHYLENE (HDPE) CONTAINERS OF  
THREE FLUORINATION TECHNOLOGIES**

September 12, 2022

Prepared for:

**IPACKCHEM GROUP S.A.S**  
La Croix des Sagnes, 42230  
Saint Victor-sur-Loire

Prepared by:

Rock J. Vitale, CEAC, Technical Director of Chemistry  
Jared K. Acker, Senior Quality Assurance Chemist

**ENVIRONMENTAL STANDARDS, INC.**  
1140 Valley Forge Road  
P.O. Box 810  
Valley Forge, PA 19482-0810

© 2022 Environmental Standards, Inc. - All Rights Reserved

## **Introduction and Scope**

IPACKCHEM Group SAS (“IPACKCHEM”), a global leader in Advanced In-Mold Fluorination (“IMF”) technology for plastic barrier packaging, engaged analytical chemistry consultants Environmental Standards, Inc., to design, supervise and review an independent study to assess the potential for per- and polyfluoroalkyl substances (PFAS) leaching from several types of fluorinated and non-fluorinated High-Density Polyethylene (HDPE) containers (“the Study”). This work was undertaken by Pace Analytical Services, LLC of West Columbia, South Carolina. The project was administered by Steptoe & Johnson LLP (“Steptoe”), an international law firm with a specialist practice in chemicals and life sciences.

This summary report sets out the regulatory context for the Study, and summarizes the objectives, design and results of the Study.

## **Executive Summary**

Environmental Standards developed a scope of work for the proposed study and solicited interest from several well-qualified analytical laboratories. Following evaluation of those proposals, a contract was awarded to Pace Analytical Services, LLC to evaluate whether, and if so, the extent of PFAS leaching from commercially available examples of three different types of fluorinated barrier containers: IPACKCHEM’s proprietary Advanced In-Mold Fluorinated (Advanced IMF), post-mold fluorinated, and post-mold plasma fluorinated. Two other container types, HDPE and co-extruded polyamide-lined HDPE were included as negative controls. Methanol was used as the leaching solvent. Nineteen specific PFAS compounds of potential regulatory interest were analysed for in aliquots of methanol having remained in the containers for four weeks, eight weeks and twelve weeks. Separate sets of triplicate containers of each type were sampled at each interval to assess sampling and analytical precision. In addition, aliquots of methanol contained in separate triplicate sets of the In-Mold Fluorinated containers and co-extrusion polyamide-lined HDPE containers were sampled after one week. A Limit of Quantification (LOQ) of 10ppt (10ng/L) for eighteen PFAS compounds and 20ppt (20ng/L) for GenX was reported by the contracted laboratory.

None of the target PFAS compounds were detected in samples from IPACKCHEM’s Advanced IMF HDPE containers at any of the time periods.

Samples from the two other fluorination technologies included in the study resulted in PFAS detections in those methanol aliquots removed for analysis.

## **Regulatory Context**

PFAS comprise a class of synthetic compounds that have been widely used for decades throughout society for many products and processes. However, over the last decade PFAS chemistries have begun attracting attention from regulators. The production and use of a limited number of PFAS are already restricted in some markets (such as the European Union and the

United Kingdom) and in some jurisdictions there are regulatory controls on the release of PFAS into the environment.

IPACKCHEM does not manufacture or use PFAS chemistries. Its interest in evaluating PFAS potentially leaching from fluorinated packaging was focused by work published by Public Employees for Environmental Responsibility (PEER) late in 2020 and early in 2021 which claimed to have identified PFAS in an insecticide product. See, <https://peer.org/aerially-sprayed-pesticide-contains-pfas/>; <https://peer.org/pfas-found-in-widely-used-insecticide/>. The US EPA performed a screening study to investigate whether the presence of PFAS was a consequence of the leaching of PFAS into the pesticide from the pesticide packaging, and specifically from fluorinated high-density polyethylene (“fHDPE”) containers. See, <https://www.epa.gov/pesticides/pfas-packaging>.

In March 2021, the US EPA released data from a leachate study using fluorinated and non-fluorinated HDPE containers. None of the studied containers were produced by IPACKCHEM. The US EPA detected eight PFAS in samples from the fHDPE containers, with total levels of the PFAS analyzed ranging from 20-50 parts per billion. The detected PFAS were PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFDA and PFUdA. For the non-fluorinated containers, PFAS was not detected at the 10 ppb LOQ.

The US EPA study in part explored whether PFAS may be generated during the fluorination process. IMF is one of three fluorination technologies commonly used in the fHDPE container market: the other two being post-mold fluorination and post-mold plasma fluorination. It appears that all the containers in the US EPA study were post-mold fluorinated. IPACKCHEM’s Advanced IMF process is rigorously controlled compared to other fluorination techniques, and therefore minimizes the opportunity for formation of PFAS as a by-product of the manufacturing process. IPACKCHEM engaged Steptoe to conduct an independent study to evaluate the potential for PFAS to be leached into methanol from fluorinated HDPE containers manufactured by different processes, and two non- fluorinated container type negative controls.

### **The Objectives of the Study**

The Study design expanded on the studies carried out by the US EPA, with modifications as explained below, for three different types of fluorinated plastic barrier technology containers, and co-extruded and non-barrier HDPE controls:

- IPACKCHEM’s Advanced IMF HDPE containers
- Post-mold fluorinated HDPE containers
- Post-mold plasma fluorinated HDPE containers
- Co-extrusion HDPE / PA (nylon) containers, as a negative control
- Non-barrier HDPE containers, as a negative control

The articles tested all came from commercial sources outside the United States. The Advanced In-Mold Fluorinated containers were from IPACKCHEM commercial production and were not specially manufactured or selected.

The Study was conducted blind, so that the laboratory participants had no indication of the composition or production method of the sample containers. The samples were allocated numbers and the key to the sample numbers was not shared with the Study participants.

The objective was to identify whether any of the selected group of PFAS leached from the containers into an aggressive solvent (100% ultra-pure methanol) during various periods of residency, and if so, in what quantities.

The most notable differences between the US EPA studies and the Study was the volume of the solvent and the period of residency of the solvent in the containers. Unlike the US EPA studies, which were 'swirl' studies using a nominal volume of methanol, in the Study, all but one of the container types were nominally filled with solvent and the solvent resided in containers at a controlled temperature with aliquots of methanol removed from triplicate, fresh (e.g., not previously sampled) containers at 4, 8 and 12 weeks, to better reflect the real-world use of the containers by IPACKCHEM's customers.

## **Study Participants**

Independent chemistry consultancy Environmental Standards, Inc. ("Environmental Standards") was retained to provide analytical chemistry and technical assistance in the development, execution, and oversight of the container leachate study. In consultation with IPACKCHEM and Steptoe, Environmental Standards prepared the initial technical and cost request for proposals (RFPs) and solicited several qualified laboratories to provide proposals for the study. Environmental Standards provided input as to the quality of these laboratory proposals and supported the selection of and contract with the laboratory ultimately awarded the container leachate study.

Pace Analytical Services, LLC ("Pace"), of West Columbia, South Carolina was awarded the container leachate study. Pace holds accreditations from the US EPA and US Department of Defense, including analysis of the Unregulated Contaminant Monitoring Rule (UCMR) test methods (UCMR 3 and 4) which includes several PFAS. The analysis was conducted using LC/MS/MS instrumentation with Pace's implementation following instrumental analysis US EPA Method 537 (which specifies LC/MS/MS instrumentation) with several enhancement modifications.

Environmental Standards received the containers to be used in the study by a contracted courier at its Valley Forge, Pennsylvania headquarters from the client. The containers were stored in a secured location until further sorted for shipment to Pace. Environmental Standards technical staff (donning nitrile gloves for each container type) carefully inspected and inventoried the containers received, repacked the containers under formal Chain-of-Custody in custody-sealed shipping coolers, and shipped the coolers via overnight courier to Pace.

Environmental Standards served as a technical advisor and liaison during the Study and provided technical and quality oversight during the Study execution. As each data set was reported by Pace, Environmental Standards reviewed the data, and provided feedback regarding the quality of the data being generated. At the conclusion of the study, Environmental

Standards received Level 4 data packages from Pace and performed a critical Level 4 data validation of the study data. At the conclusion of the Level 4 data validation efforts, Environmental Standards provided a data quality assessment and quality assurance review report of the Pace data reported.

## Study Design

Five (5) sets of containers were tested using a prescribed protocol and study design. The influence of residence time on the type and amount of any PFAS detected in the leachate was also investigated. The container type in each set of test containers is set forth in Table 1, below.

**Table 1: Key to sets**

Set	Container Type
1	Co-extrusion HDPE / polyamide (PA) (nylon) containers (negative control)
2	IPACKCHEM's Advanced IMF HDPE containers
3	Post-mold fluorinated HDPE containers
4	Non-barrier HDPE containers (negative control)
5	Post-mold plasma fluorinated HDPE containers

Fresh triplicates of each container type were included for each leaching time period, with separate sets used for each time period, so a total of nine of each container type was tested (e.g., fresh triplicates of each container type for each of the three leaching time periods). In addition, a preliminary study using fresh triplicates of only IPACKCHEM's Advanced IMF HDPE containers and co-extrusion HDPE / polyamide (PA) (nylon) containers was done at one week. The 1L containers were nominally filled with 1L methanol. Methanol was selected, consistent with the US EPA study, as an aggressive solvent to extract PFAS from the containers.

Containers were stored at ambient temperature of 23 ( $\pm$ 3) degrees Celsius for a soak period of 4, 8 and 12 weeks.

At the end of each soak period an aliquot of methanol was taken from each fresh triplicate of each of the five container types and analyzed using US EPA Method 537, with enhanced modifications developed by Pace for the 19 targeted PFAS using LC/MS/MS instrumentation. Further enhancements involved the use of isotope dilution (using labelled standards) for quantification of the 19 target analytes.

The Study was designed to test for 19 PFAS compounds (see Table 2), selected in part as the most likely to be found if PFAS is formed as a by-product of the fluorination process, and in part to mirror the US EPA studies.

**Table 2: Target PFAS Compounds**

<b>Target PFAS compound</b>	<b>CAS Number</b>
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoro-n-butanoic acid (PFBA)	375-22-4
Perfluoro-n-decanoic acid (PFDA)	335-76-2
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4
Perfluoro-n-nonanoic acid (PFNA)	375-95-1
Perfluoro-n-octanoic acid (PFOA)	335-67-1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1

This group includes the 8 PFAS compounds that were detected in the US EPA studies.

Pace's analytical Limit of Quantification was 10ng/L (20ng/L for Gen-X).

The leachate study comprised soak periods of four, eight and twelve weeks:

### ***Four-week soak (28-day)***

15 containers (viz., five sets in triplicate) were subject to a 4-week/28-day soaking period prior to testing. Fresh containers involved in the 4-week soak include the following:

- 12 x 1L containers (four sets of triplicate containers)
- 3 x 20L (one set of triplicate containers).

### ***Eight-week soak (56-day)***

An additional 15 fresh containers (viz., five sets in triplicate) were subject to an 8-week/56-day soaking period.

### ***Twelve-week soak (84-day)***

An additional 15 fresh containers (viz., five sets in triplicate) were subject to a 12-week/84-day soaking period.

The number of fresh containers, sizes of containers, and testing regime was the same for the 12-week, 8-week and the 4-week soak.

There was also an initial one-week (7-day) soak involving 6 x 1L fresh containers, comprising 2 sets of triplicate containers.

## **Summary of Study Results**

Appendix A contains the summary data tables from the Study.

None of the target PFAS compounds were detected at or above the Pace-reported LOQ in samples from in either of the two negative controls (the co-extrusion HDPE / polyamide (PA) (nylon) containers or the non-barrier HDPE containers), consistent with expectations.

None of the target PFAS compounds were detected at or above the Pace-reported LOQ in samples from IPACKCHEM's Advanced IMF HDPE containers.

In contrast, the other fluorination technologies (post-mold fluorinated HDPE containers and post-mold plasma fluorinated HDPE containers) resulted in multiple detections of multiple target PFAS compounds. The significant variability in the data between samples, regardless of solvent residency period, indicates that leaching of PFAS is not uniform between sample containers, suggesting significant variability between the individual containers for both post-mold fluorinated HDPE containers and post-mold plasma fluorinated HDPE containers.

## Summary of Quality Assurance Findings

Environmental Standards performed a data quality assessment and quality assurance (QA) review of the Study results, which included a critical evaluation of the laboratory reported data summary forms, raw instrument calibration data, and raw instrument sample data.

As a result of this comprehensive review, Environmental Standards concluded that the data for the two negative controls (Set 1 and Set 4) and the data for IPACKCHEM's Advanced IMF HDPE containers (Set 2) are of sound and reliable quality.

The data from the post-mold fluorinated HDPE containers and post-mold plasma fluorinated HDPE containers (Set 3 and Set 5) were qualitatively reliable. However, the data were found to have problems resulting in a higher degree of uncertainty regarding quantitative results for those data sets. While the quantitative data are to some extent estimates, they reliably indicate the presence of the target PFAS compounds at levels above the 10 ppt LOQ. The variability in the detections reflect variability in the concentrations leached from the tested containers.

## Conclusion

The data from this Study demonstrate that the target PFAS compounds, over a solvent residency period of up to 12 weeks, are **not detected at the LOQ in production samples from IPACKCHEM's Advanced IMF HDPE containers**. In contrast, fluorinated HDPE containers from processes other than IPACKCHEM's Advanced IMF process have characteristics that readily allow PFAS to be leached.

## Appendix A

### Key to sets

Set	Container
1-	Co-extrusion HDPE / polyamide (PA) (nylon) containers
2-	IPACKCHEM's Advanced IMF HDPE containers
3-	Post-mold fluorinated HDPE containers
4-	Non-barrier HDPE containers (control)
5-	Post-mold plasma fluorinated HDPE containers

### One Week Results

#### Summary of Results One Week Soak

Sample ID	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUdA	PFDoA	PFTrDA	PFTeDA	HFPO-DA
	(All results ng/L)																		
PFAS Family	PFASs							PFCAs											PFECA
1-0-D (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-0-E (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-0-F (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-0-D (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-0-E (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-0-F (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20

One Week Soak: Lab Lot Number associated with these results: WI16003.

## Four Week (Month One) Results

### Summary of Results Month One Soak

Sample ID	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUdA	PFDoA	PFTrDA	PFTeDA	HFPO-DA
	(All results ng/L)																		
PFAS Family	PFSAs							PFCAs											PFCEA
1-1-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-1-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-1-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-1-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-1-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-1-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
3-1-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	190	3500	5400	9700	3100	1500	730	390	230	170	79	<20
3-1-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	42	620	620	480	330	210	130	47	23	16	11	<20
3-1-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	44	<10	64	110	60	41	34	21	<20
4-1-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
4-1-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
4-1-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
5-1-A (20 Liter)	<10	<10	<10	<10	<10	<10	<10	670	1100	320	160	340	50	26	19	<10	<10	<10	<20
5-1-B (20 Liter)	<10	<10	<10	<10	<10	<10	<10	610	1000	750	270	250	59	35	12	<10	<10	<10	<20
5-1-C (20 Liter)	<10	<10	<10	<10	<10	<10	<10	560	1100	1300	210	560	59	22	12	<10	<10	<10	<20

Month One Soak: Lab Lot Number associated with these results: WI02039

## Eight Week (Month Two) Results

### Summary of Results Month Two Soak

Sample ID	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUdA	PFDoA	PFTrDA	PFTeDA	HFPO-DA
	(All results ng/L)																		
PFAS Family	PFSAs							PFCAs											PFCEA
1-2-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-2-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-2-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-2-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-2-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-2-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
3-2-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	440	2100	2100	1200	560	400	170	58	69	51	21	<20
3-2-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	150	490	480	230	190	83	25	13	10	<10	<10	<20
3-2-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	470	1200	1300	410	190	160	62	49	20	13	<10	<20
4-2-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
4-2-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
4-2-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
5-2-A (20 Liter)	<10	<10	<10	<10	<10	<10	<10	1300	2000	1100	380	450	62	28	11	<10	<10	<10	<20
5-2-B (20 Liter)	<10	<10	<10	<10	<10	<10	<10	3100	1500	820	470	400	63	23	16	<10	<10	<10	<20
5-2-C (20 Liter)	<10	<10	<10	<10	<10	<10	<10	3700	1600	880	350	320	61	28	12	<10	<10	<10	<20

Month Two Soak: Lab Lot Number associated with these results: WI02040.

## Twelve Week (Month Three) Results

### Summary of Results Month Three Soak

Sample ID	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUdA	PFDoA	PFTDA	PFTeDA	HFPO-DA	
	(All results ng/L)																			
PFAS Family	PFASs							PFCAs											PFCEA	
1-3-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-3-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
1-3-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-3-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-3-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
2-3-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
3-3-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<b>22</b>	<b>230</b>	<b>670</b>	<b>100</b>	<b>130</b>	<b>49</b>	<10	<b>68</b>	<b>24</b>	<b>43</b>	<b>20</b>	<20	
3-3-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<b>44</b>	<b>980</b>	<b>740</b>	<b>310</b>	<b>180</b>	<b>150</b>	<b>100</b>	<b>150</b>	<b>26</b>	<b>25</b>	<b>15</b>	<20	
3-3-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<b>22</b>	<b>220</b>	<b>240</b>	<b>210</b>	<b>140</b>	<b>43</b>	<10	<10	<b>16</b>	<b>18</b>	<10	<20	
4-3-A (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
4-3-B (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
4-3-C (1 Liter)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20
5-3-A (20 Liter)	<10	<10	<10	<10	<10	<10	<10	<b>670</b>	<b>1300</b>	<b>570</b>	<b>330</b>	<b>500</b>	<b>100</b>	<b>25</b>	<b>11</b>	<10	<10	<10	<10	<20
5-3-B (20 Liter)	<10	<10	<10	<10	<10	<10	<10	<b>240</b>	<b>1300</b>	<b>620</b>	<b>220</b>	<b>220</b>	<b>18</b>	<b>65</b>	<10	<10	<10	<10	<10	<20
5-3-C (20 Liter)	<10	<10	<10	<10	<10	<10	<10	<b>900</b>	<b>1700</b>	<b>1300</b>	<b>970</b>	<b>340</b>	<b>77</b>	<b>24</b>	<b>11</b>	<10	<10	<10	<10	<20

Month Three Soak: Lab Lot Number associated with these results: W102042.