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Technical Memorandum

To	Erika Biemann, ATC	Page 1 of 6
CC	Mike Schmoller, WDNR	
Subject	Interim Surface Soil PFAS Results and Groundwater RCL Discussion ATC Blount Transmission Substation, Madison Wisconsin	
From	Leo Linnemanstons, AECOM	
Date	June 10, 2020	

This technical memorandum presents the laboratory results from surface soil samples related to the American Transmission Company (ATC) Blount Transmission (BLT) Substation. The substation is located at 722 East Main Street, City of Madison, Dane County, Wisconsin. Madison Gas & Electric (MG&E) owns the substation property, and both MG&E and ATC own equipment within the substation. The substation property has soil and groundwater contamination associated with the following two WDNR BRRTS cases:

- Closed site (BRRTS# 02-13-001567): MG&E Manufactured Gas Plant (MGP) site.
- Open site (BRRTS# 02-13-584085): MG&E Substation ATC Transformer Fire

Field investigation activities and results presented herein were conducted in accordance with the approved *Site Investigation Work Plan,* dated October 15, 2019 (BRRTS #: 02-13-584085). Initial soil and water samples for the site investigation were collected in October 2019, and laboratory results were presented in an Interim Technical Memorandum, dated February 4, 2020. Based on those interim results, several data gaps were identified, and supplemental sampling was recommended.

Following review of the Interim Technical Memorandum, WDNR requested that groundwater protection RCLs be calculated for PFOA and PFOS for comparison to soil sample results. In email correspondence on March 16, 2020, the calculated groundwater protection RCLs were provided to WDNR along with an updated soil results table. The email also provided further data interpretation and described additional soil sampling locations to address potential data gaps. WDNR agreed with the additional soil and water sampling in an email dated March 18, 2020.

This interim technical memorandum presents the results from the additional soil sampling and also includes the calculation of the PFOA and PFOS groundwater protection RCLs.

1.0 FIELD ACTIVITIES AND METHODS

Soil Sampling - On April 7, 2020, AECOM collected 24 soil samples (SS-56 through SS-78, and MW-1) from across the site and surrounding area as depicted on Figure 1. A summary of samples collected for the site investigation (through April 2020) is presented on Table 1.

Soil samples were collected using hand tools from the first fill or fine-grained material that was found beneath the gravel or grass surface. A decontaminated shovel was used to remove the surface gravel or grass, and dedicated PFAS-free disposable sample spoons were used to collect soil samples into laboratory prepared containers. Soil samples were collected following PFAS protocols and placed directly in laboratory prepared sample containers. Quality control samples included a field blank and an equipment blank. The field and equipment blank samples were collected using laboratory provided certified PFAS-free water. The field blank was poured/collected near SS-78. The equipment blank was collected on the disposable sampling scoops as these were the only items to contact the soil sample prior to placement in the sample container.

Samples were maintained in coolers on ice and shipped via courier to Eurofins TestAmerica Laboratory, West Sacramento, California under chain-of-custody (COC) control, and PFAS analyses were conducted following EPA Method 537 (Modified) isotope dilution.

No soil cuttings were generated during the investigation, and existing gravel cover and grass was restored to each sample location after sampling was completed.

2.0 LABORATORY RESULTS

A summary of the soil laboratory data is presented in the attached Table 2. Note the soil results summary table presents PFAS data from prior sampling events through the present SI activities, for a total of 93 samples (including duplicates). The current results are discussed in the following section, and the corresponding laboratory report is attached.

2.1 SOIL LABORATORY RESULTS

Soil results indicate that PFAS were detected in each sample, generally at low concentrations. Total detected PFAS among the soil samples ranged from 0.057 to 16 ug/kg. The results were compared to generic residual contaminant levels (RCLs) provided on the WDNR's Remediation and Redevelopment website, which are determined in accordance with Chapter NR 720, Wisconsin Administrative Code. Among the three PFAS compounds with an NR720 RCL, the following was noted:

- Perfluorobutanesulfonic acid (PFBS) was detected at 12 out of 24 locations with an estimated concentration ranging from 0.028 to 0.21 ug/kg, which is well below the generic non-industrial direct contact RCL of 1,260,000 ug/kg;
- Perfluorooctanoic Acid (PFOA) was detected at 15 out of 24 locations with a concentration ranging from 0.11 to 0.56 ug/kg, which is also well below the generic non-industrial direct contact RCL of 1,260 ug/kg; and
- Perfluorooctanesulfonic Acid (PFOS) was at 21 of 24 locations with an estimated concentration ranging from 0.21 to 7.8 ug/kg, which is also well below the generic non-industrial direct contact RCL of 1,260 ug/kg. Note that some of the samples were qualified due to blank contamination, therefore some of the lowest detections (around 0.2 ug/kg) may be false positives.

Figure 2 presents an isoconcentration map of the 6:2 FTS concentrations in near surface soil at the site. 6:2 FTS is the principle component of the AFFF applied at the site and therefore a primary indicator of potential site impacts from the fire event. The areas with the highest documented residual surface 6:2 FTS concentrations are along the east perimeter wall (SS-17, SS-18, SS-19), the south perimeter wall (SS-26, SS-27), and just south of the former transformer (SS-42, SS-43, SS-44, SS-45, and SS-54). These findings are consistent with observations that during the firefighting operations, oil/water/foam mixture flowed east toward the catch basin (Storm Ceptor)

and south under the buswork toward and beneath the south perimeter wall. Little PFAS (<1 ug/kg total) was found during grid surface soil sampling on the northern and western portions of the substation. Therefore, the extent of residual PFAS in soil (>1 ug/kg) is defined across the site. The only area outside the substation where 6:2 FTS was detected was the grass terrace outside the south side of the substation where water/oil/foam mixture was observed seeping under the wall during the July 2019 event.

3.0 DATA ANALYSIS

Since July 2019, 93 soil samples have been analyzed for PFAS in and around the site. 6:2 FTS was detected in 76% of the samples collected within the substation. The highest concentrations of PFAS were soils collected from the base of the transformer within a week of the fire (SS-13 through SS-16). However, much of those soils were removed and properly disposed during excavation for the new transformer.

Laboratory analysis of the AFFF products (sampled in October 2019) allows for relative comparison between the two different products applied for the fire suppression and for comparison to soil.

Eleven PFAS analytes (out of 40 analyzed) were detected in one or both of the AFFF products. Both products were found to contain significant concentrations of the short-chain PFAS (6:2 FTS, PFHxA, PFPeA and PFBA). The elevated concentration of 6:2 FTS within both products and the presence of 6:2 FTS within environmental samples indicates that the use of these AFFF products are a contributing source of the PFAS impacts in the Blount Substation. An isococentration map of 6:2 FTS is presented on Figure 2.

Many of the detected constituents in the AFFF products, such as PFBA, PFPeA, PFHxA and PFHxS, are widespread in the environment and may not be good indicators of the AFFF as a contributing source. However, the GenX and 10:2 FTS analytes detected in the product(s) may be less common and may be better indicators of the AFFF contribution. GenX was detected in samples SS-35 through SS-45 and SS-62. The presence of GenX in the central portion of the substation is consistent with observations of the locations of AFFF spread during the fire event. The presence of GenX in sample SS-62 may indicate possible AFFF contribution to the soils on the north end of the west terrace along S Livingston St. 10:2 FTS was detected in 13 samples, and all were within the substation. These detections were also in locations where 6:2 FTS was detected at levels greater than or equal to one ug/Kg. PFOA was detected with a low (estimated) value in the Phos-Check AFFF applied at the site. However, PFOA was only detected at one location (SS-35) within the substation. This may be due to the relatively low volume of Phos-Check applied at the site and dilution effects.

As mentioned previously, generic direct contact RCLs have been developed for only three analytes: PFBS, PFOA and PFOS. PFBS was only detected at very low levels (<<1 ug/Kg) while the Non-industrial direct contact RCL is 1,260,000 ug/Kg. The detections of PFOA and PFOS were also well below direct contact RCLs. The detections of these two analytes in soil samples are shown on Figure 3. PFOA was detected in only two samples within the substation property boundary (SS-35 and CON-4) but was detected in nearly every sample in the areas surrounding the site. Likewise, PFOS was detected in a relatively few locations inside the substation but was detected in nearly every sample outside the substation. These findings appear to indicate PFAS is present within soils outside the substation and most detections are unrelated to the AFFF application in July 2019.

The following table summarizes these results:

Analyte	Detections Inside Substation (%) N = 50	Mean Inside Substation (± 1 SD) ug/Kg	Detections Outside Substation (%) N = 33	Mean Outside Substation (± 1 SD) ug/kg
PFBS	12%	0.08 ± 0.05	48%	0.06 ± 0.04
PFOA	2%	0.095 (only one detect)	79%	0.30 ± 0.19
PFOS	18%	0.27 ± 0.08	97%	2.47 ± 2.10

4.0 GROUNDWATER PROTECTION RCL CALCULATION

At the request of the WDNR, AECOM calculated generic Groundwater Protection (GW) Residual Contaminant Levels (RCLs) for the two PFAS compounds (PFOA and PFOS) that the State of Wisconsin has proposed Chapter NR 140 groundwater standards. Calculations were performed following the WDNR Guidance (RR-890) for Soil RCL Determinations Using the USEPA Regional Screening Level Web Calculator. A copy of the web calculator output showing the inputs and resulting calculated values is attached to this memo. The two calculated Groundwater Protection RCLS are as follows:

Compound	**EPA Risk-Based Screening Level (ug/kg)**	**WDNR Proposed Enforcement Standard (ug/L)**	**Dilution Factor**	**Calculated GW RCL (ug/kg)**	**Estimated Limit Of Detection (ug/kg)**
PFOS	0.378	0.020	2.0	0.038	<0.20
PFOA	0.172	0.020	2.0	0.017	<0.082

Based on these assumptions, both calculated GW RCLs have values that are less than the current laboratory limit of detection (LOD) for PFOA and PFOS.

5.0 CONCLUSION/RECOMMENDATIONS

Overall, site investigation activities completed in April 2020 were performed in accordance with the approved *Site Investigation Work Plan*. Surface soil samples were collected and analyzed for PFAS in previously uninvestigated areas to delineate the extent of impacts. Residual PFAS remains onsite at relatively low concentrations underneath the buswork directly south of the former transformer and along portions of the southern and eastern perimeter walls of the substation.

Further soil sampling was conducted to delineate impacts from the AFFF applied during firefighting activities in July 2019. Using 6:2 FTS, 10:2 FTS and GenX as indicator compounds, the horizontal extent of AFFF impacts to soil has been delineated. Remaining impacts from the fire are primarily within the substation; however, low levels of the indicator compounds were found outside the substation along the south terrace and possibly one sample outside to the east of the substation. The recent sampling also appears to indicate that PFOA and PFOS are detected more often and in greater concentration outside the substation and are probably not connected to the AFFF application in July 2019.

Based on these conclusions, we have the following recommendations:

- No further soil sampling is required. In the absence of applicable soil standards for PFAS related to the AFFF, indicator compounds (6:2 FTS, 10:2 FTS and GenX) identified by laboratory analysis of the AFFF product were used to successfully delineate the extent of impacts.

- No additional soil remediation is warranted. PFAS concentrations in surface soils are below the existing generic direct contact RCLs. Although calculated GW RCLs for the two proposed regulated PFAS (PFOA and PFOS) are below current laboratory limits of detection (LOD), PFOA and PFOS do not appear to be related to the AFFF release inside the substation based on their location and frequency of occurrence.

The remaining groundwater and surface water sampling is scheduled to be completed during summer 2020. Results will be reported to the WDNR following receipt of the laboratory reports for the remaining groundwater sampling.

Attachments:

Table 1 – Sample Inventory
Table 2 – Soil Analytical Results
Figure 1 – Soil Sample Location Map
Figure 2 – 6:2 FTS Detections in Soil
Figure 3 – PFOA and PFOS Detections in Soil
Attachment A – Eurofins/TestAmerica Laboratory Reports
Attachment B – RCL documentation

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TABLES

Table 1
Sample Inventory
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

AECOM

Sample ID	Location Notes	Sample Date	COC #	Sampled By	Matrix	Analysis Performed		
						PFAS	DRO	PCB
Breaker Soil	Center Inside SS	7/19/2019	320-52453-1	NSEC	Soil	x		
			500-167039-1					x
Catch Basin Water	east side catch basin		320-52453-1	NSEC	Water	x		
Surface Water	on-site NE of trans.		500-167039-1	NSEC	Water			x
			320-52453-1			x		
LW1	Structure #IN 5247-117		500-167041-1	SCS	Water	x		x
LW (Basin)	Structure # IN 5247-117		320-52453-1	NSEC	Water	x		
			500-167039-1					x
LW2	Structure #IN 5247-117		500-167041-1	SCS Split	Water	x		x
Blount Street	Structure # IN 5248-009		320-52453-1	NSEC	Water	x		
			500-167039-1					x
Blount Street			500-167041-1	SCS Split	Water	x		x
Catch Basin Oil	east side catch basin		320-52453-1	NSEC	Oil	Cancelled		
			500-167039-1					x
Main & Blount			500-167039-1	NSEC	Oil			x
Stained Soil		7/23/2019	500-167154-1	NSEC	Soil		x	
SS-01	Outside SS Terrace	7/24/2019	500-167225-1 (DRO) 500-167225-2 (PFAS)	AECOM	Soil	x	x	
SS-02						x	x	
SS-03						x	x	
SS-04						x	x	
SS-05						x	x	
SS-06						x	x	
SS-07						x	x	
SS-08						x	x	
SS-09						x	x	
SS-10						x	x	
SS-11						x	x	
SS-12						x	x	
SS-13	Gravel around former transformer					x	x	
SS-14						x	x	
SS-15						x	x	
SS-16						x	x	
SS-17	5ft from Storm Ceptor (E wall)					x	x	
North Power Pole	on-site E of trans.				Water	x		
EC-1	East Campus	7/25/2019	500-167337-1	AECOM	Soil		x	
EC-2							x	
Storm Ceptor	east side catch basin		320-52698-1	AECOM	Water	x		
River Outlet	Yahara River outlet					x		
Blount St Outlet	Monona Blount outlet					x		
Path Outlet	Monona Blount outlet					x		
LVN-6	Structure #IN 5247-115					x		
BNT-3	Square grate - main & blount					x		
BNT-4	Structure #IN 5248-028					x		
BNT-8	Structure #IN 5248-009					x		
SS-18	East wall inside SS	7/26/2019	500-167417-1 (DRO) 500-167417-2 (PFAS)	AECOM	Soil	x	x	
SS-19						x	x	
SS-20	South wall inside SS					x	x	
SS-21						x	x	
SS-22						x	x	
SS-23						x	x	
SS-24						x	x	
SS-25						x	x	
SS-26						x	x	
SS-27						x	x	
SS-28						x	x	
West Wall Manhole	Outside SS		500-167410-1	NSEC	Oil			x
WC-1	Sump	8/6/2019	500-167874-1	AECOM	Water	See Notes		
WC-2	NE Corner Excavation				Soil			
WC-3	Frac Tank SW				Water			
WC-4	Roll Off (Cap Barrier)				Soil			
RES-SS-01	Outside SS Terrace	8/8/2019	500-168051-1	AECOM	Soil	x	x	
RES-SS-08						x	x	
RES-SS-12						x	x	

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Sample ID	Location Notes	Sample Date	COC #	Sampled By	Matrix	Analysis Performed		
						PFAS	DRO	PCB
CON-1	East Washington Dewatering Area	8/28/2019	320-53858-1	AECOM	Soil	x		
CON-2						x		
CON-3						x		
CON-4						x		
CON-5						x		
OWS	Treatment System Monitoring	10/8/2019	500-171404-1 and 1903574	AECOM	Water		x	
INLET						x	x	
BAG 2						x	x	
ZEO						x	x	
GAC 1						x	x	
GAC 2						x	x	
DISCHARGE						See Notes		
River Outlet	Yahara River outlet	10/28/2019	320-55756-1	AECOM	Water	x		
Blount St Outlet	Monona Blount outlet					x		
Path Outlet	Monona Blount outlet					x		
LVN-6	Structure #IN 5247-115					x		
BNT-3	Square grate - main & blount					x		
BNT-4	Structure #IN 5248-028					x		
Storm Ceptor	east side catch basin					x		
WCB Sump	West side sump					x		
ETW-1	Temporary well off Livingstone					x		
Trans Sump	Large sump near former transformer					x		
BNT-8	Structure #IN 5248-009					x		
SS-29	Inside SS Grid	10/29/2019	320-55814-1	AECOM	Soil	x		
SS-30						x		
SS-31						x		
SS-32						x		
SS-33						x		
SS-34						x		
SS-35						x		
SS-36						x		
SS-37						x		
SS-38						x		
SS-39						x		
SS-40						x		
SS-41						x		
SS-42						x		
SS-43						x		
SS-44						x		
SS-45						x		
SS-46						x		
SS-47						x		
SS-48						x		
SS-49						x		
SS-50						x		
SS-51						x		
SS-52						x		
SS-53						x		
SS-54						x		
SS-55						x		
FireAde AFFF	Madison FD	10/29/2019	320-55913-1	AECOM	Product	x		
Phos-Check AFFF	Truax FD	10/31/2019	320-55912-1	AECOM	Product	x		

Table 1
Sample Inventory
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

AECOM

Sample ID	Location Notes	Sample Date	COC #	Sampled By	Matrix	Analysis Performed		
						PFAS	DRO	PCB
SS-56	North wall Inside SS	4/7/2020	320-60052-1	AECOM	Soil	x		
SS-57						x		
SS-58						x		
SS-59						x		
SS-60						x		
SS-61						x		
SS-62	S Livingston St - W terrace					x		
SS-63						x		
SS-64						x		
SS-66						x		
SS-67						x		
MW-1	East Control Building Terrace					x		
SS-65						x		
SS-68						x		
SS-69	E Main St - N terrace					x		
SS-72						x		
SS-70	E Main St - S terrace					x		
SS-71						x		
SS-73						x		
SS-74	S Blount St - W terrace					x		
SS-75	E Washington Ave -N terrace					x		
SS-76						x		
SS-77	S Livingston St - E terrace					x		
SS-78						x		

Notes:
Table is sorted by sample date - Oldest to Newest
WC-1 was analyzed for VOC, SVOC, O&G HEM, RCRA Metals, pH, Flash Point, mercury, cyanide, phenol, sulfate
WC-2 was analyzed for VOC, SVOC, DRO, PFAS, RCRA Metals, pesticides, herbicides, PCBs, pH, Flash Point, mercury, cyanide, phenol, paint filter, reactive sulfide
WC-3 was analyzed for VOC, SVOC, DRO O&G HEM, RCRA Metals, pH, flash point
WC-4 was analyzed for VOC, SVOC, RCRA Metals, pH, flash point, mercury, cyanide, phenol, paint filter, reactive sulfide
"DISCHARGE" was analyzed for total BETX, PAHs, PFAS, DRO, BOD, Oil and Grease, and pH
NS = not sampled
x = submitted to laboratory for analysis
WC = Waste Characterization
SS = Blount Substation
NSEC = North Shore Environmental Construction, Inc.
SCS = SCS Engineers
PFAS = per- and polyfluoroalkyl substances
DRO = diesel range organics
PCB = polychlorinated biphenyl
RES = Resampled

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Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Parameters		Generic RCLs			BREAKER SOIL	CON-1	CON-2	CON-3	CON-4	CON-5	SS-01	RES-SS-01	SS-02	SS-03	SS-04	SS-05	SS-05 FD	SS-06
		Non-Industrial	Industrial	Groundwater Pathway	Surface	2 "	2 "	2 "	2 "	2 "	8 "	12 "	9 "	10 "	8 "	7 "	7 "	9 "
					7/19/2019	8/28/2019	8/28/2019	8/28/2019	8/28/2019	8/28/2019	7/24/2019	8/8/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019
PFAS (ug/kg)	**ABBR.**																	
Perfluorobutanoic acid	PFBA	--	--	--	0.16 J B	0.11 J	< 0.028	0.032 J	0.11 J	0.084 J	0.37 B	0.22 J	0.17 JB	0.13 JB	0.44 B	0.15 JB	0.16 JB	0.39 B
Perfluorobutanesulfonic acid	PFBS	1,260,000	16,400,000	--	< 0.026	0.066 JB	0.066 JB	< 0.025	0.077 J	< 0.026	< 0.027	< 0.031	< 0.026	< 0.027	< 0.031	0.045 J	0.047 J	< 0.031
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	--	--	--	< 0.39	< 0.37	< 0.37	< 0.37	< 0.40	< 0.38	< 0.40	< 0.46	< 0.38	< 0.39	< 0.46	< 0.44	< 0.44	< 0.45
Perfluoropentanoic acid	PFPeA	--	--	--	< 0.080	0.084 J	< 0.077	< 0.077	0.12 J	< 0.080	1.3	2.7	0.56	0.33	2.6	< 0.092	0.17 J	0.67
Perfluoropentane Sulfonic Acid	PFPeS				< 0.021	< 0.020	< 0.020	< 0.020	0.035 J	< 0.021	< 0.022	< 0.025	< 0.021	< 0.021	< 0.025	< 0.024	< 0.024	< 0.024
Perfluorohexanoic acid	PFHxA	--	--	--	< 0.044	0.071 J	< 0.042	< 0.042	0.13 J	< 0.044	0.56	1.2	0.17 J	0.18 J	0.95	0.13 J	0.13 J	0.41
Perfluorohexanesulfonoic acid	PFHxS	--	--	--	< 0.032	< 0.031	< 0.031	< 0.031	0.049 J	< 0.032	0.055 J	0.18 J	0.047 J	0.078 J	0.066 J	0.053 J	0.069 J	0.093 J
6:2 Fluorotelomer sulfonic acid	6:2 FTS	--	--	--	7.7 F1	0.44 J	< 0.15	< 0.15	0.17 J	< 0.16	0.74 J	1.9 J	0.16 J	0.17 J	1.1 J	1.1 J	< 0.18	< 0.18
Perfluoroheptanoic acid	PFHpA	--	--	--	< 0.030	< 0.029	< 0.029	< 0.029	0.080 J	< 0.030	0.29	0.37	0.11 J	0.093 J	0.37	0.073 J	0.067 J	0.20 J
Perfluoroheptanesulfonic acid	PFHpS	--	--	--	< 0.037	< 0.035	< 0.035	< 0.035	0.042 J	< 0.036	< 0.038	< 0.044	< 0.036	< 0.037	< 0.044	< 0.042	< 0.042	< 0.043
Perfluorooctanoic acid	PFOA	1,260	16,400	--	< 0.09	< 0.087	< 0.086	< 0.086	0.10 J	< 0.089	0.11 J	0.27	< 0.088	< 0.091	0.27	0.25	0.30	0.44
Ammonium Perfluorooctanoate	APFO	--	--	--	< 0.093	< 0.090	< 0.089	< 0.089	0.11 J	< 0.092	0.12 J	0.29	< 0.091	< 0.095	0.28	0.26	0.31	0.46
Perfluorooctanesulfonic acid	PFOS	1,260	16,400	--	< 0.21	< 0.20	< 0.20	< 0.20	< 0.22	< 0.21	0.91	4.7	0.40 J	0.39 J	1.2	1.5	1.8	1.2
8:2 Fluorotelomer sulfonic acid	8:2 FTS	--	--	--	< 0.26	< 0.25	< 0.25	< 0.25	< 0.27	< 0.26	< 0.27	< 0.31	< 0.26	< 0.27	< 0.31	< 0.30	< 0.30	< 0.31
Perfluorononaoic acid	PFNA	--	--	--	< 0.038	< 0.036	< 0.036	< 0.036	0.043 J	< 0.037	0.061 J	0.16 J	< 0.037	< 0.038	0.10 J	0.13 J	0.14 J	0.16 J
Perfluorononanesulfonic Acid	PFNS	--	--	--	< 0.021	< 0.020	< 0.020	< 0.020	0.039 J	< 0.021	< 0.022	< 0.025	< 0.021	< 0.021	< 0.025	< 0.024	< 0.024	< 0.024
Perfluorodecanoic acid	PFDA	--	--	--	< 0.023	< 0.022	< 0.022	< 0.022	0.045 J	< 0.023	0.19 J	0.6	0.26	0.12 J	0.54	0.34	0.34	0.93
Perfluorodecanesulfonic acid	PFDS	--	--	--	< 0.041	< 0.040	< 0.039	< 0.039	< 0.042	< 0.040	< 0.042	0.72	0.053 J	< 0.041	0.13 J	0.050 J	0.084 J	0.21 J
10:2 Fluorotelomer Sulfonic Acid	10:2 FTS	--	--	--	< 0.052 F1	< 0.051	< 0.050	< 0.050	< 0.054	< 0.052	< 0.054	< 0.063	< 0.051	< 0.053	< 0.062	< 0.060	< 0.059	< 0.061
Perfluoroundecanoic acid	PFUnA	--	--	--	< 0.038	< 0.036	< 0.036	< 0.036	0.046 J	< 0.037	0.051 J	0.14 J	0.11 J	0.043 J	0.17 J	0.062 J	0.067 J	0.39
Perfluorododecanoic acid	PFDoA	--	--	--	< 0.07	< 0.068	< 0.067	< 0.067	< 0.072	< 0.069	0.073 J	0.25	0.16 J	0.21	0.43	0.092 J	0.082 J	1.0
Perfluorododecanesulfonic acid	PFDoS	--	--	--	< 0.063	< 0.061	< 0.060	< 0.060	< 0.065	< 0.062	< 0.065	< 0.075	< 0.062	< 0.064	< 0.075	< 0.072	< 0.071	< 0.073
Perfluorotridecanoic acid	PFTrDA	--	--	--	< 0.053	< 0.052	< 0.051	< 0.051	< 0.055	< 0.053	< 0.055	< 0.064	< 0.052	0.094 J	0.080 J	< 0.061	< 0.061	0.22 J
Perfluorotetradecanoic acid	PFTeDA	--	--	--	< 0.056	< 0.055	< 0.054	< 0.054	< 0.058	< 0.056	< 0.058	< 0.068	0.060 J	0.26	0.23 J	< 0.065	< 0.064	0.56
Perfluorohexadecanoic acid	PFHxDA	--	--	--	< 0.046 * F1	< 0.045	< 0.044	< 0.044	< 0.047	< 0.046 F1	< 0.047 F1	< 0.055	< 0.045	0.054 J*	0.075 J*	< 0.053	< 0.052	0.15 J*
Perfluorooctadecanoic acid	PFODA	--	--	--	< 0.029 * F1	< 0.028	< 0.028	< 0.028	0.035 J*	< 0.029 F1	< 0.030 F1	< 0.035	< 0.029	< 0.030	< 0.035	< 0.033	< 0.033	0.035 J*
HFPO-DA	GenX	--	--	--	< 0.11	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.12	< 0.14	< 0.11	< 0.12	< 0.14	< 0.13	< 0.13	< 0.13
4,8-dioxa-3H-perfluorononanoic acid	DONA	--	--	--	< 0.019	< 0.018	< 0.018	< 0.018	0.031 J	< 0.019	< 0.019	< 0.023	< 0.019	< 0.019	< 0.022	< 0.022	< 0.021	< 0.022
NaDONA	NaDONA	--	--	--	< 0.02	< 0.019	< 0.019	< 0.019	0.033 J	< 0.020	< 0.020	< 0.024	< 0.020	< 0.020	< 0.024	< 0.023	< 0.023	< 0.023
ADONA	ADONA	--	--	--	< 0.02	< 0.019	< 0.019	< 0.019	0.033 J	< 0.020	< 0.020	< 0.024	< 0.020	< 0.020	< 0.024	< 0.023	< 0.023	< 0.023
Perfluorooctane sulfonamide	PFOSA	--	--	--	< 0.086	< 0.083	< 0.082	< 0.082	< 0.088	< 0.085	< 0.088	< 0.10	< 0.084	< 0.087	< 0.10	< 0.098	< 0.097	< 0.10
N-Ethyl perfluorooctane sulfonamide	NEtFOSA	--	--	--	NA	< 0.024	< 0.024	< 0.024	< 0.026	< 0.025	NA	NA	NA	NA	NA	NA	NA	NA
N-Ethyl perfluorooctane sulfonamidoethanol	NEtFOSE	--	--	--	NA	< 0.036	< 0.036	< 0.036	< 0.039	< 0.037	NA	NA	NA	NA	NA	NA	NA	NA
N-Methyl perfluorooctane sulfonamide	NMeFOSA	--	--	--	NA	< 0.042	< 0.041	< 0.041	< 0.044	< 0.042	NA	NA	NA	NA	NA	NA	NA	NA
N-Methyl perfluorooctane sulfonamidoethanol	NMeFOSE	--	--	--	NA	< 0.072	< 0.071	< 0.071	< 0.077	< 0.074	NA	NA	NA	NA	NA	NA	NA	NA
MeFOSAA	MeFOSAA	--	--	--	< 0.41	< 0.40	< 0.39	< 0.39	< 0.42	< 0.40	< 0.42	< 0.49	< 0.40	< 0.41	< 0.49	< 0.47	< 0.46	< 0.48
EtFOSAA	EtFOSAA	--	--	--	< 0.39	< 0.37	< 0.37	< 0.37	< 0.40	< 0.38	< 0.40	< 0.46	< 0.38	< 0.39	< 0.46	< 0.44	< 0.44	< 0.45
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic ac	F-53B Major	--	--	--	< 0.028	< 0.027	< 0.027	< 0.027	0.041 J	< 0.028	< 0.029	< 0.034	< 0.028	< 0.029	< 0.034	< 0.032	< 0.032	< 0.033
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic ac	F-53B Minor	--	--	--	< 0.023	< 0.022	< 0.022	< 0.022	0.028 J	< 0.023	< 0.024	< 0.028	< 0.023	< 0.023	< 0.027	< 0.026	< 0.026	< 0.027
Total PFAS		--	--	--	8	1	0	0	1	0	5	14	2	2	9	4	4	8

AECOM

Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Parameters		Generic RCLs			SS-07	SS-08	RES-SS-08	SS-09	SS-10	SS-11	SS-12	RES-SS-12	SS-13	SS-14	SS-15	SS-16	SS-17	SS-17 FD
		Non-Industrial	Industrial	Groundwater Pathway	9 "	10 "	12 "	8 "	9 "	8 "	9 "	12 "	Surface	Surface	Surface	Surface	Surface	Surface
					7/24/2019	7/24/2019	8/8/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	8/8/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019	7/24/2019
PFAS (ug/kg)	**ABBR.**																	
Perfluorobutanoic acid	PFBA	--	--	--	0.15 JB	0.099 JB	0.15 J	0.13 JB	0.13 JB	0.20 JB	< 0.034	0.27 J	1.3 B	4.4 B	1.6 B	2.0 B	0.58 B	0.22 B
Perfluorobutanesulfonic acid	PFBS	1,260,000	16,400,000	--	< 0.026	< 0.028	< 0.031	0.048 J	< 0.026	0.061 J	0.065 J	< 0.037	< 0.027	< 0.026	< 0.025	< 0.028	< 0.027	< 0.027
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	--	--	--	< 0.39	< 0.42	< 0.46	< 0.46	< 0.38	< 0.45	< 0.46	< 0.55	< 0.40	< 0.38	< 0.38	< 0.42	< 0.40	< 0.40
Perfluoropentanoic acid	PFPeA	--	--	--	0.29	0.42	0.63	0.18 J	0.17 J	0.36	< 0.095	0.44	0.30	0.56	0.25	0.40	0.59	0.43
Perfluoropentane Sulfonic Acid	PFPeS				< 0.021	< 0.022	< 0.025	< 0.025	< 0.021	< 0.024	< 0.025	< 0.030	< 0.022	< 0.021	< 0.020	< 0.022	< 0.022	< 0.022
Perfluorohexanoic acid	PFHxA	--	--	--	0.15 J	0.17 J	0.28	0.17 J	0.073 J	0.28	0.058 JI	0.15 J	1.7	3.7	2.0	2.4	0.43	0.26
Perfluorohexanesulfonoic acid	PFHxS	--	--	--	< 0.033	0.035 J	< 0.039	0.096 J	0.042 J	0.058 J	0.17 J	0.14 J	< 0.034	< 0.032	< 0.032	< 0.035	< 0.033	< 0.034
6:2 Fluorotelomer sulfonic acid	6:2 FTS	--	--	--	0.29 J	1.3 J	0.87 J	< 0.19	< 0.16	< 0.18	< 0.18	0.36 J	120	310	140	140	15	6.6
Perfluoroheptanoic acid	PFHpA	--	--	--	0.062 J	0.13 J	0.16 J	0.12 J	0.062 J	0.27	0.11 J	0.10 J	0.075 J	0.16 J	0.040 JI	0.075 J	0.087 J	0.067 JI
Perfluoroheptanesulfonic acid	PFHpS	--	--	--	< 0.037	< 0.039	< 0.044	< 0.043	< 0.036	< 0.043	< 0.043	< 0.052	< 0.038	< 0.036	< 0.036	< 0.039	< 0.038	< 0.038
Perfluorooctanoic acid	PFOA	1,260	16,400	--	< 0.091	0.16 J	< 0.11	0.39	0.20 J	0.85	0.71	0.36	< 0.093	< 0.089	< 0.087	< 0.097	< 0.093	< 0.094
Ammonium Perfluorooctanoate	APFO	--	--	--	< 0.094	0.17 J	< 0.11	0.41	0.21 J	0.88	0.73	0.37	< 0.096	< 0.092	< 0.090	< 0.10	< 0.096	< 0.097
Perfluorooctanesulfonic acid	PFOS	1,260	16,400	--	0.22 J	0.58	< 0.25	1.6	0.50 J	1.6	2.7	2.9	< 0.22	< 0.21	0.26 JI	0.32 JI	< 0.22	< 0.22
8:2 Fluorotelomer sulfonic acid	8:2 FTS	--	--	--	< 0.26	< 0.28	< 0.31	< 0.31	< 0.26	< 0.30	< 0.31	< 0.37	< 0.27	1.4 J	< 2.5	< 0.28	0.30 J	< 0.27
Perfluorononaoic acid	PFNA	--	--	--	< 0.038	0.10 J	< 0.045	0.12 J	0.065 J	0.29	0.30	0.13 J	< 0.039	< 0.037	< 0.037	< 0.040	< 0.039	< 0.039
Perfluorononanesulfonic Acid	PFNS	--	--	--	< 0.021	< 0.022	< 0.025	< 0.025	< 0.021	< 0.024	< 0.025	< 0.030	< 0.022	< 0.021	< 0.020	< 0.022	< 0.022	< 0.022
Perfluorodecanoic acid	PFDA	--	--	--	0.17 J	0.21 J	0.081 JI	0.38	0.31	0.76	0.30	0.41	< 0.024	< 0.023	< 0.022	< 0.025	< 0.024	< 0.024
Perfluorodecanesulfonic acid	PFDS	--	--	--	< 0.041	0.057 J	< 0.049	0.12 J	0.045 J	0.060 J	< 0.048	0.29 J	< 0.042	< 0.040	< 0.040	< 0.044	< 0.042	< 0.043
10:2 Fluorotelomer Sulfonic Acid	10:2 FTS	--	--	--	< 0.053	< 0.056	< 0.063	< 0.062	< 0.052	< 0.061	< 0.061	< 0.074	< 0.054	0.64	< 0.051	< 0.056	0.14 J	< 0.055
Perfluoroundecanoic acid	PFUnA	--	--	--	0.11 J	0.095 J	< 0.045	0.11 J	0.088 J	0.089 J	0.048 J	0.10 J	0.043 J	< 0.037	< 0.037	0.049 J	< 0.039	< 0.039
Perfluorododecanoic acid	PFDoA	--	--	--	0.24	0.17 J	< 0.084	0.17 J	0.19 J	0.15 J	0.096 J	0.17 J	< 0.072	< 0.069	< 0.068	< 0.075	< 0.072	< 0.073
Perfluorododecanesulfonic acid	PFDoS	--	--	--	< 0.063	< 0.067	< 0.075	< 0.074	< 0.062	< 0.073	< 0.074	< 0.089	< 0.065	< 0.062	< 0.061	< 0.067	< 0.065	< 0.066
Perfluorotridecanoic acid	PFTrDA	--	--	--	< 0.054	< 0.057	< 0.064	< 0.063	< 0.053	< 0.062	< 0.063	< 0.075	< 0.055	< 0.053	< 0.052	0.087 J	< 0.055	< 0.056
Perfluorotetradecanoic acid	PFTeDA	--	--	--	0.068 J	0.076 J	< 0.068	0.074 J	0.091 J	0.091 J	< 0.066	< 0.080	< 0.058	< 0.056	< 0.055	0.064 J	< 0.058	< 0.059
Perfluorohexadecanoic acid	PFHxDA	--	--	--	< 0.047	< 0.049	< 0.055	< 0.054	< 0.045	< 0.054	< 0.054	< 0.065	< 0.048	< 0.045	< 0.045	< 0.049	< 0.047	< 0.048
Perfluorooctadecanoic acid	PFODA	--	--	--	< 0.030	< 0.031	< 0.035	< 0.035	< 0.029	< 0.034	< 0.034	< 0.041	< 0.030	< 0.029	< 0.028	< 0.031	< 0.030	< 0.031
HFPO-DA	GenX	--	--	--	< 0.12	< 0.12	< 0.14	< 0.14	< 0.11	< 0.13	< 0.14	< 0.16	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12
4,8-dioxa-3H-perfluorononanoic acid	DONA	--	--	--	< 0.019	< 0.020	< 0.023	< 0.022	< 0.019	< 0.022	< 0.022	< 0.027	< 0.019	< 0.019	< 0.018	< 0.020	< 0.019	< 0.020
NaDONA	NaDONA	--	--	--	< 0.020	< 0.021	< 0.024	< 0.023	< 0.020	< 0.023	< 0.023	< 0.028	< 0.021	< 0.020	< 0.019	< 0.021	< 0.020	< 0.021
ADONA	ADONA	--	--	--	< 0.020	< 0.021	< 0.024	< 0.023	< 0.020	< 0.023	< 0.023	< 0.028	< 0.021	< 0.020	< 0.019	< 0.021	< 0.020	< 0.021
Perfluorooctane sulfonamide	PFOSA	--	--	--	< 0.087	< 0.092	< 0.10	< 0.10	< 0.085	< 0.10	< 0.10	< 0.12	< 0.089	< 0.085	< 0.083	< 0.092	< 0.088	< 0.090
N-Ethyl perfluorooctane sulfonamide	NEtFOSA	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Ethyl perfluorooctane sulfonamidoethanol	NEtFOSE	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Methyl perfluorooctane sulfonamide	NMeFOSA	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Methyl perfluorooctane sulfonamidoethanol	NMeFOSE	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MeFOSAA	MeFOSAA	--	--	--	< 0.41	< 0.44	< 0.49	< 0.48	< 0.40	< 0.47	< 0.48	< 0.58	< 0.42	< 0.40	< 0.40	< 0.44	< 0.42	< 0.43
EtFOSAA	EtFOSAA	--	--	--	< 0.39	< 0.42	< 0.46	< 0.46	< 0.38	< 0.45	< 0.46	< 0.55	< 0.40	< 0.38	< 3.8	< 0.42	< 0.40	< 0.40
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic ac	F-53B Major	--	--	--	< 0.029	< 0.030	< 0.034	< 0.033	< 0.028	< 0.033	< 0.033	< 0.040	< 0.029	< 0.028	< 0.027	< 0.030	< 0.029	< 0.029
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic ac	F-53B Minor	--	--	--	< 0.023	< 0.025	< 0.028	< 0.027	< 0.023	< 0.027	< 0.027	< 0.033	< 0.024	< 0.023	< 0.022	< 0.025	< 0.024	< 0.024
Total PFAS		--	--	--	2	4	2	4	2	6	5	6	120	320	140	150	17	8

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Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Parameters		Generic RCLs			SS-18	SS-19	SS-20	SS-21	SS-22	SS-23	SS-24	SS-25	SS-26	SS-27	SS-28	SS-29	SS-30	SS-31
		Non-Industrial	Industrial	Groundwater Pathway	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 7/26/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019
PFAS (ug/kg)	**ABBR.**																	
Perfluorobutanoic acid	PFBA	--	--	--	0.59 B	3.4 B	0.14 JB	0.17 JB	0.12 JB	0.24 B	0.21 B	0.31 B	0.86 B	0.58 B	< 0.030	0.37 B	0.085 JB	0.13 JB
Perfluorobutanesulfonic acid	PFBS	1,260,000	16,400,000	--	< 0.025	< 0.028	< 0.026	< 0.027	< 0.028	< 0.026	< 0.025	< 0.027	< 0.027	< 0.026	< 0.027	< 0.026	< 0.026	< 0.025
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	--	--	--	< 0.38	< 0.41	< 0.38	< 0.39	< 0.41	< 0.39	< 0.38	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.38
Perfluoropentanoic acid	PFPeA	--	--	--	0.22	0.38	< 0.080	< 0.082	< 0.085	< 0.080	0.17 J	0.11 J	0.31	0.42	< 0.082	0.12 J	0.11 J	0.59
Perfluoropentane Sulfonic Acid	PFPeS				< 0.020	< 0.022	< 0.021	< 0.021	< 0.022	< 0.021	< 0.020	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.020
Perfluorohexanoic acid	PFHxA	--	--	--	0.26	1.0	< 0.044	< 0.045	< 0.047	0.050 J	0.083 J	0.088 J	0.28	0.50	< 0.045	0.050 J	< 0.044	0.26
Perfluorohexanesulfonoic acid	PFHxS	--	--	--	< 0.032	< 0.034	< 0.032	< 0.033	< 0.034	< 0.032	< 0.031	< 0.033	< 0.033	0.038 J	0.035 JI	0.040 J	< 0.032	< 0.032
6:2 Fluorotelomer sulfonic acid	6:2 FTS	--	--	--	11	130	< 0.16	1.5 J	0.44 J	2.0 J	3.8	1.2 J	9.8	13	1.6 J	< 0.16	0.16 J	0.66 J
Perfluoroheptanoic acid	PFHpA	--	--	--	0.031 J	0.18 J	< 0.030	< 0.031	< 0.032	< 0.030	0.032 J	< 0.031	0.070 J	0.056 J	< 0.031	0.043 J	< 0.030	0.068 J
Perfluoroheptanesulfonic acid	PFHpS	--	--	--	< 0.036	< 0.039	< 0.036	< 0.037	< 0.039	< 0.037	< 0.035	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.036	< 0.036
Perfluorooctanoic acid	PFOA	1,260	16,400	--	< 0.088	< 0.095	< 0.089	< 0.091	< 0.095	< 0.090	< 0.087	< 0.092	< 0.092	< 0.091	< 0.091	< 0.090	< 0.090	< 0.087
Ammonium Perfluorooctanoate	APFO	--	--	--	< 0.091	< 0.098	< 0.092	< 0.094	< 0.099	< 0.093	< 0.090	< 0.095	< 0.095	< 0.094	< 0.095	< 0.093	< 0.093	< 0.090
Perfluorooctanesulfonic acid	PFOS	1,260	16,400	--	< 0.20	< 0.22	< 0.21	< 0.21	< 0.22	< 0.21	< 0.20	0.24 J	< 0.21	< 0.21	< 0.21	< 0.21	0.21 J	< 0.20
8:2 Fluorotelomer sulfonic acid	8:2 FTS	--	--	--	0.62 J	< 2.8	< 0.26	< 0.27	< 0.28	< 0.26	< 0.25	< 0.27	< 0.27	< 0.26	< 0.27	< 0.26	< 0.26	< 0.25
Perfluorononaoic acid	PFNA	--	--	--	< 0.037	< 0.040	< 0.037	< 0.038	< 0.040	< 0.038	< 0.036	< 0.038	< 0.038	< 0.038	< 0.038	< 0.038	< 0.037	< 0.037
Perfluorononanesulfonic Acid	PFNS	--	--	--	< 0.020	< 0.022	< 0.021	< 0.021	< 0.022	< 0.021	< 0.020	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.020
Perfluorodecanoic acid	PFDA	--	--	--	< 0.022	0.030 J	< 0.023	< 0.023	< 0.024	< 0.023	< 0.022	0.058 J	0.042 J	< 0.023	< 0.023	0.024 J	< 0.023	< 0.022
Perfluorodecanesulfonic acid	PFDS	--	--	--	< 0.040	< 0.043	< 0.040	< 0.041	< 0.043	< 0.041	< 0.040	< 0.042	< 0.042	< 0.041	< 0.041	< 0.041	< 0.041	< 0.040
10:2 Fluorotelomer Sulfonic Acid	10:2 FTS	--	--	--	0.20	0.44	< 0.052	< 0.053	< 0.055	< 0.052	< 0.051	< 0.053	0.11 J	0.11 J	< 0.053	< 0.052	< 0.052	< 0.051
Perfluoroundecanoic acid	PFUnA	--	--	--	< 0.037	< 0.040	< 0.037	< 0.038	< 0.040	< 0.038	< 0.036	0.043 J	0.065 J	< 0.038	< 0.038	< 0.038	< 0.037	< 0.037
Perfluorododecanoic acid	PFDoA	--	--	--	< 0.068	< 0.074	< 0.070	< 0.071	< 0.074	< 0.070	< 0.068	< 0.071	< 0.071	< 0.071	< 0.071	< 0.070	< 0.070	< 0.068
Perfluorododecanesulfonic acid	PFDoS	--	--	--	< 0.061	< 0.066	< 0.062	< 0.064	< 0.066	< 0.063	< 0.061	< 0.064	< 0.064	< 0.063	< 0.064	< 0.063	< 0.062	< 0.061
Perfluorotridecanoic acid	PFTrDA	--	--	--	< 0.052	< 0.056	< 0.053	< 0.054	< 0.057	< 0.053	< 0.052	< 0.054	< 0.054	< 0.054	< 0.054	< 0.053	< 0.053	< 0.052
Perfluorotetradecanoic acid	PFTeDA	--	--	--	< 0.055	< 0.059	< 0.056	< 0.057	< 0.060	< 0.056	< 0.055	< 0.057	< 0.058	< 0.057	< 0.057	< 0.057	< 0.056	< 0.055
Perfluorohexadecanoic acid	PFHxDA	--	--	--	< 0.045	< 0.048	< 0.046	< 0.047	< 0.049	< 0.046	< 0.045	< 0.047	< 0.047	< 0.046	< 0.047	< 0.046	< 0.046	< 0.045
Perfluorooctadecanoic acid	PFODA	--	--	--	< 0.028	< 0.031	< 0.029	< 0.030	< 0.031	< 0.029	< 0.028	< 0.030	< 0.030	< 0.029	< 0.030	< 0.029	< 0.029	< 0.028
HFPO-DA	GenX	--	--	--	< 0.11	< 0.12	< 0.11	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.11	< 0.11
4,8-dioxa-3H-perfluorononanoic acid	DONA	--	--	--	< 0.018	< 0.020	< 0.019	< 0.019	< 0.020	< 0.019	< 0.018	< 0.019	< 0.019	< 0.019	< 0.019	< 0.019	< 0.019	< 0.018
NaDONA	NaDONA	--	--	--	< 0.019	< 0.021	< 0.020	< 0.020	< 0.021	< 0.020	< 0.019	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.019
ADONA	ADONA	--	--	--	< 0.019	< 0.021	< 0.020	< 0.020	< 0.021	< 0.020	< 0.019	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.019
Perfluorooctane sulfonamide	PFOSA	--	--	--	< 0.083	< 0.090	< 0.085	< 0.087	< 0.091	< 0.086	< 0.083	< 0.087	< 0.087	< 0.086	< 0.087	< 0.086	< 0.085	< 0.083
N-Ethyl perfluorooctane sulfonamide	NEtFOSA	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.025	< 0.025	< 0.024
N-Ethyl perfluorooctane sulfonamidoethanol	NEtFOSE	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.038	< 0.037	< 0.037
N-Methyl perfluorooctane sulfonamide	NMeFOSA	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.043	< 0.043	< 0.042
N-Methyl perfluorooctane sulfonamidoethanol	NMeFOSE	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.074	< 0.074	< 0.072
MeFOSAA	MeFOSAA	--	--	--	< 0.40	< 0.43	< 0.40	< 0.41	< 0.43	< 0.41	< 0.40	< 0.42	< 0.42	< 0.41	< 0.41	< 0.41	< 0.41	< 0.40
EtFOSAA	EtFOSAA	--	--	--	< 0.38	< 0.41	< 0.38	< 0.39	< 0.41	< 0.39	< 0.38	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.38
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic ac	F-53B Major	--	--	--	< 0.027	< 0.030	< 0.028	< 0.029	< 0.030	< 0.028	< 0.027	< 0.029	< 0.029	< 0.028	< 0.029	< 0.028 F1	< 0.028	< 0.027
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic ac	F-53B Minor	--	--	--	< 0.022	< 0.024	< 0.023	< 0.023	< 0.024	< 0.023	< 0.022	< 0.023	< 0.023	< 0.023	< 0.023	< 0.023	< 0.023	< 0.022
Total PFAS		--	--	--	13	140	0	2	1	2	4	2	12	15	2	1	1	2

AECOM

Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Parameters		Generic RCLs			SS-32	SS-33	SS-34	SS-34 DUP	SS-35	SS-36	SS-37	SS-38	SS-39	SS-40	SS-41	SS-42	SS-43	SS-44
		Non-Industrial	Industrial	Groundwater Pathway	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019	Surface 10/29/2019
PFAS (ug/kg)	**ABBR.**																	
Perfluorobutanoic acid	PFBA	--	--	--	0.090 JB	0.082 JB	0.12 JB	0.11 JB	0.21 B	0.63 B	0.10 JB	0.081 JB	0.063 JB	0.092 JB	0.14 JB	0.093 JB	0.070 JB	0.79 B
Perfluorobutanesulfonic acid	PFBS	1,260,000	16,400,000	--	< 0.025	< 0.026	< 0.026	< 0.025	0.17 J	0.071 J	0.11 J	0.052 J	< 0.027	0.041 J	< 0.025	< 0.026	< 0.025	0.034 J
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	--	--	--	< 0.37	< 0.39	< 0.38	< 0.37	< 0.38	< 0.37	< 0.38	< 0.38	< 0.40	< 0.40	< 0.37	< 0.38	< 0.37	< 0.39
Perfluoropentanoic acid	PFPeA	--	--	--	0.30	0.17 J	0.15 J	0.20	0.58	2.4	0.086 J	0.090 J	< 0.083	< 0.083	0.49	0.15 J	< 0.078	1.3
Perfluoropentane Sulfonic Acid	PFPeS				< 0.020	< 0.021	< 0.021	< 0.020	0.051 J	< 0.020	0.045 J	< 0.021	< 0.022	< 0.022	< 0.020	< 0.021	< 0.020	< 0.021
Perfluorohexanoic acid	PFHxA	--	--	--	0.17 J	0.056 J	0.17 J	0.17 J	0.28	1.6	0.077 J	0.065 J	< 0.045	0.046 J	0.14 J	0.15 J	0.077 J	0.70
Perfluorohexanesulfonoic acid	PFHxS	--	--	--	< 0.031	< 0.033	< 0.032	0.031 J	0.10 J	0.035 J	0.063 J	< 0.032	< 0.033	0.036 J	< 0.031	< 0.032	0.034 J	0.040 J
6:2 Fluorotelomer sulfonic acid	6:2 FTS	--	--	--	< 0.15	< 0.16	0.83 J	1.2 J	1.7 J	2.4	1.9 J	0.32 J	0.29 J	0.48 J	0.71 J	8.9	4.4	36
Perfluoroheptanoic acid	PFHpA	--	--	--	0.030 J	< 0.031	0.057 J	0.068 J	0.14 J	0.13 J	0.043 J	0.031 JI	< 0.031	< 0.031	0.10 J	< 0.030	< 0.029	0.27
Perfluoroheptanesulfonic acid	PFHpS	--	--	--	< 0.035	< 0.037	< 0.036	< 0.035	0.057 J	< 0.035	0.043 J	< 0.036	< 0.038	< 0.038	< 0.035	< 0.036	< 0.035	< 0.037
Perfluorooctanoic acid	PFOA	1,260	16,400	--	< 0.087	< 0.091	< 0.089	< 0.087	0.095 J	< 0.087	< 0.088	< 0.088	< 0.093	< 0.093	< 0.086	< 0.089	< 0.087	< 0.091
Ammonium Perfluorooctanoate	APFO	--	--	--	< 0.090	< 0.094	< 0.092	< 0.090	0.099 J	< 0.090	< 0.091	< 0.091	< 0.096	< 0.096	< 0.089	< 0.092	< 0.090	< 0.094
Perfluorooctanesulfonic acid	PFOS	1,260	16,400	--	< 0.20	< 0.21	< 0.21	< 0.20	< 0.21	< 0.20	< 0.20	< 0.21	< 0.22	< 0.22	< 0.20	< 0.21	< 0.20	< 0.21
8:2 Fluorotelomer sulfonic acid	8:2 FTS	--	--	--	< 0.25	< 0.26	< 0.26	< 0.25	0.29 J	< 0.25	0.48 J	< 0.26	< 0.27	< 0.27	< 0.25	0.35 J	< 0.25	< 0.26
Perfluorononaoic acid	PFNA	--	--	--	< 0.036	< 0.038	< 0.037	0.039 J	0.089 J	0.043 J	0.043 J	< 0.037	0.040 J	< 0.039	0.077 J	< 0.037	0.036 JI	0.047 J
Perfluorononanesulfonic Acid	PFNS	--	--	--	< 0.020	< 0.021	< 0.021	< 0.020	0.068 JI	0.025 J	0.039 JI	< 0.021	< 0.022	< 0.022	< 0.020	< 0.021	< 0.020	< 0.021
Perfluorodecanoic acid	PFDA	--	--	--	< 0.022	0.035 J	< 0.023	0.046 JI	0.070 J	< 0.022	0.057 J	< 0.023	0.075 J	0.16 J	0.026 JI	< 0.023	0.054 JI	0.052 J
Perfluorodecanesulfonic acid	PFDS	--	--	--	< 0.039	< 0.041	< 0.040	< 0.039	0.057 J	< 0.039	0.041 J	< 0.040	< 0.042	< 0.042	< 0.039	< 0.040	< 0.039	< 0.041
10:2 Fluorotelomer Sulfonic Acid	10:2 FTS	--	--	--	< 0.051	< 0.053	< 0.052	0.068 J	0.078 J	< 0.050	0.086 J	< 0.051	< 0.054	< 0.054	< 0.050	0.10 J	< 0.051	< 0.053
Perfluoroundecanoic acid	PFUnA	--	--	--	< 0.036	0.060 J	< 0.037	0.045 J	0.084 J	0.044 J	0.054 J	< 0.037	0.045 J	0.10 J	< 0.036	0.044 JI	< 0.036	< 0.038
Perfluorododecanoic acid	PFDoA	--	--	--	< 0.068	< 0.071	< 0.069	< 0.068	< 0.069	< 0.068	< 0.069	< 0.069	< 0.072	0.17 J	< 0.067	< 0.069	< 0.068	< 0.071
Perfluorododecanesulfonic acid	PFDoS	--	--	--	< 0.061	< 0.063	< 0.062	< 0.061	< 0.062	< 0.061	< 0.061	< 0.062	< 0.065	< 0.065	< 0.060	< 0.062	< 0.061	< 0.064
Perfluorotridecanoic acid	PFTrDA	--	--	--	< 0.052	< 0.054	< 0.053	< 0.052	0.068 J	< 0.052	< 0.052	< 0.052	< 0.055	0.065 J	< 0.051	< 0.053	< 0.052	< 0.054
Perfluorotetradecanoic acid	PFTeDA	--	--	--	< 0.055	< 0.057	< 0.056	< 0.055	0.068 J	< 0.055	< 0.055	< 0.055	< 0.058	0.091 J	< 0.054	< 0.056	< 0.055	< 0.057
Perfluorohexadecanoic acid	PFHxDA	--	--	--	< 0.045	< 0.046	< 0.046	< 0.044	0.069 J	< 0.044	< 0.045	< 0.045	< 0.047	< 0.048	< 0.044	< 0.045	< 0.045	< 0.047
Perfluorooctadecanoic acid	PFODA	--	--	--	< 0.028	< 0.030	< 0.029	< 0.028	0.079 J	< 0.028	0.055 J	< 0.029	< 0.030	< 0.030	< 0.028	< 0.029	< 0.028	< 0.030
HFPO-DA	GenX	--	--	--	< 0.11	< 0.12	< 0.11	< 0.11	3.3	1.0	2.2	0.48	0.46	0.60	0.19 J	0.26	0.19 J	0.19 J
4,8-dioxa-3H-perfluorononanoic acid	DONA	--	--	--	< 0.018	< 0.019	< 0.019	< 0.018	0.046 J	< 0.018	0.026 J	< 0.018	< 0.019	< 0.019	< 0.018	< 0.019	< 0.018	< 0.019
NaDONA	NaDONA	--	--	--	< 0.019	< 0.020	< 0.020	< 0.019	0.049 J	< 0.019	0.028 J	< 0.019	< 0.021	< 0.021	< 0.019	< 0.020	< 0.019	< 0.020
ADONA	ADONA	--	--	--	< 0.019	< 0.020	< 0.020	< 0.019	0.048 J	< 0.019	0.028 J	< 0.019	< 0.021	< 0.021	< 0.019	< 0.020	< 0.019	< 0.020
Perfluorooctane sulfonamide	PFOSA	--	--	--	< 0.083	< 0.087	< 0.085	< 0.083	< 0.085	< 0.083	< 0.084	< 0.084	< 0.089	< 0.089	< 0.082	< 0.084	< 0.083	< 0.087
N-Ethyl perfluorooctane sulfonamide	NEtFOSA	--	--	--	< 0.024	< 0.025	< 0.025	0.056 J	< 0.025	< 0.024	< 0.025	< 0.025	< 0.026	< 0.026	< 0.024	< 0.025	< 0.024	< 0.025
N-Ethyl perfluorooctane sulfonamidoethanol	NEtFOSE	--	--	--	< 0.036	< 0.038	0.048 J	0.098 J	0.089 J	< 0.036	< 0.037	0.048 J	< 0.039	< 0.039	0.046 J	< 0.037	< 0.036	< 0.038
N-Methyl perfluorooctane sulfonamide	NMeFOSA	--	--	--	< 0.041	< 0.043	< 0.042	0.069 J	< 0.042	< 0.041	< 0.042	< 0.042	< 0.044	< 0.044	< 0.041	< 0.042	< 0.042	< 0.043
N-Methyl perfluorooctane sulfonamidoethanol	NMeFOSE	--	--	--	< 0.072	< 0.075	< 0.074	0.12 J	< 0.074	< 0.072	< 0.073	< 0.073	< 0.077	< 0.077	< 0.071	< 0.073	< 0.072	< 0.075
MeFOSAA	MeFOSAA	--	--	--	< 0.39	< 0.41	< 0.40	< 0.39	< 0.40	< 0.39	< 0.40	< 0.40	< 0.42	< 0.42	< 0.39	< 0.40	< 0.39	< 0.41
EtFOSAA	EtFOSAA	--	--	--	< 0.37	< 0.39	< 0.38	< 0.37	< 0.38	< 0.37	< 0.38	< 0.38	< 0.40	< 0.40	< 0.37	< 0.38	< 0.37	< 0.39
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic ac	F-53B Major	--	--	--	< 0.027	< 0.029	< 0.028	< 0.027	0.069 J	< 0.027	0.038 J	< 0.028	< 0.029	< 0.029	< 0.027	< 0.028	< 0.027	< 0.029
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic ac	F-53B Minor	--	--	--	< 0.022	< 0.023	< 0.023	< 0.022	0.049 J	< 0.022	0.032 J	< 0.023	< 0.024	< 0.024	< 0.022	< 0.023	< 0.022	< 0.023
Total PFAS		--	--	--	1	0	1	2	8	8	6	1	1	2	2	10	5	39

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Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Parameters		Generic RCLs			SS-45 Surface 10/29/2019	SS-46 Surface 10/29/2019	SS-46 DUP Surface 10/29/2019	SS-47 Surface 10/29/2019	SS-48 Surface 10/29/2019	SS-49 Surface 10/29/2019	SS-49 DUP Surface 10/29/2019	SS-50 Surface 10/29/2019	SS-51 Surface 10/29/2019	SS-52 Surface 10/29/2019	SS-53 Surface 10/29/2019	SS-54 Surface 10/29/2019	SS-55 Surface 10/29/2019	MW-1 Surface 4/7/2020
		Non-Industrial	Industrial	Groundwater Pathway														
PFAS (ug/kg)	**ABBR.**																	
Perfluorobutanoic acid	PFBA	--	--	--	0.30 B	0.058 JB	0.056 JB	0.12 JB	0.057 JB	0.12 JB	0.13 JB	0.075 JB	0.066 JB	0.11 JB	0.067 JB	0.23 B	0.20 B	0.090 JB
Perfluorobutanesulfonic acid	PFBS	1,260,000	16,400,000	--	< 0.025	< 0.026	< 0.028	< 0.026	< 0.025	< 0.028	< 0.026	< 0.025	< 0.026	< 0.027	< 0.025	< 0.027	< 0.025	< 0.028
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	--	--	--	< 0.37	< 0.39	< 0.41	< 0.38	< 0.37	< 0.42	< 0.38	< 0.37	< 0.38	< 0.40	< 0.37	< 0.40	< 0.37	< 0.41
Perfluoropentanoic acid	PFPeA	--	--	--	0.093 J	0.13 J	0.098 J	0.12 J	< 0.077	< 0.087	< 0.080	< 0.077	< 0.080	< 0.083	< 0.077	0.43	0.40	< 0.085
Perfluoropentane Sulfonic Acid	PFPeS				< 0.020	< 0.021	< 0.022	< 0.021	< 0.020	< 0.023	< 0.021	< 0.020	< 0.021	< 0.022	< 0.020	< 0.022	< 0.020	< 0.022
Perfluorohexanoic acid	PFHxA	--	--	--	0.21	0.078 J	< 0.047	0.12 J	< 0.042	< 0.048	< 0.043	< 0.042	< 0.044	< 0.045	< 0.042	0.20 J	0.21	< 0.046
Perfluorohexanesulfonoic acid	PFHxS	--	--	--	0.034 J	< 0.032	< 0.035	< 0.032	< 0.031	< 0.035	< 0.032	< 0.031	< 0.032	< 0.033	< 0.031	< 0.033	< 0.031	0.15 J
6:2 Fluorotelomer sulfonic acid	6:2 FTS	--	--	--	33	2.4	1.5 J	5.0	< 0.15	< 0.17	< 0.16	< 0.15	1.3 J	0.20 J	0.30 J	7.6	2.7	< 0.17
Perfluoroheptanoic acid	PFHpA	--	--	--	< 0.029	< 0.030	< 0.032	< 0.030	< 0.029	< 0.033	< 0.030	< 0.029	< 0.030	< 0.031	< 0.029	0.092 J	0.061 J	< 0.032
Perfluoroheptanesulfonic acid	PFHpS	--	--	--	< 0.035	< 0.037	< 0.039	< 0.036	< 0.035	< 0.040	< 0.036	< 0.035	< 0.036	< 0.038	< 0.035	< 0.038	< 0.035	< 0.039
Perfluorooctanoic acid	PFOA	1,260	16,400	--	< 0.087	< 0.090	< 0.096	< 0.089	< 0.086	< 0.098	< 0.089	< 0.087	< 0.089	< 0.093	< 0.086	< 0.093	< 0.087	0.11 J
Ammonium Perfluorooctanoate	APFO	--	--	--	< 0.090	< 0.093	< 0.10	< 0.092	< 0.090	< 0.10	< 0.092	< 0.090	< 0.092	< 0.096	< 0.089	< 0.096	< 0.090	0.12 J
Perfluorooctanesulfonic acid	PFOS	1,260	16,400	--	< 0.20	< 0.21	< 0.22	< 0.20 H	< 0.20	< 0.23	< 0.21	0.20 JB*	< 0.21	< 0.22	< 0.20	0.47 JB*	< 0.20	2.4 B
8:2 Fluorotelomer sulfonic acid	8:2 FTS	--	--	--	0.36 J	< 0.26	< 0.28	< 0.26	< 0.25	< 0.28	< 0.26	< 0.25	< 0.26	< 0.27	< 0.25	< 0.27	< 0.25	< 0.28
Perfluorononaoic acid	PFNA	--	--	--	< 0.036	< 0.038	< 0.040	< 0.037	< 0.036	0.047 J	0.067 J	< 0.036	< 0.037	< 0.039	< 0.036	< 0.039	< 0.036	0.063 J
Perfluorononanesulfonic Acid	PFNS	--	--	--	< 0.020	< 0.021	< 0.022	< 0.021	< 0.020	< 0.023	< 0.021	< 0.020	< 0.021	< 0.022	< 0.020	< 0.022	< 0.020	< 0.022
Perfluorodecanoic acid	PFDA	--	--	--	< 0.022	< 0.023	< 0.025	< 0.023	< 0.022	< 0.025	0.087 J	0.043 JI	0.079 J	0.065 J	< 0.022	0.043 J	< 0.022	0.33
Perfluorodecanesulfonic acid	PFDS	--	--	--	< 0.039	< 0.041	< 0.044	< 0.040	< 0.039	< 0.044	< 0.040	< 0.039	< 0.040	< 0.042	< 0.039	< 0.042	< 0.039	0.47
10:2 Fluorotelomer Sulfonic Acid	10:2 FTS	--	--	--	0.20	< 0.052	< 0.056	< 0.052	< 0.050	< 0.057	< 0.052	< 0.050	< 0.052	< 0.054	< 0.050	0.055 J	< 0.051	< 0.055
Perfluoroundecanoic acid	PFUnA	--	--	--	< 0.036	< 0.038	< 0.040	< 0.037	< 0.036	< 0.041	< 0.037	0.037 J	< 0.037	0.064 J	< 0.036	0.051 JI	< 0.036	0.069 J
Perfluorododecanoic acid	PFDoA	--	--	--	< 0.068	< 0.070	< 0.075	< 0.069	< 0.067	< 0.076	< 0.069	< 0.067	< 0.069	< 0.072	< 0.067	< 0.072	< 0.068	0.18 J
Perfluorododecanesulfonic acid	PFDoS	--	--	--	< 0.061	< 0.063	< 0.067	< 0.062	< 0.060	< 0.068	< 0.062	< 0.060	< 0.062	< 0.065	< 0.060	< 0.065	< 0.061	< 0.066
Perfluorotridecanoic acid	PFTrDA	--	--	--	< 0.052	< 0.053	< 0.057	< 0.053	< 0.051	< 0.058	< 0.053	< 0.051	< 0.053	< 0.055	< 0.051	< 0.055	< 0.052	< 0.056
Perfluorotetradecanoic acid	PFTeDA	--	--	--	< 0.055	< 0.057	< 0.060	< 0.056	< 0.054	< 0.061	< 0.056	< 0.054	< 0.056	< 0.058	< 0.054	< 0.058	< 0.055	0.067 J
Perfluorohexadecanoic acid	PFHxDA	--	--	--	< 0.045	< 0.046	< 0.049	< 0.045	< 0.044	< 0.050	< 0.046	< 0.044	< 0.046	< 0.047	< 0.044	< 0.047	< 0.045	< 0.049
Perfluorooctadecanoic acid	PFODA	--	--	--	< 0.028	< 0.029	< 0.031	< 0.029	< 0.028	< 0.032	< 0.029	< 0.028	< 0.029	< 0.030	< 0.028	< 0.030	< 0.028	< 0.031
HFPO-DA	GenX	--	--	--	0.19 J	< 0.12	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11	< 0.11	< 0.11	< 0.12	< 0.11	< 0.12	< 0.11	< 0.12
4,8-dioxa-3H-perfluorononanoic acid	DONA	--	--	--	< 0.018	< 0.019	< 0.020	< 0.019	< 0.018	< 0.020	< 0.019	< 0.018	< 0.019	< 0.019	< 0.018	< 0.019	< 0.018	< 0.020
NaDONA	NaDONA	--	--	--	< 0.019	< 0.020	< 0.021	< 0.020	< 0.019	< 0.022	< 0.020	< 0.019	< 0.020	< 0.020	< 0.019	< 0.020	< 0.019	< 0.021
ADONA	ADONA	--	--	--	< 0.019	< 0.020	< 0.021	< 0.020	< 0.019	< 0.022	< 0.020	< 0.019	< 0.020	< 0.020	< 0.019	< 0.020	< 0.019	< 0.021
Perfluorooctane sulfonamide	PFOSA	--	--	--	< 0.083	< 0.086	< 0.092	< 0.085	< 0.082	< 0.093	< 0.085	< 0.083	< 0.085	< 0.088	< 0.082	< 0.088	< 0.083	< 0.091
N-Ethyl perfluorooctane sulfonamide	NEtFOSA	--	--	--	< 0.024	< 0.025	< 0.027	< 0.025	< 0.024	< 0.027	< 0.025	< 0.024	< 0.025	< 0.026	< 0.024	< 0.026	< 0.024	< 0.027
N-Ethyl perfluorooctane sulfonamidoethanol	NEtFOSE	--	--	--	< 0.036	< 0.038	< 0.040	0.051 JH	< 0.036	< 0.041	< 0.037	0.078 JB	< 0.037	< 0.039	< 0.036	< 0.039	< 0.036	0.36
N-Methyl perfluorooctane sulfonamide	NMeFOSA	--	--	--	< 0.041	< 0.043	< 0.046	< 0.042	< 0.041	< 0.046	< 0.042	< 0.041	< 0.042	< 0.044	< 0.041	< 0.044	< 0.041	< 0.045
N-Methyl perfluorooctane sulfonamidoethanol	NMeFOSE	--	--	--	< 0.072	< 0.074	< 0.079	< 0.072 HF2	< 0.071	< 0.081	< 0.073	0.076 J	< 0.074	< 0.077	< 0.071	0.10 J	< 0.072	0.81
MeFOSAA	MeFOSAA	--	--	--	< 0.39	< 0.41	< 0.44	< 0.40	< 0.39	< 0.44	< 0.40	< 0.39	< 0.40	< 0.42	< 0.39	< 0.42	< 0.39	< 0.43
EtFOSAA	EtFOSAA	--	--	--	< 0.37	< 0.39	< 0.41	< 0.38	< 0.37	< 0.42	< 0.38	< 0.37	< 0.38	< 0.40	< 0.37	< 0.40	< 0.37	< 0.41
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic ac	F-53B Major	--	--	--	< 0.027	< 0.028	< 0.030	< 0.028	< 0.027	< 0.031	< 0.028	< 0.027	< 0.028	< 0.029	< 0.027	< 0.029	< 0.027	< 0.030
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic ac	F-53B Minor	--	--	--	< 0.022	< 0.023	< 0.025	< 0.023	< 0.022	< 0.025	< 0.023	< 0.022	< 0.023	< 0.024	< 0.022	< 0.024	< 0.022	< 0.024
Total PFAS		--	--	--	34	3	2	5	0	0	0	1	1	0	0	9	4	5.2

AECOM

Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Parameters		Generic RCLs			SS-56	SS-57	SS-58	SS-59	SS-60	SS-61	SS-62	SS-63	SS-64	SS-65	SS-66	SS-67	SS-68	SS-69
		Non-Industrial	Industrial	Groundwater Pathway	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020
PFAS (ug/kg)	**ABBR.**																	
Perfluorobutanoic acid	PFBA	--	--	--	< 0.028	0.11 JB	< 0.028	0.081 JB	0.15 JB	0.20 JB	0.11 JB	0.073 JB	0.098 JB	0.11 JB	0.18 JB	0.16 JB	0.092 JB	0.11 JB
Perfluorobutanesulfonic acid	PFBS	1,260,000	16,400,000	--	< 0.025	< 0.026	< 0.025	< 0.024	< 0.026	< 0.026	0.035 J	< 0.030	< 0.028	0.044 J	0.047 J	0.056 J	0.043 J	0.028 J
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	--	--	--	< 0.36	< 0.38	< 0.38	< 0.35	< 0.39	< 0.38	< 0.41	< 0.44	< 0.41	< 0.43	< 0.42	< 0.41	< 0.44	< 0.42
Perfluoropentanoic acid	PFPeA	--	--	--	< 0.076	0.15 J	0.094 J	0.076 J	< 0.080	< 0.080	0.24	< 0.092	< 0.086	0.12 J	0.10 J	0.23	0.13 J	0.39
Perfluoropentane Sulfonic Acid	PFPeS				< 0.020	< 0.020	< 0.020	< 0.019	< 0.021	< 0.021	< 0.022	< 0.024	< 0.022	< 0.024	< 0.022	< 0.022	< 0.024	< 0.023
Perfluorohexanoic acid	PFHxA	--	--	--	< 0.041	0.080 J	0.058 JI	< 0.040	< 0.044	< 0.043	0.11 J	< 0.050	< 0.047	0.054 JI	0.11 J	0.23	< 0.050	0.51
Perfluorohexanesulfonoic acid	PFHxS	--	--	--	< 0.030	< 0.032	< 0.032	0.032 J	< 0.032	< 0.032	0.30	0.33	0.17 J	< 0.036	0.057 J	0.085 J	0.038 JI	0.37
6:2 Fluorotelomer sulfonic acid	6:2 FTS	--	--	--	< 0.15	1.2 J	< 0.15	< 0.14	< 0.16	< 0.16	< 0.17	< 0.18	< 0.17	< 0.18	< 0.17	< 0.17	< 0.18	1.3 J
Perfluoroheptanoic acid	PFHpA	--	--	--	< 0.029	< 0.030	< 0.029	< 0.028	< 0.030	< 0.030	0.053 J	0.035 J	0.049 J	0.040 J	0.082 J	0.15 J	0.055 J	0.21 J
Perfluoroheptanesulfonic acid	PFHpS	--	--	--	< 0.034	< 0.036	< 0.036	< 0.034	< 0.036	< 0.036	< 0.039	< 0.042	< 0.039	< 0.041	< 0.039	< 0.039	< 0.042	< 0.039
Perfluorooctanoic acid	PFOA	1,260	16,400	--	< 0.085	< 0.088	< 0.087	< 0.082	< 0.090	< 0.089	0.19 J	0.24	0.23	< 0.10	0.24	0.56	0.11 J	0.15 J
Ammonium Perfluorooctanoate	APFO	--	--	--	< 0.088	< 0.091	< 0.090	< 0.085	< 0.093	< 0.092	0.20 J	0.25	0.24	0.10 J	0.25	0.58	0.11 J	0.15 J
Perfluorooctanesulfonic acid	PFOS	1,260	16,400	--	< 0.20	0.21 JB	< 0.20	0.28 JB	0.22 JB	< 0.21	5.8 B	6.4 B	4.5 B	0.71 B	1.3 B	2.6 B	0.87 B	5.9 B
8:2 Fluorotelomer sulfonic acid	8:2 FTS	--	--	--	< 0.25	< 0.26	< 0.25	< 0.24	< 0.26	< 0.26	< 0.28	< 0.30	< 0.28	< 0.29	< 0.28	< 0.28	< 0.30	< 0.28
Perfluorononaoic acid	PFNA	--	--	--	< 0.035	< 0.037	< 0.037	< 0.034	< 0.037	< 0.037	0.14 J	0.14 J	0.13 J	0.051 J	0.095 J	0.20 J	0.057 J	0.11 J
Perfluorononanesulfonic Acid	PFNS	--	--	--	< 0.020	< 0.020	< 0.020	< 0.019	< 0.021	< 0.021	< 0.022	< 0.024	< 0.022	< 0.024	< 0.022	< 0.022	< 0.024	< 0.023
Perfluorodecanoic acid	PFDA	--	--	--	< 0.022	0.032 J	0.031 JI	< 0.021	0.040 JI	< 0.023	0.70	0.67	0.59	0.093 J	0.31	0.57	0.093 J	0.81
Perfluorodecanesulfonic acid	PFDS	--	--	--	< 0.038	< 0.040	< 0.040	< 0.037	< 0.041	< 0.040	0.86	0.82	0.41	< 0.046	0.058 J	0.060 J	0.047 J	1.0
10:2 Fluorotelomer Sulfonic Acid	10:2 FTS	--	--	--	< 0.049	0.080 J	< 0.051	< 0.048	< 0.052	< 0.052	< 0.055	< 0.060	< 0.056	< 0.059	< 0.056	< 0.056	< 0.060	< 0.056
Perfluoroundecanoic acid	PFUnA	--	--	--	< 0.035	< 0.037	< 0.037	< 0.034	< 0.037	< 0.037	0.12 J	0.14 J	0.091 J	< 0.042	0.070 J	0.11 J	0.071 J	0.21 J
Perfluorododecanoic acid	PFDoA	--	--	--	< 0.066	< 0.069	< 0.068	< 0.064	< 0.070	< 0.069	0.31	0.34	0.19 J	< 0.079	0.16 J	0.27	< 0.080	0.47
Perfluorododecanesulfonic acid	PFDoS	--	--	--	< 0.059	< 0.061	< 0.061	< 0.057	< 0.062	< 0.062	< 0.066	< 0.072	< 0.067	< 0.071	< 0.067	< 0.067	< 0.072	< 0.068
Perfluorotridecanoic acid	PFTrDA	--	--	--	< 0.050	< 0.052	< 0.052	< 0.049	< 0.053	< 0.053	< 0.056	< 0.061	< 0.057	< 0.060	< 0.057	< 0.057	< 0.061	< 0.057
Perfluorotetradecanoic acid	PFTeDA	--	--	--	< 0.053	< 0.055	< 0.055	< 0.052	< 0.056	< 0.056	0.10 J	0.13 JI	0.061 J	< 0.063	0.078 JI	0.093 J	< 0.065	0.13 J
Perfluorohexadecanoic acid	PFHxDA	--	--	--	< 0.043	< 0.045	< 0.045	< 0.042	< 0.046	< 0.046	< 0.049	< 0.053	< 0.049	< 0.052	< 0.049	< 0.049	< 0.053	< 0.050
Perfluorooctadecanoic acid	PFODA	--	--	--	< 0.028	< 0.029	< 0.028	< 0.027	< 0.029	< 0.029	< 0.031	< 0.033	< 0.031	< 0.033	< 0.031	< 0.031	< 0.034	< 0.032
HFPO-DA	GenX	--	--	--	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	0.16 J	< 0.13	< 0.12	< 0.13	< 0.12	< 0.12	< 0.13	< 0.12
4,8-dioxa-3H-perfluorononanoic acid	DONA	--	--	--	< 0.018	< 0.018	< 0.018	< 0.017	< 0.019	< 0.019	< 0.020	< 0.022	< 0.020	< 0.021	< 0.020	< 0.020	< 0.022	< 0.020
NaDONA	NaDONA	--	--	--	< 0.019	< 0.019	< 0.019	< 0.018	< 0.020	< 0.020	< 0.021	< 0.023	< 0.021	< 0.022	< 0.021	< 0.021	< 0.023	< 0.021
ADONA	ADONA	--	--	--	< 0.019	< 0.019	< 0.019	< 0.018	< 0.020	< 0.020	< 0.021	< 0.023	< 0.021	< 0.022	< 0.021	< 0.021	< 0.023	< 0.021
Perfluorooctane sulfonamide	PFOSA	--	--	--	< 0.081	< 0.084	< 0.083	< 0.079	< 0.085	< 0.085	< 0.091	< 0.098	< 0.091	< 0.096	< 0.092	< 0.092	< 0.098	< 0.092
N-Ethyl perfluorooctane sulfonamide	NEtFOSA	--	--	--	< 0.024	< 0.025	< 0.024	< 0.023	< 0.025	< 0.025	< 0.027	< 0.029	< 0.027	< 0.028	< 0.027	< 0.027	< 0.029	< 0.027
N-Ethyl perfluorooctane sulfonamidoethanol	NEtFOSE	--	--	--	0.057 J	0.18 J	< 0.037	< 0.034	0.15 J	< 0.037	1.2	1.3	0.64	0.083 J	0.32	0.35	0.23 J	1.2
N-Methyl perfluorooctane sulfonamide	NMeFOSA	--	--	--	< 0.040	< 0.042	< 0.042	< 0.039	< 0.043	< 0.042	< 0.045	< 0.049	< 0.046	< 0.048	< 0.046	< 0.046	< 0.049	< 0.046
N-Methyl perfluorooctane sulfonamidoethanol	NMeFOSE	--	--	--	< 0.070	< 0.073	< 0.072	< 0.068	< 0.074	< 0.073	1.6	1.8	0.79	< 0.083	< 0.080	< 0.080	< 0.085	2.0
MeFOSAA	MeFOSAA	--	--	--	< 0.38	< 0.40	< 0.40	< 0.37	< 0.41	< 0.40	< 0.43	< 0.47	< 0.44	< 0.46	< 0.44	< 0.44	< 0.47	0.50 J
EtFOSAA	EtFOSAA	--	--	--	< 0.36	< 0.38	< 0.38	< 0.35	< 0.39	< 0.38	< 0.41	< 0.44	< 0.41	< 0.43	< 0.42	< 0.41	< 0.44	< 0.42
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic ac	F-53B Major	--	--	--	< 0.027	< 0.028	< 0.027	< 0.026	< 0.028	< 0.028	< 0.030	< 0.032	< 0.030	< 0.032	< 0.030	< 0.030	< 0.032	< 0.030
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic ac	F-53B Minor	--	--	--	< 0.022	< 0.023	< 0.022	< 0.021	< 0.023	< 0.023	< 0.024	< 0.026	< 0.025	< 0.026	< 0.025	< 0.025	< 0.026	< 0.025
Total PFAS		--	--	--	0	2	0	0	1	0	12	13	8	1	4	6	2	16

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Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Parameters		Generic RCLs			SS-70	SS-71	SS-72	SS-73	SS-74	SS-75	SS-76	SS-77	SS-78
		Non-Industrial	Industrial	Groundwater Pathway	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020	Surface 4/7/2020
PFAS (ug/kg)	**ABBR.**												
Perfluorobutanoic acid	PFBA	--	--	--	0.19 JB	0.069 JB	0.076 JB	0.051 JB	< 0.36	0.28 B	0.12 JB	< 0.034	< 0.034
Perfluorobutanesulfonic acid	PFBS	1,260,000	16,400,000	--	0.035 J	0.029 J	0.035 J	< 0.028	< 0.32	0.075 J	0.21 J	< 0.031	0.038 J
4:2 Fluorotelomer Sulfonic Acid	4:2 FTS	--	--	--	< 0.42	< 0.42	< 0.41	< 0.42	< 4.8	< 0.46	< 0.49	< 0.45	< 0.46
Perfluoropentanoic acid	PFPeA	--	--	--	< 0.088	0.12 J	0.16 J	< 0.087	< 0.99	0.30	0.14 J	< 0.094	< 0.095
Perfluoropentane Sulfonic Acid	PFPeS				< 0.023	< 0.023	< 0.022	< 0.023	< 0.26	< 0.025	< 0.026	< 0.024	< 0.025
Perfluorohexanoic acid	PFHxA	--	--	--	0.11 JI	0.069 J	0.13 J	< 0.047	< 0.54	0.29	0.17 J	0.067 J	0.056 J
Perfluorohexanesulfonoic acid	PFHxS	--	--	--	0.067 J	0.23	0.41	0.24	< 0.40	0.053 J	0.060 J	0.051 J	0.054 J
6:2 Fluorotelomer sulfonic acid	6:2 FTS	--	--	--	< 0.17	< 0.17	< 0.17	< 0.17	< 1.9	< 0.19	< 0.20	< 0.18	< 0.18
Perfluoroheptanoic acid	PFHpA	--	--	--	0.15 J	0.075 J	0.32	< 0.033	< 0.37	0.18 J	0.076 J	0.050 J	< 0.036
Perfluoroheptanesulfonic acid	PFHpS	--	--	--	< 0.040	< 0.040	< 0.039	< 0.039	< 0.45	< 0.044	< 0.046	< 0.043	< 0.043
Perfluorooctanoic acid	PFOA	1,260	16,400	--	0.32	0.17 J	0.39	< 0.097	< 1.1	0.52	0.19 J	0.18 J	0.11 J
Ammonium Perfluorooctanoate	APFO	--	--	--	0.33	0.18 J	0.41	< 0.10	< 1.1	0.54	0.20 J	0.19 J	0.11 J
Perfluorooctanesulfonic acid	PFOS	1,260	16,400	--	1.7 B	6.1 B	7.8 B	4.5 B	4.0 JB	1.2	1.1	0.82	0.89
8:2 Fluorotelomer sulfonic acid	8:2 FTS	--	--	--	< 0.28	< 0.28	< 0.28	< 0.28	< 3.2	< 0.31	< 0.33	< 0.31	< 0.31
Perfluorononaoic acid	PFNA	--	--	--	0.15 J	0.19 J	0.22	0.081 J	< 0.46	0.23 J	0.090 J	0.098 J	0.057 J
Perfluorononanesulfonic Acid	PFNS	--	--	--	< 0.023	< 0.023	< 0.022	< 0.023	< 0.26	< 0.025	< 0.026	< 0.024	< 0.025
Perfluorodecanoic acid	PFDA	--	--	--	0.93	0.93	1.0	0.84	1.3 J	0.72	0.18 J	0.20 J	0.15 JI
Perfluorodecanesulfonic acid	PFDS	--	--	--	0.17 J	0.88	1.1	0.78	< 0.50	0.13 J	< 0.051	< 0.048	< 0.048
10:2 Fluorotelomer Sulfonic Acid	10:2 FTS	--	--	--	< 0.057	< 0.057	< 0.056	< 0.056	< 0.64	< 0.063	< 0.066	< 0.061	< 0.062 F1
Perfluoroundecanoic acid	PFUnA	--	--	--	0.28	0.16 J	0.18 J	0.15 J	< 0.46	0.27	< 0.047	< 0.044	< 0.044
Perfluorododecanoic acid	PFDoA	--	--	--	0.75	0.40	0.42	0.33	< 0.86	0.47	< 0.088	< 0.082	< 0.083
Perfluorododecanesulfonic acid	PFDoS	--	--	--	< 0.068	< 0.068	< 0.067	< 0.068	< 0.77	< 0.075	< 0.079	< 0.073	< 0.074 F1
Perfluorotridecanoic acid	PFTrDA	--	--	--	0.058 J	< 0.058	0.063 J	< 0.057	< 0.66	0.070 J	< 0.067	< 0.062	< 0.063
Perfluorotetradecanoic acid	PFTeDA	--	--	--	0.20 J	0.13 J	0.13 J	0.097 JI	< 0.70	0.19 J	< 0.071	< 0.066	< 0.067
Perfluorohexadecanoic acid	PFHxDA	--	--	--	0.071 J	< 0.050	< 0.049	< 0.050	< 0.57	0.060 J	< 0.058	< 0.054	< 0.054
Perfluorooctadecanoic acid	PFODA	--	--	--	< 0.032	< 0.032	< 0.031	< 0.032	< 0.36	< 0.035	< 0.037	< 0.034	< 0.034
HFPO-DA	GenX	--	--	--	< 0.13	< 0.12	< 0.12	< 0.12	< 1.4	< 0.14	< 0.14	< 0.13	< 0.14
4,8-dioxa-3H-perfluorononanoic acid	DONA	--	--	--	< 0.021	< 0.020	< 0.020	< 0.020	< 0.23	< 0.023	< 0.024	< 0.022	< 0.022 F1
NaDONA	NaDONA	--	--	--	< 0.022	< 0.022	< 0.021	< 0.021	< 0.24	< 0.024	< 0.025	< 0.023	< 0.023 F1
ADONA	ADONA	--	--	--	< 0.022	< 0.022	< 0.021	< 0.021	< 0.24	< 0.024	< 0.025	< 0.023	< 0.023 F1
Perfluorooctane sulfonamide	PFOSA	--	--	--	< 0.093	< 0.093	< 0.091	< 0.092	< 1.1	< 0.10	< 0.11	< 0.10	< 0.10
N-Ethyl perfluorooctane sulfonamide	NEtFOSA	--	--	--	< 0.027	< 0.027	< 0.027	< 0.027	< 0.31	< 0.030	< 0.032	< 0.029	< 0.030
N-Ethyl perfluorooctane sulfonamidoethanol	NEtFOSE	--	--	--	0.57	1.1	1.2	0.92	0.95 J	0.34	0.15 J	< 0.044	0.20 J
N-Methyl perfluorooctane sulfonamide	NMeFOSA	--	--	--	< 0.047	< 0.046	< 0.046	< 0.046	< 0.53	< 0.051	< 0.054	< 0.050	< 0.050
N-Methyl perfluorooctane sulfonamidoethanol	NMeFOSE	--	--	--	0.19 J	1.4	1.4	1.4	< 0.91	< 0.089	< 0.093	< 0.087	< 0.087
MeFOSAA	MeFOSAA	--	--	--	< 0.44	< 0.44	0.44 J	< 0.44	< 5.0	< 0.49	< 0.51	< 0.48	< 0.48
EtFOSAA	EtFOSAA	--	--	--	< 0.42	< 0.42	< 0.41	< 0.42	< 4.8	< 0.46	< 0.49	< 0.45	< 0.46
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic ac	F-53B Major	--	--	--	< 0.031	< 0.031	< 0.030	< 0.030	< 0.35	< 0.034	< 0.035	< 0.033	< 0.033 F1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic ac	F-53B Minor	--	--	--	< 0.025	< 0.025	< 0.024	< 0.025	< 0.28	< 0.028	< 0.029	< 0.027	< 0.027
Total PFAS		--	--	--	6	12	16	9	6	6	3	2	2

Table 2
Soil Sample Laboratory Analytical Results
ATC Blount SS-Environmental Emergency Spill Response
60611431; 722 E. Main Street Madison, WI 53703

Notes:

[J] Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

[B] Compound was found in the blank and sample

[*] Isotope dilution and/or LCS/LCSD is outside acceptance limits

[F1] MS and/or MSD Recovery is outside acceptance limits

-- No Generic RCL established.

Generic RCLs from WDNR RR-890: WDNR RCL Calculator December 2017

PFAS = Per-Fluorinated Alkyl Substances

NA = Not analyzed

mg/kg = miligrams per kilogram

ug/kg = micrograms per kilogram

FIGURES

LEGEND

SS SOIL SAMPLES

MW MONITORING WELL

SS-75 SS-76 SS-77 SS-78

CON-1 CON-2 CON-3 CON-4 CON-5

SS-01 SS-02 SS-03 SS-04 SS-05 SS-06 SS-07 SS-08 SS-09 SS-10 SS-11 SS-12

SS-13 SS-14 SS-15 SS-16 SS-17 SS-18 SS-19 SS-20 SS-21 SS-22 SS-23 SS-24 SS-25 SS-26 SS-27 SS-28 SS-29 SS-30 SS-31 SS-32 SS-33 SS-34 SS-35 SS-36 SS-37 SS-38 SS-39 SS-40 SS-41 SS-42 SS-43 SS-44 SS-45 SS-46 SS-47 SS-48 SS-49 SS-50 SS-51 SS-52 SS-53 SS-54 SS-55 SS-56 SS-57 SS-58 SS-59 SS-60 SS-61 SS-62 SS-63 SS-64 SS-65 SS-66 SS-67 SS-68 SS-69 SS-70 SS-71 SS-72 SS-73 SS-74

MW-1

CONTROL BUILDING

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AECOM

PROJECT

ATC BLOUNT SUBSTATION RESPONSE AND CLEANUP

MADISON, WISCONSIN

CLIENT

AMERICAN TRANSMISSION CO.

2 FEN OAK CT.
MADISON, WI 53718
(866) 899-3204 tel
www.atcllc.com

CONSULTANT

AECOM
1555 N RIVERCENTER DR.
MILWAUKEE, WI 53212
(414) 944-6080 tel
www.aecom.com

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60611431

DRAWING TITLE

SOIL SAMPLE LOCATIONS

DRAWING NUMBER **SHEET NUMBER**

Figure 4

LEGEND

- SS SOIL SAMPLES
- MW MONITORING WELL
- 6:2 FTS Detected >10 ug/Kg
- 6:2 FTS Detected 1-10 ug/Kg
- 6:2 FTS Detected

E Washington Ave

S Blount St

S Livingston St

E Main St

SS-75 SS-76 SS-77 SS-78 SS-74 SS-73 SS-71 SS-70 SS-72 SS-69 SS-68 SS-67 SS-66 SS-65 SS-64 SS-63 SS-62

CON-1 CON-2 CON-3 CON-4 CON-5

SS-01 SS-02 SS-03 SS-04 SS-05 SS-06 SS-07 SS-08 SS-09 SS-10 SS-11 SS-12 SS-13 SS-14 SS-15 SS-16 SS-17 SS-18 SS-19 SS-20 SS-21 SS-22 SS-23 SS-24 SS-25 SS-26 SS-27 SS-28 SS-29 SS-30 SS-31 SS-32 SS-33 SS-34 SS-35 SS-36 SS-37 SS-38 SS-39 SS-40 SS-41 SS-42 SS-43 SS-44 SS-45 SS-46 SS-47 SS-48 SS-49 SS-50 SS-51 SS-52 SS-53 SS-54 SS-55 SS-56 SS-57 SS-58 SS-59 SS-60 SS-61

MW-1

CONTROL BUILDING

CONTROL BUILDING

BREAKER SOIL

WEST CONTROL BUILDING

EAST CONTROL BUILDING

N

0' 30' 60'

SCALE

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AECOM

PROJECT

ATC BLOUNT SUBSTATION RESPONSE AND CLEANUP
MADISON, WISCONSIN

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ISSUE/REVISION

I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER
60611431

DRAWING TITLE
6:2 FTS DETECTIONS IN SOIL SAMPLES

DRAWING NUMBER **SHEET NUMBER**
Figure 2

LEGEND

- SS SOIL SAMPLES
- MW MONITORING WELL
- PFOA and PFOS Detected
- PFOA Detected
- PFOS Detected
- PFOA/PFOS Not Detected

E Washington Ave

S Blount St

S Livingston St

E Main St

SS-75 SS-76 SS-77 SS-78 SS-74 SS-73 SS-71 SS-70

CON-1 CON-2 CON-3 CON-4 CON-5

SS-01 SS-02 SS-03 SS-04 SS-05 SS-06 SS-07 SS-08 SS-09 SS-10 SS-11 SS-12 SS-13 SS-14 SS-15 SS-16 SS-17 SS-18 SS-19 SS-20 SS-21 SS-22 SS-23 SS-24 SS-25 SS-26 SS-27 SS-28 SS-29 SS-30 SS-31 SS-32 SS-33 SS-34 SS-35 SS-36 SS-37 SS-38 SS-39 SS-40 SS-41 SS-42 SS-43 SS-44 SS-45 SS-46 SS-47 SS-48 SS-49 SS-50 SS-51 SS-52 SS-53 SS-54 SS-55 SS-56 SS-57 SS-58 SS-59 SS-60 SS-61 SS-62 SS-63 SS-64 SS-65 SS-66 SS-67 SS-68 SS-69 SS-72

MW-1

CONTROL BUILDING

CONTROL BUILDING

BREAKER SOIL

WEST CONTROL BUILDING

EAST CONTROL BUILDING

Plotted By: joel.mackinney
Plot File Date Created: May/14/2020 3:36 PM
Filename: \\USMWK1FS001\PROD\DATA\PROJECTS\60611431\900_CAD_GIS\910 CAD\20-SHEETS\06_BLOUNT SOIL SPR2020.DWG

AECOM

PROJECT

ATC BLOUNT SUBSTATION RESPONSE AND CLEANUP
MADISON, WISCONSIN

CLIENT

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REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION

KEY PLAN

TN N

0' 30' 60'
SCALE

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PROJECT NUMBER

60611431

DRAWING TITLE

PFOA AND PFOS DETECTIONS IN SOIL SAMPLES

DRAWING NUMBER **SHEET NUMBER**

Figure 3

ATTACHMENT A – EUROFINS/TESTAMERICA LAB REPORTS

LABORATORY REPORT NAME:
J60052-1 UDS Level 2 Report Final Report

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-60052-1
Client Project/Site: ATC - Madison 60611431

For:
AECOM
1350 Deming Way Suite 100
Middleton, Wisconsin 53562

Attn: Mr. Leo B Linnemanstons, P.G.

Sandie Fredrick

Authorized for release by:
4/14/2020 1:53:53 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: AECOM
Job ID: 320-60052-1
Project/Site: ATC - Madison 60611431

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-60052-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-60052-1

Comments
No additional comments.

Receipt
The samples were received on 4/8/2020 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for d-N-MeFOSA-M and d-N-EtFOSA-M: SS-78 (320-60052-21). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS and M2-8:2 FTS in the following samples: SS-78 (320-60052-21), SS-76 (320-60052-23), SS-75 (320-60052-24), (320-60052-A-21-B MS) and (320-60052-A-21-C MSD). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for several analytes: SS-75 (320-60052-24), (320-60052-A-21-B MS) and (320-60052-A-21-C MSD). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following sample: SS-77 (320-60052-22). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C2 PFHxDA: SS-76 (320-60052-23). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgement was used to positively identify the analyte. SS-78 (320-60052-21)

Method 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for several analytes in preparation batch 320-371177 and analytical batch 320-371832 were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2 FTS in the following samples: SS-56 (320-60052-1), SS-57 (320-60052-2), SS-59 (320-60052-4), SS-60 (320-60052-5), SS-61 (320-60052-6), SS-64 (320-60052-9), SS-66 (320-60052-11), SS-67 (320-60052-12), SS-65 (320-60052-13), SS-68 (320-60052-14), SS-69 (320-60052-15), SS-71 (320-60052-17) and (320-60052-A-1-B MS). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS in the following samples: SS-57 (320-60052-2), SS-59 (320-60052-4), SS-60 (320-60052-5), SS-62 (320-60052-7), SS-63 (320-60052-8), SS-64 (320-60052-9), MW-1 (320-60052-10), SS-66 (320-60052-11), SS-67 (320-60052-12), SS-68 (320-60052-14), SS-69 (320-60052-15), SS-71 (320-60052-17) and SS-72 (320-60052-18). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following samples: SS-58 (320-60052-3) and SS-70 (320-60052-16). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Job ID: 320-60052-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS in the following sample: SS-61 (320-60052-6). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for d-N-MeFOSA-M and d-N-EtFOSA-M: SS-62 (320-60052-7), SS-63 (320-60052-8), SS-64 (320-60052-9) and SS-73 (320-60052-19). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for d-N-EtFOSA-M: MW-1 (320-60052-10), SS-69 (320-60052-15) and SS-72 (320-60052-18). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for several analytes: SS-67 (320-60052-12). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): Results for samples SS-74 (320-60052-20) were reported from the analysis of a diluted extract due to high concentration and matrix interference of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery are above the method recommended limit for M2-4:2 FTS and M2-8:2 FTS in the 1X analysis of the following samples: SS-74 (320-60052-20). These samples are reported at dilution with improved IDA recoveries, which are still above the method recommended limit. However, Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-371250. 3535_PFC Aqueous 320-371250

Method SHAKE: The following samples were observed to be yellow after extraction: SS-56 (320-60052-1), SS-57 (320-60052-2), SS-58 (320-60052-3), SS-59 (320-60052-4), SS-60 (320-60052-5), SS-61 (320-60052-6), SS-64 (320-60052-9), MW-1 (320-60052-10), SS-66 (320-60052-11), SS-67 (320-60052-12), SS-65 (320-60052-13), SS-68 (320-60052-14), SS-70 (320-60052-16), SS-74 (320-60052-20), (320-60052-A-1 MS) and (320-60052-A-1 MSD). PFC_IDA Soils 320-371164

Method SHAKE: The following samples were observed to be yellow after extraction: SS-78 (320-60052-21), SS-76 (320-60052-23), SS-75 (320-60052-24), (320-60052-A-21 MS) and (320-60052-A-21 MSD). PFC_IDA Soils 320-371177

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-56 — Lab Sample ID: 320-60052-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
NEtFOSE	0.057	J	0.20	0.035	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-57 — Lab Sample ID: 320-60052-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.11	J B	0.20	0.029	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.15	J	0.20	0.079	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.080	J	0.20	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.032	J	0.20	0.023	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.21	J B	0.51	0.20	ug/Kg	1	☼	537 (modified)	Total/NA
6:2 FTS	1.2	J	2.0	0.15	ug/Kg	1	☼	537 (modified)	Total/NA
10:2 FTS	0.080	J	0.20	0.051	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.18	J	0.20	0.037	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-58 — Lab Sample ID: 320-60052-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	0.094	J	0.20	0.078	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.058	J I	0.20	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.031	J I	0.20	0.022	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-59 — Lab Sample ID: 320-60052-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.081	J B	0.19	0.027	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.076	J	0.19	0.074	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.032	J	0.19	0.030	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.28	J B	0.48	0.19	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-60 — Lab Sample ID: 320-60052-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.15	J B	0.21	0.029	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.040	J I	0.21	0.023	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.22	J B	0.52	0.21	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.15	J	0.21	0.037	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-61 — Lab Sample ID: 320-60052-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.20	J B	0.21	0.029	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-62 — Lab Sample ID: 320-60052-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.11	J B	0.22	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.24		0.22	0.085	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.11	J	0.22	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.053	J	0.22	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.19	J	0.22	0.095	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.14	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.70		0.22	0.024	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.12	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.31		0.22	0.074	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SS-62 (Continued) — Lab Sample ID: 320-60052-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.10	J	0.22	0.060	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.035	J	0.22	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.30		0.22	0.034	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.8	B	0.55	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.86		0.22	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	1.6		0.22	0.079	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	1.2		0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
HFPO-DA (GenX)	0.16	J	0.28	0.12	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.20	J	0.23	0.099	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-63 — Lab Sample ID: 320-60052-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.073	J B	0.24	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.035	J	0.24	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.24		0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.14	J	0.24	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.67		0.24	0.026	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.14	J	0.24	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.34		0.24	0.080	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.13	J I	0.24	0.065	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.33		0.24	0.037	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.4	B	0.60	0.24	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.82		0.24	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	1.8		0.24	0.085	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	1.3		0.24	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.25		0.25	0.11	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-64 — Lab Sample ID: 320-60052-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.098	J B	0.22	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.049	J	0.22	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.23		0.22	0.096	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.13	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.59		0.22	0.025	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.091	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.19	J	0.22	0.075	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.061	J	0.22	0.060	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.17	J	0.22	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.5	B	0.56	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.41		0.22	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	0.79		0.22	0.079	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.64		0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.24		0.23	0.099	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 320-60052-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.090	J B	0.22	0.031	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-1 (Continued) — Lab Sample ID: 320-60052-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.11	J	0.22	0.095	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.063	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.33		0.22	0.024	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.069	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.18	J	0.22	0.074	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.067	J	0.22	0.060	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.15	J	0.22	0.034	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4	B	0.55	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.47		0.22	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	0.81		0.22	0.078	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.36		0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.12	J	0.23	0.098	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-66 — Lab Sample ID: 320-60052-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.18	J B	0.22	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.10	J	0.22	0.087	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.11	J	0.22	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.082	J	0.22	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.24		0.22	0.097	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.095	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.31		0.22	0.025	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.070	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.16	J	0.22	0.075	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.078	J I	0.22	0.061	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.047	J	0.22	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.057	J	0.22	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.3	B	0.56	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.058	J	0.22	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.32		0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.25		0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-67 — Lab Sample ID: 320-60052-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.16	J B	0.22	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.23		0.22	0.086	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.23		0.22	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.15	J	0.22	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.56		0.22	0.096	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.20	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.57		0.22	0.025	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.11	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.27		0.22	0.075	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.093	J	0.22	0.061	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.056	J	0.22	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.085	J	0.22	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6	B	0.56	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.060	J	0.22	0.044	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SS-67 (Continued) — Lab Sample ID: 320-60052-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
NEtFOSE	0.35		0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.58		0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-65 — Lab Sample ID: 320-60052-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.11	J B	0.24	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.12	J	0.24	0.090	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.054	J I	0.24	0.049	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.040	J	0.24	0.034	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.051	J	0.24	0.042	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.093	J	0.24	0.026	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.044	J	0.24	0.029	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.71	B	0.59	0.24	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.083	J	0.24	0.042	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.10	J	0.25	0.10	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-68 — Lab Sample ID: 320-60052-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.092	J B	0.24	0.034	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.13	J	0.24	0.092	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.055	J	0.24	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.11	J	0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.057	J	0.24	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.093	J	0.24	0.026	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.071	J	0.24	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.043	J	0.24	0.030	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.038	J I	0.24	0.037	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.87	B	0.60	0.24	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.047	J	0.24	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.23	J	0.24	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.11	J	0.25	0.11	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-69 — Lab Sample ID: 320-60052-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.11	J B	0.23	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.39		0.23	0.087	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.51		0.23	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.21	J	0.23	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.15	J	0.23	0.097	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.11	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.81		0.23	0.025	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.21	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.47		0.23	0.075	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.13	J	0.23	0.061	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.028	J	0.23	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.37		0.23	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.9	B	0.56	0.23	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SS-69 (Continued)

Lab Sample ID: 320-60052-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorodecanesulfonic acid (PFDS)	1.0		0.23	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.50	J	2.3	0.44	ug/Kg	1	☼	537 (modified)	Total/NA
6:2 FTS	1.3	J	2.3	0.17	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	2.0		0.23	0.080	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	1.2		0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.15	J	0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-70

Lab Sample ID: 320-60052-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.19	J B	0.23	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.11	J I	0.23	0.048	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.15	J	0.23	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.32		0.23	0.098	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.15	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.93		0.23	0.025	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.28		0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.75		0.23	0.076	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.058	J	0.23	0.058	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.20	J	0.23	0.062	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.071	J	0.23	0.050	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.035	J	0.23	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.067	J	0.23	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.7	B	0.57	0.23	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.17	J	0.23	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	0.19	J	0.23	0.081	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.57		0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.33		0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-71

Lab Sample ID: 320-60052-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.069	J B	0.23	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.12	J	0.23	0.087	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.069	J	0.23	0.048	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.075	J	0.23	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.17	J	0.23	0.097	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.19	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.93		0.23	0.025	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.16	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.40		0.23	0.076	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.13	J	0.23	0.061	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.029	J	0.23	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.23		0.23	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.1	B	0.57	0.23	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.88		0.23	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	1.4		0.23	0.080	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	1.1		0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SS-71 (Continued) — Lab Sample ID: 320-60052-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonium Perfluorooctanoate (APFO)	0.18	J	0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-72 — Lab Sample ID: 320-60052-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.076	J B	0.22	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.16	J	0.22	0.086	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.13	J	0.22	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.32		0.22	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.39		0.22	0.096	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.22		0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	1.0		0.22	0.024	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.18	J	0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.42		0.22	0.075	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.063	J	0.22	0.057	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.13	J	0.22	0.060	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.035	J	0.22	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.41		0.22	0.034	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.8	B	0.56	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	1.1		0.22	0.043	ug/Kg	1	☼	537 (modified)	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.44	J	2.2	0.43	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	1.4		0.22	0.079	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	1.2		0.22	0.040	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.41		0.23	0.099	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-73 — Lab Sample ID: 320-60052-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.051	J B	0.23	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.081	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.84		0.23	0.025	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.15	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.33		0.23	0.075	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.097	J I	0.23	0.061	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.24		0.23	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.5	B	0.56	0.23	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.78		0.23	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
NMeFOSE	1.4		0.23	0.080	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.92		0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-74 — Lab Sample ID: 320-60052-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorodecanoic acid (PFDA)	1.3	J	2.6	0.28	ug/Kg	10	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.0	J B	6.4	2.6	ug/Kg	10	☼	537 (modified)	Total/NA
NEtFOSE	0.95	J	2.6	0.46	ug/Kg	10	☼	537 (modified)	Total/NA

Client Sample ID: SS-78 — Lab Sample ID: 320-60052-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.056	J	0.25	0.052	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SS-78 (Continued) — Lab Sample ID: 320-60052-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.11	J	0.25	0.11	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.057	J	0.25	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.15	J I	0.25	0.027	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.038	J	0.25	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.054	J	0.25	0.038	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.89		0.62	0.25	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.20	J	0.25	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.11	J	0.26	0.11	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-77 — Lab Sample ID: 320-60052-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.067	J	0.24	0.051	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.050	J	0.24	0.036	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.18	J	0.24	0.11	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.098	J	0.24	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.20	J	0.24	0.027	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.051	J	0.24	0.038	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.82		0.61	0.24	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.19	J	0.26	0.11	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-76 — Lab Sample ID: 320-60052-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.12	J B	0.26	0.037	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.14	J	0.26	0.10	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.17	J	0.26	0.055	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.076	J	0.26	0.038	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.19	J	0.26	0.11	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.090	J	0.26	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.18	J	0.26	0.029	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.21	J	0.26	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.060	J	0.26	0.041	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.1		0.66	0.26	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.15	J	0.26	0.047	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.20	J	0.28	0.12	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SS-75 — Lab Sample ID: 320-60052-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.28	B	0.25	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.30		0.25	0.096	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.29		0.25	0.053	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.18	J	0.25	0.036	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.52		0.25	0.11	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.23	J	0.25	0.045	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.72		0.25	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.27		0.25	0.045	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.47		0.25	0.084	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.070	J	0.25	0.064	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SS-75 (Continued)

Lab Sample ID: 320-60052-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.19	J	0.25	0.068	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.060	J	0.25	0.055	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.075	J	0.25	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.053	J	0.25	0.039	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2		0.63	0.25	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.13	J	0.25	0.049	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	0.34		0.25	0.045	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.54		0.26	0.11	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: EB-Scoop

Lab Sample ID: 320-60052-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.22	J B	1.6	0.14	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.60	J B	1.6	0.28	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-56
Date Collected: 04/07/20 09:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-1
Matrix: Solid
Percent Solids: 94.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.028		0.20	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluoropentanoic acid (PFPeA)	<0.076		0.20	0.076	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorohexanoic acid (PFHxA)	<0.041		0.20	0.041	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluoroheptanoic acid (PFHpA)	<0.029		0.20	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorooctanoic acid (PFOA)	<0.085		0.20	0.085	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorononanoic acid (PFNA)	<0.035		0.20	0.035	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorodecanoic acid (PFDA)	<0.022		0.20	0.022	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluoroundecanoic acid (PFUnA)	<0.035		0.20	0.035	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorododecanoic acid (PFDoA)	<0.066		0.20	0.066	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorotridecanoic acid (PFTriA)	<0.050		0.20	0.050	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorotetradecanoic acid (PFTeA)	<0.053		0.20	0.053	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.043		0.20	0.043	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorobutanesulfonic acid (PFBS)	<0.025		0.20	0.025	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		0.20	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluoropentanesulfonic acid (PFPeS)	<0.020		0.20	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorohexanesulfonic acid (PFHxS)	<0.030		0.20	0.030	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.034		0.20	0.034	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorooctanesulfonic acid (PFOS)	<0.20		0.49	0.20	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorononanesulfonic acid (PFNS)	<0.020		0.20	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorodecanesulfonic acid (PFDS)	<0.038		0.20	0.038	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorooctanesulfonamide (FOSA)	<0.081		0.20	0.081	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.38		2.0	0.38	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.36		2.0	0.36	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
4:2 FTS	<0.36		2.0	0.36	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
6:2 FTS	<0.15		2.0	0.15	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
8:2 FTS	<0.25		2.0	0.25	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
10:2 FTS	<0.049		0.20	0.049	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
NEtFOSA	<0.024		0.20	0.024	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
NMeFOSA	<0.040		0.20	0.040	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Perfluorododecanesulfonic acid (PFDoS)	<0.059		0.20	0.059	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
NMeFOSE	<0.070		0.20	0.070	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
NEtFOSE	**0.057**	**J**	0.20	0.035	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
ADONA	<0.019		0.21	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
F-53B Major	<0.027		0.20	0.027	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
HFPO-DA (GenX)	<0.11		0.25	0.11	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
F-53B Minor	<0.022		0.20	0.022	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
NaDONA	<0.019		0.21	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
DONA	<0.018		0.20	0.018	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1
Ammonium Perfluorooctanoate (APFO)	<0.088		0.21	0.088	ug/Kg	☼	04/09/20 08:23	04/12/20 22:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*59*		*25 - 150*	*04/09/20 08:23*	*04/12/20 22:46*	*1*
13C5 PFPeA	*64*		*25 - 150*	*04/09/20 08:23*	*04/12/20 22:46*	*1*
13C2 PFHxA	*64*		*25 - 150*	*04/09/20 08:23*	*04/12/20 22:46*	*1*

Client Sample ID: SS-56
Date Collected: 04/07/20 09:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-1
Matrix: Solid
Percent Solids: 94.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	67		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C4 PFOA	67		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C5 PFNA	66		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C2 PFDA	68		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C2 PFHxDA	69		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C2 PFUnA	73		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C2 PFDoA	67		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C2 PFTeDA	65		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C3 PFBS	72		25 - 150	04/09/20 08:23	04/12/20 22:46	1
18O2 PFHxS	65		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C4 PFOS	65		25 - 150	04/09/20 08:23	04/12/20 22:46	1
13C8 FOSA	61		25 - 150	04/09/20 08:23	04/12/20 22:46	1
d3-NMeFOSAA	72		25 - 150	04/09/20 08:23	04/12/20 22:46	1
d5-NEtFOSAA	79		25 - 150	04/09/20 08:23	04/12/20 22:46	1
M2-6:2 FTS	142		25 - 150	04/09/20 08:23	04/12/20 22:46	1
M2-8:2 FTS	160	*5	25 - 150	04/09/20 08:23	04/12/20 22:46	1
M2-4:2 FTS	122		25 - 150	04/09/20 08:23	04/12/20 22:46	1
d-N-MeFOSA-M	37		25 - 150	04/09/20 08:23	04/12/20 22:46	1
d-N-EtFOSA-M	38		25 - 150	04/09/20 08:23	04/12/20 22:46	1
d7-N-MeFOSE-M	15		10 - 120	04/09/20 08:23	04/12/20 22:46	1
d9-N-EtFOSE-M	15		10 - 120	04/09/20 08:23	04/12/20 22:46	1
13C3 HFPO-DA	63		25 - 150	04/09/20 08:23	04/12/20 22:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.0		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	94.0		0.1	0.1	%			04/09/20 12:00	1

Client Sample ID: SS-57

Date Collected: 04/07/20 09:05
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-2

Matrix: Solid
Percent Solids: 89.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.11**	**J B**	0.20	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluoropentanoic acid (PFPeA)	**0.15**	**J**	0.20	0.079	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorohexanoic acid (PFHxA)	**0.080**	**J**	0.20	0.043	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluoroheptanoic acid (PFHpA)	<0.030		0.20	0.030	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorooctanoic acid (PFOA)	<0.088		0.20	0.088	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorononanoic acid (PFNA)	<0.037		0.20	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorodecanoic acid (PFDA)	**0.032**	**J**	0.20	0.023	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluoroundecanoic acid (PFUnA)	<0.037		0.20	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorododecanoic acid (PFDoA)	<0.069		0.20	0.069	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorotridecanoic acid (PFTriA)	<0.052		0.20	0.052	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorotetradecanoic acid (PFTeA)	<0.055		0.20	0.055	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.045		0.20	0.045	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.026		0.20	0.026	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.029		0.20	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluoropentanesulfonic acid (PFPeS)	<0.020		0.20	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.032		0.20	0.032	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.036		0.20	0.036	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorooctanesulfonic acid (PFOS)	**0.21**	**J B**	0.51	0.20	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorononanesulfonic acid (PFNS)	<0.020		0.20	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorodecanesulfonic acid (PFDS)	<0.040		0.20	0.040	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorooctanesulfonamide (FOSA)	<0.084		0.20	0.084	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.40		2.0	0.40	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.38		2.0	0.38	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
4:2 FTS	<0.38		2.0	0.38	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
6:2 FTS	**1.2**	**J**	2.0	0.15	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
8:2 FTS	<0.26		2.0	0.26	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
10:2 FTS	**0.080**	**J**	0.20	0.051	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
NEtFOSA	<0.025		0.20	0.025	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
NMeFOSA	<0.042		0.20	0.042	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Perfluorododecanesulfonic acid (PFDoS)	<0.061		0.20	0.061	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
NMeFOSE	<0.073		0.20	0.073	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
NEtFOSE	**0.18**	**J**	0.20	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
ADONA	<0.019		0.22	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
F-53B Major	<0.028		0.20	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
HFPO-DA (GenX)	<0.11		0.26	0.11	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
F-53B Minor	<0.023		0.20	0.023	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
NaDONA	<0.019		0.22	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
DONA	<0.018		0.20	0.018	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1
Ammonium Perfluorooctanoate (APFO)	<0.091		0.22	0.091	ug/Kg	☼	04/09/20 08:23	04/12/20 23:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*65*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:14*	*1*
13C5 PFPeA	*60*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:14*	*1*

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-57
Date Collected: 04/07/20 09:05
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-2
Matrix: Solid
Percent Solids: 89.9

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	72		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C4 PFHpA	64		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C4 PFOA	66		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C5 PFNA	67		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C2 PFDA	71		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C2 PFHxDA	64		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C2 PFUnA	75		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C2 PFDoA	69		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C2 PFTeDA	59		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C3 PFBS	76		25 - 150	04/09/20 08:23	04/12/20 23:14	1
18O2 PFHxS	67		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C4 PFOS	68		25 - 150	04/09/20 08:23	04/12/20 23:14	1
13C8 FOSA	61		25 - 150	04/09/20 08:23	04/12/20 23:14	1
d3-NMeFOSAA	65		25 - 150	04/09/20 08:23	04/12/20 23:14	1
d5-NEtFOSAA	70		25 - 150	04/09/20 08:23	04/12/20 23:14	1
M2-6:2 FTS	144		25 - 150	04/09/20 08:23	04/12/20 23:14	1
M2-8:2 FTS	190	*5	25 - 150	04/09/20 08:23	04/12/20 23:14	1
M2-4:2 FTS	203	*5	25 - 150	04/09/20 08:23	04/12/20 23:14	1
d-N-MeFOSA-M	36		25 - 150	04/09/20 08:23	04/12/20 23:14	1
d-N-EtFOSA-M	32		25 - 150	04/09/20 08:23	04/12/20 23:14	1
d7-N-MeFOSE-M	11		10 - 120	04/09/20 08:23	04/12/20 23:14	1
d9-N-EtFOSE-M	11		10 - 120	04/09/20 08:23	04/12/20 23:14	1
13C3 HFPO-DA	58		25 - 150	04/09/20 08:23	04/12/20 23:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.1		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	89.9		0.1	0.1	%			04/09/20 11:35	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-58
Date Collected: 04/07/20 09:10
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-3
Matrix: Solid
Percent Solids: 94.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.028		0.20	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluoropentanoic acid (PFPeA)	**0.094**	**J**	0.20	0.078	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorohexanoic acid (PFHxA)	**0.058**	**J I**	0.20	0.043	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluoroheptanoic acid (PFHpA)	<0.029		0.20	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorooctanoic acid (PFOA)	<0.087		0.20	0.087	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorononanoic acid (PFNA)	<0.037		0.20	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorodecanoic acid (PFDA)	**0.031**	**J I**	0.20	0.022	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluoroundecanoic acid (PFUnA)	<0.037		0.20	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorododecanoic acid (PFDoA)	<0.068		0.20	0.068	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorotridecanoic acid (PFTriA)	<0.052		0.20	0.052	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorotetradecanoic acid (PFTeA)	<0.055		0.20	0.055	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.045		0.20	0.045	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.025		0.20	0.025	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		0.20	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluoropentanesulfonic acid (PFPeS)	<0.020		0.20	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.032		0.20	0.032	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.036		0.20	0.036	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.20		0.51	0.20	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorononanesulfonic acid (PFNS)	<0.020		0.20	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorodecanesulfonic acid (PFDS)	<0.040		0.20	0.040	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorooctanesulfonamide (FOSA)	<0.083		0.20	0.083	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.40		2.0	0.40	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.38		2.0	0.38	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
4:2 FTS	<0.38		2.0	0.38	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
6:2 FTS	<0.15		2.0	0.15	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
8:2 FTS	<0.25		2.0	0.25	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
10:2 FTS	<0.051		0.20	0.051	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
NEtFOSA	<0.024		0.20	0.024	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
NMeFOSA	<0.042		0.20	0.042	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Perfluorododecanesulfonic acid (PFDoS)	<0.061		0.20	0.061	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
NMeFOSE	<0.072		0.20	0.072	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
NEtFOSE	<0.037		0.20	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
ADONA	<0.019		0.21	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
F-53B Major	<0.027		0.20	0.027	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
HFPO-DA (GenX)	<0.11		0.25	0.11	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
F-53B Minor	<0.022		0.20	0.022	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
NaDONA	<0.019		0.21	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
DONA	<0.018		0.20	0.018	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1
Ammonium Perfluorooctanoate (APFO)	<0.090		0.21	0.090	ug/Kg	☼	04/09/20 08:23	04/12/20 23:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*76*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:23*	*1*
13C5 PFPeA	*71*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:23*	*1*
13C2 PFHxA	*75*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:23*	*1*

Client Sample ID: SS-58
Date Collected: 04/07/20 09:10
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-3
Matrix: Solid
Percent Solids: 94.2

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	74		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C4 PFOA	75		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C5 PFNA	82		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C2 PFDA	83		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C2 PFHxDA	84		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C2 PFUnA	86		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C2 PFDoA	77		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C2 PFTeDA	79		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C3 PFBS	83		25 - 150	04/09/20 08:23	04/12/20 23:23	1
18O2 PFHxS	78		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C4 PFOS	78		25 - 150	04/09/20 08:23	04/12/20 23:23	1
13C8 FOSA	69		25 - 150	04/09/20 08:23	04/12/20 23:23	1
d3-NMeFOSAA	77		25 - 150	04/09/20 08:23	04/12/20 23:23	1
d5-NEtFOSAA	87		25 - 150	04/09/20 08:23	04/12/20 23:23	1
M2-6:2 FTS	161	*5	25 - 150	04/09/20 08:23	04/12/20 23:23	1
M2-8:2 FTS	221	*5	25 - 150	04/09/20 08:23	04/12/20 23:23	1
M2-4:2 FTS	174	*5	25 - 150	04/09/20 08:23	04/12/20 23:23	1
d-N-MeFOSA-M	48		25 - 150	04/09/20 08:23	04/12/20 23:23	1
d-N-EtFOSA-M	49		25 - 150	04/09/20 08:23	04/12/20 23:23	1
d7-N-MeFOSE-M	18		10 - 120	04/09/20 08:23	04/12/20 23:23	1
d9-N-EtFOSE-M	17		10 - 120	04/09/20 08:23	04/12/20 23:23	1
13C3 HFPO-DA	70		25 - 150	04/09/20 08:23	04/12/20 23:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.8		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	94.2		0.1	0.1	%			04/09/20 11:35	1

Client Sample ID: SS-59

Date Collected: 04/07/20 09:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-4

Matrix: Solid
Percent Solids: 94.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.081**	**J B**	0.19	0.027	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluoropentanoic acid (PFPeA)	**0.076**	**J**	0.19	0.074	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorohexanoic acid (PFHxA)	<0.040		0.19	0.040	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluoroheptanoic acid (PFHpA)	<0.028		0.19	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorooctanoic acid (PFOA)	<0.082		0.19	0.082	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorononanoic acid (PFNA)	<0.034		0.19	0.034	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorodecanoic acid (PFDA)	<0.021		0.19	0.021	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluoroundecanoic acid (PFUnA)	<0.034		0.19	0.034	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorododecanoic acid (PFDoA)	<0.064		0.19	0.064	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorotridecanoic acid (PFTriA)	<0.049		0.19	0.049	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorotetradecanoic acid (PFTeA)	<0.052		0.19	0.052	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.042		0.19	0.042	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorobutanesulfonic acid (PFBS)	<0.024		0.19	0.024	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.027		0.19	0.027	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluoropentanesulfonic acid (PFPeS)	<0.019		0.19	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorohexanesulfonic acid (PFHxS)	**0.032**	**J**	0.19	0.030	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.034		0.19	0.034	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorooctanesulfonic acid (PFOS)	**0.28**	**J B**	0.48	0.19	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorononanesulfonic acid (PFNS)	<0.019		0.19	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorodecanesulfonic acid (PFDS)	<0.037		0.19	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorooctanesulfonamide (FOSA)	<0.079		0.19	0.079	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.37		1.9	0.37	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.35		1.9	0.35	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
4:2 FTS	<0.35		1.9	0.35	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
6:2 FTS	<0.14		1.9	0.14	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
8:2 FTS	<0.24		1.9	0.24	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
10:2 FTS	<0.048		0.19	0.048	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
NEtFOSA	<0.023		0.19	0.023	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
NMeFOSA	<0.039		0.19	0.039	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Perfluorododecanesulfonic acid (PFDoS)	<0.057		0.19	0.057	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
NMeFOSE	<0.068		0.19	0.068	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
NEtFOSE	<0.034		0.19	0.034	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
ADONA	<0.018		0.20	0.018	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
F-53B Major	<0.026		0.19	0.026	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
HFPO-DA (GenX)	<0.11		0.24	0.11	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
F-53B Minor	<0.021		0.19	0.021	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
NaDONA	<0.018		0.20	0.018	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
DONA	<0.017		0.19	0.017	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1
Ammonium Perfluorooctanoate (APFO)	<0.085		0.20	0.085	ug/Kg	☼	04/09/20 08:23	04/12/20 23:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*66*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:33*	*1*
13C5 PFPeA	*62*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:33*	*1*

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-59
Date Collected: 04/07/20 09:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-4
Matrix: Solid
Percent Solids: 94.9

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	70		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C4 PFHpA	68		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C4 PFOA	70		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C5 PFNA	71		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C2 PFDA	74		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C2 PFHxDA	76		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C2 PFUnA	78		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C2 PFDoA	72		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C2 PFTeDA	73		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C3 PFBS	75		25 - 150	04/09/20 08:23	04/12/20 23:33	1
18O2 PFHxS	70		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C4 PFOS	72		25 - 150	04/09/20 08:23	04/12/20 23:33	1
13C8 FOSA	63		25 - 150	04/09/20 08:23	04/12/20 23:33	1
d3-NMeFOSAA	66		25 - 150	04/09/20 08:23	04/12/20 23:33	1
d5-NEtFOSAA	73		25 - 150	04/09/20 08:23	04/12/20 23:33	1
M2-6:2 FTS	141		25 - 150	04/09/20 08:23	04/12/20 23:33	1
M2-8:2 FTS	168	*5	25 - 150	04/09/20 08:23	04/12/20 23:33	1
M2-4:2 FTS	176	*5	25 - 150	04/09/20 08:23	04/12/20 23:33	1
d-N-MeFOSA-M	41		25 - 150	04/09/20 08:23	04/12/20 23:33	1
d-N-EtFOSA-M	41		25 - 150	04/09/20 08:23	04/12/20 23:33	1
d7-N-MeFOSE-M	17		10 - 120	04/09/20 08:23	04/12/20 23:33	1
d9-N-EtFOSE-M	16		10 - 120	04/09/20 08:23	04/12/20 23:33	1
13C3 HFPO-DA	63		25 - 150	04/09/20 08:23	04/12/20 23:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.1		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	94.9		0.1	0.1	%			04/09/20 11:35	1

Client Sample ID: SS-60

Date Collected: 04/07/20 09:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-5

Matrix: Solid
Percent Solids: 92.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.15**	**J B**	0.21	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluoropentanoic acid (PFPeA)	<0.080		0.21	0.080	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorohexanoic acid (PFHxA)	<0.044		0.21	0.044	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluoroheptanoic acid (PFHpA)	<0.030		0.21	0.030	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorooctanoic acid (PFOA)	<0.090		0.21	0.090	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorononanoic acid (PFNA)	<0.037		0.21	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorodecanoic acid (PFDA)	**0.040**	**J I**	0.21	0.023	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluoroundecanoic acid (PFUnA)	<0.037		0.21	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorododecanoic acid (PFDoA)	<0.070		0.21	0.070	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorotridecanoic acid (PFTriA)	<0.053		0.21	0.053	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorotetradecanoic acid (PFTeA)	<0.056		0.21	0.056	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.046		0.21	0.046	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorobutanesulfonic acid (PFBS)	<0.026		0.21	0.026	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.029		0.21	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluoropentanesulfonic acid (PFPeS)	<0.021		0.21	0.021	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.032		0.21	0.032	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.036		0.21	0.036	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorooctanesulfonic acid (PFOS)	**0.22**	**J B**	0.52	0.21	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorononanesulfonic acid (PFNS)	<0.021		0.21	0.021	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorodecanesulfonic acid (PFDS)	<0.041		0.21	0.041	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorooctanesulfonamide (FOSA)	<0.085		0.21	0.085	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.41		2.1	0.41	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.39		2.1	0.39	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
4:2 FTS	<0.39		2.1	0.39	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
6:2 FTS	<0.16		2.1	0.16	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
8:2 FTS	<0.26		2.1	0.26	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
10:2 FTS	<0.052		0.21	0.052	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
NEtFOSA	<0.025		0.21	0.025	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
NMeFOSA	<0.043		0.21	0.043	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Perfluorododecanesulfonic acid (PFDoS)	<0.062		0.21	0.062	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
NMeFOSE	<0.074		0.21	0.074	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
NEtFOSE	**0.15**	**J**	0.21	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
ADONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
F-53B Major	<0.028		0.21	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
HFPO-DA (GenX)	<0.11		0.26	0.11	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
F-53B Minor	<0.023		0.21	0.023	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
NaDONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
DONA	<0.019		0.21	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1
Ammonium Perfluorooctanoate (APFO)	<0.093		0.22	0.093	ug/Kg	☼	04/09/20 08:23	04/12/20 23:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*52*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:42*	*1*
13C5 PFPeA	*50*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:42*	*1*

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-60
Date Collected: 04/07/20 09:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-5
Matrix: Solid
Percent Solids: 92.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	58		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C4 PFHpA	52		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C4 PFOA	55		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C5 PFNA	57		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C2 PFDA	61		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C2 PFHxDA	49		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C2 PFUnA	62		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C2 PFDoA	56		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C2 PFTeDA	52		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C3 PFBS	65		25 - 150	04/09/20 08:23	04/12/20 23:42	1
18O2 PFHxS	56		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C4 PFOS	58		25 - 150	04/09/20 08:23	04/12/20 23:42	1
13C8 FOSA	55		25 - 150	04/09/20 08:23	04/12/20 23:42	1
d3-NMeFOSAA	63		25 - 150	04/09/20 08:23	04/12/20 23:42	1
d5-NEtFOSAA	67		25 - 150	04/09/20 08:23	04/12/20 23:42	1
M2-6:2 FTS	143		25 - 150	04/09/20 08:23	04/12/20 23:42	1
M2-8:2 FTS	175	*5	25 - 150	04/09/20 08:23	04/12/20 23:42	1
M2-4:2 FTS	156	*5	25 - 150	04/09/20 08:23	04/12/20 23:42	1
d-N-MeFOSA-M	36		25 - 150	04/09/20 08:23	04/12/20 23:42	1
d-N-EtFOSA-M	34		25 - 150	04/09/20 08:23	04/12/20 23:42	1
d7-N-MeFOSE-M	14		10 - 120	04/09/20 08:23	04/12/20 23:42	1
d9-N-EtFOSE-M	14		10 - 120	04/09/20 08:23	04/12/20 23:42	1
13C3 HFPO-DA	48		25 - 150	04/09/20 08:23	04/12/20 23:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.0		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	92.0		0.1	0.1	%			04/09/20 11:35	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-61
Date Collected: 04/07/20 09:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-6
Matrix: Solid
Percent Solids: 94.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.20**	**J B**	0.21	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluoropentanoic acid (PFPeA)	<0.080		0.21	0.080	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorohexanoic acid (PFHxA)	<0.043		0.21	0.043	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluoroheptanoic acid (PFHpA)	<0.030		0.21	0.030	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorooctanoic acid (PFOA)	<0.089		0.21	0.089	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorononanoic acid (PFNA)	<0.037		0.21	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorodecanoic acid (PFDA)	<0.023		0.21	0.023	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluoroundecanoic acid (PFUnA)	<0.037		0.21	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorododecanoic acid (PFDoA)	<0.069		0.21	0.069	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorotridecanoic acid (PFTriA)	<0.053		0.21	0.053	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorotetradecanoic acid (PFTeA)	<0.056		0.21	0.056	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.046		0.21	0.046	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorobutanesulfonic acid (PFBS)	<0.026		0.21	0.026	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.029		0.21	0.029	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluoropentanesulfonic acid (PFPeS)	<0.021		0.21	0.021	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorohexanesulfonic acid (PFHxS)	<0.032		0.21	0.032	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.036		0.21	0.036	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorooctanesulfonic acid (PFOS)	<0.21		0.52	0.21	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorononanesulfonic acid (PFNS)	<0.021		0.21	0.021	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorodecanesulfonic acid (PFDS)	<0.040		0.21	0.040	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorooctanesulfonamide (FOSA)	<0.085		0.21	0.085	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.40		2.1	0.40	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.38		2.1	0.38	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
4:2 FTS	<0.38		2.1	0.38	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
6:2 FTS	<0.16		2.1	0.16	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
8:2 FTS	<0.26		2.1	0.26	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
10:2 FTS	<0.052		0.21	0.052	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
NEtFOSA	<0.025		0.21	0.025	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
NMeFOSA	<0.042		0.21	0.042	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Perfluorododecanesulfonic acid (PFDoS)	<0.062		0.21	0.062	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
NMeFOSE	<0.073		0.21	0.073	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
NEtFOSE	<0.037		0.21	0.037	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
ADONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
F-53B Major	<0.028		0.21	0.028	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
HFPO-DA (GenX)	<0.11		0.26	0.11	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
F-53B Minor	<0.023		0.21	0.023	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
NaDONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
DONA	<0.019		0.21	0.019	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1
Ammonium Perfluorooctanoate (APFO)	<0.092		0.22	0.092	ug/Kg	☼	04/09/20 08:23	04/12/20 23:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:51*	*1*
13C5 PFPeA	*69*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:51*	*1*
13C2 PFHxA	*72*		*25 - 150*	*04/09/20 08:23*	*04/12/20 23:51*	*1*

Client Sample ID: SS-61

Date Collected: 04/07/20 09:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-6

Matrix: Solid
Percent Solids: 94.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	74		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C4 PFOA	78		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C5 PFNA	80		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C2 PFDA	83		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C2 PFHxDA	76		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C2 PFUnA	87		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C2 PFDoA	79		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C2 PFTeDA	70		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C3 PFBS	81		25 - 150	04/09/20 08:23	04/12/20 23:51	1
18O2 PFHxS	78		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C4 PFOS	75		25 - 150	04/09/20 08:23	04/12/20 23:51	1
13C8 FOSA	71		25 - 150	04/09/20 08:23	04/12/20 23:51	1
d3-NMeFOSAA	85		25 - 150	04/09/20 08:23	04/12/20 23:51	1
d5-NEtFOSAA	86		25 - 150	04/09/20 08:23	04/12/20 23:51	1
M2-6:2 FTS	216	*5	25 - 150	04/09/20 08:23	04/12/20 23:51	1
M2-8:2 FTS	248	*5	25 - 150	04/09/20 08:23	04/12/20 23:51	1
M2-4:2 FTS	142		25 - 150	04/09/20 08:23	04/12/20 23:51	1
d-N-MeFOSA-M	38		25 - 150	04/09/20 08:23	04/12/20 23:51	1
d-N-EtFOSA-M	36		25 - 150	04/09/20 08:23	04/12/20 23:51	1
d7-N-MeFOSE-M	15		10 - 120	04/09/20 08:23	04/12/20 23:51	1
d9-N-EtFOSE-M	14		10 - 120	04/09/20 08:23	04/12/20 23:51	1
13C3 HFPO-DA	71		25 - 150	04/09/20 08:23	04/12/20 23:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.0		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	94.0		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-62
Date Collected: 04/07/20 11:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-7
Matrix: Solid
Percent Solids: 83.1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.11**	**J B**	0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluoropentanoic acid (PFPeA)	**0.24**		0.22	0.085	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorohexanoic acid (PFHxA)	**0.11**	**J**	0.22	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluoroheptanoic acid (PFHpA)	**0.053**	**J**	0.22	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorooctanoic acid (PFOA)	**0.19**	**J**	0.22	0.095	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorononanoic acid (PFNA)	**0.14**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorodecanoic acid (PFDA)	**0.70**		0.22	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluoroundecanoic acid (PFUnA)	**0.12**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorododecanoic acid (PFDoA)	**0.31**		0.22	0.074	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorotridecanoic acid (PFTriA)	<0.056		0.22	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorotetradecanoic acid (PFTeA)	**0.10**	**J**	0.22	0.060	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.049		0.22	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorobutanesulfonic acid (PFBS)	**0.035**	**J**	0.22	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.031		0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluoropentanesulfonic acid (PFPeS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorohexanesulfonic acid (PFHxS)	**0.30**		0.22	0.034	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.22	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorooctanesulfonic acid (PFOS)	**5.8**	**B**	0.55	0.22	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorononanesulfonic acid (PFNS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorodecanesulfonic acid (PFDS)	**0.86**		0.22	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorooctanesulfonamide (FOSA)	<0.091		0.22	0.091	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.43		2.2	0.43	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
4:2 FTS	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
6:2 FTS	<0.17		2.2	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
8:2 FTS	<0.28		2.2	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
10:2 FTS	<0.055		0.22	0.055	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
NEtFOSA	<0.027		0.22	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
NMeFOSA	<0.045		0.22	0.045	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
Perfluorododecanesulfonic acid (PFDoS)	<0.066		0.22	0.066	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
NMeFOSE	**1.6**		0.22	0.079	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
NEtFOSE	**1.2**		0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
ADONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
F-53B Major	<0.030		0.22	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
HFPO-DA (GenX)	**0.16**	**J**	0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
F-53B Minor	<0.024		0.22	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
NaDONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1
DONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1

Client Sample ID: SS-62
Date Collected: 04/07/20 11:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-7
Matrix: Solid
Percent Solids: 83.1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.20	J	0.23	0.099	ug/Kg	☼	04/09/20 08:23	04/13/20 00:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*66*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C5 PFPeA	*61*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C2 PFHxA	*74*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C4 PFHpA	*68*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C4 PFOA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C5 PFNA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C2 PFDA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C2 PFHxDA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C2 PFUnA	*73*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C2 PFDoA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C2 PFTeDA	*69*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C3 PFBS	*73*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
18O2 PFHxS	*64*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C4 PFOS	*67*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C8 FOSA	*62*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
d3-NMeFOSAA	*61*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
d5-NEtFOSAA	*67*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
M2-6:2 FTS	*129*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
M2-8:2 FTS	*147*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
M2-4:2 FTS	*196*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
d-N-MeFOSA-M	*18*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
d-N-EtFOSA-M	*15*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
d7-N-MeFOSE-M	*13*		*10 - 120*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
d9-N-EtFOSE-M	*11*		*10 - 120*	*04/09/20 08:23*	*04/13/20 00:19*	*1*
13C3 HFPO-DA	*66*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:19*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.9		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	83.1		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-63
Date Collected: 04/07/20 11:30
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-8
Matrix: Solid
Percent Solids: 81.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.073**	**J B**	0.24	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluoropentanoic acid (PFPeA)	<0.092		0.24	0.092	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorohexanoic acid (PFHxA)	<0.050		0.24	0.050	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluoroheptanoic acid (PFHpA)	**0.035**	**J**	0.24	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorooctanoic acid (PFOA)	**0.24**		0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorononanoic acid (PFNA)	**0.14**	**J**	0.24	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorodecanoic acid (PFDA)	**0.67**		0.24	0.026	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluoroundecanoic acid (PFUnA)	**0.14**	**J**	0.24	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorododecanoic acid (PFDoA)	**0.34**		0.24	0.080	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorotridecanoic acid (PFTriA)	<0.061		0.24	0.061	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorotetradecanoic acid (PFTeA)	**0.13**	**J I**	0.24	0.065	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.053		0.24	0.053	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorobutanesulfonic acid (PFBS)	<0.030		0.24	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.033		0.24	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluoropentanesulfonic acid (PFPeS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorohexanesulfonic acid (PFHxS)	**0.33**		0.24	0.037	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.042		0.24	0.042	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorooctanesulfonic acid (PFOS)	**6.4**	**B**	0.60	0.24	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorononanesulfonic acid (PFNS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorodecanesulfonic acid (PFDS)	**0.82**		0.24	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorooctanesulfonamide (FOSA)	<0.098		0.24	0.098	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.47		2.4	0.47	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.44		2.4	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
4:2 FTS	<0.44		2.4	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
6:2 FTS	<0.18		2.4	0.18	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
8:2 FTS	<0.30		2.4	0.30	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
10:2 FTS	<0.060		0.24	0.060	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
NEtFOSA	<0.029		0.24	0.029	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
NMeFOSA	<0.049		0.24	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Perfluorododecanesulfonic acid (PFDoS)	<0.072		0.24	0.072	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
NMeFOSE	**1.8**		0.24	0.085	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
NEtFOSE	**1.3**		0.24	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
ADONA	<0.023		0.25	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
F-53B Major	<0.032		0.24	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
HFPO-DA (GenX)	<0.13		0.30	0.13	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
F-53B Minor	<0.026		0.24	0.026	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
NaDONA	<0.023		0.25	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
DONA	<0.022		0.24	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1
Ammonium Perfluorooctanoate (APFO)	**0.25**		0.25	0.11	ug/Kg	☼	04/09/20 08:23	04/13/20 00:29	1

Client Sample ID: SS-63

Date Collected: 04/07/20 11:30
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-8

Matrix: Solid
Percent Solids: 81.7

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	71		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C5 PFPeA	66		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C2 PFHxA	81		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C4 PFHpA	73		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C4 PFOA	73		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C5 PFNA	79		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C2 PFDA	80		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C2 PFHxDA	80		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C2 PFUnA	81		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C2 PFDoA	75		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C2 PFTeDA	79		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C3 PFBS	80		25 - 150	04/09/20 08:23	04/13/20 00:29	1
18O2 PFHxS	70		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C4 PFOS	74		25 - 150	04/09/20 08:23	04/13/20 00:29	1
13C8 FOSA	71		25 - 150	04/09/20 08:23	04/13/20 00:29	1
d3-NMeFOSAA	65		25 - 150	04/09/20 08:23	04/13/20 00:29	1
d5-NEtFOSAA	70		25 - 150	04/09/20 08:23	04/13/20 00:29	1
M2-6:2 FTS	134		25 - 150	04/09/20 08:23	04/13/20 00:29	1
M2-8:2 FTS	150		25 - 150	04/09/20 08:23	04/13/20 00:29	1
M2-4:2 FTS	215	*5	25 - 150	04/09/20 08:23	04/13/20 00:29	1
d-N-MeFOSA-M	22	*5	25 - 150	04/09/20 08:23	04/13/20 00:29	1
d-N-EtFOSA-M	20	*5	25 - 150	04/09/20 08:23	04/13/20 00:29	1
d7-N-MeFOSE-M	16		10 - 120	04/09/20 08:23	04/13/20 00:29	1
d9-N-EtFOSE-M	14		10 - 120	04/09/20 08:23	04/13/20 00:29	1
13C3 HFPO-DA	68		25 - 150	04/09/20 08:23	04/13/20 00:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.3**		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	**81.7**		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-64
Date Collected: 04/07/20 11:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-9
Matrix: Solid
Percent Solids: 83.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.098**	**J B**	0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluoropentanoic acid (PFPeA)	<0.086		0.22	0.086	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorohexanoic acid (PFHxA)	<0.047		0.22	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluoroheptanoic acid (PFHpA)	**0.049**	**J**	0.22	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorooctanoic acid (PFOA)	**0.23**		0.22	0.096	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorononanoic acid (PFNA)	**0.13**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorodecanoic acid (PFDA)	**0.59**		0.22	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluoroundecanoic acid (PFUnA)	**0.091**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorododecanoic acid (PFDoA)	**0.19**	**J**	0.22	0.075	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorotridecanoic acid (PFTriA)	<0.057		0.22	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorotetradecanoic acid (PFTeA)	**0.061**	**J**	0.22	0.060	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.049		0.22	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorobutanesulfonic acid (PFBS)	<0.028		0.22	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.031		0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluoropentanesulfonic acid (PFPeS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorohexanesulfonic acid (PFHxS)	**0.17**	**J**	0.22	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.22	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorooctanesulfonic acid (PFOS)	**4.5**	**B**	0.56	0.22	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorononanesulfonic acid (PFNS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorodecanesulfonic acid (PFDS)	**0.41**		0.22	0.044	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorooctanesulfonamide (FOSA)	<0.091		0.22	0.091	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.44		2.2	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
4:2 FTS	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
6:2 FTS	<0.17		2.2	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
8:2 FTS	<0.28		2.2	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
10:2 FTS	<0.056		0.22	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
NEtFOSA	<0.027		0.22	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
NMeFOSA	<0.046		0.22	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Perfluorododecanesulfonic acid (PFDoS)	<0.067		0.22	0.067	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
NMeFOSE	**0.79**		0.22	0.079	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
NEtFOSE	**0.64**		0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
ADONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
F-53B Major	<0.030		0.22	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
F-53B Minor	<0.025		0.22	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
NaDONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
DONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1
Ammonium Perfluorooctanoate (APFO)	**0.24**		0.23	0.099	ug/Kg	☼	04/09/20 08:23	04/13/20 00:38	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-64
Date Collected: 04/07/20 11:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-9
Matrix: Solid
Percent Solids: 83.6

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	67		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C5 PFPeA	60		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C2 PFHxA	74		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C4 PFHpA	66		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C4 PFOA	67		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C5 PFNA	71		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C2 PFDA	73		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C2 PFHxDA	61		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C2 PFUnA	74		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C2 PFDoA	65		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C2 PFTeDA	62		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C3 PFBS	74		25 - 150	04/09/20 08:23	04/13/20 00:38	1
18O2 PFHxS	66		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C4 PFOS	68		25 - 150	04/09/20 08:23	04/13/20 00:38	1
13C8 FOSA	62		25 - 150	04/09/20 08:23	04/13/20 00:38	1
d3-NMeFOSAA	58		25 - 150	04/09/20 08:23	04/13/20 00:38	1
d5-NEtFOSAA	67		25 - 150	04/09/20 08:23	04/13/20 00:38	1
M2-6:2 FTS	112		25 - 150	04/09/20 08:23	04/13/20 00:38	1
M2-8:2 FTS	154	*5	25 - 150	04/09/20 08:23	04/13/20 00:38	1
M2-4:2 FTS	204	*5	25 - 150	04/09/20 08:23	04/13/20 00:38	1
d-N-MeFOSA-M	24	*5	25 - 150	04/09/20 08:23	04/13/20 00:38	1
d-N-EtFOSA-M	19	*5	25 - 150	04/09/20 08:23	04/13/20 00:38	1
d7-N-MeFOSE-M	13		10 - 120	04/09/20 08:23	04/13/20 00:38	1
d9-N-EtFOSE-M	11		10 - 120	04/09/20 08:23	04/13/20 00:38	1
13C3 HFPO-DA	63		25 - 150	04/09/20 08:23	04/13/20 00:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.4		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	83.6		0.1	0.1	%			04/09/20 11:35	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: MW-1
Date Collected: 04/07/20 11:40
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-10
Matrix: Solid
Percent Solids: 85.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.090**	**J B**	0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluoropentanoic acid (PFPeA)	<0.085		0.22	0.085	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorohexanoic acid (PFHxA)	<0.046		0.22	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluoroheptanoic acid (PFHpA)	<0.032		0.22	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorooctanoic acid (PFOA)	**0.11**	**J**	0.22	0.095	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorononanoic acid (PFNA)	**0.063**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorodecanoic acid (PFDA)	**0.33**		0.22	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluoroundecanoic acid (PFUnA)	**0.069**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorododecanoic acid (PFDoA)	**0.18**	**J**	0.22	0.074	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorotridecanoic acid (PFTriA)	<0.056		0.22	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorotetradecanoic acid (PFTeA)	**0.067**	**J**	0.22	0.060	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.049		0.22	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorobutanesulfonic acid (PFBS)	<0.028		0.22	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.031		0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluoropentanesulfonic acid (PFPeS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorohexanesulfonic acid (PFHxS)	**0.15**	**J**	0.22	0.034	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.22	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorooctanesulfonic acid (PFOS)	**2.4**	**B**	0.55	0.22	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorononanesulfonic acid (PFNS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorodecanesulfonic acid (PFDS)	**0.47**		0.22	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorooctanesulfonamide (FOSA)	<0.091		0.22	0.091	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.43		2.2	0.43	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
4:2 FTS	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
6:2 FTS	<0.17		2.2	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
8:2 FTS	<0.28		2.2	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
10:2 FTS	<0.055		0.22	0.055	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
NEtFOSA	<0.027		0.22	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
NMeFOSA	<0.045		0.22	0.045	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Perfluorododecanesulfonic acid (PFDoS)	<0.066		0.22	0.066	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
NMeFOSE	**0.81**		0.22	0.078	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
NEtFOSE	**0.36**		0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
ADONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
F-53B Major	<0.030		0.22	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
F-53B Minor	<0.024		0.22	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
NaDONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
DONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1
Ammonium Perfluorooctanoate (APFO)	**0.12**	**J**	0.23	0.098	ug/Kg	☼	04/09/20 08:23	04/13/20 00:47	1

Client Sample ID: MW-1

Date Collected: 04/07/20 11:40
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-10

Matrix: Solid
Percent Solids: 85.4

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	76		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C5 PFPeA	71		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C2 PFHxA	82		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C4 PFHpA	74		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C4 PFOA	76		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C5 PFNA	84		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C2 PFDA	85		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C2 PFHxDA	80		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C2 PFUnA	91		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C2 PFDoA	78		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C2 PFTeDA	77		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C3 PFBS	78		25 - 150	04/09/20 08:23	04/13/20 00:47	1
18O2 PFHxS	74		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C4 PFOS	77		25 - 150	04/09/20 08:23	04/13/20 00:47	1
13C8 FOSA	73		25 - 150	04/09/20 08:23	04/13/20 00:47	1
d3-NMeFOSAA	75		25 - 150	04/09/20 08:23	04/13/20 00:47	1
d5-NEtFOSAA	83		25 - 150	04/09/20 08:23	04/13/20 00:47	1
M2-6:2 FTS	128		25 - 150	04/09/20 08:23	04/13/20 00:47	1
M2-8:2 FTS	149		25 - 150	04/09/20 08:23	04/13/20 00:47	1
M2-4:2 FTS	165	*5	25 - 150	04/09/20 08:23	04/13/20 00:47	1
d-N-MeFOSA-M	27		25 - 150	04/09/20 08:23	04/13/20 00:47	1
d-N-EtFOSA-M	22	*5	25 - 150	04/09/20 08:23	04/13/20 00:47	1
d7-N-MeFOSE-M	17		10 - 120	04/09/20 08:23	04/13/20 00:47	1
d9-N-EtFOSE-M	14		10 - 120	04/09/20 08:23	04/13/20 00:47	1
13C3 HFPO-DA	73		25 - 150	04/09/20 08:23	04/13/20 00:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.6		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	85.4		0.1	0.1	%			04/09/20 11:35	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-66
Date Collected: 04/07/20 11:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-11
Matrix: Solid
Percent Solids: 82.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.18**	**J B**	0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluoropentanoic acid (PFPeA)	**0.10**	**J**	0.22	0.087	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorohexanoic acid (PFHxA)	**0.11**	**J**	0.22	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluoroheptanoic acid (PFHpA)	**0.082**	**J**	0.22	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorooctanoic acid (PFOA)	**0.24**		0.22	0.097	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorononanoic acid (PFNA)	**0.095**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorodecanoic acid (PFDA)	**0.31**		0.22	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluoroundecanoic acid (PFUnA)	**0.070**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorododecanoic acid (PFDoA)	**0.16**	**J**	0.22	0.075	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorotridecanoic acid (PFTriA)	<0.057		0.22	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorotetradecanoic acid (PFTeA)	**0.078**	**J I**	0.22	0.061	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.049		0.22	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorobutanesulfonic acid (PFBS)	**0.047**	**J**	0.22	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.031		0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorohexanesulfonic acid (PFHxS)	**0.057**	**J**	0.22	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.22	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorooctanesulfonic acid (PFOS)	**1.3**	**B**	0.56	0.22	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorononanesulfonic acid (PFNS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorodecanesulfonic acid (PFDS)	**0.058**	**J**	0.22	0.044	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorooctanesulfonamide (FOSA)	<0.092		0.22	0.092	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.44		2.2	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.2	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
4:2 FTS	<0.42		2.2	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
6:2 FTS	<0.17		2.2	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
8:2 FTS	<0.28		2.2	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
10:2 FTS	<0.056		0.22	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
NEtFOSA	<0.027		0.22	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
NMeFOSA	<0.046		0.22	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
Perfluorododecanesulfonic acid (PFDoS)	<0.067		0.22	0.067	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
NMeFOSE	<0.080		0.22	0.080	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
NEtFOSE	**0.32**		0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
ADONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
F-53B Major	<0.030		0.22	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
F-53B Minor	<0.025		0.22	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
NaDONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1
DONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1

Client Sample ID: SS-66
Date Collected: 04/07/20 11:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-11
Matrix: Solid
Percent Solids: 82.7

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.25		0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 00:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C5 PFPeA	*54*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C2 PFHxA	*66*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C4 PFHpA	*63*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C4 PFOA	*61*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C5 PFNA	*67*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C2 PFDA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C2 PFHxDA	*53*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C2 PFUnA	*74*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C2 PFDoA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C2 PFTeDA	*54*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C3 PFBS	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
18O2 PFHxS	*67*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C4 PFOS	*66*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C8 FOSA	*55*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
d3-NMeFOSAA	*56*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
d5-NEtFOSAA	*64*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
M2-6:2 FTS	*132*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
M2-8:2 FTS	*194*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
M2-4:2 FTS	*156*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
d-N-MeFOSA-M	*30*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
d-N-EtFOSA-M	*27*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
d7-N-MeFOSE-M	*15*		*10 - 120*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
d9-N-EtFOSE-M	*14*		*10 - 120*	*04/09/20 08:23*	*04/13/20 00:57*	*1*
13C3 HFPO-DA	*58*		*25 - 150*	*04/09/20 08:23*	*04/13/20 00:57*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.3		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	82.7		0.1	0.1	%			04/09/20 11:35	1

Client Sample ID: SS-67
Date Collected: 04/07/20 12:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-12
Matrix: Solid
Percent Solids: 83.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.16**	**J B**	0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluoropentanoic acid (PFPeA)	**0.23**		0.22	0.086	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorohexanoic acid (PFHxA)	**0.23**		0.22	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluoroheptanoic acid (PFHpA)	**0.15**	**J**	0.22	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorooctanoic acid (PFOA)	**0.56**		0.22	0.096	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorononanoic acid (PFNA)	**0.20**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorodecanoic acid (PFDA)	**0.57**		0.22	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluoroundecanoic acid (PFUnA)	**0.11**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorododecanoic acid (PFDoA)	**0.27**		0.22	0.075	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorotridecanoic acid (PFTriA)	<0.057		0.22	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorotetradecanoic acid (PFTeA)	**0.093**	**J**	0.22	0.061	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.049		0.22	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorobutanesulfonic acid (PFBS)	**0.056**	**J**	0.22	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.031		0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluoropentanesulfonic acid (PFPeS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorohexanesulfonic acid (PFHxS)	**0.085**	**J**	0.22	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.22	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorooctanesulfonic acid (PFOS)	**2.6**	**B**	0.56	0.22	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorononanesulfonic acid (PFNS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorodecanesulfonic acid (PFDS)	**0.060**	**J**	0.22	0.044	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorooctanesulfonamide (FOSA)	<0.092		0.22	0.092	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.44		2.2	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
4:2 FTS	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
6:2 FTS	<0.17		2.2	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
8:2 FTS	<0.28		2.2	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
10:2 FTS	<0.056		0.22	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
NEtFOSA	<0.027		0.22	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
NMeFOSA	<0.046		0.22	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
Perfluorododecanesulfonic acid (PFDoS)	<0.067		0.22	0.067	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
NMeFOSE	<0.080		0.22	0.080	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
NEtFOSE	**0.35**		0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
ADONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
F-53B Major	<0.030		0.22	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
F-53B Minor	<0.025		0.22	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
NaDONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1
DONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1

Client Sample ID: SS-67
Date Collected: 04/07/20 12:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-12
Matrix: Solid
Percent Solids: 83.4

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.58		0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 01:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*58*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C5 PFPeA	*51*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C2 PFHxA	*61*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C4 PFHpA	*55*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C4 PFOA	*54*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C5 PFNA	*60*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C2 PFDA	*63*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C2 PFHxDA	*52*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C2 PFUnA	*62*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C2 PFDoA	*52*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C2 PFTeDA	*51*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C3 PFBS	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
18O2 PFHxS	*59*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C4 PFOS	*57*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C8 FOSA	*48*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
d3-NMeFOSAA	*51*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
d5-NEtFOSAA	*58*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
M2-6:2 FTS	*112*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
M2-8:2 FTS	*159*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
M2-4:2 FTS	*157*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
d-N-MeFOSA-M	*19*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
d-N-EtFOSA-M	*16*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
d7-N-MeFOSE-M	*10*		*10 - 120*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
d9-N-EtFOSE-M	*9*	**5*	*10 - 120*	*04/09/20 08:23*	*04/13/20 01:06*	*1*
13C3 HFPO-DA	*52*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:06*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.6		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	83.4		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-65
Date Collected: 04/07/20 12:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-13
Matrix: Solid
Percent Solids: 83.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.11**	**J B**	0.24	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluoropentanoic acid (PFPeA)	**0.12**	**J**	0.24	0.090	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorohexanoic acid (PFHxA)	**0.054**	**J I**	0.24	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluoroheptanoic acid (PFHpA)	**0.040**	**J**	0.24	0.034	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorooctanoic acid (PFOA)	<0.10		0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorononanoic acid (PFNA)	**0.051**	**J**	0.24	0.042	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorodecanoic acid (PFDA)	**0.093**	**J**	0.24	0.026	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluoroundecanoic acid (PFUnA)	<0.042		0.24	0.042	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorododecanoic acid (PFDoA)	<0.079		0.24	0.079	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorotridecanoic acid (PFTriA)	<0.060		0.24	0.060	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorotetradecanoic acid (PFTeA)	<0.063		0.24	0.063	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.052		0.24	0.052	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorobutanesulfonic acid (PFBS)	**0.044**	**J**	0.24	0.029	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.033		0.24	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluoropentanesulfonic acid (PFPeS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorohexanesulfonic acid (PFHxS)	<0.036		0.24	0.036	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.041		0.24	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorooctanesulfonic acid (PFOS)	**0.71**	**B**	0.59	0.24	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorononanesulfonic acid (PFNS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorodecanesulfonic acid (PFDS)	<0.046		0.24	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorooctanesulfonamide (FOSA)	<0.096		0.24	0.096	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.46		2.4	0.46	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.43		2.4	0.43	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
4:2 FTS	<0.43		2.4	0.43	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
6:2 FTS	<0.18		2.4	0.18	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
8:2 FTS	<0.29		2.4	0.29	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
10:2 FTS	<0.059		0.24	0.059	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
NEtFOSA	<0.028		0.24	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
NMeFOSA	<0.048		0.24	0.048	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Perfluorododecanesulfonic acid (PFDoS)	<0.071		0.24	0.071	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
NMeFOSE	<0.083		0.24	0.083	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
NEtFOSE	**0.083**	**J**	0.24	0.042	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
ADONA	<0.022		0.25	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
F-53B Major	<0.032		0.24	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
HFPO-DA (GenX)	<0.13		0.29	0.13	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
F-53B Minor	<0.026		0.24	0.026	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
NaDONA	<0.022		0.25	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
DONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1
Ammonium Perfluorooctanoate (APFO)	**0.10**	**J**	0.25	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 01:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:15*	*1*
13C5 PFPeA	*56*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:15*	*1*

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-65
Date Collected: 04/07/20 12:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-13
Matrix: Solid
Percent Solids: 83.4

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	63		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C4 PFHpA	59		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C4 PFOA	62		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C5 PFNA	66		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C2 PFDA	68		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C2 PFHxDA	60		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C2 PFUnA	72		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C2 PFDoA	64		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C2 PFTeDA	60		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C3 PFBS	65		25 - 150	04/09/20 08:23	04/13/20 01:15	1
18O2 PFHxS	61		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C4 PFOS	63		25 - 150	04/09/20 08:23	04/13/20 01:15	1
13C8 FOSA	49		25 - 150	04/09/20 08:23	04/13/20 01:15	1
d3-NMeFOSAA	56		25 - 150	04/09/20 08:23	04/13/20 01:15	1
d5-NEtFOSAA	64		25 - 150	04/09/20 08:23	04/13/20 01:15	1
M2-6:2 FTS	127		25 - 150	04/09/20 08:23	04/13/20 01:15	1
M2-8:2 FTS	172	*5	25 - 150	04/09/20 08:23	04/13/20 01:15	1
M2-4:2 FTS	138		25 - 150	04/09/20 08:23	04/13/20 01:15	1
d-N-MeFOSA-M	31		25 - 150	04/09/20 08:23	04/13/20 01:15	1
d-N-EtFOSA-M	29		25 - 150	04/09/20 08:23	04/13/20 01:15	1
d7-N-MeFOSE-M	18		10 - 120	04/09/20 08:23	04/13/20 01:15	1
d9-N-EtFOSE-M	17		10 - 120	04/09/20 08:23	04/13/20 01:15	1
13C3 HFPO-DA	56		25 - 150	04/09/20 08:23	04/13/20 01:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.6		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	83.4		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-68
Date Collected: 04/07/20 12:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-14
Matrix: Solid
Percent Solids: 82.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.092**	**J B**	0.24	0.034	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluoropentanoic acid (PFPeA)	**0.13**	**J**	0.24	0.092	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorohexanoic acid (PFHxA)	<0.050		0.24	0.050	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluoroheptanoic acid (PFHpA)	**0.055**	**J**	0.24	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorooctanoic acid (PFOA)	**0.11**	**J**	0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorononanoic acid (PFNA)	**0.057**	**J**	0.24	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorodecanoic acid (PFDA)	**0.093**	**J**	0.24	0.026	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluoroundecanoic acid (PFUnA)	**0.071**	**J**	0.24	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorododecanoic acid (PFDoA)	<0.080		0.24	0.080	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorotridecanoic acid (PFTriA)	<0.061		0.24	0.061	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorotetradecanoic acid (PFTeA)	<0.065		0.24	0.065	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.053		0.24	0.053	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorobutanesulfonic acid (PFBS)	**0.043**	**J**	0.24	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.034		0.24	0.034	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluoropentanesulfonic acid (PFPeS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorohexanesulfonic acid (PFHxS)	**0.038**	**J I**	0.24	0.037	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.042		0.24	0.042	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorooctanesulfonic acid (PFOS)	**0.87**	**B**	0.60	0.24	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorononanesulfonic acid (PFNS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorodecanesulfonic acid (PFDS)	**0.047**	**J**	0.24	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorooctanesulfonamide (FOSA)	<0.098		0.24	0.098	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.47		2.4	0.47	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.44		2.4	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
4:2 FTS	<0.44		2.4	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
6:2 FTS	<0.18		2.4	0.18	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
8:2 FTS	<0.30		2.4	0.30	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
10:2 FTS	<0.060		0.24	0.060	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
NEtFOSA	<0.029		0.24	0.029	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
NMeFOSA	<0.049		0.24	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Perfluorododecanesulfonic acid (PFDoS)	<0.072		0.24	0.072	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
NMeFOSE	<0.085		0.24	0.085	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
NEtFOSE	**0.23**	**J**	0.24	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
ADONA	<0.023		0.25	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
F-53B Major	<0.032		0.24	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
HFPO-DA (GenX)	<0.13		0.30	0.13	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
F-53B Minor	<0.026		0.24	0.026	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
NaDONA	<0.023		0.25	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
DONA	<0.022		0.24	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1
Ammonium Perfluorooctanoate (APFO)	**0.11**	**J**	0.25	0.11	ug/Kg	☼	04/09/20 08:23	04/13/20 01:25	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-68
Date Collected: 04/07/20 12:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-14
Matrix: Solid
Percent Solids: 82.0

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	68		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C5 PFPeA	60		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C2 PFHxA	67		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C4 PFHpA	63		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C4 PFOA	63		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C5 PFNA	70		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C2 PFDA	73		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C2 PFHxDA	58		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C2 PFUnA	73		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C2 PFDoA	68		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C2 PFTeDA	63		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C3 PFBS	70		25 - 150	04/09/20 08:23	04/13/20 01:25	1
18O2 PFHxS	64		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C4 PFOS	68		25 - 150	04/09/20 08:23	04/13/20 01:25	1
13C8 FOSA	56		25 - 150	04/09/20 08:23	04/13/20 01:25	1
d3-NMeFOSAA	65		25 - 150	04/09/20 08:23	04/13/20 01:25	1
d5-NEtFOSAA	65		25 - 150	04/09/20 08:23	04/13/20 01:25	1
M2-6:2 FTS	142		25 - 150	04/09/20 08:23	04/13/20 01:25	1
M2-8:2 FTS	187	*5	25 - 150	04/09/20 08:23	04/13/20 01:25	1
M2-4:2 FTS	151	*5	25 - 150	04/09/20 08:23	04/13/20 01:25	1
d-N-MeFOSA-M	30		25 - 150	04/09/20 08:23	04/13/20 01:25	1
d-N-EtFOSA-M	27		25 - 150	04/09/20 08:23	04/13/20 01:25	1
d7-N-MeFOSE-M	14		10 - 120	04/09/20 08:23	04/13/20 01:25	1
d9-N-EtFOSE-M	11		10 - 120	04/09/20 08:23	04/13/20 01:25	1
13C3 HFPO-DA	61		25 - 150	04/09/20 08:23	04/13/20 01:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.0		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	82.0		0.1	0.1	%			04/09/20 11:35	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-69
Date Collected: 04/07/20 12:30
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-15
Matrix: Solid
Percent Solids: 81.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.11**	**J B**	0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluoropentanoic acid (PFPeA)	**0.39**		0.23	0.087	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorohexanoic acid (PFHxA)	**0.51**		0.23	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluoroheptanoic acid (PFHpA)	**0.21**	**J**	0.23	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorooctanoic acid (PFOA)	**0.15**	**J**	0.23	0.097	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorononanoic acid (PFNA)	**0.11**	**J**	0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorodecanoic acid (PFDA)	**0.81**		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluoroundecanoic acid (PFUnA)	**0.21**	**J**	0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorododecanoic acid (PFDoA)	**0.47**		0.23	0.075	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorotridecanoic acid (PFTriA)	<0.057		0.23	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorotetradecanoic acid (PFTeA)	**0.13**	**J**	0.23	0.061	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.050		0.23	0.050	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorobutanesulfonic acid (PFBS)	**0.028**	**J**	0.23	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.032		0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluoropentanesulfonic acid (PFPeS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorohexanesulfonic acid (PFHxS)	**0.37**		0.23	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.23	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorooctanesulfonic acid (PFOS)	**5.9**	**B**	0.56	0.23	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorononanesulfonic acid (PFNS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorodecanesulfonic acid (PFDS)	**1.0**		0.23	0.044	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorooctanesulfonamide (FOSA)	<0.092		0.23	0.092	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	**0.50**	**J**	2.3	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
4:2 FTS	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
6:2 FTS	**1.3**	**J**	2.3	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
8:2 FTS	<0.28		2.3	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
10:2 FTS	<0.056		0.23	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
NEtFOSA	<0.027		0.23	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
NMeFOSA	<0.046		0.23	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
Perfluorododecanesulfonic acid (PFDoS)	<0.068		0.23	0.068	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
NMeFOSE	**2.0**		0.23	0.080	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
NEtFOSE	**1.2**		0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
ADONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
F-53B Major	<0.030		0.23	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
F-53B Minor	<0.025		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
NaDONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1
DONA	<0.020		0.23	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1

Client Sample ID: SS-69
Date Collected: 04/07/20 12:30
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-15
Matrix: Solid
Percent Solids: 81.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.15	J	0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 01:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C5 PFPeA	*63*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C2 PFHxA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C4 PFHpA	*75*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C4 PFOA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C5 PFNA	*78*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C2 PFDA	*80*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C2 PFHxDA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C2 PFUnA	*78*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C2 PFDoA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C2 PFTeDA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C3 PFBS	*75*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
18O2 PFHxS	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C4 PFOS	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C8 FOSA	*68*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
d3-NMeFOSAA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
d5-NEtFOSAA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
M2-6:2 FTS	*138*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
M2-8:2 FTS	*163*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
M2-4:2 FTS	*157*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
d-N-MeFOSA-M	*29*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
d-N-EtFOSA-M	*23*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
d7-N-MeFOSE-M	*14*		*10 - 120*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
d9-N-EtFOSE-M	*12*		*10 - 120*	*04/09/20 08:23*	*04/13/20 01:34*	*1*
13C3 HFPO-DA	*64*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.2		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	81.8		0.1	0.1	%			04/09/20 11:35	1

Client Sample ID: SS-70
Date Collected: 04/07/20 12:40
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-16
Matrix: Solid
Percent Solids: 82.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.19**	**J B**	0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluoropentanoic acid (PFPeA)	<0.088		0.23	0.088	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorohexanoic acid (PFHxA)	**0.11**	**J I**	0.23	0.048	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluoroheptanoic acid (PFHpA)	**0.15**	**J**	0.23	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorooctanoic acid (PFOA)	**0.32**		0.23	0.098	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorononanoic acid (PFNA)	**0.15**	**J**	0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorodecanoic acid (PFDA)	**0.93**		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluoroundecanoic acid (PFUnA)	**0.28**		0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorododecanoic acid (PFDoA)	**0.75**		0.23	0.076	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorotridecanoic acid (PFTriA)	**0.058**	**J**	0.23	0.058	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorotetradecanoic acid (PFTeA)	**0.20**	**J**	0.23	0.062	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.071**	**J**	0.23	0.050	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorobutanesulfonic acid (PFBS)	**0.035**	**J**	0.23	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.032		0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluoropentanesulfonic acid (PFPeS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorohexanesulfonic acid (PFHxS)	**0.067**	**J**	0.23	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.040		0.23	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorooctanesulfonic acid (PFOS)	**1.7**	**B**	0.57	0.23	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorononanesulfonic acid (PFNS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorodecanesulfonic acid (PFDS)	**0.17**	**J**	0.23	0.044	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorooctanesulfonamide (FOSA)	<0.093		0.23	0.093	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.44		2.3	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
4:2 FTS	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
6:2 FTS	<0.17		2.3	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
8:2 FTS	<0.28		2.3	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
10:2 FTS	<0.057		0.23	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
NEtFOSA	<0.027		0.23	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
NMeFOSA	<0.047		0.23	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
Perfluorododecanesulfonic acid (PFDoS)	<0.068		0.23	0.068	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
NMeFOSE	**0.19**	**J**	0.23	0.081	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
NEtFOSE	**0.57**		0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
ADONA	<0.022		0.24	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
F-53B Major	<0.031		0.23	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
HFPO-DA (GenX)	<0.13		0.28	0.13	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
F-53B Minor	<0.025		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
NaDONA	<0.022		0.24	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1
DONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1

Client Sample ID: SS-70
Date Collected: 04/07/20 12:40
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-16
Matrix: Solid
Percent Solids: 82.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.33		0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 01:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C5 PFPeA	*61*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C2 PFHxA	*76*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C4 PFHpA	*64*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C4 PFOA	*69*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C5 PFNA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C2 PFDA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C2 PFHxDA	*68*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C2 PFUnA	*80*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C2 PFDoA	*67*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C2 PFTeDA	*57*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C3 PFBS	*81*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
18O2 PFHxS	*77*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C4 PFOS	*74*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C8 FOSA	*55*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
d3-NMeFOSAA	*59*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
d5-NEtFOSAA	*66*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
M2-6:2 FTS	*182*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
M2-8:2 FTS	*238*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
M2-4:2 FTS	*184*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
d-N-MeFOSA-M	*33*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
d-N-EtFOSA-M	*28*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
d7-N-MeFOSE-M	*18*		*10 - 120*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
d9-N-EtFOSE-M	*16*		*10 - 120*	*04/09/20 08:23*	*04/13/20 01:43*	*1*
13C3 HFPO-DA	*63*		*25 - 150*	*04/09/20 08:23*	*04/13/20 01:43*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.5		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	82.5		0.1	0.1	%			04/09/20 11:35	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-71
Date Collected: 04/07/20 12:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-17
Matrix: Solid
Percent Solids: 83.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.069**	**J B**	0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluoropentanoic acid (PFPeA)	**0.12**	**J**	0.23	0.087	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorohexanoic acid (PFHxA)	**0.069**	**J**	0.23	0.048	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluoroheptanoic acid (PFHpA)	**0.075**	**J**	0.23	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorooctanoic acid (PFOA)	**0.17**	**J**	0.23	0.097	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorononanoic acid (PFNA)	**0.19**	**J**	0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorodecanoic acid (PFDA)	**0.93**		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluoroundecanoic acid (PFUnA)	**0.16**	**J**	0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorododecanoic acid (PFDoA)	**0.40**		0.23	0.076	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorotridecanoic acid (PFTriA)	<0.058		0.23	0.058	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorotetradecanoic acid (PFTeA)	**0.13**	**J**	0.23	0.061	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.050		0.23	0.050	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorobutanesulfonic acid (PFBS)	**0.029**	**J**	0.23	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.032		0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluoropentanesulfonic acid (PFPeS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorohexanesulfonic acid (PFHxS)	**0.23**		0.23	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.040		0.23	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorooctanesulfonic acid (PFOS)	**6.1**	**B**	0.57	0.23	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorononanesulfonic acid (PFNS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorodecanesulfonic acid (PFDS)	**0.88**		0.23	0.044	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorooctanesulfonamide (FOSA)	<0.093		0.23	0.093	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.44		2.3	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
4:2 FTS	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
6:2 FTS	<0.17		2.3	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
8:2 FTS	<0.28		2.3	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
10:2 FTS	<0.057		0.23	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
NEtFOSA	<0.027		0.23	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
NMeFOSA	<0.046		0.23	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
Perfluorododecanesulfonic acid (PFDoS)	<0.068		0.23	0.068	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
NMeFOSE	**1.4**		0.23	0.080	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
NEtFOSE	**1.1**		0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
ADONA	<0.022		0.24	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
F-53B Major	<0.031		0.23	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
F-53B Minor	<0.025		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
NaDONA	<0.022		0.24	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1
DONA	<0.020		0.23	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-71
Date Collected: 04/07/20 12:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-17
Matrix: Solid
Percent Solids: 83.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.18	J	0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 02:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C5 PFPeA	*64*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C2 PFHxA	*73*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C4 PFHpA	*68*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C4 PFOA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C5 PFNA	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C2 PFDA	*77*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C2 PFHxDA	*73*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C2 PFUnA	*74*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C2 PFDoA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C2 PFTeDA	*73*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C3 PFBS	*76*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
18O2 PFHxS	*72*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C4 PFOS	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C8 FOSA	*67*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
d3-NMeFOSAA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
d5-NEtFOSAA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
M2-6:2 FTS	*127*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
M2-8:2 FTS	*156*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
M2-4:2 FTS	*185*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
d-N-MeFOSA-M	*34*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
d-N-EtFOSA-M	*29*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
d7-N-MeFOSE-M	*16*		*10 - 120*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
d9-N-EtFOSE-M	*13*		*10 - 120*	*04/09/20 08:23*	*04/13/20 02:12*	*1*
13C3 HFPO-DA	*62*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:12*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.0		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	83.0		0.1	0.1	%			04/09/20 11:35	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-72
Date Collected: 04/07/20 12:55
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-18
Matrix: Solid
Percent Solids: 85.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.076**	**J B**	0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluoropentanoic acid (PFPeA)	**0.16**	**J**	0.22	0.086	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorohexanoic acid (PFHxA)	**0.13**	**J**	0.22	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluoroheptanoic acid (PFHpA)	**0.32**		0.22	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorooctanoic acid (PFOA)	**0.39**		0.22	0.096	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorononanoic acid (PFNA)	**0.22**		0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorodecanoic acid (PFDA)	**1.0**		0.22	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluoroundecanoic acid (PFUnA)	**0.18**	**J**	0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorododecanoic acid (PFDoA)	**0.42**		0.22	0.075	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorotridecanoic acid (PFTriA)	**0.063**	**J**	0.22	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorotetradecanoic acid (PFTeA)	**0.13**	**J**	0.22	0.060	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.049		0.22	0.049	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorobutanesulfonic acid (PFBS)	**0.035**	**J**	0.22	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.031		0.22	0.031	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluoropentanesulfonic acid (PFPeS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorohexanesulfonic acid (PFHxS)	**0.41**		0.22	0.034	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.22	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorooctanesulfonic acid (PFOS)	**7.8**	**B**	0.56	0.22	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorononanesulfonic acid (PFNS)	<0.022		0.22	0.022	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorodecanesulfonic acid (PFDS)	**1.1**		0.22	0.043	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorooctanesulfonamide (FOSA)	<0.091		0.22	0.091	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	**0.44**	**J**	2.2	0.43	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
4:2 FTS	<0.41		2.2	0.41	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
6:2 FTS	<0.17		2.2	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
8:2 FTS	<0.28		2.2	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
10:2 FTS	<0.056		0.22	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
NEtFOSA	<0.027		0.22	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
NMeFOSA	<0.046		0.22	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
Perfluorododecanesulfonic acid (PFDoS)	<0.067		0.22	0.067	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
NMeFOSE	**1.4**		0.22	0.079	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
NEtFOSE	**1.2**		0.22	0.040	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
ADONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
F-53B Major	<0.030		0.22	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
F-53B Minor	<0.024		0.22	0.024	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
NaDONA	<0.021		0.23	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1
DONA	<0.020		0.22	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-72
Date Collected: 04/07/20 12:55
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-18
Matrix: Solid
Percent Solids: 85.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.41		0.23	0.099	ug/Kg	☼	04/09/20 08:23	04/13/20 02:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*68*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C5 PFPeA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C2 PFHxA	*74*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C4 PFHpA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C4 PFOA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C5 PFNA	*78*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C2 PFDA	*79*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C2 PFHxDA	*78*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C2 PFUnA	*78*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C2 PFDoA	*76*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C2 PFTeDA	*77*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C3 PFBS	*73*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
18O2 PFHxS	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C4 PFOS	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C8 FOSA	*71*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
d3-NMeFOSAA	*70*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
d5-NEtFOSAA	*73*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
M2-6:2 FTS	*130*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
M2-8:2 FTS	*150*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
M2-4:2 FTS	*159*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
d-N-MeFOSA-M	*25*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
d-N-EtFOSA-M	*20*	**5*	*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
d7-N-MeFOSE-M	*18*		*10 - 120*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
d9-N-EtFOSE-M	*16*		*10 - 120*	*04/09/20 08:23*	*04/13/20 02:21*	*1*
13C3 HFPO-DA	*65*		*25 - 150*	*04/09/20 08:23*	*04/13/20 02:21*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.0		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	85.0		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-73
Date Collected: 04/07/20 13:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-19
Matrix: Solid
Percent Solids: 85.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.051**	**J B**	0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluoropentanoic acid (PFPeA)	<0.087		0.23	0.087	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorohexanoic acid (PFHxA)	<0.047		0.23	0.047	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluoroheptanoic acid (PFHpA)	<0.033		0.23	0.033	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorooctanoic acid (PFOA)	<0.097		0.23	0.097	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorononanoic acid (PFNA)	**0.081**	**J**	0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorodecanoic acid (PFDA)	**0.84**		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluoroundecanoic acid (PFUnA)	**0.15**	**J**	0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorododecanoic acid (PFDoA)	**0.33**		0.23	0.075	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorotridecanoic acid (PFTriA)	<0.057		0.23	0.057	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorotetradecanoic acid (PFTeA)	**0.097**	**J I**	0.23	0.061	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.050		0.23	0.050	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorobutanesulfonic acid (PFBS)	<0.028		0.23	0.028	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.032		0.23	0.032	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluoropentanesulfonic acid (PFPeS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorohexanesulfonic acid (PFHxS)	**0.24**		0.23	0.035	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.039		0.23	0.039	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorooctanesulfonic acid (PFOS)	**4.5**	**B**	0.56	0.23	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorononanesulfonic acid (PFNS)	<0.023		0.23	0.023	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorodecanesulfonic acid (PFDS)	**0.78**		0.23	0.044	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorooctanesulfonamide (FOSA)	<0.092		0.23	0.092	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.44		2.3	0.44	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
4:2 FTS	<0.42		2.3	0.42	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
6:2 FTS	<0.17		2.3	0.17	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
8:2 FTS	<0.28		2.3	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
10:2 FTS	<0.056		0.23	0.056	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
NEtFOSA	<0.027		0.23	0.027	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
NMeFOSA	<0.046		0.23	0.046	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Perfluorododecanesulfonic acid (PFDoS)	<0.068		0.23	0.068	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
NMeFOSE	**1.4**		0.23	0.080	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
NEtFOSE	**0.92**		0.23	0.041	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
ADONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
F-53B Major	<0.030		0.23	0.030	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
HFPO-DA (GenX)	<0.12		0.28	0.12	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
F-53B Minor	<0.025		0.23	0.025	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
NaDONA	<0.021		0.24	0.021	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
DONA	<0.020		0.23	0.020	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1
Ammonium Perfluorooctanoate (APFO)	<0.10		0.24	0.10	ug/Kg	☼	04/09/20 08:23	04/13/20 02:30	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-73
Date Collected: 04/07/20 13:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-19
Matrix: Solid
Percent Solids: 85.4

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	62		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C5 PFPeA	62		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C2 PFHxA	63		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C4 PFHpA	60		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C4 PFOA	61		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C5 PFNA	63		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C2 PFDA	67		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C2 PFHxDA	65		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C2 PFUnA	68		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C2 PFDoA	63		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C2 PFTeDA	62		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C3 PFBS	67		25 - 150	04/09/20 08:23	04/13/20 02:30	1
18O2 PFHxS	61		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C4 PFOS	61		25 - 150	04/09/20 08:23	04/13/20 02:30	1
13C8 FOSA	60		25 - 150	04/09/20 08:23	04/13/20 02:30	1
d3-NMeFOSAA	61		25 - 150	04/09/20 08:23	04/13/20 02:30	1
d5-NEtFOSAA	66		25 - 150	04/09/20 08:23	04/13/20 02:30	1
M2-6:2 FTS	108		25 - 150	04/09/20 08:23	04/13/20 02:30	1
M2-8:2 FTS	130		25 - 150	04/09/20 08:23	04/13/20 02:30	1
M2-4:2 FTS	135		25 - 150	04/09/20 08:23	04/13/20 02:30	1
d-N-MeFOSA-M	23	*5	25 - 150	04/09/20 08:23	04/13/20 02:30	1
d-N-EtFOSA-M	19	*5	25 - 150	04/09/20 08:23	04/13/20 02:30	1
d7-N-MeFOSE-M	13		10 - 120	04/09/20 08:23	04/13/20 02:30	1
d9-N-EtFOSE-M	11		10 - 120	04/09/20 08:23	04/13/20 02:30	1
13C3 HFPO-DA	58		25 - 150	04/09/20 08:23	04/13/20 02:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.6		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	85.4		0.1	0.1	%			04/09/20 12:00	1

Client Sample ID: SS-74
Date Collected: 04/07/20 13:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-20
Matrix: Solid
Percent Solids: 76.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.36		2.6	0.36	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluoropentanoic acid (PFPeA)	<0.99		2.6	0.99	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorohexanoic acid (PFHxA)	<0.54		2.6	0.54	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluoroheptanoic acid (PFHpA)	<0.37		2.6	0.37	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorooctanoic acid (PFOA)	<1.1		2.6	1.1	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorononanoic acid (PFNA)	<0.46		2.6	0.46	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorodecanoic acid (PFDA)	**1.3**	**J**	2.6	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluoroundecanoic acid (PFUnA)	<0.46		2.6	0.46	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorododecanoic acid (PFDoA)	<0.86		2.6	0.86	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorotridecanoic acid (PFTriA)	<0.66		2.6	0.66	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorotetradecanoic acid (PFTeA)	<0.70		2.6	0.70	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.57		2.6	0.57	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorobutanesulfonic acid (PFBS)	<0.32		2.6	0.32	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluoro-n-octadecanoic acid (PFODA)	<0.36		2.6	0.36	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluoropentanesulfonic acid (PFPeS)	<0.26		2.6	0.26	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorohexanesulfonic acid (PFHxS)	<0.40		2.6	0.40	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluoroheptanesulfonic Acid (PFHpS)	<0.45		2.6	0.45	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorooctanesulfonic acid (PFOS)	**4.0**	**J B**	6.4	2.6	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorononanesulfonic acid (PFNS)	<0.26		2.6	0.26	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorodecanesulfonic acid (PFDS)	<0.50		2.6	0.50	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorooctanesulfonamide (FOSA)	<1.1		2.6	1.1	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		26	5.0	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		26	4.8	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
4:2 FTS	<4.8		26	4.8	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
6:2 FTS	<1.9		26	1.9	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
8:2 FTS	<3.2		26	3.2	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
10:2 FTS	<0.64		2.6	0.64	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
NEtFOSA	<0.31		2.6	0.31	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
NMeFOSA	<0.53		2.6	0.53	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Perfluorododecanesulfonic acid (PFDoS)	<0.77		2.6	0.77	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
NMeFOSE	<0.91		2.6	0.91	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
NEtFOSE	**0.95**	**J**	2.6	0.46	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
ADONA	<0.24		2.7	0.24	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
F-53B Major	<0.35		2.6	0.35	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
HFPO-DA (GenX)	<1.4		3.2	1.4	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
F-53B Minor	<0.28		2.6	0.28	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
NaDONA	<0.24		2.7	0.24	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
DONA	<0.23		2.6	0.23	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10
Ammonium Perfluorooctanoate (APFO)	<1.1		2.7	1.1	ug/Kg	☼	04/09/20 08:23	04/13/20 18:22	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*83*		*25 - 150*	*04/09/20 08:23*	*04/13/20 18:22*	*10*
13C5 PFPeA	*80*		*25 - 150*	*04/09/20 08:23*	*04/13/20 18:22*	*10*

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-74
Date Collected: 04/07/20 13:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-20
Matrix: Solid
Percent Solids: 76.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C4 PFHpA	79		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C4 PFOA	83		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C5 PFNA	91		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C2 PFDA	92		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C2 PFHxDA	53		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C2 PFUnA	93		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C2 PFDoA	85		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C2 PFTeDA	74		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C3 PFBS	82		25 - 150	04/09/20 08:23	04/13/20 18:22	10
18O2 PFHxS	83		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C4 PFOS	89		25 - 150	04/09/20 08:23	04/13/20 18:22	10
13C8 FOSA	76		25 - 150	04/09/20 08:23	04/13/20 18:22	10
d3-NMeFOSAA	96		25 - 150	04/09/20 08:23	04/13/20 18:22	10
d5-NEtFOSAA	101		25 - 150	04/09/20 08:23	04/13/20 18:22	10
M2-6:2 FTS	140		25 - 150	04/09/20 08:23	04/13/20 18:22	10
M2-8:2 FTS	173	*5	25 - 150	04/09/20 08:23	04/13/20 18:22	10
M2-4:2 FTS	159	*5	25 - 150	04/09/20 08:23	04/13/20 18:22	10
d-N-MeFOSA-M	48		25 - 150	04/09/20 08:23	04/13/20 18:22	10
d-N-EtFOSA-M	50		25 - 150	04/09/20 08:23	04/13/20 18:22	10
d7-N-MeFOSE-M	19		10 - 120	04/09/20 08:23	04/13/20 18:22	10
d9-N-EtFOSE-M	21		10 - 120	04/09/20 08:23	04/13/20 18:22	10
13C3 HFPO-DA	72		25 - 150	04/09/20 08:23	04/13/20 18:22	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.5		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	76.5		0.1	0.1	%			04/09/20 12:00	1

Client Sample ID: SS-78

Date Collected: 04/07/20 13:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-21

Matrix: Solid
Percent Solids: 76.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.034		0.25	0.034	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluoropentanoic acid (PFPeA)	<0.095		0.25	0.095	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorohexanoic acid (PFHxA)	**0.056**	**J**	0.25	0.052	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluoroheptanoic acid (PFHpA)	<0.036		0.25	0.036	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorooctanoic acid (PFOA)	**0.11**	**J**	0.25	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorononanoic acid (PFNA)	**0.057**	**J**	0.25	0.044	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorodecanoic acid (PFDA)	**0.15**	**J I**	0.25	0.027	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluoroundecanoic acid (PFUnA)	<0.044		0.25	0.044	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorododecanoic acid (PFDoA)	<0.083		0.25	0.083	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorotridecanoic acid (PFTriA)	<0.063		0.25	0.063	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorotetradecanoic acid (PFTeA)	<0.067		0.25	0.067	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.054		0.25	0.054	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorobutanesulfonic acid (PFBS)	**0.038**	**J**	0.25	0.031	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.034		0.25	0.034	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluoropentanesulfonic acid (PFPeS)	<0.025		0.25	0.025	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorohexanesulfonic acid (PFHxS)	**0.054**	**J**	0.25	0.038	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.043		0.25	0.043	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorooctanesulfonic acid (PFOS)	**0.89**		0.62	0.25	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorononanesulfonic acid (PFNS)	<0.025		0.25	0.025	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorodecanesulfonic acid (PFDS)	<0.048		0.25	0.048	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorooctanesulfonamide (FOSA)	<0.10		0.25	0.10	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.48		2.5	0.48	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.46		2.5	0.46	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
4:2 FTS	<0.46		2.5	0.46	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
6:2 FTS	<0.18		2.5	0.18	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
8:2 FTS	<0.31		2.5	0.31	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
10:2 FTS	<0.062	F1	0.25	0.062	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
NEtFOSA	<0.030		0.25	0.030	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
NMeFOSA	<0.050		0.25	0.050	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Perfluorododecanesulfonic acid (PFDoS)	<0.074	F1	0.25	0.074	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
NMeFOSE	<0.087		0.25	0.087	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
NEtFOSE	**0.20**	**J**	0.25	0.044	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
ADONA	<0.023	F1	0.26	0.023	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
F-53B Major	<0.033	F1	0.25	0.033	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
HFPO-DA (GenX)	<0.14		0.31	0.14	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
F-53B Minor	<0.027		0.25	0.027	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
NaDONA	<0.023	F1	0.26	0.023	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
DONA	<0.022	F1	0.25	0.022	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1
Ammonium Perfluorooctanoate (APFO)	**0.11**	**J**	0.26	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 20:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*68*		*25 - 150*	*04/09/20 08:32*	*04/12/20 20:16*	*1*

Client Sample ID: SS-78
Date Collected: 04/07/20 13:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-21
Matrix: Solid
Percent Solids: 76.2

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	60		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C2 PFHxA	81		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C4 PFHpA	63		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C4 PFOA	67		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C5 PFNA	62		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C2 PFDA	65		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C2 PFHxDA	60		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C2 PFUnA	69		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C2 PFDoA	64		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C2 PFTeDA	58		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C3 PFBS	73		25 - 150	04/09/20 08:32	04/12/20 20:16	1
18O2 PFHxS	64		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C4 PFOS	65		25 - 150	04/09/20 08:32	04/12/20 20:16	1
13C8 FOSA	55		25 - 150	04/09/20 08:32	04/12/20 20:16	1
d3-NMeFOSAA	49		25 - 150	04/09/20 08:32	04/12/20 20:16	1
d5-NEtFOSAA	57		25 - 150	04/09/20 08:32	04/12/20 20:16	1
M2-6:2 FTS	128		25 - 150	04/09/20 08:32	04/12/20 20:16	1
M2-8:2 FTS	152	*5	25 - 150	04/09/20 08:32	04/12/20 20:16	1
M2-4:2 FTS	213	*5	25 - 150	04/09/20 08:32	04/12/20 20:16	1
d-N-MeFOSA-M	24	*5	25 - 150	04/09/20 08:32	04/12/20 20:16	1
d-N-EtFOSA-M	20	*5	25 - 150	04/09/20 08:32	04/12/20 20:16	1
d7-N-MeFOSE-M	14		10 - 120	04/09/20 08:32	04/12/20 20:16	1
d9-N-EtFOSE-M	11		10 - 120	04/09/20 08:32	04/12/20 20:16	1
13C3 HFPO-DA	63		25 - 150	04/09/20 08:32	04/12/20 20:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.8		0.1	0.1	%			04/09/20 11:35	1
Percent Solids	76.2		0.1	0.1	%			04/09/20 11:35	1

Client Sample ID: SS-77
Date Collected: 04/07/20 13:45
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-22
Matrix: Solid
Percent Solids: 80.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.034		0.24	0.034	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluoropentanoic acid (PFPeA)	<0.094		0.24	0.094	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorohexanoic acid (PFHxA)	**0.067**	**J**	0.24	0.051	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluoroheptanoic acid (PFHpA)	**0.050**	**J**	0.24	0.036	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorooctanoic acid (PFOA)	**0.18**	**J**	0.24	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorononanoic acid (PFNA)	**0.098**	**J**	0.24	0.044	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorodecanoic acid (PFDA)	**0.20**	**J**	0.24	0.027	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluoroundecanoic acid (PFUnA)	<0.044		0.24	0.044	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorododecanoic acid (PFDoA)	<0.082		0.24	0.082	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorotridecanoic acid (PFTriA)	<0.062		0.24	0.062	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorotetradecanoic acid (PFTeA)	<0.066		0.24	0.066	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.054		0.24	0.054	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorobutanesulfonic acid (PFBS)	<0.031		0.24	0.031	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.034		0.24	0.034	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluoropentanesulfonic acid (PFPeS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorohexanesulfonic acid (PFHxS)	**0.051**	**J**	0.24	0.038	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.043		0.24	0.043	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorooctanesulfonic acid (PFOS)	**0.82**		0.61	0.24	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorononanesulfonic acid (PFNS)	<0.024		0.24	0.024	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorodecanesulfonic acid (PFDS)	<0.048		0.24	0.048	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorooctanesulfonamide (FOSA)	<0.10		0.24	0.10	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.48		2.4	0.48	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.45		2.4	0.45	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
4:2 FTS	<0.45		2.4	0.45	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
6:2 FTS	<0.18		2.4	0.18	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
8:2 FTS	<0.31		2.4	0.31	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
10:2 FTS	<0.061		0.24	0.061	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
NEtFOSA	<0.029		0.24	0.029	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
NMeFOSA	<0.050		0.24	0.050	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Perfluorododecanesulfonic acid (PFDoS)	<0.073		0.24	0.073	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
NMeFOSE	<0.087		0.24	0.087	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
NEtFOSE	<0.044		0.24	0.044	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
ADONA	<0.023		0.26	0.023	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
F-53B Major	<0.033		0.24	0.033	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
HFPO-DA (GenX)	<0.13		0.31	0.13	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
F-53B Minor	<0.027		0.24	0.027	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
NaDONA	<0.023		0.26	0.023	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
DONA	<0.022		0.24	0.022	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1
Ammonium Perfluorooctanoate (APFO)	**0.19**	**J**	0.26	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 20:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*81*		*25 - 150*	*04/09/20 08:32*	*04/12/20 20:44*	*1*
13C5 PFPeA	*74*		*25 - 150*	*04/09/20 08:32*	*04/12/20 20:44*	*1*

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-77
Date Collected: 04/07/20 13:45
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-22
Matrix: Solid
Percent Solids: 80.7

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C4 PFHpA	78		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C4 PFOA	79		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C5 PFNA	79		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C2 PFDA	83		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C2 PFHxDA	82		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C2 PFUnA	86		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C2 PFDoA	76		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C2 PFTeDA	76		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C3 PFBS	88		25 - 150	04/09/20 08:32	04/12/20 20:44	1
18O2 PFHxS	78		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C4 PFOS	82		25 - 150	04/09/20 08:32	04/12/20 20:44	1
13C8 FOSA	73		25 - 150	04/09/20 08:32	04/12/20 20:44	1
d3-NMeFOSAA	68		25 - 150	04/09/20 08:32	04/12/20 20:44	1
d5-NEtFOSAA	78		25 - 150	04/09/20 08:32	04/12/20 20:44	1
M2-6:2 FTS	156	*5	25 - 150	04/09/20 08:32	04/12/20 20:44	1
M2-8:2 FTS	179	*5	25 - 150	04/09/20 08:32	04/12/20 20:44	1
M2-4:2 FTS	267	*5	25 - 150	04/09/20 08:32	04/12/20 20:44	1
d-N-MeFOSA-M	36		25 - 150	04/09/20 08:32	04/12/20 20:44	1
d-N-EtFOSA-M	32		25 - 150	04/09/20 08:32	04/12/20 20:44	1
d7-N-MeFOSE-M	20		10 - 120	04/09/20 08:32	04/12/20 20:44	1
d9-N-EtFOSE-M	15		10 - 120	04/09/20 08:32	04/12/20 20:44	1
13C3 HFPO-DA	72		25 - 150	04/09/20 08:32	04/12/20 20:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.3		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	80.7		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-76
Date Collected: 04/07/20 13:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-23
Matrix: Solid
Percent Solids: 72.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.12**	**J B**	0.26	0.037	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluoropentanoic acid (PFPeA)	**0.14**	**J**	0.26	0.10	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorohexanoic acid (PFHxA)	**0.17**	**J**	0.26	0.055	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluoroheptanoic acid (PFHpA)	**0.076**	**J**	0.26	0.038	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorooctanoic acid (PFOA)	**0.19**	**J**	0.26	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorononanoic acid (PFNA)	**0.090**	**J**	0.26	0.047	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorodecanoic acid (PFDA)	**0.18**	**J**	0.26	0.029	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluoroundecanoic acid (PFUnA)	<0.047		0.26	0.047	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorododecanoic acid (PFDoA)	<0.088		0.26	0.088	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorotridecanoic acid (PFTriA)	<0.067		0.26	0.067	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorotetradecanoic acid (PFTeA)	<0.071		0.26	0.071	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.058		0.26	0.058	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorobutanesulfonic acid (PFBS)	**0.21**	**J**	0.26	0.033	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.037		0.26	0.037	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluoropentanesulfonic acid (PFPeS)	<0.026		0.26	0.026	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorohexanesulfonic acid (PFHxS)	**0.060**	**J**	0.26	0.041	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.046		0.26	0.046	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorooctanesulfonic acid (PFOS)	**1.1**		0.66	0.26	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorononanesulfonic acid (PFNS)	<0.026		0.26	0.026	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorodecanesulfonic acid (PFDS)	<0.051		0.26	0.051	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorooctanesulfonamide (FOSA)	<0.11		0.26	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.51		2.6	0.51	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.49		2.6	0.49	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
4:2 FTS	<0.49		2.6	0.49	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
6:2 FTS	<0.20		2.6	0.20	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
8:2 FTS	<0.33		2.6	0.33	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
10:2 FTS	<0.066		0.26	0.066	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
NEtFOSA	<0.032		0.26	0.032	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
NMeFOSA	<0.054		0.26	0.054	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Perfluorododecanesulfonic acid (PFDoS)	<0.079		0.26	0.079	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
NMeFOSE	<0.093		0.26	0.093	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
NEtFOSE	**0.15**	**J**	0.26	0.047	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
ADONA	<0.025		0.28	0.025	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
F-53B Major	<0.035		0.26	0.035	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
HFPO-DA (GenX)	<0.14		0.33	0.14	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
F-53B Minor	<0.029		0.26	0.029	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
NaDONA	<0.025		0.28	0.025	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
DONA	<0.024		0.26	0.024	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1
Ammonium Perfluorooctanoate (APFO)	**0.20**	**J**	0.28	0.12	ug/Kg	☼	04/09/20 08:32	04/12/20 20:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*62*		*25 - 150*	*04/09/20 08:32*	*04/12/20 20:53*	*1*

Client Sample ID: SS-76

Date Collected: 04/07/20 13:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-23

Matrix: Solid
Percent Solids: 72.9

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	54		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C2 PFHxA	71		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C4 PFHpA	58		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C4 PFOA	60		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C5 PFNA	59		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C2 PFDA	67		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C2 PFHxDA	22	*5	25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C2 PFUnA	67		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C2 PFDoA	54		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C2 PFTeDA	31		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C3 PFBS	75		25 - 150	04/09/20 08:32	04/12/20 20:53	1
18O2 PFHxS	65		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C4 PFOS	63		25 - 150	04/09/20 08:32	04/12/20 20:53	1
13C8 FOSA	55		25 - 150	04/09/20 08:32	04/12/20 20:53	1
d3-NMeFOSAA	49		25 - 150	04/09/20 08:32	04/12/20 20:53	1
d5-NEtFOSAA	53		25 - 150	04/09/20 08:32	04/12/20 20:53	1
M2-6:2 FTS	136		25 - 150	04/09/20 08:32	04/12/20 20:53	1
M2-8:2 FTS	174	*5	25 - 150	04/09/20 08:32	04/12/20 20:53	1
M2-4:2 FTS	185	*5	25 - 150	04/09/20 08:32	04/12/20 20:53	1
d-N-MeFOSA-M	35		25 - 150	04/09/20 08:32	04/12/20 20:53	1
d-N-EtFOSA-M	34		25 - 150	04/09/20 08:32	04/12/20 20:53	1
d7-N-MeFOSE-M	17		10 - 120	04/09/20 08:32	04/12/20 20:53	1
d9-N-EtFOSE-M	14		10 - 120	04/09/20 08:32	04/12/20 20:53	1
13C3 HFPO-DA	56		25 - 150	04/09/20 08:32	04/12/20 20:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	27.1		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	72.9		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-75
Date Collected: 04/07/20 14:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-24
Matrix: Solid
Percent Solids: 75.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.28**	**B**	0.25	0.035	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluoropentanoic acid (PFPeA)	**0.30**		0.25	0.096	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorohexanoic acid (PFHxA)	**0.29**		0.25	0.053	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluoroheptanoic acid (PFHpA)	**0.18**	**J**	0.25	0.036	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorooctanoic acid (PFOA)	**0.52**		0.25	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorononanoic acid (PFNA)	**0.23**	**J**	0.25	0.045	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorodecanoic acid (PFDA)	**0.72**		0.25	0.028	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluoroundecanoic acid (PFUnA)	**0.27**		0.25	0.045	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorododecanoic acid (PFDoA)	**0.47**		0.25	0.084	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorotridecanoic acid (PFTriA)	**0.070**	**J**	0.25	0.064	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorotetradecanoic acid (PFTeA)	**0.19**	**J**	0.25	0.068	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.060**	**J**	0.25	0.055	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorobutanesulfonic acid (PFBS)	**0.075**	**J**	0.25	0.031	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.035		0.25	0.035	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluoropentanesulfonic acid (PFPeS)	<0.025		0.25	0.025	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorohexanesulfonic acid (PFHxS)	**0.053**	**J**	0.25	0.039	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.044		0.25	0.044	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**		0.63	0.25	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorononanesulfonic acid (PFNS)	<0.025		0.25	0.025	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorodecanesulfonic acid (PFDS)	**0.13**	**J**	0.25	0.049	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorooctanesulfonamide (FOSA)	<0.10		0.25	0.10	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.49		2.5	0.49	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.46		2.5	0.46	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
4:2 FTS	<0.46		2.5	0.46	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
6:2 FTS	<0.19		2.5	0.19	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
8:2 FTS	<0.31		2.5	0.31	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
10:2 FTS	<0.063		0.25	0.063	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
NEtFOSA	<0.030		0.25	0.030	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
NMeFOSA	<0.051		0.25	0.051	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
Perfluorododecanesulfonic acid (PFDoS)	<0.075		0.25	0.075	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
NMeFOSE	<0.089		0.25	0.089	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
NEtFOSE	**0.34**		0.25	0.045	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
ADONA	<0.024		0.26	0.024	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
F-53B Major	<0.034		0.25	0.034	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
HFPO-DA (GenX)	<0.14		0.31	0.14	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
F-53B Minor	<0.028		0.25	0.028	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
NaDONA	<0.024		0.26	0.024	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1
DONA	<0.023		0.25	0.023	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1

Client Sample ID: SS-75

Date Collected: 04/07/20 14:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-24

Matrix: Solid
Percent Solids: 75.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonium Perfluorooctanoate (APFO)	0.54		0.26	0.11	ug/Kg	☼	04/09/20 08:32	04/12/20 21:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*60*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C5 PFPeA	*50*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C2 PFHxA	*68*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C4 PFHpA	*56*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C4 PFOA	*55*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C5 PFNA	*59*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C2 PFDA	*61*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C2 PFHxDA	*21*	**5*	*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C2 PFUnA	*62*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C2 PFDoA	*44*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C2 PFTeDA	*26*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C3 PFBS	*75*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
18O2 PFHxS	*67*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C4 PFOS	*66*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C8 FOSA	*50*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
d3-NMeFOSAA	*48*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
d5-NEtFOSAA	*57*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
M2-6:2 FTS	*122*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
M2-8:2 FTS	*171*	**5*	*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
M2-4:2 FTS	*190*	**5*	*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
d-N-MeFOSA-M	*29*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
d-N-EtFOSA-M	*27*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
d7-N-MeFOSE-M	*9*	**5*	*10 - 120*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
d9-N-EtFOSE-M	*7*	**5*	*10 - 120*	*04/09/20 08:32*	*04/12/20 21:03*	*1*
13C3 HFPO-DA	*56*		*25 - 150*	*04/09/20 08:32*	*04/12/20 21:03*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.2		0.1	0.1	%			04/09/20 12:00	1
Percent Solids	75.8		0.1	0.1	%			04/09/20 12:00	1

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: EB-Scoop

Date Collected: 04/07/20 14:10
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-25

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
10:2 FTS	<0.15		1.6	0.15	ng/L		04/09/20 11:31	04/10/20 15:27	1
4:2 FTS	<4.2		16	4.2	ng/L		04/09/20 11:31	04/10/20 15:27	1
6:2 FTS	<1.6		16	1.6	ng/L		04/09/20 11:31	04/10/20 15:27	1
8:2 FTS	<1.6		16	1.6	ng/L		04/09/20 11:31	04/10/20 15:27	1
ADONA	<0.15		1.7	0.15	ng/L		04/09/20 11:31	04/10/20 15:27	1
Ammonium Perfluorooctanoate (APFO)	<0.71		1.7	0.71	ng/L		04/09/20 11:31	04/10/20 15:27	1
DONA	<0.15		1.6	0.15	ng/L		04/09/20 11:31	04/10/20 15:27	1
F-53B Major	<0.19		1.6	0.19	ng/L		04/09/20 11:31	04/10/20 15:27	1
F-53B Minor	<0.26		1.6	0.26	ng/L		04/09/20 11:31	04/10/20 15:27	1
HFPO-DA (GenX)	<1.2		3.2	1.2	ng/L		04/09/20 11:31	04/10/20 15:27	1
NaDONA	<0.15		1.7	0.15	ng/L		04/09/20 11:31	04/10/20 15:27	1
NEtFOSA	<0.71		1.6	0.71	ng/L		04/09/20 11:31	04/10/20 15:27	1
NEtFOSE	<0.69		1.6	0.69	ng/L		04/09/20 11:31	04/10/20 15:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.5		16	1.5	ng/L		04/09/20 11:31	04/10/20 15:27	1
NMeFOSA	<0.35		1.6	0.35	ng/L		04/09/20 11:31	04/10/20 15:27	1
NMeFOSE	<1.1		3.2	1.1	ng/L		04/09/20 11:31	04/10/20 15:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.5		16	2.5	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.16		1.6	0.16	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorobutanoic acid (PFBA)	<0.28		1.6	0.28	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorodecanesulfonic acid (PFDS)	<0.26		1.6	0.26	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorodecanoic acid (PFDA)	<0.25		1.6	0.25	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorododecanesulfonic acid (PFDoS)	<0.37		1.6	0.37	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorododecanoic acid (PFDoA)	<0.45		1.6	0.45	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.15		1.6	0.15	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluoroheptanoic acid (PFHpA)	<0.20		1.6	0.20	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorohexanesulfonic acid (PFHxS)	**0.22**	**J B**	1.6	0.14	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorohexanoic acid (PFHxA)	<0.47		1.6	0.47	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.72		1.6	0.72	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.37		1.6	0.37	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorononanesulfonic acid (PFNS)	<0.13		1.6	0.13	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorononanoic acid (PFNA)	<0.22		1.6	0.22	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorooctanesulfonamide (FOSA)	**0.60**	**J B**	1.6	0.28	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorooctanesulfonic acid (PFOS)	<0.44		1.6	0.44	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorooctanoic acid (PFOA)	<0.69		1.6	0.69	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluoropentanesulfonic acid (PFPeS)	<0.24		1.6	0.24	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluoropentanoic acid (PFPeA)	<0.40		1.6	0.40	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorotetradecanoic acid (PFTeA)	<0.24		1.6	0.24	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluorotridecanoic acid (PFTriA)	<1.1		1.6	1.1	ng/L		04/09/20 11:31	04/10/20 15:27	1
Perfluoroundecanoic acid (PFUnA)	<0.89		1.6	0.89	ng/L		04/09/20 11:31	04/10/20 15:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFBS	*105*		*25 - 150*	*04/09/20 11:31*	*04/10/20 15:27*	*1*
13C4 PFBA	*102*		*25 - 150*	*04/09/20 11:31*	*04/10/20 15:27*	*1*

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: EB-Scoop
Date Collected: 04/07/20 14:10
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-25
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	101		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C2 PFHxA	101		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C4 PFHpA	104		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C4 PFOA	105		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C5 PFNA	101		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C2 PFDA	92		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C2 PFHxDA	85		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C2 PFUnA	112		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C2 PFDoA	87		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C2 PFTeDA	81		25 - 150	04/09/20 11:31	04/10/20 15:27	1
18O2 PFHxS	103		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C4 PFOS	108		25 - 150	04/09/20 11:31	04/10/20 15:27	1
13C8 FOSA	100		25 - 150	04/09/20 11:31	04/10/20 15:27	1
d3-NMeFOSAA	105		25 - 150	04/09/20 11:31	04/10/20 15:27	1
d5-NEtFOSAA	104		25 - 150	04/09/20 11:31	04/10/20 15:27	1
M2-6:2 FTS	146		25 - 150	04/09/20 11:31	04/10/20 15:27	1
M2-8:2 FTS	137		25 - 150	04/09/20 11:31	04/10/20 15:27	1
M2-4:2 FTS	131		25 - 150	04/09/20 11:31	04/10/20 15:27	1
d-N-MeFOSA-M	88		20 - 150	04/09/20 11:31	04/10/20 15:27	1
d-N-EtFOSA-M	91		20 - 150	04/09/20 11:31	04/10/20 15:27	1
d7-N-MeFOSE-M	65		10 - 120	04/09/20 11:31	04/10/20 15:27	1
d9-N-EtFOSE-M	63		10 - 120	04/09/20 11:31	04/10/20 15:27	1
13C3 HFPO-DA	99		25 - 150	04/09/20 11:31	04/10/20 15:27	1

Isotope Dilution Summary

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFHxDA (25-150)
320-60052-1	SS-56	59	64	64	67	67	66	68	69
320-60052-1 MS	SS-56	65	65	67	67	70	70	76	76
320-60052-1 MSD	SS-56	60	63	64	64	66	66	68	71
320-60052-2	SS-57	65	60	72	64	66	67	71	64
320-60052-3	SS-58	76	71	75	74	75	82	83	84
320-60052-4	SS-59	66	62	70	68	70	71	74	76
320-60052-5	SS-60	52	50	58	52	55	57	61	49
320-60052-6	SS-61	69	69	72	74	78	80	83	76
320-60052-7	SS-62	66	61	74	68	71	70	72	71
320-60052-8	SS-63	71	66	81	73	73	79	80	80
320-60052-9	SS-64	67	60	74	66	67	71	73	61
320-60052-10	MW-1	76	71	82	74	76	84	85	80
320-60052-11	SS-66	65	54	66	63	61	67	72	53
320-60052-12	SS-67	58	51	61	55	54	60	63	52
320-60052-13	SS-65	65	56	63	59	62	66	68	60
320-60052-14	SS-68	68	60	67	63	63	70	73	58
320-60052-15	SS-69	71	63	71	75	71	78	80	72
320-60052-16	SS-70	72	61	76	64	69	72	71	68
320-60052-17	SS-71	70	64	73	68	70	72	77	73
320-60052-18	SS-72	68	65	74	70	71	78	79	78
320-60052-19	SS-73	62	62	63	60	61	63	67	65
320-60052-20	SS-74	83	80	80	79	83	91	92	53
320-60052-21	SS-78	68	60	81	63	67	62	65	60
320-60052-21 MS	SS-78	55	47	66	53	58	60	59	39
320-60052-21 MSD	SS-78	66	52	77	56	63	64	64	27
320-60052-22	SS-77	81	74	95	78	79	79	83	82
320-60052-23	SS-76	62	54	71	58	60	59	67	22 *5
320-60052-24	SS-75	60	50	68	56	55	59	61	21 *5
LCS 320-371164/2-A	Lab Control Sample	63	67	67	75	71	72	72	74
LCS 320-371177/2-A	Lab Control Sample	50	56	55	57	54	53	53	54
MB 320-371164/1-A	Method Blank	73	78	76	88	83	81	86	83
MB 320-371177/1-A	Method Blank	59	64	63	68	66	63	67	66

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)
320-60052-1	SS-56	73	67	65	72	65	65	61	72
320-60052-1 MS	SS-56	80	77	72	76	68	69	68	76
320-60052-1 MSD	SS-56	72	69	66	69	64	64	60	69
320-60052-2	SS-57	75	69	59	76	67	68	61	65
320-60052-3	SS-58	86	77	79	83	78	78	69	77
320-60052-4	SS-59	78	72	73	75	70	72	63	66
320-60052-5	SS-60	62	56	52	65	56	58	55	63
320-60052-6	SS-61	87	79	70	81	78	75	71	85
320-60052-7	SS-62	73	65	69	73	64	67	62	61
320-60052-8	SS-63	81	75	79	80	70	74	71	65
320-60052-9	SS-64	74	65	62	74	66	68	62	58
320-60052-10	MW-1	91	78	77	78	74	77	73	75
320-60052-11	SS-66	74	65	54	72	67	66	55	56
320-60052-12	SS-67	62	52	51	65	59	57	48	51

Isotope Dilution Summary

Client: AECOM
Job ID: 320-60052-1
Project/Site: ATC - Madison 60611431

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid
Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	3C3-PFB (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS (25-150)
320-60052-13	SS-65	72	64	60	65	61	63	49	56
320-60052-14	SS-68	73	68	63	70	64	68	56	65
320-60052-15	SS-69	78	72	70	75	72	71	68	65
320-60052-16	SS-70	80	67	57	81	77	74	55	59
320-60052-17	SS-71	74	70	73	76	72	71	67	65
320-60052-18	SS-72	78	76	77	73	70	70	71	70
320-60052-19	SS-73	68	63	62	67	61	61	60	61
320-60052-20	SS-74	93	85	74	82	83	89	76	96
320-60052-21	SS-78	69	64	58	73	64	65	55	49
320-60052-21 MS	SS-78	60	50	42	64	59	63	43	46
320-60052-21 MSD	SS-78	64	53	31	76	73	72	47	52
320-60052-22	SS-77	86	76	76	88	78	82	73	68
320-60052-23	SS-76	67	54	31	75	65	63	55	49
320-60052-24	SS-75	62	44	26	75	67	66	50	48
LCS 320-371164/2-A	Lab Control Sample	75	72	71	71	73	69	63	67
LCS 320-371177/2-A	Lab Control Sample	58	56	56	61	58	55	50	52
MB 320-371164/1-A	Method Blank	87	85	83	82	84	82	76	79
MB 320-371177/1-A	Method Blank	74	68	70	72	68	69	65	63

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	-NEtFOS (25-150)	M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	I-MeFOS (25-150)	N-EtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)
320-60052-1	SS-56	79	142	160 *5	122	37	38	15	15
320-60052-1 MS	SS-56	80	125	175 *5	131	38	36	15	14
320-60052-1 MSD	SS-56	76	108	145	108	28	27	14	12
320-60052-2	SS-57	70	144	190 *5	203 *5	36	32	11	11
320-60052-3	SS-58	87	161 *5	221 *5	174 *5	48	49	18	17
320-60052-4	SS-59	73	141	168 *5	176 *5	41	41	17	16
320-60052-5	SS-60	67	143	175 *5	156 *5	36	34	14	14
320-60052-6	SS-61	86	216 *5	248 *5	142	38	36	15	14
320-60052-7	SS-62	67	129	147	196 *5	18 *5	15 *5	13	11
320-60052-8	SS-63	70	134	150	215 *5	22 *5	20 *5	16	14
320-60052-9	SS-64	67	112	154 *5	204 *5	24 *5	19 *5	13	11
320-60052-10	MW-1	83	128	149	165 *5	27	22 *5	17	14
320-60052-11	SS-66	64	132	194 *5	156 *5	30	27	15	14
320-60052-12	SS-67	58	112	159 *5	157 *5	19 *5	16 *5	10	9 *5
320-60052-13	SS-65	64	127	172 *5	138	31	29	18	17
320-60052-14	SS-68	65	142	187 *5	151 *5	30	27	14	11
320-60052-15	SS-69	72	138	163 *5	157 *5	29	23 *5	14	12
320-60052-16	SS-70	66	182 *5	238 *5	184 *5	33	28	18	16
320-60052-17	SS-71	70	127	156 *5	185 *5	34	29	16	13
320-60052-18	SS-72	73	130	150	159 *5	25	20 *5	18	16
320-60052-19	SS-73	66	108	130	135	23 *5	19 *5	13	11
320-60052-20	SS-74	101	140	173 *5	159 *5	48	50	19	21
320-60052-21	SS-78	57	128	152 *5	213 *5	24 *5	20 *5	14	11
320-60052-21 MS	SS-78	56	140	181 *5	220 *5	22 *5	21 *5	10	9 *5
320-60052-21 MSD	SS-78	60	150	171 *5	230 *5	26	23 *5	9 *5	8 *5
320-60052-22	SS-77	78	156 *5	179 *5	267 *5	36	32	20	15
320-60052-23	SS-76	53	136	174 *5	185 *5	35	34	17	14
320-60052-24	SS-75	57	122	171 *5	190 *5	29	27	9 *5	7 *5
LCS 320-371164/2-A	Lab Control Sample	69	83	88	84	30	29	11	12

Isotope Dilution Summary

Client: AECOM
Job ID: 320-60052-1
Project/Site: ATC - Madison 60611431

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	-NEtFOSA (25-150)	M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	I-MeFOSA (25-150)	N-EtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)
LCS 320-371177/2-A	Lab Control Sample	54	61	60	62	32	31	10	10
MB 320-371164/1-A	Method Blank	82	98	104	92	48	48	21	21
MB 320-371177/1-A	Method Blank	67	74	79	76	42	40	16	16

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-60052-1	SS-56	63
320-60052-1 MS	SS-56	64
320-60052-1 MSD	SS-56	63
320-60052-2	SS-57	58
320-60052-3	SS-58	70
320-60052-4	SS-59	63
320-60052-5	SS-60	48
320-60052-6	SS-61	71
320-60052-7	SS-62	66
320-60052-8	SS-63	68
320-60052-9	SS-64	63
320-60052-10	MW-1	73
320-60052-11	SS-66	58
320-60052-12	SS-67	52
320-60052-13	SS-65	56
320-60052-14	SS-68	61
320-60052-15	SS-69	64
320-60052-16	SS-70	63
320-60052-17	SS-71	62
320-60052-18	SS-72	65
320-60052-19	SS-73	58
320-60052-20	SS-74	72
320-60052-21	SS-78	63
320-60052-21 MS	SS-78	55
320-60052-21 MSD	SS-78	57
320-60052-22	SS-77	72
320-60052-23	SS-76	56
320-60052-24	SS-75	56
LCS 320-371164/2-A	Lab Control Sample	67
LCS 320-371177/2-A	Lab Control Sample	55
MB 320-371164/1-A	Method Blank	76
MB 320-371177/1-A	Method Blank	64

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFHxDA = 13C2 PFHxDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA

Isotope Dilution Summary

Client: AECOM
Job ID: 320-60052-1
Project/Site: ATC - Madison 60611431

PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
M242FTS = M2-4:2 FTS
d-N-MeFOSA-M = d-N-MeFOSA-M
d-N-EtFOSA-M = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
HFPODA = 13C3 HFPO-DA

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		3C3-PFBS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-60052-25	EB-Scoop	105	102	101	101	104	105	101	92
LCS 320-371250/2-A	Lab Control Sample	102	96	94	98	100	96	96	87
LCSD 320-371250/3-A	Lab Control Sample Dup	111	110	101	101	106	110	96	102
MB 320-371250/1-A	Method Blank	100	96	91	100	100	100	94	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxDA	PFUnA	PFDoA	PFTDA	PFHxS	PFOS	PFOSA	-NMeFOS/
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-60052-25	EB-Scoop	85	112	87	81	103	108	100	105
LCS 320-371250/2-A	Lab Control Sample	96	89	79	80	104	102	91	101
LCSD 320-371250/3-A	Lab Control Sample Dup	104	108	95	87	109	115	101	106
MB 320-371250/1-A	Method Blank	82	102	81	83	99	102	90	101

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		-NEtFOSA	M262FTS	M282FTS	M242FTS	I-MeFOSA	N-EtFOSA	NMFM	NEFM
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(20-150)	(20-150)	(10-120)	(10-120)
320-60052-25	EB-Scoop	104	146	137	131	88	91	65	63
LCS 320-371250/2-A	Lab Control Sample	102	133	126					
LCSD 320-371250/3-A	Lab Control Sample Dup	107	149	144					
MB 320-371250/1-A	Method Blank	101	138	129					

		Percent Isotope Dilution Recovery (Acceptance Limits)
		HFPODA
Lab Sample ID	Client Sample ID	(25-150)
320-60052-25	EB-Scoop	99
LCS 320-371250/2-A	Lab Control Sample	90
LCSD 320-371250/3-A	Lab Control Sample Dup	96
MB 320-371250/1-A	Method Blank	94

Surrogate Legend

13C3-PFBS = 13C3 PFBS
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA

Isotope Dilution Summary

Client: AECOM
Job ID: 320-60052-1
Project/Site: ATC - Madison 60611431

PFDA = 13C2 PFDA
PFHxDA = 13C2 PFHxDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
M242FTS = M2-4:2 FTS
d-N-MeFOSA-M = d-N-MeFOSA-M
d-N-EtFOSA-M = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
HFPODA = 13C3 HFPO-DA

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-371164/1-A
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	<0.37		2.0	0.37	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
6:2 FTS	<0.15		2.0	0.15	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
8:2 FTS	<0.25		2.0	0.25	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.37		2.0	0.37	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.39		2.0	0.39	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.025		0.20	0.025	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorobutanoic acid (PFBA)	0.0370	J	0.20	0.028	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorodecanesulfonic acid (PFDS)	<0.039		0.20	0.039	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
10:2 FTS	<0.050		0.20	0.050	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorodecanoic acid (PFDA)	<0.022		0.20	0.022	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
NEtFOSA	<0.024		0.20	0.024	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorododecanoic acid (PFDoA)	<0.067		0.20	0.067	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
NMeFOSA	<0.041		0.20	0.041	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.035		0.20	0.035	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluoroheptanoic acid (PFHpA)	<0.029		0.20	0.029	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorohexanesulfonic acid (PFHxS)	<0.031		0.20	0.031	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorododecanesulfonic acid (PFDoS)	<0.060		0.20	0.060	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorohexanoic acid (PFHxA)	<0.042		0.20	0.042	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
NMeFOSE	<0.071		0.20	0.071	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.044		0.20	0.044	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
NEtFOSE	<0.036		0.20	0.036	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		0.20	0.028	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorononanesulfonic acid (PFNS)	<0.020		0.20	0.020	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorononanoic acid (PFNA)	<0.036		0.20	0.036	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
ADONA	<0.019		0.21	0.019	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorooctanesulfonamide (FOSA)	<0.082		0.20	0.082	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
F-53B Major	<0.027		0.20	0.027	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorooctanesulfonic acid (PFOS)	0.206	J	0.50	0.20	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
HFPO-DA (GenX)	<0.11		0.25	0.11	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorooctanoic acid (PFOA)	<0.086		0.20	0.086	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluoropentanesulfonic acid (PFPeS)	<0.020		0.20	0.020	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
F-53B Minor	<0.022		0.20	0.022	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluoropentanoic acid (PFPeA)	<0.077		0.20	0.077	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
NaDONA	<0.019		0.21	0.019	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorotetradecanoic acid (PFTeA)	<0.054		0.20	0.054	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
DONA	<0.018		0.20	0.018	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluorotridecanoic acid (PFTriA)	<0.051		0.20	0.051	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Ammonium Perfluorooctanoate (APFO)	<0.089		0.21	0.089	ug/Kg		04/09/20 08:23	04/12/20 22:27	1
Perfluoroundecanoic acid (PFUnA)	<0.036		0.20	0.036	ug/Kg		04/09/20 08:23	04/12/20 22:27	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*25 - 150*	*04/09/20 08:23*	*04/12/20 22:27*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-371164/1-A
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371164

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	78		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C2 PFHxA	76		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C4 PFHpA	88		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C4 PFOA	83		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C5 PFNA	81		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C2 PFDA	86		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C2 PFHxDA	83		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C2 PFUnA	87		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C2 PFDoA	85		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C2 PFTeDA	83		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C3 PFBS	82		25 - 150	04/09/20 08:23	04/12/20 22:27	1
18O2 PFHxS	84		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C4 PFOS	82		25 - 150	04/09/20 08:23	04/12/20 22:27	1
13C8 FOSA	76		25 - 150	04/09/20 08:23	04/12/20 22:27	1
d3-NMeFOSAA	79		25 - 150	04/09/20 08:23	04/12/20 22:27	1
d5-NEtFOSAA	82		25 - 150	04/09/20 08:23	04/12/20 22:27	1
M2-6:2 FTS	98		25 - 150	04/09/20 08:23	04/12/20 22:27	1
M2-8:2 FTS	104		25 - 150	04/09/20 08:23	04/12/20 22:27	1
M2-4:2 FTS	92		25 - 150	04/09/20 08:23	04/12/20 22:27	1
d-N-MeFOSA-M	48		25 - 150	04/09/20 08:23	04/12/20 22:27	1
d-N-EtFOSA-M	48		25 - 150	04/09/20 08:23	04/12/20 22:27	1
d7-N-MeFOSE-M	21		10 - 120	04/09/20 08:23	04/12/20 22:27	1
d9-N-EtFOSE-M	21		10 - 120	04/09/20 08:23	04/12/20 22:27	1
13C3 HFPO-DA	76		25 - 150	04/09/20 08:23	04/12/20 22:27	1

Lab Sample ID: LCS 320-371164/2-A
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	1.87	1.81	J	ug/Kg		97	68 - 143
6:2 FTS	1.90	1.98	J	ug/Kg		104	73 - 139
8:2 FTS	1.92	1.90	J	ug/Kg		99	75 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.02		ug/Kg		101	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.97	J	ug/Kg		99	72 - 132
Perfluorobutanesulfonic acid (PFBS)	1.77	1.78		ug/Kg		101	69 - 129
Perfluorobutanoic acid (PFBA)	2.00	2.19		ug/Kg		110	76 - 136
Perfluorodecanesulfonic acid (PFDS)	1.93	2.12		ug/Kg		110	71 - 131
10:2 FTS	1.93	2.02		ug/Kg		105	69 - 145
Perfluorodecanoic acid (PFDA)	2.00	2.26		ug/Kg		113	72 - 132
Perfluorododecanoic acid (PFDoA)	2.00	2.36		ug/Kg		118	71 - 131
NMeFOSA	2.00	2.06		ug/Kg		103	63 - 148
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.14		ug/Kg		113	76 - 136
Perfluoroheptanoic acid (PFHpA)	2.00	1.87		ug/Kg		93	71 - 131

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-371164/2-A
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.87		ug/Kg		103	62 - 122
Perfluorododecanesulfonic acid (PFDoS)	1.94	2.12		ug/Kg		110	70 - 130
Perfluorohexanoic acid (PFHxA)	2.00	2.12		ug/Kg		106	71 - 131
NMeFOSE	2.00	2.26		ug/Kg		113	43 - 153
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	2.11		ug/Kg		105	75 - 135
NEtFOSE	2.00	2.14		ug/Kg		107	44 - 155
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.29		ug/Kg		114	53 - 130
Perfluorononanesulfonic acid (PFNS)	1.92	2.16		ug/Kg		112	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.13		ug/Kg		106	73 - 133
ADONA	1.97	2.01		ug/Kg		102	79 - 139
Perfluorooctanesulfonamide (FOSA)	2.00	1.97		ug/Kg		98	77 - 137
F-53B Major	1.86	2.12		ug/Kg		114	74 - 134
Perfluorooctanesulfonic acid (PFOS)	1.86	2.24		ug/Kg		121	68 - 141
HFPO-DA (GenX)	2.00	2.05		ug/Kg		103	53 - 158
Perfluorooctanoic acid (PFOA)	2.00	2.18		ug/Kg		109	72 - 132
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.02		ug/Kg		108	66 - 126
F-53B Minor	1.88	1.93		ug/Kg		103	66 - 136
Perfluoropentanoic acid (PFPeA)	2.00	2.09		ug/Kg		105	69 - 129
NaDONA	2.00	2.03		ug/Kg		102	79 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.18		ug/Kg		109	67 - 127
DONA	1.88	1.92		ug/Kg		102	79 - 139
Perfluorotridecanoic acid (PFTriA)	2.00	2.20		ug/Kg		110	71 - 131
Ammonium Perfluorooctanoate (APFO)	2.08	2.27		ug/Kg		109	72 - 132
Perfluoroundecanoic acid (PFUnA)	2.00	1.80		ug/Kg		90	66 - 126

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*63*		*25 - 150*
13C5 PFPeA	*67*		*25 - 150*
13C2 PFHxA	*67*		*25 - 150*
13C4 PFHpA	*75*		*25 - 150*
13C4 PFOA	*71*		*25 - 150*
13C5 PFNA	*72*		*25 - 150*
13C2 PFDA	*72*		*25 - 150*
13C2 PFHxDA	*74*		*25 - 150*
13C2 PFUnA	*75*		*25 - 150*
13C2 PFDoA	*72*		*25 - 150*
13C2 PFTeDA	*71*		*25 - 150*
13C3 PFBS	*71*		*25 - 150*
18O2 PFHxS	*73*		*25 - 150*
13C4 PFOS	*69*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-371164/2-A
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371164

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	63		25 - 150
d3-NMeFOSAA	67		25 - 150
d5-NEtFOSAA	69		25 - 150
M2-6:2 FTS	83		25 - 150
M2-8:2 FTS	88		25 - 150
M2-4:2 FTS	84		25 - 150
d-N-MeFOSA-M	30		25 - 150
d-N-EtFOSA-M	29		25 - 150
d7-N-MeFOSE-M	11		10 - 120
d9-N-EtFOSE-M	12		10 - 120
13C3 HFPO-DA	67		25 - 150

Lab Sample ID: 320-60052-1 MS
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: SS-56
Prep Type: Total/NA
Prep Batch: 371164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	<0.36		1.89	1.82	J	ug/Kg	☼	96	68 - 143
6:2 FTS	<0.15		1.92	1.91	J	ug/Kg	☼	100	73 - 139
8:2 FTS	<0.25		1.94	1.89	J	ug/Kg	☼	98	75 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.36		2.03	2.25		ug/Kg	☼	111	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.38		2.03	2.16		ug/Kg	☼	107	72 - 132
Perfluorobutanesulfonic acid (PFBS)	<0.025		1.79	1.76		ug/Kg	☼	98	69 - 129
Perfluorobutanoic acid (PFBA)	<0.028		2.03	1.94		ug/Kg	☼	96	76 - 136
Perfluorodecanesulfonic acid (PFDS)	<0.038		1.95	2.07		ug/Kg	☼	106	71 - 131
10:2 FTS	<0.049		1.95	1.97		ug/Kg	☼	101	69 - 145
Perfluorodecanoic acid (PFDA)	<0.022		2.03	2.25		ug/Kg	☼	111	72 - 132
Perfluorododecanoic acid (PFDoA)	<0.066		2.03	2.07		ug/Kg	☼	102	71 - 131
NMeFOSA	<0.040		2.03	2.23		ug/Kg	☼	110	63 - 148
Perfluoroheptanesulfonic Acid (PFHpS)	<0.034		1.93	2.11		ug/Kg	☼	110	76 - 136
Perfluoroheptanoic acid (PFHpA)	<0.029		2.03	1.88		ug/Kg	☼	93	71 - 131
Perfluorohexanesulfonic acid (PFHxS)	<0.030		1.84	1.89		ug/Kg	☼	103	62 - 122
Perfluorododecanesulfonic acid (PFDoS)	<0.059		1.96	1.91		ug/Kg	☼	97	70 - 130
Perfluorohexanoic acid (PFHxA)	<0.041		2.03	2.24		ug/Kg	☼	110	71 - 131
NMeFOSE	<0.070		2.03	2.44		ug/Kg	☼	121	43 - 153
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.043		2.03	2.13		ug/Kg	☼	105	75 - 135
NEtFOSE	0.057	J	2.03	2.36		ug/Kg	☼	114	44 - 155
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		2.03	2.23		ug/Kg	☼	110	53 - 130
Perfluorononanesulfonic acid (PFNS)	<0.020		1.95	2.12		ug/Kg	☼	109	72 - 132
Perfluorononanoic acid (PFNA)	<0.035		2.03	2.17		ug/Kg	☼	107	73 - 133
ADONA	<0.019		2.00	1.93		ug/Kg	☼	96	79 - 139

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-60052-1 MS
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: SS-56
Prep Type: Total/NA
Prep Batch: 371164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonamide (FOSA)	<0.081		2.03	2.01		ug/Kg	☼	99	77 - 137
F-53B Major	<0.027		1.89	2.33		ug/Kg	☼	123	74 - 134
Perfluorooctanesulfonic acid (PFOS)	<0.20		1.88	2.12		ug/Kg	☼	113	68 - 141
HFPO-DA (GenX)	<0.11		2.03	2.04		ug/Kg	☼	100	53 - 158
Perfluorooctanoic acid (PFOA)	<0.085		2.03	2.11		ug/Kg	☼	104	72 - 132
Perfluoropentanesulfonic acid (PFPeS)	<0.020		1.90	1.85		ug/Kg	☼	97	66 - 126
F-53B Minor	<0.022		1.91	1.85		ug/Kg	☼	97	66 - 136
Perfluoropentanoic acid (PFPeA)	<0.076		2.03	2.02		ug/Kg	☼	100	69 - 129
NaDONA	<0.019		2.03	1.95		ug/Kg	☼	96	79 - 139
Perfluorotetradecanoic acid (PFTeA)	<0.053		2.03	1.98		ug/Kg	☼	98	67 - 127
DONA	<0.018		1.91	1.84		ug/Kg	☼	96	79 - 139
Perfluorotridecanoic acid (PFTriA)	<0.050		2.03	1.90		ug/Kg	☼	94	71 - 131
Ammonium Perfluorooctanoate (APFO)	<0.088		2.11	2.20		ug/Kg	☼	104	72 - 132
Perfluoroundecanoic acid (PFUnA)	<0.035		2.03	1.78		ug/Kg	☼	88	66 - 126

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*65*		*25 - 150*
13C5 PFPeA	*65*		*25 - 150*
13C2 PFHxA	*67*		*25 - 150*
13C4 PFHpA	*67*		*25 - 150*
13C4 PFOA	*70*		*25 - 150*
13C5 PFNA	*70*		*25 - 150*
13C2 PFDA	*76*		*25 - 150*
13C2 PFHxDA	*76*		*25 - 150*
13C2 PFUnA	*80*		*25 - 150*
13C2 PFDoA	*77*		*25 - 150*
13C2 PFTeDA	*72*		*25 - 150*
13C3 PFBS	*76*		*25 - 150*
18O2 PFHxS	*68*		*25 - 150*
13C4 PFOS	*69*		*25 - 150*
13C8 FOSA	*68*		*25 - 150*
d3-NMeFOSAA	*76*		*25 - 150*
d5-NEtFOSAA	*80*		*25 - 150*
M2-6:2 FTS	*125*		*25 - 150*
M2-8:2 FTS	*175*	*5	*25 - 150*
M2-4:2 FTS	*131*		*25 - 150*
d-N-MeFOSA-M	*38*		*25 - 150*
d-N-EtFOSA-M	*36*		*25 - 150*
d7-N-MeFOSE-M	*15*		*10 - 120*
d9-N-EtFOSE-M	*14*		*10 - 120*
13C3 HFPO-DA	*64*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-60052-1 MSD
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: SS-56
Prep Type: Total/NA
Prep Batch: 371164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4:2 FTS	<0.36		1.95	2.06	J	ug/Kg	☼	106	68 - 143	12	30
6:2 FTS	<0.15		1.98	2.16		ug/Kg	☼	109	73 - 139	12	30
8:2 FTS	<0.25		2.00	2.00	J	ug/Kg	☼	100	75 - 135	6	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.36		2.09	2.24		ug/Kg	☼	108	72 - 132	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.38		2.09	2.30		ug/Kg	☼	110	72 - 132	6	30
Perfluorobutanesulfonic acid (PFBS)	<0.025		1.84	1.78		ug/Kg	☼	96	69 - 129	1	30
Perfluorobutanoic acid (PFBA)	<0.028		2.09	2.02		ug/Kg	☼	97	76 - 136	4	30
Perfluorodecanesulfonic acid (PFDS)	<0.038		2.01	2.05		ug/Kg	☼	102	71 - 131	1	30
10:2 FTS	<0.049		2.01	2.01		ug/Kg	☼	100	69 - 145	2	30
Perfluorodecanoic acid (PFDA)	<0.022		2.09	2.32		ug/Kg	☼	111	72 - 132	3	30
Perfluorododecanoic acid (PFDoA)	<0.066		2.09	2.23		ug/Kg	☼	107	71 - 131	8	30
NMeFOSA	<0.040		2.09	2.16		ug/Kg	☼	104	63 - 148	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	<0.034		1.99	2.25		ug/Kg	☼	113	76 - 136	6	30
Perfluoroheptanoic acid (PFHpA)	<0.029		2.09	2.02		ug/Kg	☼	97	71 - 131	7	30
Perfluorohexanesulfonic acid (PFHxS)	<0.030		1.90	2.03		ug/Kg	☼	107	62 - 122	7	30
Perfluorododecanesulfonic acid (PFDoS)	<0.059		2.02	2.03		ug/Kg	☼	101	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<0.041		2.09	2.24		ug/Kg	☼	107	71 - 131	0	30
NMeFOSE	<0.070		2.09	2.29		ug/Kg	☼	110	43 - 153	7	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.043		2.09	2.16		ug/Kg	☼	104	75 - 135	2	30
NEtFOSE	0.057	J	2.09	2.52		ug/Kg	☼	118	44 - 155	7	30
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		2.09	2.15		ug/Kg	☼	103	53 - 130	4	30
Perfluorononanesulfonic acid (PFNS)	<0.020		2.00	2.17		ug/Kg	☼	109	72 - 132	3	30
Perfluorononanoic acid (PFNA)	<0.035		2.09	2.38		ug/Kg	☼	114	73 - 133	9	30
ADONA	<0.019		2.06	2.04		ug/Kg	☼	99	79 - 139	6	30
Perfluorooctanesulfonamide (FOSA)	<0.081		2.09	2.13		ug/Kg	☼	102	77 - 137	6	30
F-53B Major	<0.027		1.94	2.36		ug/Kg	☼	122	74 - 134	2	30
Perfluorooctanesulfonic acid (PFOS)	<0.20		1.94	2.19		ug/Kg	☼	113	68 - 141	3	30
HFPO-DA (GenX)	<0.11		2.09	2.07		ug/Kg	☼	99	53 - 158	1	30
Perfluorooctanoic acid (PFOA)	<0.085		2.09	2.14		ug/Kg	☼	103	72 - 132	1	30
Perfluoropentanesulfonic acid (PFPeS)	<0.020		1.96	1.98		ug/Kg	☼	101	66 - 126	7	30
F-53B Minor	<0.022		1.96	1.88		ug/Kg	☼	95	66 - 136	1	30
Perfluoropentanoic acid (PFPeA)	<0.076		2.09	2.00		ug/Kg	☼	96	69 - 129	1	30
NaDONA	<0.019		2.08	2.07		ug/Kg	☼	99	79 - 139	6	30
Perfluorotetradecanoic acid (PFTeA)	<0.053		2.09	2.10		ug/Kg	☼	101	67 - 127	6	30
DONA	<0.018		1.96	1.95		ug/Kg	☼	99	79 - 139	6	30
Perfluorotridecanoic acid (PFTriA)	<0.050		2.09	2.06		ug/Kg	☼	99	71 - 131	8	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-60052-1 MSD
Matrix: Solid
Analysis Batch: 371837

Client Sample ID: SS-56
Prep Type: Total/NA
Prep Batch: 371164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonium Perfluorooctanoate (APFO)	<0.088		2.17	2.23		ug/Kg	☼	103	72 - 132	1	30
Perfluoroundecanoic acid (PFUnA)	<0.035		2.09	1.87		ug/Kg	☼	90	66 - 126	5	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*60*		*25 - 150*
13C5 PFPeA	*63*		*25 - 150*
13C2 PFHxA	*64*		*25 - 150*
13C4 PFHpA	*64*		*25 - 150*
13C4 PFOA	*66*		*25 - 150*
13C5 PFNA	*66*		*25 - 150*
13C2 PFDA	*68*		*25 - 150*
13C2 PFHxDA	*71*		*25 - 150*
13C2 PFUnA	*72*		*25 - 150*
13C2 PFDoA	*69*		*25 - 150*
13C2 PFTeDA	*66*		*25 - 150*
13C3 PFBS	*69*		*25 - 150*
18O2 PFHxS	*64*		*25 - 150*
13C4 PFOS	*64*		*25 - 150*
13C8 FOSA	*60*		*25 - 150*
d3-NMeFOSAA	*69*		*25 - 150*
d5-NEtFOSAA	*76*		*25 - 150*
M2-6:2 FTS	*108*		*25 - 150*
M2-8:2 FTS	*145*		*25 - 150*
M2-4:2 FTS	*108*		*25 - 150*
d-N-MeFOSA-M	*28*		*25 - 150*
d-N-EtFOSA-M	*27*		*25 - 150*
d7-N-MeFOSE-M	*14*		*10 - 120*
d9-N-EtFOSE-M	*12*		*10 - 120*
13C3 HFPO-DA	*63*		*25 - 150*

Lab Sample ID: MB 320-371177/1-A
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371177

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	<0.37		2.0	0.37	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
6:2 FTS	<0.15		2.0	0.15	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
8:2 FTS	<0.25		2.0	0.25	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.37		2.0	0.37	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.39		2.0	0.39	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.025		0.20	0.025	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorobutanoic acid (PFBA)	0.0661	J	0.20	0.028	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorodecanesulfonic acid (PFDS)	<0.039		0.20	0.039	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
10:2 FTS	<0.050		0.20	0.050	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorodecanoic acid (PFDA)	<0.022		0.20	0.022	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
NEtFOSA	<0.024		0.20	0.024	ug/Kg		04/09/20 08:32	04/12/20 19:57	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-371177/1-A
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371177

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<0.067		0.20	0.067	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
NMeFOSA	<0.041		0.20	0.041	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.035		0.20	0.035	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluoroheptanoic acid (PFHpA)	<0.029		0.20	0.029	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.031		0.20	0.031	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorododecanesulfonic acid (PFDoS)	<0.060		0.20	0.060	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorohexanoic acid (PFHxA)	<0.042		0.20	0.042	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
NMeFOSE	<0.071		0.20	0.071	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.044		0.20	0.044	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
NEtFOSE	<0.036		0.20	0.036	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		0.20	0.028	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorononanesulfonic acid (PFNS)	<0.020		0.20	0.020	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorononanoic acid (PFNA)	<0.036		0.20	0.036	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
ADONA	<0.019		0.21	0.019	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorooctanesulfonamide (FOSA)	<0.082		0.20	0.082	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
F-53B Major	<0.027		0.20	0.027	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorooctanesulfonic acid (PFOS)	<0.20		0.50	0.20	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
HFPO-DA (GenX)	<0.11		0.25	0.11	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorooctanoic acid (PFOA)	<0.086		0.20	0.086	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.020		0.20	0.020	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
F-53B Minor	<0.022		0.20	0.022	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluoropentanoic acid (PFPeA)	<0.077		0.20	0.077	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
NaDONA	<0.019		0.21	0.019	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorotetradecanoic acid (PFTeA)	<0.054		0.20	0.054	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
DONA	<0.018		0.20	0.018	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluorotridecanoic acid (PFTriA)	<0.051		0.20	0.051	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Ammonium Perfluorooctanoate (APFO)	<0.089		0.21	0.089	ug/Kg		04/09/20 08:32	04/12/20 19:57	1
Perfluoroundecanoic acid (PFUnA)	<0.036		0.20	0.036	ug/Kg		04/09/20 08:32	04/12/20 19:57	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*59*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C5 PFPeA	*64*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C2 PFHxA	*63*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C4 PFHpA	*68*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C4 PFOA	*66*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C5 PFNA	*63*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C2 PFDA	*67*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C2 PFHxDA	*66*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C2 PFUnA	*74*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C2 PFDoA	*68*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C2 PFTeDA	*70*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C3 PFBS	*72*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
18O2 PFHxS	*68*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*
13C4 PFOS	*69*		*25 - 150*	*04/09/20 08:32*	*04/12/20 19:57*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-371177/1-A
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371177

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	65		25 - 150	04/09/20 08:32	04/12/20 19:57	1
d3-NMeFOSAA	63		25 - 150	04/09/20 08:32	04/12/20 19:57	1
d5-NEtFOSAA	67		25 - 150	04/09/20 08:32	04/12/20 19:57	1
M2-6:2 FTS	74		25 - 150	04/09/20 08:32	04/12/20 19:57	1
M2-8:2 FTS	79		25 - 150	04/09/20 08:32	04/12/20 19:57	1
M2-4:2 FTS	76		25 - 150	04/09/20 08:32	04/12/20 19:57	1
d-N-MeFOSA-M	42		25 - 150	04/09/20 08:32	04/12/20 19:57	1
d-N-EtFOSA-M	40		25 - 150	04/09/20 08:32	04/12/20 19:57	1
d7-N-MeFOSE-M	16		10 - 120	04/09/20 08:32	04/12/20 19:57	1
d9-N-EtFOSE-M	16		10 - 120	04/09/20 08:32	04/12/20 19:57	1
13C3 HFPO-DA	64		25 - 150	04/09/20 08:32	04/12/20 19:57	1

Lab Sample ID: LCS 320-371177/2-A
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371177

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	1.87	1.91	J	ug/Kg		102	68 - 143
6:2 FTS	1.90	1.72	J	ug/Kg		91	73 - 139
8:2 FTS	1.92	2.02		ug/Kg		105	75 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.19		ug/Kg		109	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.12		ug/Kg		106	72 - 132
Perfluorobutanesulfonic acid (PFBS)	1.77	1.78		ug/Kg		101	69 - 129
Perfluorobutanoic acid (PFBA)	2.00	2.08		ug/Kg		104	76 - 136
Perfluorodecanesulfonic acid (PFDS)	1.93	2.12		ug/Kg		110	71 - 131
10:2 FTS	1.93	2.03		ug/Kg		105	69 - 145
Perfluorodecanoic acid (PFDA)	2.00	2.13		ug/Kg		107	72 - 132
Perfluorododecanoic acid (PFDoA)	2.00	2.34		ug/Kg		117	71 - 131
NMeFOSA	2.00	2.05		ug/Kg		103	63 - 148
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.05		ug/Kg		108	76 - 136
Perfluoroheptanoic acid (PFHpA)	2.00	1.82		ug/Kg		91	71 - 131
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.84		ug/Kg		101	62 - 122
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.93		ug/Kg		100	70 - 130
Perfluorohexanoic acid (PFHxA)	2.00	2.00		ug/Kg		100	71 - 131
NMeFOSE	2.00	2.24		ug/Kg		112	43 - 153
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	2.18		ug/Kg		109	75 - 135
NEtFOSE	2.00	2.09		ug/Kg		104	44 - 155
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.16		ug/Kg		108	53 - 130
Perfluorononanesulfonic acid (PFNS)	1.92	2.10		ug/Kg		109	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.15		ug/Kg		107	73 - 133
ADONA	1.97	1.96		ug/Kg		99	79 - 139

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-371177/2-A
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371177

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonamide (FOSA)	2.00	2.12		ug/Kg		106	77 - 137
F-53B Major	1.86	2.00		ug/Kg		107	74 - 134
Perfluorooctanesulfonic acid (PFOS)	1.86	1.96		ug/Kg		105	68 - 141
HFPO-DA (GenX)	2.00	1.89		ug/Kg		95	53 - 158
Perfluorooctanoic acid (PFOA)	2.00	2.10		ug/Kg		105	72 - 132
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.82		ug/Kg		97	66 - 126
F-53B Minor	1.88	1.84		ug/Kg		98	66 - 136
Perfluoropentanoic acid (PFPeA)	2.00	1.99		ug/Kg		99	69 - 129
NaDONA	2.00	1.99		ug/Kg		99	79 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.16		ug/Kg		108	67 - 127
DONA	1.88	1.87		ug/Kg		99	79 - 139
Perfluorotridecanoic acid (PFTriA)	2.00	2.20		ug/Kg		110	71 - 131
Ammonium Perfluorooctanoate (APFO)	2.08	2.19		ug/Kg		105	72 - 132
Perfluoroundecanoic acid (PFUnA)	2.00	1.66		ug/Kg		83	66 - 126

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*50*		*25 - 150*
13C5 PFPeA	*56*		*25 - 150*
13C2 PFHxA	*55*		*25 - 150*
13C4 PFHpA	*57*		*25 - 150*
13C4 PFOA	*54*		*25 - 150*
13C5 PFNA	*53*		*25 - 150*
13C2 PFDA	*53*		*25 - 150*
13C2 PFHxDA	*54*		*25 - 150*
13C2 PFUnA	*58*		*25 - 150*
13C2 PFDoA	*56*		*25 - 150*
13C2 PFTeDA	*56*		*25 - 150*
13C3 PFBS	*61*		*25 - 150*
18O2 PFHxS	*58*		*25 - 150*
13C4 PFOS	*55*		*25 - 150*
13C8 FOSA	*50*		*25 - 150*
d3-NMeFOSAA	*52*		*25 - 150*
d5-NEtFOSAA	*54*		*25 - 150*
M2-6:2 FTS	*61*		*25 - 150*
M2-8:2 FTS	*60*		*25 - 150*
M2-4:2 FTS	*62*		*25 - 150*
d-N-MeFOSA-M	*32*		*25 - 150*
d-N-EtFOSA-M	*31*		*25 - 150*
d7-N-MeFOSE-M	*10*		*10 - 120*
d9-N-EtFOSE-M	*10*		*10 - 120*
13C3 HFPO-DA	*55*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-60052-21 MS
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: SS-78
Prep Type: Total/NA
Prep Batch: 371177

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	<0.46		2.28	2.22	J	ug/Kg	☼	97	68 - 143
6:2 FTS	<0.18		2.31	2.29	J	ug/Kg	☼	99	73 - 139
8:2 FTS	<0.31		2.33	2.26	J	ug/Kg	☼	97	75 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.46		2.44	2.84		ug/Kg	☼	117	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.48		2.44	2.90		ug/Kg	☼	119	72 - 132
Perfluorobutanesulfonic acid (PFBS)	0.038	J	2.15	2.24		ug/Kg	☼	102	69 - 129
Perfluorobutanoic acid (PFBA)	<0.034		2.44	2.33		ug/Kg	☼	96	76 - 136
Perfluorodecanesulfonic acid (PFDS)	<0.048		2.35	2.10		ug/Kg	☼	89	71 - 131
10:2 FTS	<0.062	F1	2.35	1.54	F1	ug/Kg	☼	66	69 - 145
Perfluorodecanoic acid (PFDA)	0.15	J I	2.44	3.13		ug/Kg	☼	122	72 - 132
Perfluorododecanoic acid (PFDoA)	<0.083		2.44	2.67		ug/Kg	☼	110	71 - 131
NMeFOSA	<0.050		2.44	2.45		ug/Kg	☼	101	63 - 148
Perfluoroheptanesulfonic Acid (PFHpS)	<0.043		2.32	2.57		ug/Kg	☼	111	76 - 136
Perfluoroheptanoic acid (PFHpA)	<0.036		2.44	2.43		ug/Kg	☼	100	71 - 131
Perfluorohexanesulfonic acid (PFHxS)	0.054	J	2.22	2.33		ug/Kg	☼	103	62 - 122
Perfluorododecanesulfonic acid (PFDoS)	<0.074	F1	2.36	1.56	F1	ug/Kg	☼	66	70 - 130
Perfluorohexanoic acid (PFHxA)	0.056	J	2.44	2.80		ug/Kg	☼	113	71 - 131
NMeFOSE	<0.087		2.44	2.60		ug/Kg	☼	107	43 - 153
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.054		2.44	2.73		ug/Kg	☼	112	75 - 135
NEtFOSE	0.20	J	2.44	3.85		ug/Kg	☼	150	44 - 155
Perfluoro-n-octadecanoic acid (PFODA)	<0.034		2.44	2.71		ug/Kg	☼	111	53 - 130
Perfluorononanesulfonic acid (PFNS)	<0.025		2.34	2.43		ug/Kg	☼	104	72 - 132
Perfluorononanoic acid (PFNA)	0.057	J	2.44	2.58		ug/Kg	☼	104	73 - 133
ADONA	<0.023	F1	2.40	2.03		ug/Kg	☼	85	79 - 139
Perfluorooctanesulfonamide (FOSA)	<0.10		2.44	2.61		ug/Kg	☼	107	77 - 137
F-53B Major	<0.033	F1	2.27	3.21	F1	ug/Kg	☼	141	74 - 134
Perfluorooctanesulfonic acid (PFOS)	0.89		2.26	2.79		ug/Kg	☼	84	68 - 141
HFPO-DA (GenX)	<0.14		2.44	2.57		ug/Kg	☼	105	53 - 158
Perfluorooctanoic acid (PFOA)	0.11	J	2.44	2.64		ug/Kg	☼	109	72 - 132
Perfluoropentanesulfonic acid (PFPeS)	<0.025		2.28	2.44		ug/Kg	☼	107	66 - 126
F-53B Minor	<0.027		2.29	1.88		ug/Kg	☼	82	66 - 136
Perfluoropentanoic acid (PFPeA)	<0.095		2.44	2.41		ug/Kg	☼	99	69 - 129
NaDONA	<0.023	F1	2.43	2.06		ug/Kg	☼	85	79 - 139
Perfluorotetradecanoic acid (PFTeA)	<0.067		2.44	2.62		ug/Kg	☼	108	67 - 127
DONA	<0.022	F1	2.29	1.94		ug/Kg	☼	85	79 - 139
Perfluorotridecanoic acid (PFTriA)	<0.063		2.44	2.01		ug/Kg	☼	82	71 - 131

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-60052-21 MS
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: SS-78
Prep Type: Total/NA
Prep Batch: 371177

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonium Perfluorooctanoate (APFO)	0.11	J	2.53	2.75		ug/Kg	☼	104	72 - 132
Perfluoroundecanoic acid (PFUnA)	<0.044		2.44	2.49		ug/Kg	☼	102	66 - 126

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*55*		*25 - 150*
13C5 PFPeA	*47*		*25 - 150*
13C2 PFHxA	*66*		*25 - 150*
13C4 PFHpA	*53*		*25 - 150*
13C4 PFOA	*58*		*25 - 150*
13C5 PFNA	*60*		*25 - 150*
13C2 PFDA	*59*		*25 - 150*
13C2 PFHxDA	*39*		*25 - 150*
13C2 PFUnA	*60*		*25 - 150*
13C2 PFDoA	*50*		*25 - 150*
13C2 PFTeDA	*42*		*25 - 150*
13C3 PFBS	*64*		*25 - 150*
18O2 PFHxS	*59*		*25 - 150*
13C4 PFOS	*63*		*25 - 150*
13C8 FOSA	*43*		*25 - 150*
d3-NMeFOSAA	*46*		*25 - 150*
d5-NEtFOSAA	*56*		*25 - 150*
M2-6:2 FTS	*140*		*25 - 150*
M2-8:2 FTS	*181*	**5*	*25 - 150*
M2-4:2 FTS	*220*	**5*	*25 - 150*
d-N-MeFOSA-M	*22*	**5*	*25 - 150*
d-N-EtFOSA-M	*21*	**5*	*25 - 150*
d7-N-MeFOSE-M	*10*		*10 - 120*
d9-N-EtFOSE-M	*9*	**5*	*10 - 120*
13C3 HFPO-DA	*55*		*25 - 150*

Lab Sample ID: 320-60052-21 MSD
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: SS-78
Prep Type: Total/NA
Prep Batch: 371177

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4:2 FTS	<0.46		2.40	2.32	J	ug/Kg	☼	96	68 - 143	5	30
6:2 FTS	<0.18		2.44	2.43	J	ug/Kg	☼	100	73 - 139	6	30
8:2 FTS	<0.31		2.47	2.33	J	ug/Kg	☼	94	75 - 135	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.46		2.57	2.71		ug/Kg	☼	105	72 - 132	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.48		2.57	2.78		ug/Kg	☼	108	72 - 132	4	30
Perfluorobutanesulfonic acid (PFBS)	0.038	J	2.28	2.17		ug/Kg	☼	94	69 - 129	3	30
Perfluorobutanoic acid (PFBA)	<0.034		2.57	2.24		ug/Kg	☼	87	76 - 136	4	30
Perfluorodecanesulfonic acid (PFDS)	<0.048		2.48	2.06		ug/Kg	☼	83	71 - 131	2	30
10:2 FTS	<0.062	F1	2.48	1.80		ug/Kg	☼	72	69 - 145	15	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-60052-21 MSD
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: SS-78
Prep Type: Total/NA
Prep Batch: 371177

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanoic acid (PFDA)	0.15	J I	2.57	3.08		ug/Kg	☼	114	72 - 132	2	30
Perfluorododecanoic acid (PFDoA)	<0.083		2.57	2.82		ug/Kg	☼	109	71 - 131	5	30
NMeFOSA	<0.050		2.57	2.52		ug/Kg	☼	98	63 - 148	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	<0.043		2.45	2.74		ug/Kg	☼	112	76 - 136	6	30
Perfluoroheptanoic acid (PFHpA)	<0.036		2.57	2.60		ug/Kg	☼	101	71 - 131	7	30
Perfluorohexanesulfonic acid (PFHxS)	0.054	J	2.34	2.35		ug/Kg	☼	98	62 - 122	1	30
Perfluorododecanesulfonic acid (PFDoS)	<0.074	F1	2.49	1.15	F1	ug/Kg	☼	46	70 - 130	30	30
Perfluorohexanoic acid (PFHxA)	0.056	J	2.57	2.79		ug/Kg	☼	106	71 - 131	1	30
NMeFOSE	<0.087		2.57	2.80		ug/Kg	☼	109	43 - 153	7	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.054		2.57	2.56		ug/Kg	☼	100	75 - 135	6	30
NEtFOSE	0.20	J	2.57	3.35		ug/Kg	☼	122	44 - 155	14	30
Perfluoro-n-octadecanoic acid (PFODA)	<0.034		2.57	2.63		ug/Kg	☼	102	53 - 130	3	30
Perfluorononanesulfonic acid (PFNS)	<0.025		2.47	2.43		ug/Kg	☼	98	72 - 132	0	30
Perfluorononanoic acid (PFNA)	0.057	J	2.57	2.72		ug/Kg	☼	104	73 - 133	5	30
ADONA	<0.023	F1	2.54	1.97	F1	ug/Kg	☼	77	79 - 139	3	30
Perfluorooctanesulfonamide (FOSA)	<0.10		2.57	2.67		ug/Kg	☼	104	77 - 137	2	30
F-53B Major	<0.033	F1	2.40	3.50	F1	ug/Kg	☼	146	74 - 134	9	30
Perfluorooctanesulfonic acid (PFOS)	0.89		2.39	3.27		ug/Kg	☼	100	68 - 141	16	30
HFPO-DA (GenX)	<0.14		2.57	2.81		ug/Kg	☼	109	53 - 158	9	30
Perfluorooctanoic acid (PFOA)	0.11	J	2.57	2.72		ug/Kg	☼	106	72 - 132	3	30
Perfluoropentanesulfonic acid (PFPeS)	<0.025		2.41	2.43		ug/Kg	☼	101	66 - 126	0	30
F-53B Minor	<0.027		2.43	1.98		ug/Kg	☼	82	66 - 136	5	30
Perfluoropentanoic acid (PFPeA)	<0.095		2.57	2.54		ug/Kg	☼	99	69 - 129	5	30
NaDONA	<0.023	F1	2.57	1.99	F1	ug/Kg	☼	77	79 - 139	3	30
Perfluorotetradecanoic acid (PFTeA)	<0.067		2.57	2.75		ug/Kg	☼	107	67 - 127	5	30
DONA	<0.022	F1	2.43	1.88	F1	ug/Kg	☼	77	79 - 139	3	30
Perfluorotridecanoic acid (PFTriA)	<0.063		2.57	2.02		ug/Kg	☼	78	71 - 131	1	30
Ammonium Perfluorooctanoate (APFO)	0.11	J	2.68	2.83		ug/Kg	☼	101	72 - 132	3	30
Perfluoroundecanoic acid (PFUnA)	<0.044		2.57	2.63		ug/Kg	☼	102	66 - 126	5	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*66*		*25 - 150*
13C5 PFPeA	*52*		*25 - 150*
13C2 PFHxA	*77*		*25 - 150*
13C4 PFHpA	*56*		*25 - 150*
13C4 PFOA	*63*		*25 - 150*
13C5 PFNA	*64*		*25 - 150*
13C2 PFDA	*64*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-60052-21 MSD
Matrix: Solid
Analysis Batch: 371832

Client Sample ID: SS-78
Prep Type: Total/NA
Prep Batch: 371177

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C2 PFHxDA	*27*		*25 - 150*
13C2 PFUnA	*64*		*25 - 150*
13C2 PFDoA	*53*		*25 - 150*
13C2 PFTeDA	*31*		*25 - 150*
13C3 PFBS	*76*		*25 - 150*
18O2 PFHxS	*73*		*25 - 150*
13C4 PFOS	*72*		*25 - 150*
13C8 FOSA	*47*		*25 - 150*
d3-NMeFOSAA	*52*		*25 - 150*
d5-NEtFOSAA	*60*		*25 - 150*
M2-6:2 FTS	*150*		*25 - 150*
M2-8:2 FTS	*171*	**5*	*25 - 150*
M2-4:2 FTS	*230*	**5*	*25 - 150*
d-N-MeFOSA-M	*26*		*25 - 150*
d-N-EtFOSA-M	*23*	**5*	*25 - 150*
d7-N-MeFOSE-M	*9*	**5*	*10 - 120*
d9-N-EtFOSE-M	*8*	**5*	*10 - 120*
13C3 HFPO-DA	*57*		*25 - 150*

Lab Sample ID: MB 320-371250/1-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371250

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	<5.2		20	5.2	ng/L		04/09/20 11:31	04/10/20 14:59	1
6:2 FTS	<2.0		20	2.0	ng/L		04/09/20 11:31	04/10/20 14:59	1
8:2 FTS	<2.0		20	2.0	ng/L		04/09/20 11:31	04/10/20 14:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		20	1.9	ng/L		04/09/20 11:31	04/10/20 14:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<3.1		20	3.1	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorobutanoic acid (PFBA)	<0.35		2.0	0.35	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		04/09/20 11:31	04/10/20 14:59	1
10:2 FTS	<0.19		2.0	0.19	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		04/09/20 11:31	04/10/20 14:59	1
NEtFOSA	<0.87		2.0	0.87	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		04/09/20 11:31	04/10/20 14:59	1
NMeFOSA	<0.43		2.0	0.43	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		2.0	0.19	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorohexanesulfonic acid (PFHxS)	0.268	J	2.0	0.17	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorododecanesulfonic acid (PFDoS)	<0.45		2.0	0.45	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		04/09/20 11:31	04/10/20 14:59	1
NMeFOSE	<1.4		4.0	1.4	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.89		2.0	0.89	ng/L		04/09/20 11:31	04/10/20 14:59	1
NEtFOSE	<0.85		2.0	0.85	ng/L		04/09/20 11:31	04/10/20 14:59	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-371250/1-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371250

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-n-octadecanoic acid (PFODA)	<0.46		2.0	0.46	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorononanesulfonic acid (PFNS)	<0.16		2.0	0.16	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		04/09/20 11:31	04/10/20 14:59	1
ADONA	<0.19		2.1	0.19	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorooctanesulfonamide (FOSA)	0.598	J	2.0	0.35	ng/L		04/09/20 11:31	04/10/20 14:59	1
F-53B Major	<0.24		2.0	0.24	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		04/09/20 11:31	04/10/20 14:59	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		04/09/20 11:31	04/10/20 14:59	1
F-53B Minor	<0.32		2.0	0.32	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		04/09/20 11:31	04/10/20 14:59	1
NaDONA	<0.19		2.1	0.19	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorotetradecanoic acid (PFTeA)	<0.29		2.0	0.29	ng/L		04/09/20 11:31	04/10/20 14:59	1
DONA	<0.18		2.0	0.18	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluorotridecanoic acid (PFTriA)	<1.3		2.0	1.3	ng/L		04/09/20 11:31	04/10/20 14:59	1
Ammonium Perfluorooctanoate (APFO)	<0.88		2.1	0.88	ng/L		04/09/20 11:31	04/10/20 14:59	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		04/09/20 11:31	04/10/20 14:59	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C5 PFPeA	*91*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C2 PFHxA	*100*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C4 PFHpA	*100*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C4 PFOA	*100*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C5 PFNA	*94*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C2 PFDA	*90*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C2 PFHxDA	*82*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C2 PFUnA	*102*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C2 PFDoA	*81*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C2 PFTeDA	*83*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C3 PFBS	*100*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
18O2 PFHxS	*99*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C4 PFOS	*102*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C8 FOSA	*90*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
d3-NMeFOSAA	*101*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
d5-NEtFOSAA	*101*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
M2-6:2 FTS	*138*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
M2-8:2 FTS	*129*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*
13C3 HFPO-DA	*94*		*25 - 150*	*04/09/20 11:31*	*04/10/20 14:59*	*1*

Lab Sample ID: LCS 320-371250/2-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371250

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	37.4	38.4		ng/L		103	79 - 139

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-371250/2-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371250

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
6:2 FTS	37.9	37.7		ng/L		100	59 - 175
8:2 FTS	38.3	36.0		ng/L		94	75 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.3		ng/L		96	76 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.7		ng/L		102	76 - 136
Perfluorobutanesulfonic acid (PFBS)	35.4	33.9		ng/L		96	67 - 127
Perfluorobutanoic acid (PFBA)	40.0	40.5		ng/L		101	76 - 136
Perfluorodecanesulfonic acid (PFDS)	38.6	42.1		ng/L		109	71 - 131
10:2 FTS	38.6	34.0		ng/L		88	64 - 142
Perfluorodecanoic acid (PFDA)	40.0	41.2		ng/L		103	76 - 136
Perfluorododecanoic acid (PFDoA)	40.0	40.0		ng/L		100	71 - 131
NMeFOSA	40.0	41.3		ng/L		103	67 - 154
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.6		ng/L		104	76 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	35.9		ng/L		90	72 - 132
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	59 - 119
Perfluorododecanesulfonic acid (PFDoS)	38.7	37.2		ng/L		96	67 - 127
Perfluorohexanoic acid (PFHxA)	40.0	39.3		ng/L		98	73 - 133
NMeFOSE	40.0	45.2		ng/L		113	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	36.0		ng/L		90	76 - 136
NEtFOSE	40.0	39.8		ng/L		99	71 - 131
Perfluoro-n-octadecanoic acid (PFODA)	40.0	40.2		ng/L		101	58 - 145
Perfluorononanesulfonic acid (PFNS)	38.4	39.4		ng/L		103	75 - 135
Perfluorononanoic acid (PFNA)	40.0	45.7		ng/L		114	75 - 135
ADONA	39.5	38.8		ng/L		98	79 - 139
Perfluorooctanesulfonamide (FOSA)	40.0	41.6		ng/L		104	73 - 133
F-53B Major	37.3	37.1		ng/L		99	75 - 135
Perfluorooctanesulfonic acid (PFOS)	37.1	36.8		ng/L		99	70 - 130
HFPO-DA (GenX)	40.0	40.1		ng/L		100	51 - 173
Perfluorooctanoic acid (PFOA)	40.0	42.8		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	37.5	41.2		ng/L		110	66 - 126
F-53B Minor	37.7	35.5		ng/L		94	54 - 114
Perfluoropentanoic acid (PFPeA)	40.0	43.3		ng/L		108	71 - 131
NaDONA	40.0	39.3		ng/L		98	79 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	44.8		ng/L		112	70 - 130
DONA	37.7	37.0		ng/L		98	79 - 139
Perfluorotridecanoic acid (PFTriA)	40.0	39.8		ng/L		99	71 - 131
Ammonium Perfluorooctanoate (APFO)	41.6	44.6		ng/L		107	70 - 130

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-371250/2-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371250

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluoroundecanoic acid (PFUnA)			40.0	36.4		ng/L		91	68 - 128		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*96*		*25 - 150*
13C5 PFPeA	*94*		*25 - 150*
13C2 PFHxA	*98*		*25 - 150*
13C4 PFHpA	*100*		*25 - 150*
13C4 PFOA	*96*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*87*		*25 - 150*
13C2 PFHxDA	*96*		*25 - 150*
13C2 PFUnA	*89*		*25 - 150*
13C2 PFDoA	*79*		*25 - 150*
13C2 PFTeDA	*80*		*25 - 150*
13C3 PFBS	*102*		*25 - 150*
18O2 PFHxS	*104*		*25 - 150*
13C4 PFOS	*102*		*25 - 150*
13C8 FOSA	*91*		*25 - 150*
d3-NMeFOSAA	*101*		*25 - 150*
d5-NEtFOSAA	*102*		*25 - 150*
M2-6:2 FTS	*133*		*25 - 150*
M2-8:2 FTS	*126*		*25 - 150*
13C3 HFPO-DA	*90*		*25 - 150*

Lab Sample ID: LCSD 320-371250/3-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 371250

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4:2 FTS			37.4	35.2		ng/L		94	79 - 139	8	30
6:2 FTS			37.9	37.0		ng/L		98	59 - 175	2	30
8:2 FTS			38.3	36.2		ng/L		95	75 - 135	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	38.1		ng/L		95	76 - 136	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.0		ng/L		98	76 - 136	4	30
Perfluorobutanesulfonic acid (PFBS)			35.4	34.3		ng/L		97	67 - 127	1	30
Perfluorobutanoic acid (PFBA)			40.0	38.5		ng/L		96	76 - 136	5	30
Perfluorodecanesulfonic acid (PFDS)			38.6	40.6		ng/L		105	71 - 131	4	30
10:2 FTS			38.6	31.8		ng/L		82	64 - 142	7	30
Perfluorodecanoic acid (PFDA)			40.0	41.7		ng/L		104	76 - 136	1	30
Perfluorododecanoic acid (PFDoA)			40.0	39.4		ng/L		98	71 - 131	2	30
NMeFOSA			40.0	40.1		ng/L		100	67 - 154	3	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.6		ng/L		101	76 - 136	3	30
Perfluoroheptanoic acid (PFHpA)			40.0	37.3		ng/L		93	72 - 132	4	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-371250/3-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 371250

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.0		ng/L		93	59 - 119	3	30
Perfluorododecanesulfonic acid (PFDoS)			38.7	36.0		ng/L		93	67 - 127	3	30
Perfluorohexanoic acid (PFHxA)			40.0	41.8		ng/L		105	73 - 133	6	30
NMeFOSE			40.0	38.6		ng/L		96	70 - 130	16	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.2		ng/L		96	76 - 136	6	30
NEtFOSE			40.0	37.5		ng/L		94	71 - 131	6	30
Perfluoro-n-octadecanoic acid (PFODA)			40.0	36.8		ng/L		92	58 - 145	9	30
Perfluorononanesulfonic acid (PFNS)			38.4	38.0		ng/L		99	75 - 135	4	30
Perfluorononanoic acid (PFNA)			40.0	46.5		ng/L		116	75 - 135	2	30
ADONA			39.5	38.4		ng/L		97	79 - 139	1	30
Perfluorooctanesulfonamide (FOSA)			40.0	40.7		ng/L		102	73 - 133	2	30
F-53B Major			37.3	33.9		ng/L		91	75 - 135	9	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.4		ng/L		95	70 - 130	4	30
HFPO-DA (GenX)			40.0	42.2		ng/L		106	51 - 173	5	30
Perfluorooctanoic acid (PFOA)			40.0	37.9		ng/L		95	70 - 130	12	30
Perfluoropentanesulfonic acid (PFPeS)			37.5	40.5		ng/L		108	66 - 126	2	30
F-53B Minor			37.7	34.6		ng/L		92	54 - 114	3	30
Perfluoropentanoic acid (PFPeA)			40.0	40.6		ng/L		101	71 - 131	7	30
NaDONA			40.0	38.8		ng/L		97	79 - 139	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	41.1		ng/L		103	70 - 130	9	30
DONA			37.7	36.6		ng/L		97	79 - 139	1	30
Perfluorotridecanoic acid (PFTriA)			40.0	39.2		ng/L		98	71 - 131	1	30
Ammonium Perfluorooctanoate (APFO)			41.6	39.5		ng/L		95	70 - 130	12	30
Perfluoroundecanoic acid (PFUnA)			40.0	31.1		ng/L		78	68 - 128	16	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*110*		*25 - 150*
13C5 PFPeA	*101*		*25 - 150*
13C2 PFHxA	*101*		*25 - 150*
13C4 PFHpA	*106*		*25 - 150*
13C4 PFOA	*110*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*102*		*25 - 150*
13C2 PFHxDA	*104*		*25 - 150*
13C2 PFUnA	*108*		*25 - 150*
13C2 PFDoA	*95*		*25 - 150*
13C2 PFTeDA	*87*		*25 - 150*
13C3 PFBS	*111*		*25 - 150*
18O2 PFHxS	*109*		*25 - 150*
13C4 PFOS	*115*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-371250/3-A
Matrix: Water
Analysis Batch: 371624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 371250

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C8 FOSA	*101*		*25 - 150*
d3-NMeFOSAA	*106*		*25 - 150*
d5-NEtFOSAA	*107*		*25 - 150*
M2-6:2 FTS	*149*		*25 - 150*
M2-8:2 FTS	*144*		*25 - 150*
13C3 HFPO-DA	*96*		*25 - 150*

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-60052-14 DU
Matrix: Solid
Analysis Batch: 371247

Client Sample ID: SS-68
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	18.0			18.2		%				0.8	20
Percent Solids	82.0			81.8		%				0.2	20

Lab Sample ID: 320-60052-24 DU
Matrix: Solid
Analysis Batch: 371252

Client Sample ID: SS-75
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	24.2			23.9		%				1	20
Percent Solids	75.8			76.1		%				0.4	20

LCMS

Prep Batch: 371164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-1	SS-56	Total/NA	Solid	SHAKE	
320-60052-2	SS-57	Total/NA	Solid	SHAKE	
320-60052-3	SS-58	Total/NA	Solid	SHAKE	
320-60052-4	SS-59	Total/NA	Solid	SHAKE	
320-60052-5	SS-60	Total/NA	Solid	SHAKE	
320-60052-6	SS-61	Total/NA	Solid	SHAKE	
320-60052-7	SS-62	Total/NA	Solid	SHAKE	
320-60052-8	SS-63	Total/NA	Solid	SHAKE	
320-60052-9	SS-64	Total/NA	Solid	SHAKE	
320-60052-10	MW-1	Total/NA	Solid	SHAKE	
320-60052-11	SS-66	Total/NA	Solid	SHAKE	
320-60052-12	SS-67	Total/NA	Solid	SHAKE	
320-60052-13	SS-65	Total/NA	Solid	SHAKE	
320-60052-14	SS-68	Total/NA	Solid	SHAKE	
320-60052-15	SS-69	Total/NA	Solid	SHAKE	
320-60052-16	SS-70	Total/NA	Solid	SHAKE	
320-60052-17	SS-71	Total/NA	Solid	SHAKE	
320-60052-18	SS-72	Total/NA	Solid	SHAKE	
320-60052-19	SS-73	Total/NA	Solid	SHAKE	
320-60052-20	SS-74	Total/NA	Solid	SHAKE	
MB 320-371164/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-371164/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-60052-1 MS	SS-56	Total/NA	Solid	SHAKE	
320-60052-1 MSD	SS-56	Total/NA	Solid	SHAKE	

Prep Batch: 371177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-21	SS-78	Total/NA	Solid	SHAKE	
320-60052-22	SS-77	Total/NA	Solid	SHAKE	
320-60052-23	SS-76	Total/NA	Solid	SHAKE	
320-60052-24	SS-75	Total/NA	Solid	SHAKE	
MB 320-371177/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-371177/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-60052-21 MS	SS-78	Total/NA	Solid	SHAKE	
320-60052-21 MSD	SS-78	Total/NA	Solid	SHAKE	

Prep Batch: 371250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-25	EB-Scoop	Total/NA	Water	3535	
MB 320-371250/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-371250/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-371250/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 371624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-25	EB-Scoop	Total/NA	Water	537 (modified)	371250
MB 320-371250/1-A	Method Blank	Total/NA	Water	537 (modified)	371250
LCS 320-371250/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	371250
LCSD 320-371250/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	371250

QC Association Summary

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

LCMS

Analysis Batch: 371832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-21	SS-78	Total/NA	Solid	537 (modified)	371177
320-60052-22	SS-77	Total/NA	Solid	537 (modified)	371177
320-60052-23	SS-76	Total/NA	Solid	537 (modified)	371177
320-60052-24	SS-75	Total/NA	Solid	537 (modified)	371177
MB 320-371177/1-A	Method Blank	Total/NA	Solid	537 (modified)	371177
LCS 320-371177/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	371177
320-60052-21 MS	SS-78	Total/NA	Solid	537 (modified)	371177
320-60052-21 MSD	SS-78	Total/NA	Solid	537 (modified)	371177

Analysis Batch: 371837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-1	SS-56	Total/NA	Solid	537 (modified)	371164
320-60052-2	SS-57	Total/NA	Solid	537 (modified)	371164
320-60052-3	SS-58	Total/NA	Solid	537 (modified)	371164
320-60052-4	SS-59	Total/NA	Solid	537 (modified)	371164
320-60052-5	SS-60	Total/NA	Solid	537 (modified)	371164
320-60052-6	SS-61	Total/NA	Solid	537 (modified)	371164
320-60052-7	SS-62	Total/NA	Solid	537 (modified)	371164
320-60052-8	SS-63	Total/NA	Solid	537 (modified)	371164
320-60052-9	SS-64	Total/NA	Solid	537 (modified)	371164
320-60052-10	MW-1	Total/NA	Solid	537 (modified)	371164
320-60052-11	SS-66	Total/NA	Solid	537 (modified)	371164
320-60052-12	SS-67	Total/NA	Solid	537 (modified)	371164
320-60052-13	SS-65	Total/NA	Solid	537 (modified)	371164
320-60052-14	SS-68	Total/NA	Solid	537 (modified)	371164
320-60052-15	SS-69	Total/NA	Solid	537 (modified)	371164
320-60052-16	SS-70	Total/NA	Solid	537 (modified)	371164
320-60052-17	SS-71	Total/NA	Solid	537 (modified)	371164
320-60052-18	SS-72	Total/NA	Solid	537 (modified)	371164
320-60052-19	SS-73	Total/NA	Solid	537 (modified)	371164
MB 320-371164/1-A	Method Blank	Total/NA	Solid	537 (modified)	371164
LCS 320-371164/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	371164
320-60052-1 MS	SS-56	Total/NA	Solid	537 (modified)	371164
320-60052-1 MSD	SS-56	Total/NA	Solid	537 (modified)	371164

Analysis Batch: 372034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-20	SS-74	Total/NA	Solid	537 (modified)	371164

General Chemistry

Analysis Batch: 371247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-2	SS-57	Total/NA	Solid	D 2216	
320-60052-3	SS-58	Total/NA	Solid	D 2216	
320-60052-4	SS-59	Total/NA	Solid	D 2216	
320-60052-5	SS-60	Total/NA	Solid	D 2216	
320-60052-9	SS-64	Total/NA	Solid	D 2216	
320-60052-10	MW-1	Total/NA	Solid	D 2216	
320-60052-11	SS-66	Total/NA	Solid	D 2216	
320-60052-14	SS-68	Total/NA	Solid	D 2216	

General Chemistry (Continued)

Analysis Batch: 371247 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-15	SS-69	Total/NA	Solid	D 2216	
320-60052-16	SS-70	Total/NA	Solid	D 2216	
320-60052-17	SS-71	Total/NA	Solid	D 2216	
320-60052-21	SS-78	Total/NA	Solid	D 2216	
320-60052-14 DU	SS-68	Total/NA	Solid	D 2216	

Analysis Batch: 371252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-60052-1	SS-56	Total/NA	Solid	D 2216	
320-60052-6	SS-61	Total/NA	Solid	D 2216	
320-60052-7	SS-62	Total/NA	Solid	D 2216	
320-60052-8	SS-63	Total/NA	Solid	D 2216	
320-60052-12	SS-67	Total/NA	Solid	D 2216	
320-60052-13	SS-65	Total/NA	Solid	D 2216	
320-60052-18	SS-72	Total/NA	Solid	D 2216	
320-60052-19	SS-73	Total/NA	Solid	D 2216	
320-60052-20	SS-74	Total/NA	Solid	D 2216	
320-60052-22	SS-77	Total/NA	Solid	D 2216	
320-60052-23	SS-76	Total/NA	Solid	D 2216	
320-60052-24	SS-75	Total/NA	Solid	D 2216	
320-60052-24 DU	SS-75	Total/NA	Solid	D 2216	

Client Sample ID: SS-56
Date Collected: 04/07/20 09:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-56
Date Collected: 04/07/20 09:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-1
Matrix: Solid
Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/12/20 22:46	P1N	TAL SAC

Client Sample ID: SS-57
Date Collected: 04/07/20 09:05
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-57
Date Collected: 04/07/20 09:05
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-2
Matrix: Solid
Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/12/20 23:14	P1N	TAL SAC

Client Sample ID: SS-58
Date Collected: 04/07/20 09:10
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-58
Date Collected: 04/07/20 09:10
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-3
Matrix: Solid
Percent Solids: 94.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/12/20 23:23	P1N	TAL SAC

Client Sample ID: SS-59
Date Collected: 04/07/20 09:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Lab Chronicle

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-59
Date Collected: 04/07/20 09:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-4
Matrix: Solid
Percent Solids: 94.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.50 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/12/20 23:33	P1N	TAL SAC

Client Sample ID: SS-60
Date Collected: 04/07/20 09:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-60
Date Collected: 04/07/20 09:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-5
Matrix: Solid
Percent Solids: 92.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/12/20 23:42	P1N	TAL SAC

Client Sample ID: SS-61
Date Collected: 04/07/20 09:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-61
Date Collected: 04/07/20 09:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-6
Matrix: Solid
Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/12/20 23:51	P1N	TAL SAC

Client Sample ID: SS-62
Date Collected: 04/07/20 11:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-62
Lab Sample ID: 320-60052-7
Date Collected: 04/07/20 11:20
Matrix: Solid
Date Received: 04/08/20 09:50
Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 00:19	P1N	TAL SAC

Client Sample ID: SS-63
Lab Sample ID: 320-60052-8
Date Collected: 04/07/20 11:30
Matrix: Solid
Date Received: 04/08/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-63
Lab Sample ID: 320-60052-8
Date Collected: 04/07/20 11:30
Matrix: Solid
Date Received: 04/08/20 09:50
Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.12 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 00:29	P1N	TAL SAC

Client Sample ID: SS-64
Lab Sample ID: 320-60052-9
Date Collected: 04/07/20 11:35
Matrix: Solid
Date Received: 04/08/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-64
Lab Sample ID: 320-60052-9
Date Collected: 04/07/20 11:35
Matrix: Solid
Date Received: 04/08/20 09:50
Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 00:38	P1N	TAL SAC

Client Sample ID: MW-1
Lab Sample ID: 320-60052-10
Date Collected: 04/07/20 11:40
Matrix: Solid
Date Received: 04/08/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Lab Chronicle

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: MW-1
Date Collected: 04/07/20 11:40
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-10
Matrix: Solid
Percent Solids: 85.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 00:47	P1N	TAL SAC

Client Sample ID: SS-66
Date Collected: 04/07/20 11:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-66
Date Collected: 04/07/20 11:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-11
Matrix: Solid
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 00:57	P1N	TAL SAC

Client Sample ID: SS-67
Date Collected: 04/07/20 12:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-67
Date Collected: 04/07/20 12:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-12
Matrix: Solid
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 01:06	P1N	TAL SAC

Client Sample ID: SS-65
Date Collected: 04/07/20 12:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Lab Chronicle

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-65
Date Collected: 04/07/20 12:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-13
Matrix: Solid
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 01:15	P1N	TAL SAC

Client Sample ID: SS-68
Date Collected: 04/07/20 12:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-68
Date Collected: 04/07/20 12:25
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-14
Matrix: Solid
Percent Solids: 82.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.09 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 01:25	P1N	TAL SAC

Client Sample ID: SS-69
Date Collected: 04/07/20 12:30
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-69
Date Collected: 04/07/20 12:30
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-15
Matrix: Solid
Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 01:34	P1N	TAL SAC

Client Sample ID: SS-70
Date Collected: 04/07/20 12:40
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Lab Chronicle

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-70
Date Collected: 04/07/20 12:40
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-16
Matrix: Solid
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.32 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 01:43	P1N	TAL SAC

Client Sample ID: SS-71
Date Collected: 04/07/20 12:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-71
Date Collected: 04/07/20 12:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-17
Matrix: Solid
Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.32 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 02:12	P1N	TAL SAC

Client Sample ID: SS-72
Date Collected: 04/07/20 12:55
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-72
Date Collected: 04/07/20 12:55
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-18
Matrix: Solid
Percent Solids: 85.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 02:21	P1N	TAL SAC

Client Sample ID: SS-73
Date Collected: 04/07/20 13:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-19
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Lab Chronicle

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-73
Date Collected: 04/07/20 13:15
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-19
Matrix: Solid
Percent Solids: 85.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371837	04/13/20 02:30	P1N	TAL SAC

Client Sample ID: SS-74
Date Collected: 04/07/20 13:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-74
Date Collected: 04/07/20 13:20
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-20
Matrix: Solid
Percent Solids: 76.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 g	10.00 mL	371164	04/09/20 08:23	MA	TAL SAC
Total/NA	Analysis	537 (modified)		10			372034	04/13/20 18:22	S1M	TAL SAC

Client Sample ID: SS-78
Date Collected: 04/07/20 13:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-21
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371247	04/09/20 11:35	HB	TAL SAC

Client Sample ID: SS-78
Date Collected: 04/07/20 13:35
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-21
Matrix: Solid
Percent Solids: 76.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.33 g	10.00 mL	371177	04/09/20 08:32	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371832	04/12/20 20:16	P1N	TAL SAC

Client Sample ID: SS-77
Date Collected: 04/07/20 13:45
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-22
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Lab Chronicle

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Client Sample ID: SS-77
Date Collected: 04/07/20 13:45
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-22
Matrix: Solid
Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.06 g	10.00 mL	371177	04/09/20 08:32	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371832	04/12/20 20:44	P1N	TAL SAC

Client Sample ID: SS-76
Date Collected: 04/07/20 13:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-23
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-76
Date Collected: 04/07/20 13:50
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-23
Matrix: Solid
Percent Solids: 72.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.00 mL	371177	04/09/20 08:32	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371832	04/12/20 20:53	P1N	TAL SAC

Client Sample ID: SS-75
Date Collected: 04/07/20 14:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-24
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			371252	04/09/20 12:00	HB	TAL SAC

Client Sample ID: SS-75
Date Collected: 04/07/20 14:00
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-24
Matrix: Solid
Percent Solids: 75.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.00 mL	371177	04/09/20 08:32	MA	TAL SAC
Total/NA	Analysis	537 (modified)		1			371832	04/12/20 21:03	P1N	TAL SAC

Client Sample ID: EB-Scoop
Date Collected: 04/07/20 14:10
Date Received: 04/08/20 09:50

Lab Sample ID: 320-60052-25
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			308.1 mL	10.00 mL	371250	04/09/20 11:31	IH	TAL SAC
Total/NA	Analysis	537 (modified)		1			371624	04/10/20 15:27	S1M	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: AECOM
Job ID: 320-60052-1
Project/Site: ATC - Madison 60611431

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-20
Michigan	State	9947	01-29-20 *
Nevada	State	CA000442020-1	07-31-20
New Hampshire	NELAP	2997	04-18-20
New Jersey	NELAP	CA005	06-30-20
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	05-31-20
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-20
Wyoming	State Program	8TMS-L	01-28-19 *

Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: AECOM
Project/Site: ATC - Madison 60611431

Job ID: 320-60052-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-60052-1	SS-56	Solid	04/07/20 09:00	04/08/20 09:50	
320-60052-2	SS-57	Solid	04/07/20 09:05	04/08/20 09:50	
320-60052-3	SS-58	Solid	04/07/20 09:10	04/08/20 09:50	
320-60052-4	SS-59	Solid	04/07/20 09:20	04/08/20 09:50	
320-60052-5	SS-60	Solid	04/07/20 09:25	04/08/20 09:50	
320-60052-6	SS-61	Solid	04/07/20 09:35	04/08/20 09:50	
320-60052-7	SS-62	Solid	04/07/20 11:20	04/08/20 09:50	
320-60052-8	SS-63	Solid	04/07/20 11:30	04/08/20 09:50	
320-60052-9	SS-64	Solid	04/07/20 11:35	04/08/20 09:50	
320-60052-10	MW-1	Solid	04/07/20 11:40	04/08/20 09:50	
320-60052-11	SS-66	Solid	04/07/20 11:50	04/08/20 09:50	
320-60052-12	SS-67	Solid	04/07/20 12:00	04/08/20 09:50	
320-60052-13	SS-65	Solid	04/07/20 12:15	04/08/20 09:50	
320-60052-14	SS-68	Solid	04/07/20 12:25	04/08/20 09:50	
320-60052-15	SS-69	Solid	04/07/20 12:30	04/08/20 09:50	
320-60052-16	SS-70	Solid	04/07/20 12:40	04/08/20 09:50	
320-60052-17	SS-71	Solid	04/07/20 12:50	04/08/20 09:50	
320-60052-18	SS-72	Solid	04/07/20 12:55	04/08/20 09:50	
320-60052-19	SS-73	Solid	04/07/20 13:15	04/08/20 09:50	
320-60052-20	SS-74	Solid	04/07/20 13:20	04/08/20 09:50	
320-60052-21	SS-78	Solid	04/07/20 13:35	04/08/20 09:50	
320-60052-22	SS-77	Solid	04/07/20 13:45	04/08/20 09:50	
320-60052-23	SS-76	Solid	04/07/20 13:50	04/08/20 09:50	
320-60052-24	SS-75	Solid	04/07/20 14:00	04/08/20 09:50	
320-60052-25	EB-Scoop	Water	04/07/20 14:10	04/08/20 09:50	

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: Joel Mackinney	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-80770-37016.1
Client Contact: Mr. Leo Linnemanstons, P.G.	Phone: 4145202179	E-Mail: sandie.fredrick@testamericainc.com		Page: Page 1 of 3
Company: AECOM				Job #:
Address: 1350 Deming Way Suite 100	Due Date Requested:			
City: Middleton	TAT Requested (days):			
State, Zip: WI, 53562				
Phone: 608-836-9800(Tel)	PO #: 60611431			
Email: leo.linnemanstons@aecom.com	WO #:			
Project Name: ATC - Madison 60611431	Project #: 50016386			
Site:	SSOW#:			

Analysis Requested

320-60052 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
SS-56	4/7/20	0900	G	Solid			X	1	
SS-57		0905		Solid			X	1	
SS-58		0910		Solid			X	1	
SS-59		0920		Solid			X	1	
SS-60		0925		Solid			X	1	
SS-61		0935		Solid			X	1	
SS-62		1120		Solid			X	1	
SS-63		1130		Solid			X	1	
SS-64		1135		Solid			X	1	
MW-1		1140		Solid			X	1	
SS-66	↓	1150	↓	Solid			X	1	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Joel Mackinney	4/7/20 1535	AECOM		4-7-20 1535	TA
2		4-7-20 1700	TA		4/08/20 950	ETA-SAC
3						

Custody Seals Intact: ● Yes △ No
Custody Seal No.: 1023497
Cooler Temperature(s) °C and Other Remarks: 1.0°C

Ver: 01/16/2019

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Joel Mackinney	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-80770-37016.2
Client Contact: Mr. Leo Linnemanstons, P.G.	Phone:	E-Mail: sandie.fredrick@testamericainc.com		Page: Page 2 of 3
Company: AECOM				Job #:
Address: 1350 Deming Way Suite 100	Due Date Requested:			
City: Middleton	TAT Requested (days):			
State, Zip: WI, 53562				
Phone: 608-836-9800(Tel)	PO #: 60611431			
Email: leo.linnemanstons@aecom.com	WO #:			
Project Name: ATC - Madison 60611431	Project #: 50016386			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
SS-67	4/7/20	1200	G	Solid			X	1	
SS-65		1215		Solid			X	1	
SS-68		1225		Solid			X	1	
SS-69		1230		Solid			X	1	
SS-70		1240		Solid			X	1	
SS-71		1250		Solid			X	1	
SS-72		1255		Solid			X	1	
SS-73		1315		Solid			X	1	
SS-74		1320		Solid			X	1	
SS-78		1335		Solid			X	1	
SS-77	↓	1345	↓	Solid			X	1	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		4/7/20 1535	AECOM		4-7-20 1535	TA
2		4-7-20 1700	TA		4/8/20 950	ETA - SAC
3						

Custody Seals Intact: ☑ Yes ☐ No | Custody Seal No.: 1023497

Cooler Temperature(s) °C and Other Remarks: 1.0°C

Ver: 01/16/2019

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Joel Mckinney	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-80770-37016.3
Client Contact: Mr. Leo Linnemanstons, P.G.	Phone:	E-Mail: sandie.fredrick@testamericainc.com		Page: Page 3 of 3
Company: AECOM			Analysis Requested	Job #:
Address: 1350 Deming Way Suite 100	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify), Other:
City: Middleton	TAT Requested (days):			
State, Zip: WI, 53562				
Phone: 608-836-9800(Tel)	PO #: 60611431			
Email: leo.linnemanstons@aecom.com	WO #:			
Project Name: ATC - Madison 60611431	Project #: 50016386			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
SS-76	4/7/20	1350	G	Solid			X	1	
SS-75	4/7/20	1400	↓	Solid			X	1	
FB - Scoop	4/7/20	1410	↓	~~Water~~ Solid			X	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Joel Mckinney	4/7/20 1535	AECOM		4-7-20 1535	TA
2		4-7-20 1700	TA		4/8/20 950	ETA - SAC
3		Date/Time:	Company		Date/Time:	Company

Custody Seals Intact: ◆ Yes △ No | Custody Seal No.: 1023497

Cooler Temperature(s) °C and Other Remarks: 1.0°C

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: AECOM

Job Number: 320-60052-1

Login Number: 60052
List Number: 1
Creator: Guzman, Juan

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1023497
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT B – RCL DOCUMENTATION

Site-specific
Equation Inputs for Soil to Groundwater

*** Inputted values different from defaults are highlighted.**

Variable	Default Value	Form-input Value
DAF (dilution attenuation factor) unitless	1	1
DAF (dilution attenuation factor) unitless	1	1
BW_{0-2} (mutagenic body weight) kg	15	15
BW_{2-6} (mutagenic body weight) kg	15	15
BW_{6-16} (mutagenic body weight) kg	80	80
BW_{16-26} (mutagenic body weight) kg	80	80
BW_{res-a} (body weight - adult) kg	80	80
BW_{res-c} (body weight - child) kg	15	15
$DFW_{res-adj}$ (age-adjusted dermal factor) cm^2-event/kg	2610650	2610650
$DFWM_{res-adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	8191633	8191633
ED_{res} (exposure duration - resident) years	26	26
ED_{0-2} (mutagenic exposure duration first phase) years	2	2
ED_{2-6} (mutagenic exposure duration second phase) years	4	4
ED_{6-16} (mutagenic exposure duration third phase) years	10	10
ED_{16-26} (mutagenic exposure duration fourth phase) years	10	10
ED_{res-a} (exposure duration - adult) years	20	20
ED_{res-c} (exposure duration - child) years	6	6
EF_{res} (exposure frequency) days/year	350	350
EF_{0-2} (mutagenic exposure frequency first phase) days/year	350	350
EF_{2-6} (mutagenic exposure frequency second phase) days/year	350	350
EF_{6-16} (mutagenic exposure frequency third phase) days/year	350	350
EF_{16-26} (mutagenic exposure frequency fourth phase) days/year	350	350
EF_{res-a} (exposure frequency - adult) days/year	350	350
EF_{res-c} (exposure frequency - child) days/year	350	350
ET_{res} (exposure time) hours/day	24	24
$ET_{event-res-adj}$ (age-adjusted exposure time) hours/event	0.67077	0.67077
$ET_{event-res-madj}$ (mutagenic age-adjusted exposure time) hours/event	0.67077	0.67077
ET_{0-2} (mutagenic dermal exposure time first phase) hours/event	0.54	0.54
ET_{2-6} (mutagenic dermal exposure time second phase) hours/event	0.54	0.54
ET_{6-16} (mutagenic dermal exposure time third phase) hours/event	0.71	0.71
ET_{16-26} (mutagenic dermal exposure time fourth phase) hours/event	0.71	0.71

Output generated 14FEB2020:13:18:16

Site-specific
Equation Inputs for Soil to Groundwater

*** Inputted values different from defaults are highlighted.**

Variable	Default Value	Form-input Value
ET_{res-a} (dermal exposure time - adult) hours/event	0.71	0.71
ET_{res-c} (dermal exposure time - child) hours/event	0.54	0.54
ET_{0-2} (mutagenic inhalation exposure time first phase) hours/day	24	24
ET_{2-6} (mutagenic inhalation exposure time second phase) hours/day	24	24
ET_{6-16} (mutagenic inhalation exposure time third phase) hours/day	24	24
ET_{16-26} (mutagenic inhalation exposure time fourth phase) hours/day	24	24
ET_{res-a} (inhalation exposure time - adult) hours/day	24	24
ET_{res-c} (inhalation exposure time - child) hours/day	24	24
EV_{0-2} (mutagenic events) per day	1	1
EV_{2-6} (mutagenic events) per day	1	1
EV_{6-16} (mutagenic events) per day	1	1
EV_{16-26} (mutagenic events) per day	1	1
EV_{res-a} (events - adult) per day	1	1
EV_{res-c} (events - child) per day	1	1
THQ (target hazard quotient) unitless	0.1	1
$IFW_{res-adj}$ (adjusted intake factor) L/kg	327.95	327.95
$IFWM_{res-adj}$ (mutagenic adjusted intake factor) L/kg	1019.9	1019.9
IRW_{0-2} (mutagenic water intake rate) L/day	0.78	0.78
IRW_{2-6} (mutagenic water intake rate) L/day	0.78	0.78
IRW_{6-16} (mutagenic water intake rate) L/day	2.5	2.5
IRW_{16-26} (mutagenic water intake rate) L/day	2.5	2.5
IRW_{res-a} (water intake rate - adult) L/day	2.5	2.5
IRW_{res-c} (water intake rate - child) L/day	0.78	0.78
K (volatilization factor of Andelman) L/m^3	0.5	0.5
LT (lifetime) years	70	70
SA_{0-2} (mutagenic skin surface area) cm^2	6365	6365
SA_{2-6} (mutagenic skin surface area) cm^2	6365	6365
SA_{6-16} (mutagenic skin surface area) cm^2	19652	19652
SA_{16-26} (mutagenic skin surface area) cm^2	19652	19652
SA_{res-a} (skin surface area - adult) cm^2	19652	19652
SA_{res-c} (skin surface area - child) cm^2	6365	6365

Output generated 14FEB2020:13:18:16

Site-specific
Equation Inputs for Soil to Groundwater

*** Inputted values different from defaults are highlighted.**

Variable	Default Value	Form-input Value
l_{sc} (apparent thickness of stratum corneum) cm	0.001	0.001
TR (target risk) unitless	1.0E-06	1.0E-06

Site-specific
Regional Screening Levels (RSL) for Soil to Groundwater

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = DWSHA; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o (mg/kg-day)$^{-1}$	SF_o Ref	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	S (mg/L)	K_d (cm^3/g)
Perfluorobutane sulfonic acid (PFBS)	375-73-5	No	No	Organics	-		-		2.00E-02	P	-		1	0.1	56600	1.23E-01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	No	No	Organics	-		-		2.00E-05	D	-		1	0.1	680	7.43E-01
Perfluorooctanoic acid (PFOA)	335-67-1	No	No	Organics	7.00E-02	D	-		2.00E-05	D	-		1	0.1	9500	2.30E-01

K_{oc} (cm^3/g)	Dilution Attenuation Factor (DAF) (unitless)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	H` and HLC Ref	Normal Boiling Point BP (K)	BP Ref	Critical Temperature TC (K)	TC Ref	Noncarcinogenic SL Adult THI=1 (ug/L)	Noncarcinogenic SL Child THI=1 (ug/L)	Carcinogenic SL TR=1E-06 (ug/L)
6.17E+01	1	-	-		484.15	PHYSPROP	-		6.67E+02	4.01E+02	-
3.72E+02	1	-	-		532.15	PHYSPROP	-		6.67E-01	4.01E-01	-
1.15E+02	1	4E-6	1.64E-04	ATSDR Draft Profile	465.55	PHYSPROP	-		6.67E-01	4.01E-01	1.11E+00

Water Concentration (Adult) (mg/L)	Water Concentration (Child) (mg/L)	Water Concentration (Cancer) (mg/L)	Maximum Contaminant Level (MCL) (ug/L)	Water Concentration (MCL) (mg/L)	MCL-based SL (mg/kg)	Noncarcinogenic Adult SL THI=1 (mg/kg)	Noncarcinogenic Child SL THI=1 (mg/kg)	Carcinogenic SL (mg/kg)	Risk-Based SL (mg/kg)
6.67E-01	4.01E-01	-	-	-	-	2.16E-01	1.30E-01	-	1.30E-01
6.67E-04	4.01E-04	-	-	-	-	6.29E-04	3.78E-04	-	3.78E-04
6.67E-04	4.01E-04	1.11E-03	-	-	-	2.87E-04	1.72E-04	4.78E-04	1.72E-04