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October 1, 2019 LKB Project No. 2019-0059

Arsheen Ehtesham New York City Department of Parks and Recreation Environmental Remediation Unit Olmsted Center, Flushing Meadows, Corona Park Flushing, NY 11368

Re: Brookfield Avenue Landfill (DEC Site No. 2-43-006) 2019 Emerging Contaminant Groundwater Monitoring Results

Dear Ms. Ehtesham,

This letter-style report contains the 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS) monitoring results for the Brookfield Avenue Landfill (BAL) site. This additional monitoring was requested by the New York State Department of Environmental Conservation (NYSDEC) in a November 9, 2018 letter to the New York City Department of Parks and Recreation (DPR), as part of its ongoing state-wide assessment of emerging contaminant concentrations in groundwater. The letter also requested that a work plan be prepared and submitted to the NYSDEC for approval prior to being implemented.

The Final Work Plan (Work Plan) was submitted to the NYSDEC on January 4, 2019, and was subsequently approved by the NYSDEC. The monitoring was performed in March 2019, in conjunction with the BAL annual post-closure groundwater monitoring round. The Work Plan called for the collection of samples from eight of the site's 23 long-term monitoring wells. The selected wells identified in the table below are screened in the uppermost aquifer (Upper Glacial) and located upgradient and downgradient of both landfill cells (West and East). A total of three wells are located in the West Cell and five wells in the East Cell. The locations of the wells relative to the water-table elevation in March 2019 are shown in Figure 1.

Well Number	Location
LTMW-8	Upgradient of West Cell
LTMW-1	Downgradient of West Cell, located in groundwater discharge area
LTMW-3	Downgradient of West Cell
LTMW-10	Upgradient of East Cell
LTMW-12	Downgradient of East Cell
LTMW-15	Downgradient of East Cell
LTMW-16	Downgradient of East Cell
LTMW-18ug	Downgradient of East Cell



The samples were collected by Brookfield Construction Associates (BCA), the DPR Operation, Maintenance and Monitoring (OM&M) contractor for the site and their laboratory subcontractor Accredited Analytical Resources, LLC of Carteret, NJ (AAR). AAR performed the 1,4-dioxane analyses, but is not state-certified to perform PFAS analyses. Therefore, AAR subcontracted the PFAS analyses to Eurofins QC Laboratories, Inc. in Horsham, PA, which in turn subcontracted them to its affiliate Eurofins Lancaster Laboratories Environmental, LLC in Lancaster, PA, which is state-certified to perform PFAS analyses. The 1,4-dioxane and PFAS sample results are summarized in Table 1. The laboratory analytical reports are provided in Attachment 1. The key findings and conclusions are summarized below.

The monitoring data was validated along with the remaining post-closure groundwater monitoring data in accordance with the requirements of the BAL OU1 Post-Closure Monitoring, Sampling and Analysis Plan. The Data Usability Summary Report was included in the BAL Annual Post-Closure Operation, Maintenance and Monitoring Report for the period April 1, 2018 to March 31, 2019.

1,4-Dioxane Results

Monitoring for 1,4-dioxane was performed in accordance with the Work Plan with the following exception: two additional wells not included in the Work Plan (LTMW-4 and LTMW-6) were also sampled for 1,4 dioxane. The Work Plan Quality Assurance/Quality Control (QA/QC) samples for blind duplicate and the matrix spike/matrix spike duplicate (MS/MSD) were collected from wells LTMW-6 and LTMW-4, respectively. The noted deviations from the Work Plan do not significantly impact the findings, and provide 1,4-dioxane results for two additional wells, which are located sidegradient to the West Cell of the BAL. In addition, since the approval of the Work Plan, the New York State Department of Health (NYSDOH) proposed a 1-ug/L standard for 1,4-dioxane in drinking water (which has been accepted by the NYSDEC as their internal guidance value). Since the Work Plan stated that should the available, applicable guidance and health advisory levels change prior to reporting, the results should be compared to the new standards or guidance values. Therefore, Table 1 includes a comparison to the current NYSDOH proposed drinking water standard.

As shown in Table 1, 1,4-dioxane was only detected in five of the 10 wells sampled for this parameter, in three West Cell wells and two East Cell wells, including both upgradient wells. Two of the three West Cell well detections (Upgradient LTMW-8, 106 micrograms per Liter (ug/L) and Downgradient LTMW-1, 114 ug/L) were much higher in concentration than other three detections (0.335 to 13.6 ug/L). The higher 1,4-dioxane concentrations detected in LTMW-8 and LTMW-1 are attributed to an off-site, upgradient source based on their spatial distribution and high degree of comparability. 1,4-dioxane was only detected at trace levels (0.335 ug/L) in the other downgradient West Cell well sampled (LTMW-3) and was not detected in the two additional sidegradient West Cell wells sampled (LTMW-4 and LTMW-6). This is attributed to the fact that these three West Cell wells are not located directly downgradient of the upgradient source (see Figure 1).

In the East Cell wells, 1,4-dioxane was detected at a relatively low concentration in the upgradient well (LTMW-10, 0.748 ug/L) and at a somewhat higher concentration in one of the four downgradient wells (LTMW-18ug, 13.6 ug/L). It was not detected in the other three downgradient East Cell wells.

Regarding the QA/QC-related samples, 1,4-dioxane was not detected in the two field blanks or in the duplicate sample from LTMW-6. The MS/MSD percent recoveries for 1,4-dioxane were within the acceptable range.

Based on the occurrence and distribution of 1,4-dioxane in the 10 wells sampled for this parameter, the West Cell, which is the oldest portion of the site, is not a significant source of 1,4-dioxane releases to groundwater, despite the fact that relatively high concentrations were detected in the upgradient well and one of the two downgradient wells sampled; and the newer East Cell is only a relatively minor source of localized 1,4-dioxane releases to groundwater based on the fact that it was only detected in one of the four downgradient wells, at a concentration somewhat higher than in the upgradient well.

While there are currently no official standards for 1,4-dioxane in water, the BAL 1,4-dioxane results were compared to the recently proposed NYSDOH standard for drinking water of a 1-ug/L, and the United States Environmental Protection Agency (USEPA) screening level for tap water of 0.46-ug/L. Three of the five 1,4-dioxane detections, including the West Cell upgradient well, are higher than both of these values while the 1,4-dioxane detections in the East Cell upgradient well was higher than the USEPA screening level for tap water but lower than the NYSDOH recently proposed standard for drinking water. The magnitudes of the exceedances varied over two orders of magnitude, but the two highest-magnitude exceedances are not site-related and attributed instead to an off-site source upgradient of the West Cell.

PFAS Results

Monitoring for PFAS was performed in accordance with the Work Plan with the following exceptions: (i) an additional field blank was collected and analyzed for (i.e., two instead of one); (ii) the blind duplicate and the MS/MSD sample for PFAS were collected from LTMW-3 on March 14, 2019, whereas the original sample from this well was collected on March 11, 2019; and (iii) seven of the target analytes were not able to be reported due to a laboratory documentation error. The noted deviations from the Work Plan do not significantly impact the findings as further discussed in the paragraphs below. In addition, since the approval of the Work Plan, the NYSDOH proposed a 10-ng/L standard for drinking water for perfluorooctanoic acid (PFOA) and perfluoro-octanesulfonate (PFOS). Since the Work Plan stated that should the available, applicable guidance and health advisory levels change prior to reporting, the results should be compared to the new standards or guidance values. Therefore, Table 1 includes a comparison to the current NYSDOH proposed drinking water standards.

The samples were analyzed for PFAS using Method 537 instead of Modified Method 537 and due to differences between the analyte lists of the two laboratory methods, results are not available for seven of the target analytes. However, since results are available for the 14 other analytes, including the only two for which a federal health advisory and a proposed state drinking water standard exist, and the groundwater beneath the site is naturally saline and therefore non-potable, the available results should be sufficient to assess overall PFAS concentrations in groundwater at the site. Specifically, although AAR provided Eurofins QC Laboratories, Inc. with a copy of the Full PFAS Target Analyte List in the NYSDEC's July 2018 document titled "Groundwater Sampling for Emerging Contaminants", Eurofins QC Laboratories, Inc. incorrectly logged the samples in as drinking water samples before transferring them to Eurofins Lancaster Laboratories Environmental, LLC for analysis, and did not include the Full PFAS Target Analyte List with the samples. Consequently, Eurofins Lancaster Laboratories, LLC analyzed the samples as drinking water samples by Method 537 instead of as groundwater samples by

Modified Method 537. Due to differences between the analyte lists of the two laboratory methods, results are not available for seven of the target analytes. Reprocessing of the laboratory data files to obtain results for the missing analytes was requested and explored but determined not to be possible because spikes for the missing parameters were not included in the Method 537 analyses.

As shown in Table 1, PFAS were detected in seven of the eight wells sampled for these parameters, including both upgradient wells. Similar to the 1,4-dioxane results, total PFAS concentrations in West Cell wells LTMW-8 (858 nanograms per Liter (ng/L)) and LTMW-1 (1,109 ng/L), located upgradient and downgradient, respectively, were much higher than in the other five wells, and also exhibited a high degree of comparability. The total PFAS concentration in the other downgradient West Cell well (LTMW-3, 4.2 J ng/L) was due to low, estimated concentrations of just three analytes, which is also similar to the 1,4-dioxane result for this well. In accordance with the Work Plan requirements, West Cell sidegradient wells LTMW-4 and LTMW-6 were not sampled for PFAS. In the East Cell wells, PFAS were primarily detected in the same two wells in which 1,4-dioxane was detected (Upgradient LTMW-10 and Downgradient LTMW-18ug), at comparable total concentrations of 43.2 J ng/L and 40.4 ng/L, respectively. Total PFAS concentrations in the other downgradient East Cell wells were limited to low, estimated concentrations of 43.2 J ng/L and 40.4 ng/L, respectively. Total PFAS concentrations in the other downgradient East Cell wells were limited to low, estimated concentrations of 2.7 ng/L and 0.89 ng/L, in two of the three wells.

Regarding the QA/QC-related samples, PFAS were not detected in the field blanks. Although the sample and blind duplicate from LTMW-3 were collected on different days, the results overall are relatively similar and the observed differences are primarily attributed to temporal variation in groundwater quality. The MS/MSD percent recoveries for PFAS were within acceptable limits. The relative percent difference for the spiked-sample results (35%) was slightly higher than the maximum (30%), but this is attributed to the higher degree of analytical variation inherent in analyzing samples for low concentrations of PFAS.

Based on the occurrence and distribution of PFAS in the eight wells sampled, neither the West Cell nor the East Cell is a significant source of PFAS releases to groundwater. This determination is based on the fact that total PFAS concentrations in the upgradient well for each cell exhibited a high degree of comparability to the highest total PFAS concentration in a downgradient well for that cell, and that PFAS concentrations in the other downgradient wells are limited to low, estimated concentrations.

While there are currently no official standards for PFAS, two of the PFAS analytes – PFOA and PFOS now have a NYSDOH proposed drinking water standard of 10 ng/L for each compound, and the USEPA has a health advisory level for drinking water of 70 ng/L for each compound or their sum. Results are available for both compounds and were compared to these values. In the West Cell wells, the concentrations of PFOA and PFOS in both upgradient well LTMW-8 and downgradient well LTMW-1 exceed both values, but are similar in magnitude. PFOA and PFOS concentrations detected in the other downgradient West Cell well (LTMW-3) were much lower than these values. In the East Cell wells, only the concentrations of PFOA in upgradient well LTMW-10 and one of the four downgradient wells (LTMW-18ug) exceeded the NYSDOH proposed drinking water standard, and were similar in magnitude. PFOA and PFOS concentrations in the other three East Cell wells were lower than the NYSDOH and USEPA values.

Conclusions

In summary, based on the results of the additional monitoring for 1,4-dioxane and PFAS performed in March 2019, the BAL site is not a significant source of these emerging contaminants in groundwater. For the older West Cell, the higher concentrations of 1,4-dioxane, PFOA and PFOS detected in upgradient well LTMW-8 and downgradient well LTMW-1 show a high degree of comparability, and are attributed to an off-site, upgradient source. The newer East Cell appears to be only a minor, localized source of 1,4-dioxane based on the fact that the concentration in one downgradient well (LTMW-18ug) is somewhat higher than in upgradient well LTMW-10, but PFAS concentrations in these two wells are comparable. 1,4-dioxane and PFAS concentrations in the other three downgradient East Cell wells are negligible. The presence of 1,4-dioxane, PFOA and PFOS in the upgradient wells suggests that the occurrence of these parameters at the site represents the regional groundwater quality.

Please contact our office if you have any questions regarding the information in this report.

Sincerely, LOCKWOOD, KESSLER & BARTLETT, INC.

therese Heneveld

Theresa Heneveld, PE Director of Environmental Engineering

C.c. K. Zias – DPR

Attachments (Figure 1, Table 1 and Attachment 1)



1 inch = 150 ft.

Table 1Brookfield Avenue Landfill 2019 Groundwater Monitoring EventSummary of Groundwater Monitoring Results for Emerging Contaminants

				We	est Cell Wells Samp	led				Eas	st Cell Wells Samp	led	
Emerging Contaminants	Unite	Upgradient Well	Additi	onal Sidegradient	Wells ¹	[Downgradient We	ls	Upgradient Well		Downgrad	lient Wells	
	Offics	LTMW-8	LTMW-4	LTMW-6	LTMW-6 Dup.	LTMW-1	LTMW-3	LTMW-3 Dup. ²	LTMW-10	LTMW-12	LTMW-15	LTMW-16	LTMW-18ug
		3/12/2019	3/14/2019	3/15/2019	3/15/2019	3/11/2019	3/11/2019	3/14/2019	3/12/2019	3/12/2019	3/12/2019	3/13/2019	3/13/2019
1,4-Dioxane ³	ug/L	<u>106</u>	<0.303	<0.306	<0.306	<u>114</u>	0.335	NA	<u>0.748</u>	<0.303	<0.303	<0.306	<u>13.6</u>
Per- and Polyfluoroalkyl Substances (PFAS):													
N-EtFOSAA ⁵	ng/L	6.2	NA	NA	NA	32	1.6 J	7.0	<0.50	<0.50	1.1 J	<0.45	<0.44
N-MeFOSAA ^{6*}	ng/L	<0.50	NA	NA	NA	3.5	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	<0.44
Perfluorobutanesulfonate	ng/L	32	NA	NA	NA	25	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	3.2
Perfluorodecanoic acid*	ng/L	<0.50	NA	NA	NA	1.3 J	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	<0.44
Perfluorododecanoic acid*	ng/L	<0.50	NA	NA	NA	<0.50	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	<0.44
Perfluoroheptanoic acid	ng/L	93	NA	NA	NA	110	<0.50	<0.42	0.89 J	<0.50	<0.50	<0.45	2.7
Perfluorohexanesulfonate	ng/L	55	NA	NA	NA	65	<0.50	<0.42	1.4 J	<0.50	<0.50	<0.45	3.2
Perfluorohexanoic acid	ng/L	210	NA	NA	NA	190	<0.50	0.98 J	1.6 J	<0.50	<0.50	<0.45	4.0
Perfluorononanoic acid*	ng/L	2.2	NA	NA	NA	2.1	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	<0.44
Perfluorooctanoic acid (PFOA) ⁴	ng/L	<u>320</u>	NA	NA	NA	<u>410</u>	0.97 J	1.1 J	37	<0.50	<0.50	<0.45	23
Perfluoro-octanesulfonate (PFOS) ⁴	ng/L	<u>140</u>	NA	NA	NA	<u>270</u>	1.6 J	3.3	2.3	<0.50	1.6 J	0.89 J	4.3
Sum of PFOA and PFOS ⁴ :	ng/L	<u>460</u>	NA	NA	NA	<u>680</u>	2.57 J	4.4 J	39.3	<1.0	1.6 J	0.89 J	27.3
Perfluorotetradecanoic acid*	ng/L	<0.50	NA	NA	NA	<0.50	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	<0.44
Perfluorotridecanoic acid*	ng/L	<0.50	NA	NA	NA	<0.50	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	<0.44
Perfluoroundecanoic acid*	ng/L	<0.50	NA	NA	NA	<0.50	<0.50	<0.42	<0.50	<0.50	<0.50	<0.45	<0.44
No. of PFAS Analytes Detected:	Out of 14	8				10	3	4	5	0	2	1	6
Total Detected PFAS Concentration:	ng/L	858				1,109 J	4.2 J	12.4 J	43.2 J	0	2.7 J	0.89 J	40.4

Notes:

ug/L = micrograms per Liter.

ng/L = nanograms per Liter.

NA = Not Analyzed (see Note 1).

1 = Wells not originally included in Final Work Plan, but sampled for 1,4-Dioxane. Well LTMW-6 was selected for blind duplicate for 1,4-Dioxane and other Post-Closure Groundwater Monitoring parameters. 2 = Blind duplicate and MS/MSD samples for LTMW-3 were performed on 3/14/19.

3 = NYSDOH proposed drinking water standard is 1 ug/L (NYSDEC has accepted this as their internal guidance value) and USEPA screening level for tap water is 0.46 ug/L.

4 = NYSDOH proposed drinking water standard for PFOS or PFOA is 10 ng/L and USEPA health advisory level for PFOS, PFOA or their sum in drinking water is 70 ng/L.

5 = N-ethyl perfluorooctanesulfonamidoacetic Acid.

6 = N-methyl perfluorooctanesulfonamidoacetic Acid.

J = Estimated concentration (less than reporting limit but higher than method detection limit).

Bold = Exceeds NYSDOH proposed drinking water standard.

Underlined = Also exceeds EPA screening level for 1,4-dioxane or health advisory level for PFOA and/or PFOS.

* = Analyte not detected (4 of 14) or only detected sporadically at low concentration (3 of 14).

ug/L. L. ATTACHMENT 1 LABORATORY ANALYTICAL REPORTS



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	Field Blank
Lab Sample ID:	1900371-01
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900371

Date Sampled:	03/11/19 09:45	Prep Date:	03/15/19 08:33	Matrix:	Aqueous
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8035.D
Prep Batch:	B9C1504	Sequence:	S9C1910	Analyzed:	03/19/19 08:37
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	ND	0.309	0.309	
	Surrogate	<u>% Recovery</u>		Recovery Lim	its
	1,4-Dioxane SURR-d8	18%		10-100	

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

P - Greater than 25% diff. between 2 GC columns.

MDL - Minimum detection limit

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-1
Lab Sample ID:	1900371-02
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900371

Date Sampled:	03/11/19 12:00	Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8070.D
Prep Batch:	B9C1504	Sequence:	S9C2012	Analyzed:	03/20/19 15:33
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	114	0.303	0.303	
	<u>Surrogate</u> 1,4-Dioxane SURR-d8	<u>% Recovery</u> 19%		Recovery Limits 10-100	

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

MDL - Minimum detection limit

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard

P - Greater than 25% diff. between 2 GC columns.



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-3
Lab Sample ID:	1900371-03
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900371

Date Sampled: 03/11/2	9 13:50 Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:	Prep Method:	EPA 3510C GCMS	File ID:	B8039.D
Prep Batch: B9C15	4 Sequence:	S9C1910	Analyzed:	03/19/19 10:55
Dilution: 1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.335	0.306	0.306	
	Surrogate	<u>% Recovery</u> 22%		Recovery Lir	nits

* Values outside of QC limits

- ND Indicates compound analyzed for but not detected at or above the MDL
- J Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

- D Indicates result is based on a dilution
- P Greater than 25% diff. between 2 GC columns.
- MDL Minimum detection limit

E - Concentration exceeds highest calibration standard



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-4
Lab Sample ID:	1900412-04
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900412

Date Sampled: 03/14/1	9 10:40 Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:	Prep Method:	EPA 3510C GCMS	File ID:	B8050.D
Prep Batch: B9C150	4 Sequence:	S9C1910	Analyzed:	03/19/19 15:59
Dilution: 1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	ND	0.303	0.303	
	Surrogate	% Recovery		Recovery Lin	<u>nits</u>
	1,4-Dioxane SURR-d8	16%		10-100)

* Values outside of QC limits

- ND Indicates compound analyzed for but not detected at or above the MDL
- J Indicates estimated value for TICs and all results when detected $\ \mbox{below}$ the RL

B - Indicates compound found in associated blank

- E Concentration exceeds highest calibration standard
- D Indicates result is based on a dilution
- P Greater than 25% diff. between 2 GC columns.
- MDL Minimum detection limit

RL - Reporting limit



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-4MS
Lab Sample ID:	1900412-05
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900412

Date Sampled:	03/14/19 11:20	Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8051.D
Prep Batch:	B9C1504	Sequence:	S9C1910	Analyzed:	03/19/19 16:26
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	1.62	0.303	0.303	
	<u>Surrogate</u> 1,4-Dioxane SURR-d8	<u>% Recovery</u> 18%		Recovery Limits 10-100	

* Values outside of QC limits

- ND Indicates compound analyzed for but not detected at or above the MDL
- J Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

- D Indicates result is based on a dilution
- P Greater than 25% diff. between 2 GC columns.
- MDL Minimum detection limit

E - Concentration exceeds highest calibration standard



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-4MSD
Lab Sample ID:	1900412-06
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900412

Date Sampled: 03/14/19 11:45	Prep Date:	03/15/19 08:33	Matrix:	Ground Water	
Percent Solids:	Prep Method:	EPA 3510C GCMS	File ID:	B8052.D	
Prep Batch: B9C1504	Sequence:	S9C1910	Analyzed:	03/19/19 16:53	
Dilution: 1			Analyst:	DSM	

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	1.79	0.306	0.306	
	Surrogate	<u>% Recovery</u>		Recovery Lin	<u>nits</u>
	1,4-Dioxane SURR-d8	15%		10-100)

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

P - Greater than 25% diff. between 2 GC columns.

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard

MDL - Minimum detection limit



Client: Client Sample II Lab Sample ID: Project: Work Order:	Brookfield C D: LTMW-6 1900418-02 B.A.L. Contr 1900418	onstruction Associa	tes, LLC			
Date Sampled:	03/15/19 09:50	Prep Date:	03/22/19 07:24	Matrix:	Ground Water	
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8082.D	
Prep Batch:	B9C2204	Sequence:	S9D0215	Analyzed:	04/02/19 15:45	
Dilution:	1			Analyst:	DSM	

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	<u>Q</u>
123-91-1	1,4-Dioxane	ND	0.300	0.300	
	<u>Surrogate</u>	<u>% Recovery</u>		Recovery Limits	<u>3</u>
	1,4-Dioxane SURR-d8	19%		10-100	

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

P - Greater than 25% diff. between 2 GC columns.

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard

MDL - Minimum detection limit



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-25 (Blind Duplicate of LTMW-6)
Lab Sample ID:	1900418-03
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900418

Date Sampled:	03/15/19 10:20	Prep Date:	03/22/19 07:24	Matrix:	Ground Water
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8083.D
Prep Batch:	B9C2204	Sequence:	S9D0215	Analyzed:	04/02/19 16:08
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	ND	0.306	0.306	
	<u>Surrogate</u> 1,4-Dioxane SURR-d8	<u>% Recovery</u> 22%		Recovery Lim 10-100	<u>nits</u>

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

MDL - Minimum detection limit

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard

P - Greater than 25% diff. between 2 GC columns.



Client: Client Sample II Lab Sample ID: Project: Work Order:	Brookfield C D: LTMW-8 1900377-01 B.A.L. Contr 1900377	construction Associat	tes, LLC		
Date Sampled:	03/12/19 09:35	Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8071.D
Prep Batch:	B9C1504	Sequence:	S9C2012	Analyzed:	03/20/19 16:01
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	106	0.303	0.303	
	<u>Surrogate</u> 1,4-Dioxane SURR-d8	<u>% Recovery</u> 19%		<u>Recovery Lir</u> 10-10	<u>nits</u> 0

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\mbox{ below the RL}$

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

P - Greater than 25% diff. between 2 GC columns.

MDL - Minimum detection limit

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-10
Lab Sample ID:	1900377-02
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900377

Date Sampled:	03/12/19 11:25	Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8042.D
Prep Batch:	B9C1504	Sequence:	S9C1910	Analyzed:	03/19/19 12:22
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.748	0.309	0.309	
	<u>Surrogate</u> 1,4-Dioxane SURR-d8	<u>% Recovery</u> 20%		Recovery Limits 10-100	

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard

P - Greater than 25% diff. between 2 GC columns.

MDL - Minimum detection limit



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-12
Lab Sample ID:	1900377-03
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900377

Date Sampled: 0	3/12/19 13:10	Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8043.D
Prep Batch: B	9C1504	Sequence:	S9C1910	Analyzed:	03/19/19 12:49
Dilution: 1				Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	ND	0.303	0.303	
	Surrogate	<u>% Recovery</u>		Recovery Lin	<u>nits</u>
	1,4-Dioxane SURR-d8	16%		10-100)

* Values outside of QC limits

 J - Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

MDL - Minimum detection limit

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard

P - Greater than 25% diff. between 2 GC columns.



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-15
Lab Sample ID:	1900377-04
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900377

Date Sampled:	03/12/19 14:45	Prep Date:	03/15/19 08:33	Matrix:	Ground Water
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8044.D
Prep Batch:	B9C1504	Sequence:	S9C1910	Analyzed:	03/19/19 13:16
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	ND	0.303	0.303	
	<u>Surrogate</u> 1,4-Dioxane SURR-d8	<u>% Recovery</u> 17%		Recovery Limits 10-100	

* Values outside of QC limits

- ND Indicates compound analyzed for but not detected at or above the MDL
- J Indicates estimated value for TICs and all results when detected $\ \mbox{below}$ the RL

B - Indicates compound found in associated blank

- D Indicates result is based on a dilution
- P Greater than 25% diff. between 2 GC columns.
- MDL Minimum detection limit
- RL Reporting limit

E - Concentration exceeds highest calibration standard



Client:	Brookfield C	onstruction Associa	ates, LLC		
Client Sample ID	: Field Blank				
Lab Sample ID:	1900394-01				
Project:	B.A.L. Contr	B.A.L. Contract #1359-BRK			
Work Order:	1900394				
Data Samplad	02/12/10 08:20	Prop Data:	02/15/10 08:22		

Date Sampled:	03/13/19 08:30	Prep Date:	03/15/19 08:33	Matrix:	Aqueous
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8045.D
Prep Batch:	B9C1504	Sequence:	S9C1910	Analyzed:	03/19/19 13:43
Dilution:	1			Analyst:	DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	ND	0.306	0.306	
	Surrogate	<u>% Recovery</u>		Recovery Lin	nits

* Values outside of QC limits

- ND Indicates compound analyzed for but not detected at or above the MDL
- J Indicates estimated value for TICs and all results when detected $\ \mbox{below}$ the RL

B - Indicates compound found in associated blank

- D Indicates result is based on a dilution
- P Greater than 25% diff. between 2 GC columns.
- MDL Minimum detection limit

E - Concentration exceeds highest calibration standard

RL - Reporting limit



ANALYSIS DATA SHEET **EPA 8270D SIM**

Client:	Brookfield C	Construction Associa	ates, LLC		
Client Sample ID): LTMW-16				
Lab Sample ID:	1900394-02				
Project:	B.A.L. Conti	B.A.L. Contract #1359-BRK			
Work Order:	1900394				
Date Sampled:	03/13/19 09:50	Prep Date:	03/15/19 08:33	Ν	

Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8046.D
Prep Batch: Dilution:	B9C1504 1	Sequence:	S9C1910	Analyzed: Analyst:	03/19/19 14:11 DSM

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	ND (0.306	0.306	
	<u>Surrogate</u> 1,4-Dioxane SURR-d8	<u>% Recovery</u> 16%		Recovery Limits 10-100	<u>.</u>

* Values outside of QC limits

J - Indicates estimated value for TICs and all results when detected below the RL

B - Indicates compound found in associated blank

D - Indicates result is based on a dilution

MDL - Minimum detection limit

ND - Indicates compound analyzed for but not detected at or above the MDL

E - Concentration exceeds highest calibration standard

P - Greater than 25% diff. between 2 GC columns.



Client:	Brookfield Construction Associates, LLC
Client Sample ID:	LTMW-18UG
Lab Sample ID:	1900394-03
Project:	B.A.L. Contract #1359-BRK
Work Order:	1900394

Dilution:	1			Analyst:	DSM
Prep Batch:	B9C1504	Sequence:	S9C2012	Analyzed:	03/20/19 16:28
Percent Solids:		Prep Method:	EPA 3510C GCMS	File ID:	B8072.D
Date Sampled:	03/13/19 11:30	Prep Date:	03/15/19 08:33	Matrix:	Ground Water

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	13.6	0.312	0.312	
	<u>Surrogate</u> 1.4-Dioxane SURR-d8	<u>% Recovery</u> 20%		<u>Recovery Lir</u> 10-100	nits D

* Values outside of QC limits

- ND Indicates compound analyzed for but not detected at or above the MDL
- J Indicates estimated value for TICs and all results when detected $\ \mathsf{below}$ the RL

B - Indicates compound found in associated blank

- D Indicates result is based on a dilution
- P Greater than 25% diff. between 2 GC columns.
- MDL Minimum detection limit

E - Concentration exceeds highest calibration standard





DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE

CARTERET,NJ 07008

Regarding:

ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

PROJECT ID:

AW0782

LABORATORY REPORT NUMBER:

L7111747

Der AU

Authorized by: Douglas J. Gump Client Services Manager

Eurofins QC, LLC

Analytical Report Printed 03/29/19 19:59 QC21

ACCREDITED ANALYTICAL RESOURCES, LLC AW0782

P.O. No: Inv. No: 1971063 PI PWSID:

DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

Regarding: DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

SAMPLE SUMMARY

Lab ID	Collected	Received	Matrix	Client ID	
L7111747-1	03/11/19 09:45	03/13/19 12:30	MISC	1900371-01	Field Blank
L7111747-2	03/11/19 10:44	03/13/19 12:30	WATER	1900371-02	LTMW-1
L7111747-3	03/11/19 13:11	03/13/19 12:30	WATER	1900371-03	LTMW-3

PIN: 37516

Unserialized Copy

Eurofins QC, LLC

Analytical Report

Printed 03/29/19 19:59

	Sample Description: Sample Number: Matrix: Received Temp: Exceeds recommended ter	1900371-01 L7111747-1 MISC 7.4 C mperature for chemical test	Samp. Date/Time/Temp: Sampled by: Iced (Y/N): ing.(T)	03/11/19 09:45am NA C Customer Y	
SUBCONTRACTE	ED RESULT REFER	RENCES1900371-0	1		
See attached reports for the	e following Subcontract Lat	ooratories:			
Eurofins - Lancaster La PERFLUORINATED CH	boratories, Environmen HEMICALS (14) PFAS	tal (ELLE)			
	Sample Description: Sample Number: Matrix: Received Temp: Exceeds recommended ter	1900371-02 L7111747-2 WATER 7.4 C mperature for chemical test	Samp. Date/Time/Temp: Sampled by: Iced (Y/N): ing.(T)	03/11/19 10:44am NA C Customer Y	

--SUBCONTRACTED RESULT REFERENCES--1900371-02

See attached reports for the following Subcontract Laboratories:

Eurofins - Lancaster Laboratories, Environmental (ELLE)

PERFLUORINATED CHEMICALS (14) PFAS

Sample Description:	1900371-03		
Sample Number:	L7111747-3	Samp. Date/Time/Temp:	03/11/19 01:11pm NA C
Matrix:	WATER	Sampled by:	Customer
Received Temp:	7.4 C	Iced (Y/N):	Y
Exceeds recommended terr	nperature for chemical testing	I.(T)	

--SUBCONTRACTED RESULT REFERENCES--1900371-03

See attached reports for the following Subcontract Laboratories:

Eurofins - Lancaster Laboratories, Environmental (ELLE) PERFLUORINATED CHEMICALS (14) PFAS

Sample Comments | Result Qualifiers:

L7111747-1:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.

L7111747-2:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C.

*=This limit was used in the evaluation of the final result.

PIN: 37516

Unserialized Copy





Consult your regulatory agency for further guidance on the use of this data.

L7111747-3 :

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.



*=This limit was used in the evaluation of the final result.

PIN: 37516

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DEFINITIONS

The following terms or abbreviations are used in this report:

QC

Less than: In conjunction with a numerical value, indicates a concentration less than RL / MDL
Greater than: In conjunction with a numerical value,
indicates a concentration greater than RL / MDL
Colony Forming Unit
Dilution Factor (For Microbiology, DF = volume of
sample tested)
Result was reported on a dry weight basis
EPA recommended "Maximum Contaminant Level"
Method Detection Limit
Membrane Filtration
Most Probable Number
For odor test: No Odor Observed
For all other tests: Analyte concentration Not
Detected greater than the RL / MDL

Negative / Absent
Nephelometric Turbidity Units
Positive / Present
Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
Presumptive
Qualifier (Q)
Laboratory Reporting Limit or Limit of Quantitation (LOQ)
Too Numerous To Count
Threshold Odor Number

Data Qualifiers

J	Estimated value <u>></u> MDL, but < RL
Т	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
Е	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- The report shall not be reproduced, except in full, without the written consent of the laboratory.
- All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Bhavita Shah (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs-	PA: 46-05499	NJ:	PA093	NY:	12080	MD: 3	857
East Rutherford Facility New Castle Facility Vineland Facility Wind Gap Facility	<u>State ID-</u> <u>State IDs-</u> <u>State ID-</u> <u>State ID</u> -	NJ: 02015 DE: DE01101 NJ: 06005 NJ: PA001	MD:	138				

Eurofins QC, LLC (EQC)

Lab LIMS No: L7111747 MATRIX CODES	LAB USE ONLY OT TY IZ IN A PL 250	# Ascorbic/HCL Vials # HCl Vials Gw: GROUND WATER	# Na ₂ S ₂ O ₃ WW: WASTEWATER	# Na°OH/Zn acetate pH	# HNOsphart Andread # HoSoA bH Andread	# NaOH pH Sol: NON SOIL SOLID	# Unpreserved * MISCELLANEOUS	D H. HCI K OTHER	The DI Water Control of the DI	Field pH, Temp (°C), ANALYSIS REQUESTED DO, Cl2, Cond. etc.	2 PFA3, PFCS	2	+ + 73					DELIVERED		RP-RDD	Initials Date/Time:		VD MILLI ARY TIME (24 HOUR CLOCK, I.E. BAM IS 0800, 4 PM IS 1600) TIME DELIVERY: DECCOURIER DICLENT Custody Seal Number	TIME Rec'd Temn 7.4°C Initials: ALON Infry No Location:	1230 COMMENTS:	TIME 1.1°- 170, 10,00 1000	TIME 1825 Hazardous: ves/no
CHAIN OF CUSTODY Pageof	Bill to/Report to (if different) Same.		Sampling Site Address (if different) Include State NY			P.O. No.	Quote #	e-mail: bennie @ accelerationalytical.com	Collection G C Number of Containers	Date Military R O Matrix Time B P Code Total 2 C C C N N N N N N N N N N N N N N N N	3/11/10 945 x A 2	1 10 ⁴⁴ X 60 2	L 13" X GW 2						4 m m m m m m m m m m m m m m m m m m m	ARD (10 DAY) Report Format: Construction NJ-RDD	<u> 2 3/ 2 5/ 19 🗆 Standard + QC 🔄 Forms 🗖 EDD:</u>	and and availability for rush (<10 day) turnaround and for all but standard reporting form	UMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AN TIME RECEIVED BY	TIME RECEIVED BY RZS 2. Mickey KREMS Maikery 2 3113/19	ME 3 3 ALT MAT 2/13/19	TIME RECEIVED BY	1825 5 VILLA A Darce 213/19
🔅 eurofins	S	702 Electronic Drive Phone: 215-355-3900	Horsham, PA 19044-0962 Fax: 215-355-7231	Client/Acct. No. Accredited Arelytical Les.	Address 20 Honshing Ave	City/State/Zip Carterof NI NTCMS	Phone/Fax 732-969-6112	Client Contact: B. O'Gorro	L PROJECT 14 CO 271	A FIELD ID	190371-01	8. 1900371- 02	E 1900371-03	0	23	3 6	>			SAMPLED BY: (Name/Company)	AAC Or DUE DATE C		SAMPLE CUSTOUY EXCHANGES MUST BE DOU RELINQUISHED BY SAMPLER	RELINOVISHED BY	RELINQUISHED BY Wicking R. 2/13/19	RELINQUISHED BY DATE	5. MOLPU PEAS # 3/13/19

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77 of 87



Lancaster Laboratories Environmental

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Prepared for:

Eurofins QC Laboratories 702 Electronic Drive Horsham PA 19044

Report Date: March 29, 2019 16:10

Project: L7111747

Account #: 22049 Group Number: 2033902 SDG: EAA06 State of Sample Origin: NY

Electronic Copy To Eurofins QC Laboratories

Attn: Nicki Smith

SAMPLE INFORMATION

Client Sample Description	Sample Collection	<u>ELLE#</u>
	Date/Time	
L7111747-1 Grab Drinking Water	03/11/2019 09:45	1009701
L7111747-2 Grab Drinking Water	03/11/2019 10:44	1009702
L7111747-3 Grab Drinking Water	03/11/2019 13:11	1009703

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Respectfully Submitted,

Wendy a. Kom-

Wendy A. Kozma Principal Specialist Group Leader

To view our laboratory's current scopes of accreditation please go to <u>https://www.eurofinsus.com/environment-</u> testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratoriesenvironmental/. Historical copies may be requested through your project manager.



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Sample Description:	L7111747-1 Grab Drinking Water 1900371-01
Project Name:	L7111747
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 00:45 03/11/2019 09:45 EAA06-01BL

Eurofins QC Laboratories ELLE Sample #: PW 1009701 ELLE Group #: 2033902 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Vers	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	N.D.	0.49	1.9	1
	NEtFOSAA is the acronym for N-ethyl perflue	prooctanesulfonamic	loacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.49	1.9	1
	NMeFOSAA is the acronym for N-methyl per	fluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.49	1.9	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.49	1.9	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.49	1.9	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.49	1.9	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.49	1.9	1
14070	Perfluorohexanoic acid	307-24-4	N.D.	0.49	1.9	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.49	1.9	1
14070	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.49	1.9	1
14070	Perfluorooctanoic acid	335-67-1	N.D.	0.49	1.9	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.49	1.9	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.49	1.9	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.49	1.9	1

Sample Comments

State of New York Cer	ification No. 10670
-----------------------	---------------------

Laboratory Sample Analysis Record										
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor			
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/20/2019 00:09	Marissa C Drexinger	1			
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19077023	03/18/2019 16:00	Anthony C Polaski	1			

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Sample Description:	L7111747-2 Grab Drinking Water 1900371-02
Project Name:	L7111747
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 00:45 03/11/2019 10:44 EAA06-02

Eurofins QC Laboratories ELLE Sample #: PW 1009702 ELLE Group #: 2033902 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS	MS Miscellaneous EPA	537 Version 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	32	0.50	2.0	1
	NEtFOSAA is the acronym for N	-ethyl perfluorooctanesulfonar	nidoacetic Acid.			
14070	NMeFOSAA	2355-31-9	3.5	0.50	2.0	1
	NMeFOSAA is the acronym for	N-methyl perfluorooctanesulfo	namidoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	25	0.50	2.0	1
14070	Perfluorodecanoic acid	335-76-2	1.3 J	0.50	2.0	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.50	2.0	1
14070	Perfluoroheptanoic acid	375-85-9	110	5.0	20	10
14070	Perfluorohexanesulfonate	355-46-4	65	5.0	20	10
14070	Perfluorohexanoic acid	307-24-4	190	5.0	20	10
14070	Perfluorononanoic acid	375-95-1	2.1	0.50	2.0	1
14070	Perfluoro-octanesulfonate	1763-23-1	270	5.0	20	10
14070	Perfluorooctanoic acid	335-67-1	410	5.0	20	10
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.50	2.0	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.50	2.0	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.50	2.0	1
The re were follow the m areas	ecovery for the internal standard p outside of QC acceptance limits a ing corrective action was taken: T ethod holding time and the recove and surrogate 13C2-PFDA were	eak areas and surrogate 13C2 s noted on the QC Summary. his sample was re-extracted w ry for the internal standard pe outside of QC acceptance limi	2-PFDA The vithin ak ts.			

The data is reported from the initial trial of the sample. Both sets of

data are included in the data package.

Sample Comments

State of New York Certification No. 106

Laboratory Sample Analysis Record											
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor				
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/21/2019 23:24	Marissa C Drexinger	1				
14070 14381	PFAS in Drinking Water DW PFAS Prep	EPA 537 Version 1.1 EPA 537 Version 1.1	1 1	19077023 19077023	03/21/2019 23:59 03/18/2019 16:00	Marissa C Drexinger Anthony C Polaski	10 1				



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Sample Description:	L7111747-3 Grab Drinking Water 1900371-03
Project Name:	L7111747
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 00:45 03/11/2019 13:11 EAA06-03

Eurofins QC Laboratories ELLE Sample #: PW 1009703 ELLE Group #: 2033902 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/I	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	1.6 J	0.50	2.0	1
	NEtFOSAA is the acronym for N-ethyl perflue	prooctanesulfonamic	loacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.50	2.0	1
	NMeFOSAA is the acronym for N-methyl per	fluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.50	2.0	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.50	2.0	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.50	2.0	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.50	2.0	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.50	2.0	1
14070	Perfluorohexanoic acid	307-24-4	N.D.	0.50	2.0	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.50	2.0	1
14070	Perfluoro-octanesulfonate	1763-23-1	1.6 J	0.50	2.0	1
14070	Perfluorooctanoic acid	335-67-1	0.97 J	0.50	2.0	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.50	2.0	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.50	2.0	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.50	2.0	1

Sample Comments

State of New	York	Certification	No.	10670
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		Labo	oratory S	Sample Analy	sis Record		
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/20/2019 00:32	Marissa C Drexinger	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19077023	03/18/2019 16:00	Anthony C Polaski	1



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Quality Control Outlier Summary

Client Name: Eurofins QC Laboratories Reported: 03/29/2019 16:10 Group Number: 2033902

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PFAS in Drinking Water Batch number: 19077023 13C2-PFDA 1009702 200*

Limits: 70-130

*- Outside of specification

- **-This limit was used in the evaluation of the final result for the blank
- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Joz 3 Stor	rive Bill to: A Bill to: A Mar 14 2019, 10:20 am Bencaster (ELLE) CHAIN OF CUSTODY Mar 14 2019, 10:20 am Pusitive Pusiti	Sampled Analysis Analysis Date and Time Tier	Total H2SO4 HCL AscAc HNO3 NaOH ZNAC UNDre Bact NaThio Other $\mathcal{P}'\mathcal{D}^{M}\mathcal{A}$	00371-01 2 1 1 1 1 1 1 1 1 03/11/19 09:45 AM RDD PFC	Total H2SO4 HCl AscAc HNO3 NaOH ZNAC Unpre Bact NaThio Other	ER PFC	Total H2SO4 HCl AscAc HNO3 NaOH ZNAc Unpre Bact NaThio Other		- er: 22049 ACCREDITED ANALYTICAL RESOURCES, LLC CS REP: TBURNELL	By Date Time Received By Date Time Comments: $\sqrt[2]{ 4 _{G}} 1 _{U^{2}}$ $Received By$ $\sqrt[2]{ 4 _{G}} 1 _{U^{2}}$ $Received By$ $\sqrt[2]{ 4 _{G}} 1 _{U^{2}}$ $Received By$ $\sqrt[2]{ 4 _{G}} 1 _{U^{2}}$ $Received By$ $Received By$ $Received By$ $\sqrt[2]{ 4 _{G}} 1 _{U^{2}}$ $Received By$ $Recei$	21834J	And the first state
	EUROFINS QC, LLC 702 Electronic Drive 40rsham, PA 19044 2ontact: Nicki Smith x3360 2hone: 215-355-3900 FAX: 215-392-0626	Sample ID Ana	state: NY	L7111747-1 1900371-01 03/26/19 QA PF	State: NY	03/26/19 WATER PFI	state: NY 17111777 2 1000271 02	03/26/19 WATER PFI	loisture?	Relinquished By		

Page 6 of 10

	MATRIX CODES		BUSE ONLY: 10 TV 12 Ma pl 250	Ascorbic/HCL Vials # HCl Vials GW: GR01IND WATER		Na OHIZn acetate pH So: SoiL		 NaOH PH Sol: NoN Sol: Non Sol: Non Sol: S	HICH WINDERLANEOUS		#DI Water	ANALYSIS REQUESTED DO, CI2, Cond. etc.	PFA3 PFC 3		-+ -+			UEUVEHED	TO OFFICE	Elen Patameter Endinged By 1. 5.	Initials Date/Time:		DELIVERY: DECIVER CLOCK, I.E. BAM IS 0800, 4 PM IS 1600)	Bard Tamn 7. 4°C Initiale MTM Income		1.1° + 170 B / 1000 / 000	Hazardous: ves/no
2033902	CHAIN OF CUSTODY	Bill to/Report to (if different)			Sampling Site Address (if different) Include State NY ##		#	P.O. No. PWSID #: # Ounte # 4	e-mail: Properio @ Arr Nord Henrichter O amonth	Collection Containers	Date Military A M Code Total & C A P C A P C C		3/11/19 945 X A 2 1 2	1 10 ⁴⁴ X GW 2 3	1311 X GW 2 3					ARD (10 DAY) Report Format: Cartiguidard WUJ-RDD SRP-RDD	<u>) 3/ スズ/ /9 ロ</u> Standard + QC	rg and availability for rush (<10 day) turnaround and for all but standard reporting format.		TIME RECEIVED BY REAMS MAJAUN 2013/19 TIME	MER RECEIVED BY MAXM BAYES/19 178-	TIME RECEIVED BY	IME REPLIVED BY CONCEPTED DATE TIME B2S 5. (U.L.Q. CONCEPTED 2013/19 1825
	🐝 eurofins	OC	-	702 Electronic Drive Phone: 215-355-3900	Horsham, PA 19044-0962 Fax: 215-355-7231	Client/Acct. No. Homedited Houldficed Les.	Address OL Molshing Are	Phone/Fax 7.32 - Q(A-//1/2)	Client Contact: B. O. C. O. C.	PROJECT [Q CO 371	FIELD ID		1900371-01	5 1900371- 02	1900371-03					SAMPLED BY: (Name/Company) TAT: C STANDA	AAR ON DUE DATE O	SAMPLE CUSTODY EXCHANGES MUST BE DOC	RELINQUISHED BY SAMPLER	RELINOVISHED BY RELINOVISHED BY 2. A OCH W TO 3/13/19 8	RELINQUISHED BY 3. PHICLEY H- DATE 1.	RELINQUISHED BY DATE T	5. COOPEN PEAS #2 B/13/19/1
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Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Client: EQC

Delivery and Receipt Information Delivery Method: EQCL Drop Off Arrival Timestamp: 03/15/2019 0:45 Number of Packages: Number of Projects: 1 2 **Arrival Condition Summary** Sample IDs on COC match Containers: Shipping Container Sealed: Yes Yes **Custody Seal Present:** Yes Sample Date/Times match COC: Yes Custody Seal Intact: Yes VOA Vial Headspace \geq 6mm: N/A Samples Chilled: Yes Total Trip Blank Qty: 0 Air Quality Samples Present: Paperwork Enclosed: Yes No Samples Intact: Yes Missing Samples: No Extra Samples: No Discrepancy in Container Qty on COC: No Unpacked by Nicole Reiff (25684) at 07:05 on 03/15/2019

			Sample	es Chille	d Details		
The	ermometer Types	s: DT = Digi	ital (Temp. Botti	le) IR =	Infrared (Sur	face Temp)	All Temperatures in °C.
Cooler #	Thermometer ID	Corrected Temp	Therm. Type	lce Type	Ice Present?	Ice Container	Elevated Temp?
1	32170023	4.2	IR	Wet	Y	Bagged	N

Doc Log ID:

Group Number(s): Ze33902

243644

Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQI	Below Minimum Quantitation Level	ml	milliliter(s)
<u> </u>	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	ND	non-detect
CP Unite	cobalt chloroplatinato units	N.D.	
	degrees Febrenhoit	пу	nanogram(s)
Г		NTU	
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	μg	microgram(s)
lb.	pound(s)	μL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent a aqueous liquids, ppm is usually taken to b very close to a kilogram. For gases or va	to one milligram per be equivalent to milli pors, one ppm is eq	kilogram (mg/kg) or one gram per million grams. For grams per liter (mg/l), because one liter of water has a weig uivalent to one microliter per liter of gas.
ppb	parts per billion		
Dry weight basis	Results printed under this heading have b concentration to approximate the value pr	been adjusted for mo resent in a similar sa	visture content. This increases the analyte weight imple without moisture. All other results are reported on an

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

as-received basis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

of water has a weight

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Data Qualifiers

Lancaster Laboratories Environmental

Qualifier	Definition
С	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
Р	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised
	due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report
В	Detection in the Blank
Q0	LCS/LCSD Low
Q1	LCS/LCSD High
Q2	MS/MSD Low
Q3	MS/MSD High
Q7	LCS/LCSD RPD
Q8	DUP RPD
Q9	MS/MSD RPD

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.





DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE

CARTERET,NJ 07008

Regarding:

ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

PROJECT ID:

AW0782

LABORATORY REPORT NUMBER:

L7111959

Der AU

Authorized by: Douglas J. Gump Client Services Manager

Analytical Report Printed 03/29/19 19:51 QC21

ACCREDITED ANALYTICAL RESOURCES, LLC AW0782

P.O. No: Inv. No: 1971060 PI PWSID:

> Regarding: DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

L7111959-1	03/14/19 08:55	03/15/19 13:15	WATER	1900412-01	LTMW-3 Duplicate
L7111959-2	03/14/19 08:57	03/15/19 13:15	WATER	1900412-02	LTMW-3 MS
L7111959-3	03/14/19 09:00	03/15/19 13:15	WATER	1900412-03	LTMW-3 MSD

PIN: 37516

Analytical Report

Printed 03/29/19 19:51

Samp Samp Matrix Recei	le Description: le Number: :: ved Temp:	1900412-01 L7111959-1 WATER 11.5 C	Samp. Date/Time/Temp: Sampled by: Iced (Y/N):	03/14/19 08:55am NA C Customer Y	
Exceed	ds recommended ten	nperature for chemica	al testing.(T)		
SUBCONTRACTED R	ESULT REFER	ENCES19004	12-01		
See attached reports for the follow	ving Subcontract Lab	oratories:			

Eurofins - Lancaster Laboratories, Environmental (ELLE) PERFLUORINATED CHEMICALS (14) PFAS

Sample Description:1900412-02Sample Number:L7111959-2SaMatrix:WATERSaReceived Temp:11.5 CIceExceeds recommended temperature for chemical testing.(T)

Samp. Date/Time/Temp: Sampled by: Iced (Y/N):

03/14/19 08:57am NA C Customer Y

--SUBCONTRACTED RESULT REFERENCES--1900412-02

See attached reports for the following Subcontract Laboratories:

Eurofins - Lancaster Laboratories, Environmental (ELLE)

PERFLUORINATED CHEMICALS (14) PFAS

Sample Description:	1900412-03		
Sample Number:	L7111959-3	Samp. Date/Time/Temp:	03/14/19 09:00am NA C
Matrix:	WATER	Sampled by:	Customer
Received Temp:	11.5 C	Iced (Y/N):	Y
Exceeds recommended ten	perature for chemical testing	.(T)	

--SUBCONTRACTED RESULT REFERENCES--1900412-03

See attached reports for the following Subcontract Laboratories:

Eurofins - Lancaster Laboratories, Environmental (ELLE) PERFLUORINATED CHEMICALS (14) PFAS

Sample Comments | Result Qualifiers:

L7111959-1:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.

L7111959-2:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C.

*=This limit was used in the evaluation of the final result.

PIN: 37516



Analytical Report Printed 03/29/19 19:51

Consult your regulatory agency for further guidance on the use of this data.

L7111959-3 :

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.



*=This limit was used in the evaluation of the final result.

PIN: 37516



DEFINITIONS

The following terms or abbreviations are used in this report:

QC

Less than: In conjunction with a numerical value, indicates a concentration less than RL / MDL
Greater than: In conjunction with a numerical value,
indicates a concentration greater than RL / MDL
Colony Forming Unit
Dilution Factor (For Microbiology, DF = volume of
sample tested)
Result was reported on a dry weight basis
EPA recommended "Maximum Contaminant Level"
Method Detection Limit
Membrane Filtration
Most Probable Number
For odor test: No Odor Observed
For all other tests: Analyte concentration Not
Detected greater than the RL / MDL

NEG	Negative / Absent
NTU	Nephelometric Turbidity Units
POS	Positive / Present
PPB (µg/L)	Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
PPM (mg/L)	Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
PRES	Presumptive
QUAL	Qualifier (Q)
RL	Laboratory Reporting Limit or Limit of Quantitation (LOQ)
TNTC	Too Numerous To Count
TON	Threshold Odor Number

Data Qualifiers

J	Estimated value <u>></u> MDL, but < RL
Т	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
Е	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- The report shall not be reproduced, except in full, without the written consent of the laboratory.
- All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Bhavita Shah (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs-	PA: 46-05499	NJ:	PA093	NY:	12080	MD: 3	857
East Rutherford Facility New Castle Facility Vineland Facility Wind Gap Facility	<u>State ID-</u> <u>State IDs-</u> <u>State ID-</u> <u>State ID</u> -	NJ: 02015 DE: DE01101 NJ: 06005 NJ: PA001	MD:	138				

Eurofins QC, LLC (EQC)

🔅 eurofins			0	HAIN					Lab LI	MS No: LJ	111959	MATRIX CODES	
	ပ္မွ	Bill to/Report t	o (if different	り	M	J			I AR I	SF ON Y			
								ĺ) j			DW: DRINKING WATER	,
702 Electronic Drive Phone:	215-355-3900								#	Ascorbic/HCL Vials	s # HCI Vials	GW: GROUND WATER	_
Horsham, PA 19044-0962 Fax:	215-355-7231	Sampling Site	Address (if o	different)	Include State	6			#	Na ₂ S ₂ O ₃		WW: WASTEWATER	~
Client/Acct. No. Accredute Of And	uh Olo								#	Na°OH/Zn acetate	Hd	SO: SOIL	
Address 20 Pen Dhirley	- Z								#	HNO ₃ pH		SL: SLUDGE	
7									#	H ₂ SO4 pH	c	oil: Oil	
City/State/Zip Contered NJ	02008	P.O. No.			PWS	D#:			#	NaOH pH	1 1 ×	SOL: NON SOIL SOLID	
Phone/Fax 732-969-61	12	Quote #	¢						<u>ا</u> و #	Hupreserved	1000 1 222	MI: MISCELLANEOUS	
Client Contact: J. O. C. D. C.		e-mail: bul) Deriver	Derna	a par	nallan	•Con		#	HCI # N	H4CI #MeOH	X: OTHER	
L PROJECT 1900412		Collecti	u	0		C Numb	er of Contair	lers	-	Г, ⁴ Т	11 Whter		
		Date	Military Time		Matrix Code To			n ∢O⊢ D Z G K ⊓	izna 16.5	/utra/ac/p	REQUESTED	Field pH, Temp (°C), DO, Cl2, Cond. etc.	
1900412-01		3/14/19	855 (3	*			2 7 1 1	-As, PFC	S	-	-
8. 1900418-02			857 (5 C	م دی	3			2	(
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SAMPLED BY: (Name/Company)	TAT: C STAND	ARD (10 DAY	H	Report For	rmat: 🗆 S	tandard 🔉	(NJ-RDD		-RDD		Field Parameters Analyz	ed By:	
AAR .	or DUE DATE	03/28/	6	☐ Standa	nd + OC	Eorms				Initials		ate/Time:	
	Please call for priv	cing and availab	ility for rush	(<10 day) i	urnaround a	nd for all but s	tandard rep	orting form	at.				
SAMPLE CUSTODY EXCHANGES	MUST BE DO	CUMENTED	BELOW	USEF	ULL LEG	AL SIGNA	TURE, D/	ATE AN	D MILITAR	Y TIME (24 HOU	IR CLOCK, I.E. 8AM IS 0	300, 4 PM IS 1600)	
RELINQUISHED BY SAMPLER 1.	DATE	TIME RE	CEIVED BY				DATI		TIME	Delivery: De Dups Dfedex	ac courier Client	Custody Seal Number	
2. Halky Inacio	315/19	TIME 820 RE 2	Mi ulue	y the	unis Mu	itar K	Ten -	15/19	TIME S:20	Rec'd Temp.:	//.5°C Initials: //tym) Ici	N Location:	
3. MICKOY KONNS MICKY	3//s//9	ITIME RE	CEIVED BY	E	YA		Ar a	2/19	130	COMMENTS:			
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107 of 117



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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Prepared for:

Eurofins QC Laboratories 702 Electronic Drive Horsham PA 19044

Report Date: March 29, 2019 15:17

Project: L7111959

Account #: 22049 Group Number: 2033946 SDG: EAA08 State of Sample Origin: NY

Electronic Copy To Eurofins QC Laboratories

Attn: Nicki Smith

SAMPLE INFORMATION

Client Sample Description	Sample Collection	<u>ELLE#</u>
	Date/Time	
L7111959-1 Grab Drinking Water	03/14/2019 08:55	1009890
L7111959-2 Grab Drinking Water	03/14/2019 08:57	1009891
L7111959-3 Grab Drinking Water	03/14/2019 09:00	1009892

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Respectfully Submitted,

Wendy a. Kom-

Wendy A. Kozma Principal Specialist Group Leader

To view our laboratory's current scopes of accreditation please go to <u>https://www.eurofinsus.com/environment-</u> testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratoriesenvironmental/. Historical copies may be requested through your project manager.

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Sample Description:	L7111959-1 Grab Drinking Water 1900412-01				
Project Name:	L7111959				
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 22:10 03/14/2019 08:55 EAA08-01				

Eurofins QC Laboratories ELLE Sample #: PW 1009890 ELLE Group #: 2033946 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	7.0	0.42	1.7	1
	NEtFOSAA is the acronym for N-ethyl perflu	orooctanesulfonami	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.42	1.7	1
	NMeFOSAA is the acronym for N-methyl pe	rfluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.42	1.7	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.42	1.7	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.42	1.7	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.42	1.7	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.42	1.7	1
14070	Perfluorohexanoic acid	307-24-4	0.98 J	0.42	1.7	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.42	1.7	1
14070	Perfluoro-octanesulfonate	1763-23-1	3.3	0.42	1.7	1
14070	Perfluorooctanoic acid	335-67-1	1.1 J	0.42	1.7	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.42	1.7	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.42	1.7	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.42	1.7	1

Sample Comments

	Laboratory Sample Analysis Record							
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor	
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19082023	03/28/2019 06:48	Marissa C Drexinger	1	
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19082023	03/24/2019 16:00	Anthony C Polaski	1	

Lancaster Laboratories Environmental

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Sample Description:	L7111959-2 Grab Drinking Water 1900412-02				
Project Name:	L7111959				
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 22:10 03/14/2019 08:57 EAA08-01MS				

Eurofins QC Laboratories ELLE Sample #: PW 1009891 ELLE Group #: 2033946 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	8.6	0.42	1.7	1
	NEtFOSAA is the acronym for N-ethyl perflu	orooctanesulfonami	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	2.9	0.42	1.7	1
	NMeFOSAA is the acronym for N-methyl pe	rfluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	2.7	0.42	1.7	1
14070	Perfluorodecanoic acid	335-76-2	3.0	0.42	1.7	1
14070	Perfluorododecanoic acid	307-55-1	2.7	0.42	1.7	1
14070	Perfluoroheptanoic acid	375-85-9	2.9	0.42	1.7	1
14070	Perfluorohexanesulfonate	355-46-4	2.9	0.42	1.7	1
14070	Perfluorohexanoic acid	307-24-4	3.4	0.42	1.7	1
14070	Perfluorononanoic acid	375-95-1	2.9	0.42	1.7	1
14070	Perfluoro-octanesulfonate	1763-23-1	5.0	0.42	1.7	1
14070	Perfluorooctanoic acid	335-67-1	4.0	0.42	1.7	1
14070	Perfluorotetradecanoic acid	376-06-7	2.1	0.42	1.7	1
14070	Perfluorotridecanoic acid	72629-94-8	2.6	0.42	1.7	1
14070	Perfluoroundecanoic acid	2058-94-8	2.9	0.42	1.7	1

Sample Comments

State of New	York	Certification	No.	10670
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	Laboratory Sample Analysis Record							
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor	
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19082023	03/28/2019 10:38	Marissa C Drexinger	1	
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19082023	03/24/2019 16:00	Anthony C Polaski	1	

Lancaster Laboratories Environmental

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Sample Description:	L7111959-3 Grab Drinking Water 1900412-03			
Project Name:	L7111959			
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 22:10 03/14/2019 09:00 EAA08-01MSD			

Eurofins QC Laboratories ELLE Sample #: PW 1009892 ELLE Group #: 2033946 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	9.6	0.42	1.7	1
	NEtFOSAA is the acronym for N-ethyl perflu	orooctanesulfonami	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	3.0	0.42	1.7	1
	NMeFOSAA is the acronym for N-methyl pe	rfluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	2.7	0.42	1.7	1
14070	Perfluorodecanoic acid	335-76-2	3.3	0.42	1.7	1
14070	Perfluorododecanoic acid	307-55-1	2.9	0.42	1.7	1
14070	Perfluoroheptanoic acid	375-85-9	3.0	0.42	1.7	1
14070	Perfluorohexanesulfonate	355-46-4	2.7	0.42	1.7	1
14070	Perfluorohexanoic acid	307-24-4	3.5	0.42	1.7	1
14070	Perfluorononanoic acid	375-95-1	2.8	0.42	1.7	1
14070	Perfluoro-octanesulfonate	1763-23-1	5.5	0.42	1.7	1
14070	Perfluorooctanoic acid	335-67-1	4.0	0.42	1.7	1
14070	Perfluorotetradecanoic acid	376-06-7	3.0	0.42	1.7	1
14070	Perfluorotridecanoic acid	72629-94-8	3.1	0.42	1.7	1
14070	Perfluoroundecanoic acid	2058-94-8	3.0	0.42	1.7	1

Sample Comments

State of New	York	Certification	No.	10670
--------------	------	---------------	-----	-------

	Laboratory Sample Analysis Record							
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor	
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19082023	03/28/2019 10:50	Marissa C Drexinger	1	
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19082023	03/24/2019 16:00	Anthony C Polaski	1	



Lancaster Laboratories Environmental

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Quality Control Outlier Summary

Client Name: Eurofins QC Laboratories Reported: 03/29/2019 15:17 Group Number: 2033946

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ng/l	MS Spike Added ng/l	MS Conc ng/l	MSD Spike Added ng/l	MSD Conc ng/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 19082023	Sample number	r(s): 1009890-	1009892 U	INSPK: 1009890						
Perfluorotetradecanoic acid	N.D.	3.25	2.09	3.25	2.98	64	92	50-150	35*	30

*- Outside of specification

- **-This limit was used in the evaluation of the final result for the blank
- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

	:0ISMd	Sampled Date and Time Tier	Eact NaThio Other	03/14/19 08:55 AM RDD		Bact NaThio Other	03/14/19 08:57 AM RDD		Bact NaThio Other	03/14/19 09:00 AM RDD						Comments:			
46	EUROFINS QC, INC. LANCASTER (ELLE) CHAIN OF CUSTODY Mar 15 2019, 07:14 pm	Number of Containers	Total H2SO4 HCl AscAc HNO3 NaOH ZNAc Unpre			Total H2SO4 HCl AscAc HNO3 NaOH ZNAc Unpre			Total H2SO4 HCL AscAc HNO3 NaOH ZNAc Unpre					C CS REP: TBURNELL		Received By Date Time Cush PKAS 3/15/17 1945	1	March a block and	orer utale
233°	Bill to: D Horsham, PA 19044	Analysis			PFC			PFC			PFC			ACCREDITED ANALYTICAL RESOURCES, LL		Date Time $3/15/18$ $1/15$			
	EUROFINS QC, LLC 702 Electronic Drive Horsham, PA 19044 Contact: Nicki Smith x3360 Phone: 215-352-3900 FAX: 215-392-0626	Sample ID	State: NY	L7111959-1 1900412-01	03/28/19 WATER	State: NY	L7111959-2 1900412-02	03/28/19 WATER	State: NY	L7111959-3 1900412-03	03/28/19 WATER		Moisture?	E-Account Number: 22049	Package Type: TYPE III	Relinquished By	f 117		

Page 6 of 10

	MATRIX CODES		DW: DRINKING WATER	GW: GROUND WATER	WW: WASTEWATER	SO: SOIL	SL: SLUDGE	OIL: OIL	SOL: NON SOIL SOLID	MI: MISCELLANEOUS	X: UIHER	Field pH, Temp (°C), DO, CI2, Cond. etc.								<u> </u>	alyzed By:	Date/Time:		S 0800, 4 PM IS 1600)	Custody Seal Number	Ploed N Location:)			
	MS No: L7111959		<u>USE UNLY:</u>	_ Ascorbic/HCL Vials # HCI Vials	Na ₂ S ₂ O ₃	_ Na OH/Zn acetate pH	HNOs pH	H2SO4_pH	- NaOH pH		- 110 #	6/urbhat a c / Joe Wher ANALYSIS REQUESTED	ZA DEN					DELIVERED	TO OFFICE		Field Parameters An	Initials		XY TIME (24 HOUR CLOCK, I.E. 8AM I	Delivery: Deac Courier D Client	Rec'd Temp.: //:5 ^d C Initials: //tdf)	COMMENTS:			119201000. JES / 110
	Lab L			#	#	#	#	#	#	9 ⊭ ₹	<u>⊨</u>		i C C	x (8 50	8					□ SRP-RDD	s.	ting format.	IE AND MILITAR		5/19 TIME	5/19 1350	TIME	s/ig TIME	
	IN OF CUSTODY	Jame			t) Include State				PWSID #:	Ath A margin A. A a	Chimber of Contained	Matrix H H V H N Z Code 7 1 1 N 2 0 1 2 1 1 N 2 1		(60 2						Format:	dard + QC 🗆 Forms 🗆 EDD	y) turnaround and for all but standard repon	FULL LEGAL SIGNATURE, DA		ears Michar 2 03	HUM HUM	DÂTE	Page 7 of 10	a all and and and and
2053946	CHAI	Bill to/Report to (if different)			Sampling Site Address (if differen				P.O. No.	e-mail: hold wind and	Collection	Date Military A M Time B P	3/11/19 855 6	1 857 6	4 900 6						ARD (10 DAY) Report	03/28/19 0 stan	cing and availability for rush (<10 da	JUMENTED BELOW, USE TIME RECEIVED BY	1.	11ME RECEIVED BY 8 20 2. Mi uleey 1/2	ISHS 3.	TIME RECEIVED BY	TIME RECEIVED BY	
		SC		ne: 215-355-3900	215-355-7231	nelphallo	Buck	(1 07008	6110											TAT: STAND	or DUE DATE				3)15/19	- 3//5//9	3-1AL	201E/13	
	🐝 eurofins				HOISNAM, PA 19044-0962 Fax:	Client/Acct. No. Accreduted	Address 20 Kuruhur		Phone/Fax 720 02.0	Client Contact:			1900412-01	1900418-03	50-6412-03		-				SAMPLED BY: (Name/Company)	AAR	SAMPLE CLISTOPNEXCHANGE	SAMPLEE COSTODITEAUTANOE RELINQUISHED BY SAMPLER	1. Det Michten By	2. Hollichen Bri Macio	3. Mickey Key Nocky L	кесимчизител вт 4.	5. Could Arge Arge -3	

114 of 117

euro	Client: EQC	Laboratories ental	Sample Receipt D	Admini ocumer	stration Itation Log	g	Group Num	_og ID: IIII IIII IIII IIII Iber(s): 70	243 933946
			Delivery an	d Receip	t Informat	ion			
	Delivery Method:	E	QCL Drop Off	Arriva	al Timestamp	: <u>0</u>	3/15/2019 22	<u>2:10</u>	
	Number of Packa	ages: <u>1</u>		Num	per of Project	rs: <u>4</u>			
			Arrival C	ondition	Summary			<u></u>	.,,
S	Shipping Containe	er Sealed:	Yes	Sar	nple IDs on C	COC match	Containers:	Yes	
Custody Seal Present:				Sar	nple Date/Tir	nes match C	COC:	No	
(Custody Seal Inta	ict:	Yes	VO	A Vial Heads	pace ≥ 6mm	n:	N/A	
5	Samples Chilled:		Yes	Tot	al Trip Blank	Qty:	I	0	
F	Paperwork Enclos	sed:	Yes	Air	Quality Samp	oles Present		No	
5	Samples Intact:		Yes						
r	Missing Samples:		No						
E	Extra Samples:		No						
[Discrepancy in Co	ontainer Qty o	n COC: No						
l	Unpacked by Nice	ole Reiff (2568	34) at 09:24 on 03	/16/2019					
			Sample	es Chille	d Details				
Th	ermometer Types	s: DT = L	Digital (Temp. Bot	tle) IR =	- Infrared (Su	rface Temp;) All Tem	peratures i	in °C.
Cooler #	Thermometer ID	Corrected Tem	<u>o Therm. Type</u>	Ice Type	Ice Present?	Ice Contain	er <u>Elevated</u>	Temp?	
1	32170023	2.2	IR	Wet	Y	Bagged	Ν	1	
			Sample Date/	Time Dis	crepancy	Details			
<u>S</u>	ample ID on COC	Date	Time on Label		Com	ments			
	L7111959-1	3/1	4/2019 08:57						
	L7111959-2	3/1	4/2019 11:20						

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
С	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	μg	microgram(s)
lb.	pound(s)	μL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent aqueous liquids, ppm is usually taken to b very close to a kilogram. For gases or va	to one milligram per pe equivalent to milli pors, one ppm is eq	kilogram (mg/kg) or one gram per million grams. For grams per liter (mg/l), because one liter of water has a weig uivalent to one microliter per liter of gas.
ppb	parts per billion		
Dry weight basis	Results printed under this heading have to concentration to approximate the value pri as-received basis.	been adjusted for mo resent in a similar sa	bisture content. This increases the analyte weight ample without moisture. All other results are reported on an

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

of water has a weight

🔅 eurofins

Data Qualifiers

Lancaster Laboratories Environmental

Qualifier	Definition
	Result confirmed by reanalysis
	Indicates for dual column analyses that the result is reported from column 1
D2	indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
KI KO	Initial Calibration Blank is above the QC limit and the sample result is ND
KZ	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
Р	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised
	due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report
В	Detection in the Blank
Q0	LCS/LCSD Low
Q1	LCS/LCSD High
Q2	MS/MSD Low
Q3	MS/MSD High
Q7	LCS/LCSD RPD
Q8	DUP RPD
Q9	MS/MSD RPD

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.





DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE

CARTERET,NJ 07008

Regarding:

ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

PROJECT ID:

AW0782

LABORATORY REPORT NUMBER:

L7111746

Der AU

Authorized by: Douglas J. Gump Client Services Manager

Analytical Report Printed 03/29/19 19:29 QC21

ACCREDITED ANALYTICAL RESOURCES, LLC AW0782

P.O. No: Inv. No: 1971048 PI PWSID:

DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

Regarding: DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

SAMPLE SUMMARY

Lab ID	Collected	Received	Matrix	Client ID
L7111746-1	03/12/19 09:00	03/13/19 12:30	WATER	1900377-01 LTMW-8
L7111746-2	03/12/19 10:45	03/13/19 12:30	WATER	1900377-02 LTMW-10
L7111746-3	03/12/19 12:35	03/13/19 12:30	WATER	1900377-03 LTMW-12
L7111746-4	03/12/19 14:10	03/13/19 12:30	WATER	1900377-04 LTMW-15

PIN: 37516

Sample Description:

1900377-01

Analytical Report Printed 03/29/19 19:29

	Sample Number: Matrix: Received Temp:	L7111746-1 WATER 7.4 C	Samp. Date/Time/Temp: Sampled by: Iced (Y/N):	03/12/19 09:00am NA C Customer Y	
	Exceeds recommended te	mperature for chemical testir	ng.(T)		
SUBCONTRAC	TED RESULT REFEI	RENCES1900377-01			
See attached reports for	the following Subcontract La	horotorios:			
Eurofins - Lancaster	Laboratories, Environmen	ital (ELLE)			
PERFLOORINATED	CHEMICALS (14) PPAS				_
	Sample Description: Sample Number: Matrix: Received Temp: Exceeds recommended te	1900377-02 L7111746-2 WATER 7.4 C mperature for chemical testir	Samp. Date/Time/Temp: Sampled by: Iced (Y/N):	03/12/19 10:45am NA C Customer Y	
			.5.(.)		
SUBCONTRAC	TED RESULT REFEI	RENCES1900377-02	,		_
Cas attached reports for	the following Cubeentreet Le	haratariaa			
Eurofins - Lancaster PERFLUORINATED	Laboratories, Environmen CHEMICALS (14) PFAS	ital (ELLE)			
	Sample Description: Sample Number: Matrix: Received Temp: Exceeds recommended te	1900377-03 L7111746-3 WATER 7.4 C mperature for chemical testir	Samp. Date/Time/Temp: Sampled by: Iced (Y/N): ng.(T)	03/12/19 12:35pm NA C Customer Y	
SUBCONTRAC	TED RESULT REFEI	RENCES1900377-03			
See attached reports for	r the following Subcontract La	boratories:			
Eurofins - Lancaster PERFLUORINATED	Laboratories, Environmen CHEMICALS (14) PFAS	ital (ELLE)			
					-

*=This limit was used in the evaluation of the final result.

PIN: 37516

Analytical Report

Printed 03/29/19 19:29

Sample Description:1900377-04Sample Number:L7111746-4SaMatrix:WATERSaReceived Temp:7.4 CIceExceeds recommended temperature for chemical testing.(T)

Samp. Date/Time/Temp: Sampled by: Iced (Y/N): 03/12/19 02:10pm NA C Customer Y

--SUBCONTRACTED RESULT REFERENCES--1900377-04

See attached reports for the following Subcontract Laboratories:

Eurofins - Lancaster Laboratories, Environmental (ELLE) PERFLUORINATED CHEMICALS (14) PFAS

Sample Comments | Result Qualifiers:

L7111746-1:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.

L7111746-2:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.

L7111746-3 :

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.

L7111746-4:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.



*=This limit was used in the evaluation of the final result.

PIN: 37516



DEFINITIONS

The following terms or abbreviations are used in this report:

QC

Less than: In conjunction with a numerical value, indicates a concentration less than RL / MDL
Greater than: In conjunction with a numerical value,
indicates a concentration greater than RL / MDL
Colony Forming Unit
Dilution Factor (For Microbiology, DF = volume of
sample tested)
Result was reported on a dry weight basis
EPA recommended "Maximum Contaminant Level"
Method Detection Limit
Membrane Filtration
Most Probable Number
For odor test: No Odor Observed
For all other tests: Analyte concentration Not
Detected greater than the RL / MDL

NEG	Negative / Absent
NTU	Nephelometric Turbidity Units
POS	Positive / Present
PPB (µg/L)	Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
PPM (mg/L)	Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
PRES	Presumptive
QUAL	Qualifier (Q)
RL	Laboratory Reporting Limit or Limit of Quantitation (LOQ)
TNTC	Too Numerous To Count
TON	Threshold Odor Number

Eurofins QC, LLC (EQC)

Data Qualifiers

J	Estimated value > MDL, but < RL
Т	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
Е	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- The report shall not be reproduced, except in full, without the written consent of the laboratory.
- All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Bhavita Shah (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs-	PA: 46-05499	NJ:	PA093	NY:	12080	MD:	357
East Rutherford Facility New Castle Facility Vineland Facility Wind Gap Facility	<u>State ID-</u> <u>State IDs-</u> <u>State ID-</u> <u>State ID-</u>	NJ: 02015 DE: DE01101 NJ: 06005 NJ: PA001	MD:	138				

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93 of 104



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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Prepared for:

Eurofins QC Laboratories 702 Electronic Drive Horsham PA 19044

Report Date: March 29, 2019 16:12

Project: L7111746

Account #: 22049 Group Number: 2033903 SDG: EAA09 State of Sample Origin: NY

Electronic Copy To Eurofins QC Laboratories

Attn: Nicki Smith

SAMPLE INFORMATION

Client Sample Description	Sample Collection	<u>ELLE#</u>
	Date/Time	
L7111746-1 Grab Drinking Water LTMW-8	03/12/2019 09:00	1009704
L7111746-2 Grab Drinking Water LTMW-10	03/12/2019 10:45	1009705
L7111746-3 Grab Drinking Water LTMW-12	03/12/2019 12:35	1009706
L7111746-4 Grab Drinking Water LTMW-15	03/12/2019 14:10	1009707

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Respectfully Submitted,

Wendy a. Konn

Wendy A. Kozma Principal Specialist Group Leader

To view our laboratory's current scopes of accreditation please go to <u>https://www.eurofinsus.com/environment-</u> <u>testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratoriesenvironmental/</u>. Historical copies may be requested through your project manager.

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Sample Description:	L7111746-1 Grab Drinking Water 1900377-01				
Project Name:	L7111746				
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 00:45 03/12/2019 09:00 EAA09-01				

Eurofins QC Labo	ratories
ELLE Sample #:	PW 1009704
ELLE Group #:	2033903
Matrix: Drinking W	Vater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	6.2	0.50	2.0	1
	NEtFOSAA is the acronym for N-ethyl perflu	orooctanesulfonami	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.50	2.0	1
	NMeFOSAA is the acronym for N-methyl pe	rfluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	32	0.50	2.0	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.50	2.0	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.50	2.0	1
14070	Perfluoroheptanoic acid	375-85-9	93	5.0	20	10
14070	Perfluorohexanesulfonate	355-46-4	55	0.50	2.0	1
14070	Perfluorohexanoic acid	307-24-4	210	5.0	20	10
14070	Perfluorononanoic acid	375-95-1	2.2	0.50	2.0	1
14070	Perfluoro-octanesulfonate	1763-23-1	140	5.0	20	10
14070	Perfluorooctanoic acid	335-67-1	320	5.0	20	10
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.50	2.0	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.50	2.0	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.50	2.0	1
A field		the this complete and				

A field reagent blank was not submitted by the client for this sample group.

The recovery for surrogate 13C2-PFDA was outside of QC acceptance limits as noted on the QC Summary. The following corrective action was taken: This sample was re-extracted within the method holding time and the recovery for surrogate 13C2-PFDA was outside of QC acceptance limits. The data is reported from the initial trial of the sample. Both sets of data are included in the data package.

Sample Comments

State of New York Certification No. 10670

CAT

No

	Labo	Laboratory Sample Analysis Record						
Analysis Name	Method	Trial#	Batch#	Analysis	Analyst			
PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/21/2019 23:36	Marissa C Drexing			

14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/21/2019 23:36
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/22/2019 00:10
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19077023	03/18/2019 16:00

Marissa C Drexinger Marissa C Drexinger Anthony C Polaski

Dilution Factor 1 10 1

*=This limit was used in the evaluation of the final result

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Sample Description:	L7111746-2 Grab Drinking Water 1900377-02				
Project Name:	L7111746				
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 00:45 03/12/2019 10:45 EAA09-02				

Eurofins QC Laboratories ELLE Sample #: PW 1009705 ELLE Group #: 2033903 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	N.D.	0.50	2.0	1
	NEtFOSAA is the acronym for N-ethyl perflue	prooctanesulfonamic	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.50	2.0	1
	NMeFOSAA is the acronym for N-methyl per	fluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.50	2.0	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.50	2.0	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.50	2.0	1
14070	Perfluoroheptanoic acid	375-85-9	0.89 J	0.50	2.0	1
14070	Perfluorohexanesulfonate	355-46-4	1.4 J	0.50	2.0	1
14070	Perfluorohexanoic acid	307-24-4	1.6 J	0.50	2.0	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.50	2.0	1
14070	Perfluoro-octanesulfonate	1763-23-1	2.3	0.50	2.0	1
14070	Perfluorooctanoic acid	335-67-1	37	0.50	2.0	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.50	2.0	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.50	2.0	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.50	2.0	1
A field	reagent blank was not submitted by the clien	t for this sample grou	up.			

Sample Comments

	Laboratory Sample Analysis Record									
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor			
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/20/2019 00:55	Marissa C Drexinger	1			
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19077023	03/18/2019 16:00	Anthony C Polaski	1			

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Sample Description:	L7111746-3 Grab Drinking Water 1900377-03				
Project Name:	L7111746				
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 00:45 03/12/2019 12:35 EAA09-03				

Eurofins QC Laboratories ELLE Sample #: PW 1009706 ELLE Group #: 2033903 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Vers	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	N.D.	0.50	2.0	1
	NEtFOSAA is the acronym for N-ethyl perflue	prooctanesulfonamic	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.50	2.0	1
	NMeFOSAA is the acronym for N-methyl per	fluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.50	2.0	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.50	2.0	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.50	2.0	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.50	2.0	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.50	2.0	1
14070	Perfluorohexanoic acid	307-24-4	N.D.	0.50	2.0	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.50	2.0	1
14070	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.50	2.0	1
14070	Perfluorooctanoic acid	335-67-1	N.D.	0.50	2.0	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.50	2.0	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.50	2.0	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.50	2.0	1
A field	reagent blank was not submitted by the clien	t for this sample gro	up.			

Sample Comments

	Laboratory Sample Analysis Record								
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor		
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/20/2019 01:07	Marissa C Drexinger	1		
14381	DW FRO Flep	EPA 557 Version 1.1	I	19077023	03/10/2019 16:00	Anthony C Polaski	I		

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Sample Description:	L7111746-4 Grab Drinking Water 1900377-04
Project Name:	L7111746
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 00:45 03/12/2019 14:10 EAA09-04

Eurofins QC Laboratories ELLE Sample #: PW 1009707 ELLE Group #: 2033903 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Vers	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	1.1 J	0.50	2.0	1
	NEtFOSAA is the acronym for N-ethyl perflue	prooctanesulfonamic	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.50	2.0	1
	NMeFOSAA is the acronym for N-methyl per	fluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.50	2.0	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.50	2.0	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.50	2.0	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.50	2.0	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.50	2.0	1
14070	Perfluorohexanoic acid	307-24-4	N.D.	0.50	2.0	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.50	2.0	1
14070	Perfluoro-octanesulfonate	1763-23-1	1.6 J	0.50	2.0	1
14070	Perfluorooctanoic acid	335-67-1	N.D.	0.50	2.0	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.50	2.0	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.50	2.0	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.50	2.0	1
A field	reagent blank was not submitted by the clien	t for this sample grou	up.			

Sample Comments

	Laboratory Sample Analysis Record							
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor	
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19077023	03/20/2019 01:30	Marissa C Drexinger	1	
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19077023	03/18/2019 16:00	Anthony C Polaski	1	



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Quality Control Outlier Summary

Client Name: Eurofins QC Laboratories Reported: 03/29/2019 16:12 Group Number: 2033903

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PFAS in Drinking Water Batch number: 19077023 13C2-PFHxA

1009704 58*

Limits: 70-130

*- Outside of specification

- **-This limit was used in the evaluation of the final result for the blank
- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

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	EUROFINS QC, 702 Electroni Horsham, PA 1 ⁴ Contact. Nick Phone: 215-392-(FAX: 215-392-(Sample ID	State: NY	L7111746-1	03/26/19 1	State: NY L7111746-2	03/26/19 4	State: NY	L7111746-3	03/26/19 h	-	state: NY I 7111746.4		03/26/19 h	Moisture?	E-Account Nu Package Type:	Relinquish			

Page 7 of 11

	L7111746 MATRIX CODES		DIVIZIMU COP DW: DRINKING WATER HOL Vials #HCI Vials GW: GROUND WATER	WW: WASTEWATER	acetate pH So: SOIL	SL: SLUDGE	SOL: NON SOIL SOLD	ed MI: MISCELLANEOUS		D) Water	ALYSIS REQUESTED DO, CI2, Cond. etc.	FC s						C Bar Mishal Qd By:	Date/Time:		r: □ EQC COURIER □ CLIENT Custody Seal Number	am 7.4°C Initiale. (ILTY) Ind N 1 continue.			- 1 MU IUCA I	
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2023963	CHAIN OF CUSTODY Page 1 of 1	Report to (If different) Same		ling Site Address (if different) Include State $N \checkmark$			No. PWSID #:	#e	Collection ONINGECTED CAPITED CONTRACTOR	Allilitary R O Matrix The Code Train 2 C a 0	Time B P	2 19 0900 X GW 2	1045 N GW 2	1235 N GW 2	1410 X GW 2			10 DAY) Report Format:	<u> 36 / 19 □</u> Standard + QC □ Forms □ 14	(availability for rush (<10 day) tumaround and for all but stands INTED BELOW. USE FULL LEGAL SIGNATUR	RECEIVED BY	RECEIVED BY REAMS Michay R.	ID 3.	RECEIVED BY	S 5. D M Page 8 of 11	R Jane
	👬 eurofins	BIIIR	702 Electronic Drive Phone: 215-355-3900	Horsham, PA 19044-0962 Fax: 215-355-7231 Sam	Client/Acct. No. POCCCEDisted Any Litical Peb.	ALL SVINSIGNOX SSAINNY	city/State/Zip Conteret, NJ 07008 P.O.	Phone/Fax 733~969~61(3- Quo	Project Dour C. Condect C. Condo e-m	ELDID		10 1900377-01 3	s 1900377 - 02	1900377-03	0 1900377 - 04 J			SAMPLED BY: (Name/Company) TAT: C STANDARD	APPC or DUE DATE 03/	SAMPLE CUSTODY EXCHANGES MUST BE DOCUME	RELINQUISHED BY SAMPLER DATE TIME 1.	RELINQUISHED BY 2. Aardy (racio 3)13/19 825	RELINQUISHED BY	RELINQUISHED BY DATE TIME 4.	RELINQUISHED BY FLAS #FI DATE / TIME 5. Cash PLAS #FI 3/13/19 (35)	

101 of 104

🔹 eurofins	Lancaster Laboratories Environmental	

Client: EQC

Sample Administration Receipt Documentation Log

Doc Log ID: 243644

Group Number(s): Ze35103

Delivery and Receipt Information Delivery Method: EQCL Drop Off Arrival Timestamp: 03/15/2019 0:45 Number of Packages: Number of Projects: 1 <u>2</u> **Arrival Condition Summary** Sample IDs on COC match Containers: Shipping Container Sealed: Yes Yes **Custody Seal Present:** Yes Sample Date/Times match COC: Yes VOA Vial Headspace \geq 6mm: N/A **Custody Seal Intact:** Yes Total Trip Blank Qty: Samples Chilled: Yes 0 Paperwork Enclosed: Air Quality Samples Present: No Yes Samples Intact: Yes **Missing Samples:** No Extra Samples: No Discrepancy in Container Qty on COC: No Unpacked by Nicole Reiff (25684) at 07:05 on 03/15/2019

			Sample	es Chille	d Details			
The	ermometer Types	s: DT = Digi	tal (Temp. Botti	le) IR =	Infrared (Sur	face Temp)	All Temperatures in °C.	
Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?	
1	32170023	4.2	IR	Wet	Y	Bagged	Ν	

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQI	Below Minimum Quantitation Level	ml	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	ND	non-detect
CP Unite	cobalt chloroplatinato units	N.D.	
	degrees Febrenhoit	пу	nanogram(s)
г		NTU	
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	μg	microgram(s)
lb.	pound(s)	μL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent a aqueous liquids, ppm is usually taken to b very close to a kilogram. For gases or va	to one milligram per be equivalent to milli pors, one ppm is eq	kilogram (mg/kg) or one gram per million grams. For grams per liter (mg/l), because one liter of water has a weig uivalent to one microliter per liter of gas.
ppb	parts per billion		
Dry weight basis	Results printed under this heading have b concentration to approximate the value pr	been adjusted for mo resent in a similar sa	pisture content. This increases the analyte weight ample without moisture. All other results are reported on an

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

as-received basis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

of water has a weight

🔅 eurofins

Data Qualifiers

Lancaster Laboratories Environmental

Qualifier	Definition
	Result commend by realizing analysis
	Indicates for dual column analyses that the result is reported from column 1
	Concertation evenede the cellbration reason
E	Concentration exceeds the calibration range
KI KO	Initial Calibration Blank is above the QC limit and the sample result is ND
KZ	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
Р	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised
	due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report
В	Detection in the Blank
Q0	LCS/LCSD Low
Q1	LCS/LCSD High
Q2	MS/MSD Low
Q3	MS/MSD High
Q7	LCS/LCSD RPD
Q8	DUP RPD
Q9	MS/MSD RPD

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.




DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE

CARTERET,NJ 07008

Regarding:

ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

PROJECT ID:

AW0782

LABORATORY REPORT NUMBER:

L7111958

Der AU

Authorized by: Douglas J. Gump Client Services Manager

Eurofins QC, LLC

Analytical Report Printed 03/29/19 19:32 QC21

ACCREDITED ANALYTICAL RESOURCES, LLC AW0782

P.O. No: Inv. No: 1971050 PI PWSID:

DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

Regarding: DANIEL MIGUEL ACCREDITED ANALYTICAL RESOURCES, LLC. 20 PERSHING AVENUE CARTERET, NJ 07008

SAMPLE SUMMARY

Lab ID	Collected	Received	Matrix	Client ID	
L7111958-1	03/13/19 08:30	03/15/19 13:15	MISC	1900394-01	Field Blank
L7111958-2	03/13/19 09:09	03/15/19 13:15	WATER	1900394-02	LTMW-16
L7111958-3	03/13/19 10:55	03/15/19 13:15	WATER	1900394-03	LTMW-18ug

PIN: 37516

Unserialized Copy

Eurofins QC, LLC

Analytical Report

Printed 03/29/19 19:32

	Sample Description: Sample Number: Matrix: Received Temp:	1900394-01 L7111958-1 MISC 7.8 C	Samp. Date/Time/Temp: Sampled by: Iced (Y/N):	03/13/19 08:30am NA C Customer Y	
	Exceeds recommended te	mperature for chemical tes	ting.(T)		
SUBCONTRAC	TED RESULT REFE	RENCES1900394-0	01		
See attached reports fo	r the following Subcontract La	boratories:			
Eurofins - Lancaster PERFLUORINATED	Laboratories, Environmer CHEMICALS (14) PFAS	ntal (ELLE)			
	Sample Description: Sample Number: Matrix: Received Temp: Exceeds recommended te	1900394-02 L7111958-2 WATER 7.8 C emperature for chemical tes	Samp. Date/Time/Temp: Sampled by: Iced (Y/N): ting.(T)	03/13/19 09:09am NA C Customer Y	
SUBCONTRAC	TED RESULT REFE	RENCES1900394-0)2		
See attached reports fo	the following Subcontract La	boratories:			
See attached reports fo	r the following Subcontract La	boratories:			

Eurofins - Lancaster Laboratories, Environmental (ELLE) PERFLUORINATED CHEMICALS (14) PFAS

Sample Description:	1900394-03		
Sample Number:	L7111958-3	Samp. Date/Time/Temp:	03/13/19 10:55am NA C
Matrix:	WATER	Sampled by:	Customer
Received Temp:	7.8 C	Iced (Y/N):	Y
Exceeds recommended te	mperature for chemical testi	ing.(T)	

--SUBCONTRACTED RESULT REFERENCES--1900394-03

See attached reports for the following Subcontract Laboratories:

Eurofins - Lancaster Laboratories, Environmental (ELLE) PERFLUORINATED CHEMICALS (14) PFAS

Sample Comments | Result Qualifiers:

L7111958-1:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.

L7111958-2:

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C.

*=This limit was used in the evaluation of the final result.

PIN: 37516

Unserialized Copy

Page 3 of 6





Consult your regulatory agency for further guidance on the use of this data.

L7111958-3 :

T: Samples for chemical testing were received at the laboratory outside of the allowed temperature range of just above 0 to 6 degrees C. Consult your regulatory agency for further guidance on the use of this data.



*=This limit was used in the evaluation of the final result.

PIN: 37516

Unserialized Copy



DEFINITIONS

The following terms or abbreviations are used in this report:

QC

Less than: In conjunction with a numerical value, indicates a concentration less than RL / MDL
Greater than: In conjunction with a numerical value,
indicates a concentration greater than RL / MDL
Colony Forming Unit
Dilution Factor (For Microbiology, DF = volume of
sample tested)
Result was reported on a dry weight basis
EPA recommended "Maximum Contaminant Level"
Method Detection Limit
Membrane Filtration
Most Probable Number
For odor test: No Odor Observed
For all other tests: Analyte concentration Not
Detected greater than the RL / MDL

Negative / Absent
Nephelometric Turbidity Units
Positive / Present
Parts per billion: equivalent to 1 microgram per kilogram (µg/Kg) for solids or one microgram per liter (µg/L) for aqueous samples
Parts per million: equivalent to 1 milligram per kilogram (mg/Kg) for solids or one milligram per liter (mg/L) for aqueous samples
Presumptive
Qualifier (Q)
Laboratory Reporting Limit or Limit of Quantitation (LOQ)
Too Numerous To Count
Threshold Odor Number

Data Qualifiers

J	Estimated value > MDL, but < RL
Т	Temperature exceedance at receipt, refer to Sample Comments / Results Qualifiers section
Е	Estimated CFU count (Microbiology)
Q	Qualifier defined in Sample Comment section on report

Warranties, Terms, and Conditions

- Unless otherwise indicated in the Parameter field, analyses for environmental microbiology, odor, and pharmaceutical microbiology are performed at the EQC Horsham Facility (702 Electronic Dr. Horsham, PA 19044).
- Analyses for Field Parameters are performed by EQC Field staff. Locations and certifications are identified on the Chain of Custody as follows:
 - "ERF" = field staff performs tests under NJ State certification # 02015.
 - "VL" = field staff performs tests under NJ State certification # 06005.
 - "WG" = field staff performs tests under NJ State certification # PA001.
- Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.
- The report shall not be reproduced, except in full, without the written consent of the laboratory.
- All samples are collected as "grab" samples unless otherwise identified.
- Reported results relate only to the sample as tested. EQC is not responsible for sample integrity unless sampling has been performed by a member of our staff.
- EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance. EQC's internet program "LIVE ACCESS" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.
- The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry), Amanda Berd (Pharmaceutical Microbiology), and Bhavita Shah (Water Microbiology).

EQC Accreditations

Horsham Facility	NELAP/State IDs-	PA: 46-05499	NJ:	PA093	NY:	12080	MD: 3	857
East Rutherford Facility New Castle Facility Vineland Facility Wind Gap Facility	<u>State ID-</u> <u>State IDs-</u> <u>State ID-</u> <u>State ID</u> -	NJ: 02015 DE: DE01101 NJ: 06005 NJ: PA001	MD:	138				

Eurofins QC, LLC (EQC)

MATRIX CODES	the statement	DW: DRINKING WATER GW: GROUND WATER	WW: WASTEWATER	I SO: SOIL	SL: SLUDGE		SOL: NON SOIL SOLID MI: MISCELLANEOUS	X: OTHER		Field pH, Temp (°C), DO, Cl2, Cond. etc.							Ω	Alter Area	 ,	ed By:	late/Time:	1 DM IS 1600	Custody Seal Number	When Location:		
MS NO: L7 111958	SE ONLY	Ascorbic/HCL Vials ##	Na ₂ S ₂ O ₃	Na OH/Zn acetate pH	HNO ₃ pH	H2SO4 pH	NaOH pH Unineerrood Tr ZA ソフトレー	HCI: # MH4CI # MeOH	/ # DI MAAR	UNA / BC// BC	ZAS , PFCS		+				DELIVERE	TC OFFIC	BY CUSTO	Field Parameters Analyze	Initials			Rec'd Temp.: 7.8°C Initials: 100 Icc		Hazardous: yes / no
Lab LI		**************************************	#	#	#	# :	ع # #	#			s PI	78	5] SRP-RDD		g format. AND MILITAR	TIME	1/19 TIME 20		Les vers
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CHA	oort to (if different)		Site Address (if differer				_	tonnio Cace	lection G	Military Time B M	9 8:30 G	909 G	1055 6							DAY) Report	<u>1/ /9 🗆 Sta</u>	ED BELOW 115	RECEIVED BY 1.	RECEIVED BY 2. Mickey RECEIVED BY	3. RECEIVED BY	4. RECEIVED BY
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🔅 eurofins		205 Industrial Blvd.	southampton, PA 18966-0514 F	Dient/Acct. No. Annelliel	Address 20 Rushin	Carteret.	hone/Fax	Slient Contact: P. O'	L PROJECT 190030		1900394 - 01	3 1900394 - NA	E0-4-03	(0)	2	<u>۵</u> ۵				SAMPLED BY: (Name/Company)	AAC		ELINQUISHED BY SAMPLER	ELINOUISHED BY NALLC	ELINQUISHED BY KEY ME THEY	RELINQUIGHED BY PFAS - 1



Lancaster Laboratories Environmental

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Prepared for:

Eurofins QC Laboratories 702 Electronic Drive Horsham PA 19044

Report Date: March 29, 2019 09:23

Project: L7111958

Account #: 22049 Group Number: 2033945 SDG: EAA07 State of Sample Origin: NY

Electronic Copy To Eurofins QC Laboratories

Attn: Nicki Smith

SAMPLE INFORMATION

Client Sample Description	Sample Collection	<u>ELLE#</u>
	Date/Time	
L7111958-1 Grab Drinking Water	03/13/2019 08:30	1009887
L7111958-2 Grab Drinking Water	03/13/2019 09:09	1009888
L7111958-3 Grab Drinking Water	03/13/2019 10:55	1009889

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Respectfully Submitted,

Wendy a. Kom-

Wendy A. Kozma Principal Specialist Group Leader

To view our laboratory's current scopes of accreditation please go to <u>https://www.eurofinsus.com/environment-</u> testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratoriesenvironmental/. Historical copies may be requested through your project manager.

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Sample Description:	L7111958-1 Grab Drinking Water 1900394-01
Project Name:	L7111958
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 22:10 03/13/2019 08:30 EAA07-01BL

Eurofins QC Laboratories ELLE Sample #: PW 1009887 ELLE Group #: 2033945 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	N.D.	0.43	1.7	1
	NEtFOSAA is the acronym for N-ethyl perflu	orooctanesulfonami	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.43	1.7	1
	NMeFOSAA is the acronym for N-methyl pe	rfluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.43	1.7	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.7	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.7	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.43	1.7	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.43	1.7	1
14070	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1.7	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.43	1.7	1
14070	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.43	1.7	1
14070	Perfluorooctanoic acid	335-67-1	N.D.	0.43	1.7	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1.7	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1.7	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.7	1

Sample Comments

State of New York Certification No. 10670

	Laboratory Sample Analysis Record										
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor				
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19078004	03/22/2019 16:07	Devon M Whooley	1				
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19078004	03/19/2019 08:30	Courtney J Fatta	1				

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Sample Description:	L7111958-2 Grab Drinking Water 1900394-02					
Project Name:	L7111958					
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 22:10 03/13/2019 09:09 EAA07-02					

Eurofins QC Laboratories							
ELLE Sample #:	PW 1009888						
ELLE Group #:	2033945						
Matrix: Drinking	Water						

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	N.D.	0.45	1.8	1
	NEtFOSAA is the acronym for N-ethyl perflu	orooctanesulfonami	doacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.45	1.8	1
	NMeFOSAA is the acronym for N-methyl pe	rfluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	N.D.	0.45	1.8	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1.8	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.8	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1.8	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.45	1.8	1
14070	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1.8	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.45	1.8	1
14070	Perfluoro-octanesulfonate	1763-23-1	0.89 J	0.45	1.8	1
14070	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1.8	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1.8	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1.8	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1.8	1

Sample Comments

State of New	York	Certification	No.	10670
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	Laboratory Sample Analysis Record									
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor			
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19084006	03/28/2019 01:48	Jason W Knight	1			
14381	DW PFAS Prep	EPA 537 Version 1.1	2	19084006	03/25/2019 08:25	Courtney J Fatta	1			

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Sample Description:	L7111958-3 Grab Drinking Water 1900394-03				
Project Name:	L7111958				
Submittal Date/Time: Collection Date/Time: SDG#:	03/15/2019 22:10 03/13/2019 10:55 EAA07-03				

Eurofins QC Laboratories ELLE Sample #: PW 1009889 ELLE Group #: 2033945 Matrix: Drinking Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/	MS Miscellaneous EPA 537 Ver	sion 1.1	ng/l	ng/l	ng/l	
14070	NEtFOSAA	2991-50-6	N.D.	0.44	1.8	1
	NEtFOSAA is the acronym for N-ethyl perflu	orooctanesulfonamic	loacetic Acid.			
14070	NMeFOSAA	2355-31-9	N.D.	0.44	1.8	1
	NMeFOSAA is the acronym for N-methyl per	fluorooctanesulfona	midoacetic Acid.			
14070	Perfluorobutanesulfonate	375-73-5	3.2	0.44	1.8	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1.8	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.8	1
14070	Perfluoroheptanoic acid	375-85-9	2.7	0.44	1.8	1
14070	Perfluorohexanesulfonate	355-46-4	3.2	0.44	1.8	1
14070	Perfluorohexanoic acid	307-24-4	4.0	0.44	1.8	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.44	1.8	1
14070	Perfluoro-octanesulfonate	1763-23-1	4.3	0.44	1.8	1
14070	Perfluorooctanoic acid	335-67-1	23	0.44	1.8	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1.8	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1.8	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.8	1

Sample Comments

State of New York Certification No. 10670

	Laboratory Sample Analysis Record									
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor			
14070	PFAS in Drinking Water	EPA 537 Version 1.1	1	19078004	03/22/2019 16:30	Devon M Whooley	1			
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19078004	03/19/2019 08:30	Courtney J Fatta	1			

	: DISM	Sampled Date and Time Tier	1	03/13/19 08:30 AM RDD			03/13/19 09:09 AM RDD			03/13/19 10:55 AM RDD							
			イバス hpre Bact NaThio Other			npre Bact NaThio Othen			npre Bact NaThio Other)					Comments:		
	QC, INC. CHAIN OF CUSTODY 9, 07:15 pm	r of Containers	scAc HNO3 NaOH ZnAc U			scAc HNO3 NaOH ZNAC U			scAc HNO3 NaOH ZhAc UI						$\begin{array}{c c} \text{Date} & \text{Time} \\ \hline 3/5/ig & 19YS \end{array}$		3/15/19 22/0
	EUROFINS LANCASTER (ELLE) Mar 15 201	Numbe	Total H2SO4 HCL A	4		Total H2SO4 HCl As			Total H2SO4 HCl As				CS REP: TBURNELL		Received By Cool MAS		nip
SHEEP	Bill to: Horsham, PA 19044	nalysis			5-C			246			PFC		CCREDITED ANALYTICAL RESOURCES, LLC		$\begin{array}{c c} pate & Time \\ \hline & \hline & \hline \\ \hline \\$		
	EUROFINS QC, LLC 702 Electronic Drive Horsham, PA 19044 Contact: Nicki Smith x3360 Phone: 215-355-3900 FAX: 215-392-0626	Sample ID A	State: NY	L7111958-1 1900394-01	03/28/19 QA	State: NY	L7111958-2 1900394-02	03/28/19 WATER	State: NY	L7111958-3 1900394-03	03/28/19 WATER	Moisture?	E-Account Number: 22049 /	Package Type: TYPE III	Relinquished By	115	

Page 5 of 9

🐝 eurofins	CHAIN OF CUSTODY Pageof1	856111L7	MATRIX CODES
gc	Bill to/Report to (if different) Same		
		LAB USE ONLY:	V: DRINKING WATER
1200 midusular biva. Phone: 215-355-3900 Southampton PA 18968-0514 552-7004		# Ascorbic/HCL Vials # HCI Vials GW:	N: GROUND WATER
	varinpring one Address (it different) include State NY	# NazS:03 WW:	W: WASTEWATER
Address 20 and 00	Diken.	# Na OH/Zn acetate pH So:): Soil
Product Product		#HNOspH8L: {	: SLUDGE
Citv/State/Zip		#HzSO4 pH01L:	L: OIL
Phone/Fax 7320-969-6113		# C Ibrossing Cont of 100	DL: NON SOIL SOLID
Client Contact: B. O'Cana	e-mail: bornin @acourdit=00 malestin 10 mm		: MISCELLANEOUS
PROJECT 1900394	Collection Containers		OTHER
	Milliav R O Matrix H H V H R Z U B 2 C I V H R Z V B 2 V B 2 V A V A V A V A V A V A V A V A V A V	2.1/uur toch water	
		Field DO, DO,	eld pH, Temp (°C), D, Cl2, Cond. etc.
1900394 - 01	3 13 19 8:30 G A 2 3	PEAS , PFC.S	
1900394-02	1 909 G Gw 2 2		
19(20394-03	L 1055 6 Gu 2 2		
		DELWEDER	
SAMPIED RY: (Name/Commany)		BYCUSTO	
	JARD (10 DAY) Report Format: □ Standard XNJ-RDD □ SRP-RDD	D Field Parameters Analyzed By:	
HHC DI		Initials Date/Tim	ime:
SAMPLE CUSTODY EXCHANGES MUST BE DOG	DUMENTED BELOW. USE FULL LEGAL SIGNATURE DUTING AND NUMBER ADDRESS OF AND MIL		
RELINQUISHED BY SAMPLER DATE 1.	TIME RECEIVED BY DATE TIM		4 FM 15 1000) stody Seal Number
RELINGUISHED BY	TWE RECEIVED BY RELATS Michy 2 DATE 15/19 TW	E.20 Boold Tomas 7 (Lateral MAN)	
RELINQUISHED BY 3. MI TCKER KEY REY MONDY Z 3/15/19	13:15 3. MECEIVED BY NULTY BY 13	PS COMMENTS:	N Location:
RELINQUISHED BY DATE 4.	TIME RECEIVED BY		
RELINQUARED BY 5. Cost PFAS - 7 3/15/11	1845 5. DATE RECEIVED BY PADE 6 01 9 3/45/49 18	الالالالالالالالالالالالالالالالالالال	
	1121 3112 31121 1 31121 1 3	Hazardous: yes / no	

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112 of 115

Environmental Sa	ample A eipt Doo	Administration cumentation Log	Group	Doc Log ID: 243809			
Client: <u>EQC</u>							
Delive	ery and	Receipt Information					
Delivery Method: EQCL Drop	<u>o Off</u>	Arrival Timestamp:	03/15/20	19 22:10			
Number of Packages: <u>1</u>		Number of Projects:	<u>4</u>				
Arr	ival Con	dition Summary					
Shipping Container Sealed:	Yes	Sample IDs on COC m	atch Contain	iers: Yes			
Custody Seal Present:	Yes	Sample Date/Times ma	atch COC:	Yes			
Custody Seal Intact:	Yes	VOA Vial Headspace ≥	: 6mm:	N/A			
Samples Chilled:	Yes	Total Trip Blank Qty:		0			
Paperwork Enclosed:	Yes	Air Quality Samples Pr	esent:	No			
Samples Intact:	Yes						
Missing Samples:	No						
Extra Samples:	No						
Discrepancy in Container Qty on COC:	No						
Unpacked by Nicole Reiff (25684) at 09:2-	4 on 03/16	5/2019					
c	amples	Chilled Details					
Thermometer Types: DT = Digital (Ter	mp. Bottle)	IR = Infrared (Surface 7	Temp) A	ll Temperatures in °C.			
	T		De statue a				
CODIEF # Inermometer ID Corrected Temp Therm	<u>. iype</u>	ice i ype ice Present? ice (<u>Jontainer</u> <u>E</u>	levated Temp?			

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQI	Below Minimum Quantitation Level	ml	milliliter(s)
<u> </u>	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	ND	non-detect
CP Unite	cobalt chloroplatinato units	N.D.	
	degrees Febrenhoit	пу	nanogram(s)
Г		NTU	
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	μg	microgram(s)
lb.	pound(s)	μL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent a aqueous liquids, ppm is usually taken to b very close to a kilogram. For gases or va	to one milligram per be equivalent to milli pors, one ppm is eq	kilogram (mg/kg) or one gram per million grams. For grams per liter (mg/l), because one liter of water has a weig uivalent to one microliter per liter of gas.
ppb	parts per billion		
Dry weight basis	Results printed under this heading have b concentration to approximate the value pr	been adjusted for mo resent in a similar sa	visture content. This increases the analyte weight imple without moisture. All other results are reported on an

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

as-received basis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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of water has a weight

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Data Qualifiers

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Definition
Result confirmed by reanalysis
Indicates for dual column analyses that the result is reported from column 1
Indicates for dual column analyses that the result is reported from column 2
Concentration exceeds the calibration range
Initial Calibration Blank is above the QC limit and the sample result is ND
Continuing Calibration Blank is above the QC limit and the sample result is ND
Initial Calibration Verification is above the QC limit and the sample result is ND
Continuing Calibration Verification is above the QC limit and the sample result is ND
Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
Concentration difference between the primary and confirmation column >40%. The lower result is reported.
Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
Analyte was not detected at the value indicated
Concentration difference between the primary and confirmation column >100%. The reporting limit is raised
due to this disparity and evident interference.
The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Laboratory Defined - see analysis report
Detection in the Blank
LCS/LCSD Low
LCS/LCSD High
MS/MSD Low
MS/MSD High
LCS/LCSD RPD
DUP RPD
MS/MSD RPD

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.