

ANALYTICAL REPORT



PREPARED FOR

Attn: Mike Lankford
Gadsden Water Works
515 Albert Rains Blvd
Gadsden Alabama 35901



Generated 11/18/2022 5:46:50 PM

JOB DESCRIPTION

Gadsden PFAS Sampling



JOB NUMBER

280-167897-1

Case Narrative

Client: Gadsden Water Works
Project/Site: Gadsden PFAS Sampling

Job ID: 280-167897-1

Job ID: 280-167897-1

Laboratory: Eurofins Denver

Narrative

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CASE NARRATIVE

Client: Gadsden Water Works

Project: Gadsden PFAS Sampling

Report Number: 280-167897-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 10/19/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.6 C.

PERFLUORINATED HYDROCARBONS (PFAS) MOD

Samples GADSDEN - RW (280-167897-1), GADSDEN - FW (280-167897-2) and GADSDEN - DISCHARGE (280-167897-3) were analyzed for Perfluorinated Hydrocarbons (PFAS) MOD in accordance with 537 MOD. The samples were prepared on 10/21/2022 and analyzed on 10/24/2022.

The following samples in preparation batch 320-626493 were observed to have a thin layer of sediment present in the bottom of bottle prior to extraction: GADSDEN - RW (280-167897-1).

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

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Detection Summary

Client: Gadsden Water Works
Project/Site: Gadsden PFAS Sampling

Job ID: 280-167897-1

Client Sample ID: GADSDEN - RW

Lab Sample ID: 280-167897-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	17		4.3	2.1	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	3.9		1.7	0.27	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	9.0		1.7	0.21	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	27		1.7	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.9		1.7	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	26		1.7	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctane sulfonate (PFOS)	38		1.7	0.46	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPA)	48		1.7	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	120		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		1.7	0.49	ng/L	1		537 (modified)	Total/NA

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Client Sample ID: GADSDEN - FW

Lab Sample ID: 280-167897-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	15		4.2	2.0	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.0		1.7	0.26	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.2		1.7	0.21	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	19		1.7	0.49	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.6	J	1.7	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	18		1.7	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorooctane sulfonate (PFOS)	21		1.7	0.45	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPA)	33		1.7	0.41	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	80		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.0		1.7	0.48	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GADSDEN - DISCHARGE

Lab Sample ID: 280-167897-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	18		4.4	2.1	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.0		1.8	0.27	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	8.8		1.8	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	29		1.8	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.2		1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	24		1.8	0.75	ng/L	1		537 (modified)	Total/NA
Perfluorooctane sulfonate (PFOS)	27		1.8	0.48	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPA)	50		1.8	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (PFOSA)	0.92	J	1.8	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	130		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		1.8	0.50	ng/L	1		537 (modified)	Total/NA

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This Detection Summary does not include radiochemical test results.

Eurofins Denver

Method Summary

Client: Gadsden Water Works
Project/Site: Gadsden PFAS Sampling

Job ID: 280-167897-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

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Client Sample Results

Client: Gadsden Water Works
Project/Site: Gadsden PFAS Sampling

Job ID: 280-167897-1

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Client Sample ID: GADSDEN - RW

Date Collected: 10/17/22 20:24

Date Received: 10/19/22 10:10

Lab Sample ID: 280-167897-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	17		4.3	2.1	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorodecanoic acid (PFDA)	3.9		1.7	0.27	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorododecanoic acid (PFDoA)	0.47	U	1.7	0.47	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluoroheptanoic acid (PFHpA)	9.0		1.7	0.21	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorohexanoic acid (PFHxA)	27		1.7	0.50	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorononanoic acid (PFNA)	2.9		1.7	0.23	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorooctanoic acid (PFOA)	26		1.7	0.73	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorooctane sulfonate (PFOS)	38		1.7	0.46	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluoropentanoic acid (PFPA)	48		1.7	0.42	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorotetradecanoic acid (PFTeA)	0.63	U	1.7	0.63	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorotridecanoic acid (PFTriA)	1.1	U	1.7	1.1	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluoroundecanoic acid (PFUnA)	0.94	U	1.7	0.94	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorobutanesulfonic acid (PFBS)	120		1.7	0.17	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorodecanesulfonic acid (PFDS)	0.27	U	1.7	0.27	ng/L		10/21/22 11:05	10/24/22 14:18	1
Perfluorohexanesulfonic acid (PFHxS)	3.2		1.7	0.49	ng/L		10/21/22 11:05	10/24/22 14:18	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C4 PFBA	63		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C5 PFPeA	76		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C2 PFHxA	84		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C4 PFHpA	88		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C4 PFOA	83		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C5 PFNA	83		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C2 PFDA	85		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C2 PFUnA	85		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C2 PFDoA	83		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C2 PFTeA	77		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C3 PFBS	76		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹⁸ O2 PFHxS	82		25 - 150				10/21/22 11:05	10/24/22 14:18	1
¹³ C4 PFOS	75		25 - 150				10/21/22 11:05	10/24/22 14:18	1

Client Sample ID: GADSDEN - FW

Date Collected: 10/18/22 11:00

Date Received: 10/19/22 10:10

Lab Sample ID: 280-167897-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	15		4.2	2.0	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorodecanoic acid (PFDA)	2.0		1.7	0.26	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorododecanoic acid (PFDoA)	0.46	U	1.7	0.46	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluoroheptanoic acid (PFHpA)	6.2		1.7	0.21	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorohexanoic acid (PFHxA)	19		1.7	0.49	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorononanoic acid (PFNA)	1.6	J	1.7	0.23	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorooctanoic acid (PFOA)	18		1.7	0.71	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorooctane sulfonate (PFOS)	21		1.7	0.45	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluoropentanoic acid (PFPA)	33		1.7	0.41	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorotetradecanoic acid (PFTeA)	0.61	U	1.7	0.61	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorotridecanoic acid (PFTriA)	1.1	U	1.7	1.1	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluoroundecanoic acid (PFUnA)	0.92	U	1.7	0.92	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorobutanesulfonic acid (PFBS)	80		1.7	0.17	ng/L		10/21/22 11:05	10/24/22 15:39	1

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Client Sample Results

Client: Gadsden Water Works
 Project/Site: Gadsden PFAS Sampling

Job ID: 280-167897-1

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

Client Sample ID: GADSDEN - FW

Date Collected: 10/18/22 11:00

Date Received: 10/19/22 10:10

Lab Sample ID: 280-167897-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.27	U	1.7	0.27	ng/L		10/21/22 11:05	10/24/22 15:39	1
Perfluorohexanesulfonic acid (PFHxS)	2.0		1.7	0.48	ng/L		10/21/22 11:05	10/24/22 15:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	80		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C5 PFPeA	91		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C2 PFHxA	94		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C4 PFHpA	100		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C4 PFOA	95		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C5 PFNA	96		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C2 PFDA	96		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C2 PFUnA	95		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C2 PFDoA	99		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C2 PFTeDA	102		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C3 PFBS	94		25 - 150				10/21/22 11:05	10/24/22 15:39	1
18O2 PFHxS	101		25 - 150				10/21/22 11:05	10/24/22 15:39	1
13C4 PFOS	95		25 - 150				10/21/22 11:05	10/24/22 15:39	1

Client Sample ID: GADSDEN - DISCHARGE

Date Collected: 10/18/22 10:00

Date Received: 10/19/22 10:10

Lab Sample ID: 280-167897-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	18		4.4	2.1	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorodecanoic acid (PFDA)	2.0		1.8	0.27	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorododecanoic acid (PFDoA)	0.49	U	1.8	0.49	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluoroheptanoic acid (PFHpA)	8.8		1.8	0.22	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorohexanoic acid (PFHxA)	29		1.8	0.51	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorononanoic acid (PFNA)	2.2		1.8	0.24	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorooctanoic acid (PFOA)	24		1.8	0.75	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorooctane sulfonate (PFOS)	27		1.8	0.48	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluoropentanoic acid (PFPA)	50		1.8	0.43	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorotetradecanoic acid (PFTeA)	0.65	U	1.8	0.65	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorotridecanoic acid (PFTriA)	1.1	U	1.8	1.1	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluoroundecanoic acid (PFUnA)	0.97	U	1.8	0.97	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorooctanesulfonamide (PFOSA)	0.92	J	1.8	0.87	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorobutanesulfonic acid (PFBS)	130		1.8	0.18	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorodecanesulfonic acid (PFDS)	0.28	U	1.8	0.28	ng/L		10/21/22 11:05	10/24/22 15:49	1
Perfluorohexanesulfonic acid (PFHxS)	3.2		1.8	0.50	ng/L		10/21/22 11:05	10/24/22 15:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	98		25 - 150				10/21/22 11:05	10/24/22 15:49	1
13C4 PFBA	77		25 - 150				10/21/22 11:05	10/24/22 15:49	1
13C5 PFPeA	90		25 - 150				10/21/22 11:05	10/24/22 15:49	1
13C2 PFHxA	96		25 - 150				10/21/22 11:05	10/24/22 15:49	1
13C4 PFHpA	106		25 - 150				10/21/22 11:05	10/24/22 15:49	1
13C4 PFOA	99		25 - 150				10/21/22 11:05	10/24/22 15:49	1
13C5 PFNA	100		25 - 150				10/21/22 11:05	10/24/22 15:49	1
13C2 PFDA	99		25 - 150				10/21/22 11:05	10/24/22 15:49	1

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Client Sample Results

Client: Gadsden Water Works
Project/Site: Gadsden PFAS Sampling

Job ID: 280-167897-1

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

Client Sample ID: GADSDEN - DISCHARGE

Date Collected: 10/18/22 10:00

Date Received: 10/19/22 10:10

Lab Sample ID: 280-167897-3

Matrix: Water

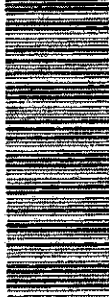
<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C2 PFUnA	96		25 - 150	10/21/22 11:05	10/24/22 15:49	1
13C2 PFDoA	101		25 - 150	10/21/22 11:05	10/24/22 15:49	1
13C2 PFTeDA	99		25 - 150	10/21/22 11:05	10/24/22 15:49	1
13C3 PFBS	94		25 - 150	10/21/22 11:05	10/24/22 15:49	1
18O2 PFHxS	106		25 - 150	10/21/22 11:05	10/24/22 15:49	1
13C4 PFOS	93		25 - 150	10/21/22 11:05	10/24/22 15:49	1

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Chain of Custody Record

Client Information		Sampler: MICHAEL BROOKINS		Lab PM: Bieniulis, Dylan T	Carrier Tracking No(s):	COCC No:
Client Contact: Mike Lankford		256 543-2884		E-Mail: Dylan.Bieniulis@eurofins.com	State of Origin:	Page:
Company: Gadsden Water Works		PWSID:		Analysis Requested:		
Address: 515 Albert Rains Blvd		Due Date Requested:		Preservation Codes:		
City: Gadsden		TAT Requested (days):		M - Hexane N - None O - Acetate P - Na2CO3 Q - Na2SO3 R - Na2S2O3 S - H2SO4 G - Amchlor H - Ascorbic Acid I - Ica J - DI Water K - EDTA L - EDA Other:		
State, Zip: AL, 35901		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		Total Number of Containers:		
Phone: DEM# 6-0288		PO #		1		
Email: mlankford@gadsdenwater.org		DEM# 6-0288		2		
Project Name: Gadsden PFAS Sampling		WC #		2		
Site: SSOVW		Project # 28020645		Special Instructions/Note: Lab. 8		
		SSOVW		Special Instructions/Note:		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (W=Water, S=Soil, O=Other)	Preservation Code	Analysis Requested
GADSDEN - RW	10/17/22	2024	G	W	N	X
GADSDEN - FW	10/18/22	1100	G	W	N	X
GADSDEN - DISCHARGE	10/18/22	1000	G	W	N	X
 280-167897 Chain of Custody						
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)						
Empty Kit Relinquished by: _____ Date: 10/18/22 Time: 1100 Relinquished by: MICHAEL BROOKINS TO COOLER Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____						
Custody Seal Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: 19855009 Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____						

Login Sample Receipt Checklist

Client: Gadsden Water Works

Job Number: 280-167897-1

Login Number: 167897

List Source: Eurofins Denver

List Number: 1

Creator: Bieniulis, Dylan T

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