

**Saari, Christopher A - DNR**

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**From:** Pooler, Cary <cary.pooler@aecom.com>  
**Sent:** Thursday, June 15, 2017 4:06 PM  
**To:** Saari, Christopher A - DNR  
**Cc:** Bradley.S.Nave@chemours.com  
**Subject:** Barksdale: BDC Clubhouse April 2017 Sample Results  
**Attachments:** J96406-1 UDS Level 2 Report Final Report.pdf

Greetings Chris,

Attached is a portable document file (PDF) containing Test America's report for the inflow groundwater sample collected from Bretting Development Corporation's (BDC's) Clubhouse well on April 25, 2017. The sample was collected before the two granular activated carbon (GAC) filtration cylinders installed between the well and the point of use at the BDC Clubhouse (i.e., "inflow" port of system). The lab report was received for review on June 5, 2017.

As we discussed via telephone on June 6th, Test America reported the presence of nitrobenzene in the sample at an estimated, "J qualified" concentration of 0.072 micrograms per liter ( $\mu\text{g/L}$ ). In addition to the "J qualifier", the result was also qualified with an "H" due to an issue with the holding time being exceeded when re-extraction was performed by the laboratory. The original sample was extracted within the method-specified seven day hold time; however, the laboratory found it necessary to re-extract for a yet to be determined reason after the holding time was exceeded, and that value was the one reported.

This inflow water has been sampled 24 times in the last 17 years and the nitrobenzene result is inconsistent with previous monitoring data. This estimated detection was the first nitroaromatic or nitramine organic compound (NNOC) detected at the well since December 2002 (see Table 1 of the February 1, 2017 letter from Brad Nave to you) and only the second time nitrobenzene has been detected in the inflow port (last detection was in October 2000 and that result was a "J qualified" value also).

Wisconsin NR140 does not specify a groundwater quality standard for nitrobenzene, so the estimated concentration was compared to the USEPA resident tap water value. The result of that comparison shows that the estimated, detected concentration is below the USEPA RSL value of 0.14  $\mu\text{g/L}$ .

Nitrobenzene is not a primary constituent of concern at Barksdale in groundwater; this fact, coupled with the overall absence of the constituent and other NNOCs in the BDC Clubhouse inflow over the past 15 years and the laboratory issues, leads me to suspect that the detection in the April 2017 sample is likely due to laboratory contamination or error. As such, the "inflow" port was resampled on June 6, 2017 and an additional water sample was collected from the "effluent" port of the GAC system on the same day. As you recall, water collected from the "effluent" port of the GAC system represents what is present for use at the tap.

I notified Mr. Paul Bretting of BDC of the detection on June 6th and the resampling work, and I expect the laboratory results of the resampling to be available in next few weeks. In the meantime, if you have any questions or comments, please do not hesitate to contact me via email or telephone at (502) 252-5878.

Sincerely,

**C.E. "Cary" Pooler, III, P.G.**  
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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-96406-1

Client Project/Site: BAR-POTABLE

For:

Chemours Company FC, LLC The

c/o AECOM

Sabre Building, Suite 300

4051 Ogletown Road

Newark, Delaware 19713

Attn: Sharon Nordstrom



Authorized for release by:

5/24/2017 3:32:26 PM

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

### LCMS

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Case Narrative

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

**Job ID: 280-96406-1**

**Laboratory: TestAmerica Denver**

## Narrative

### **CASE NARRATIVE** **Client: Chemours Company FC, LLC The** **Project: BAR-POTABLE** **Report Number: 280-96406-1**

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.

Throughout this report the MDL is equivalent to the LOD and the RL is equivalent to the LOQ.

#### **Sample Arrival and Receipt**

The sample was received on 4/27/2017 at 8:55 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

#### **Semivolatiles - Method 8270C DNX**

Sample GW0417-CLUBHOUSE INFLOW (280-96406-1) was analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 05/02/2017 and analyzed on 05/22/2017.

The method required MS/MSD could not be performed for prep batch 280-371862, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analyses data.

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

#### **Explosives - Method 8321A**

Sample GW0417-CLUBHOUSE INFLOW (280-96406-1) was analyzed for explosives in accordance with EPA SW-846 Method 8321A. The samples were prepared on 05/08/2017 and analyzed on 05/12/2017.

The following sample was re-prepared and re-analyzed outside of preparation holding time due to multiple QC failures in the original run: GW0417-CLUBHOUSE INFLOW (280-96406-1).

The method required MS/MSD could not be performed for prep batch 280-372683, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analyses data.

The 2,4-DNT-d3 Internal Standard (ISTD) retention time in LCS 280-372683/2-A) was outside the acceptance criteria of +/-0.5 minutes from the average of the of the initial calibration; it was within +/-0.5 minutes from the mid-point of the initial calibration per the SOP. The LCSD, MB, and samples were within +/-0.5 minutes from the mid-point and average of the initial calibration; therefore, no corrective action was required, per the SOP.

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

# Detection Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

**Client Sample ID: GW0417-CLUBHOUSE INFLOW**

**Lab Sample ID: 280-96406-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrobenzene	0.072	J H	0.096	0.032	ug/L	1		8321A	Total/NA

- 1
- 2
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This Detection Summary does not include radiochemical test results.

TestAmerica Denver

# Method Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

Method	Method Description	Protocol	Laboratory
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL DEN
8321A	Nitroaromatic and Nitramine Compounds (Explosives) (LC/MS)	SW846	TAL DEN

**Protocol References:**

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

**Laboratory References:**

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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# Sample Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-96406-1	GW0417-CLUBHOUSE INFLOW	Water	04/25/17 13:30	04/27/17 08:55

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# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

**Client Sample ID: GW0417-CLUBHOUSE INFLOW**

**Lab Sample ID: 280-96406-1**

**Date Collected: 04/25/17 13:30**

**Matrix: Water**

**Date Received: 04/27/17 08:55**

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dimethyl-3,4-Dinitrobenzene	0.23	U	4.8	0.23	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,2-Dimethyl-3,5-Dinitrobenzene	0.32	U	4.8	0.32	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,2-Dimethyl-3,6-Dinitrobenzene	0.40	U	4.8	0.40	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,2-Dimethyl-4,5-Dinitrobenzene	0.38	U	4.8	0.38	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,3-Dimethyl-2,4-Dinitrobenzene	0.44	U	4.8	0.44	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,3-Dimethyl-2,5-Dinitrobenzene	0.41	U	4.8	0.41	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,4-Dimethyl-2,3-Dinitrobenzene	0.37	U	4.8	0.37	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,4-Dimethyl-2,5-Dinitrobenzene	0.74	U	4.8	0.74	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,4-Dimethyl-2,6-Dinitrobenzene	0.21	U	4.8	0.21	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,5-Dimethyl-2,3-Dinitrobenzene	0.25	U	4.8	0.25	ug/L		05/02/17 14:00	05/22/17 21:02	1
1,5-Dimethyl-2,4-Dinitrobenzene	0.26	U	4.8	0.26	ug/L		05/02/17 14:00	05/22/17 21:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	86		48 - 135	05/02/17 14:00	05/22/17 21:02	1
2-Fluorobiphenyl	85		48 - 135	05/02/17 14:00	05/22/17 21:02	1
2-Fluorophenol	83		41 - 135	05/02/17 14:00	05/22/17 21:02	1
Nitrobenzene-d5	86		42 - 135	05/02/17 14:00	05/22/17 21:02	1
Phenol-d5	80		46 - 135	05/02/17 14:00	05/22/17 21:02	1
Terphenyl-d14	88		20 - 135	05/02/17 14:00	05/22/17 21:02	1

## Method: 8321A - Nitroaromatic and Nitramine Compounds (Explosives) (LC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.016	U H	0.096	0.016	ug/L		05/08/17 19:40	05/12/17 18:36	1
1,3-Dinitrobenzene	0.013	U H	0.096	0.013	ug/L		05/08/17 19:40	05/12/17 18:36	1
2,3-Dinitrotoluene	0.014	U H	0.096	0.014	ug/L		05/08/17 19:40	05/12/17 18:36	1
2,4,6-Trinitro-3-xylene	0.012	U H	0.096	0.012	ug/L		05/08/17 19:40	05/12/17 18:36	1
2,4,6-Trinitrotoluene	0.021	U H	0.096	0.021	ug/L		05/08/17 19:40	05/12/17 18:36	1
2,4-Dinitrotoluene	0.018	U H	0.096	0.018	ug/L		05/08/17 19:40	05/12/17 18:36	1
2,5-Dinitrotoluene	0.013	U H	0.096	0.013	ug/L		05/08/17 19:40	05/12/17 18:36	1
2,6-Dinitrotoluene	0.021	U H	0.096	0.021	ug/L		05/08/17 19:40	05/12/17 18:36	1
2-Amino-4,6-dinitrotoluene	0.020	U H	0.096	0.020	ug/L		05/08/17 19:40	05/12/17 18:36	1
2-Nitrotoluene	0.021	U H	0.096	0.021	ug/L		05/08/17 19:40	05/12/17 18:36	1
3,4-Dinitrotoluene	0.019	U H	0.096	0.019	ug/L		05/08/17 19:40	05/12/17 18:36	1
3,5-Dinitrotoluene	0.033	U H	0.096	0.033	ug/L		05/08/17 19:40	05/12/17 18:36	1
3-Nitrotoluene	0.024	U H	0.096	0.024	ug/L		05/08/17 19:40	05/12/17 18:36	1
4-Amino-2,6-dinitrotoluene	0.018	U H	0.096	0.018	ug/L		05/08/17 19:40	05/12/17 18:36	1
4-Nitrotoluene	0.025	U H	0.096	0.025	ug/L		05/08/17 19:40	05/12/17 18:36	1
HMX	0.018	U H	0.096	0.018	ug/L		05/08/17 19:40	05/12/17 18:36	1
<b>Nitrobenzene</b>	<b>0.072</b>	<b>J H</b>	0.096	0.032	ug/L		05/08/17 19:40	05/12/17 18:36	1
Nitroglycerin	0.043	U H	0.13	0.043	ug/L		05/08/17 19:40	05/12/17 18:36	1
PETN	0.017	U H	0.096	0.017	ug/L		05/08/17 19:40	05/12/17 18:36	1
RDX	0.020	U H	0.096	0.020	ug/L		05/08/17 19:40	05/12/17 18:36	1
Tetryl	0.020	U H	0.096	0.020	ug/L		05/08/17 19:40	05/12/17 18:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	115		48 - 130	05/08/17 19:40	05/12/17 18:36	1

TestAmerica Denver

# Surrogate Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TBP (48-135)	FBP (48-135)	2FP (41-135)	NBZ (42-135)	PHL (46-135)	TPH (20-135)
280-96406-1	GW0417-CLUBHOUSE INFLOW	86	85	83	86	80	88
LCS 280-371862/2-A	Lab Control Sample	79	69	78	80	75	84
LCSD 280-371862/3-A	Lab Control Sample Dup	83	80	84	84	83	87
MB 280-371862/1-A	Method Blank	81	77	84	84	80	83

### Surrogate Legend

TBP = 2,4,6-Tribromophenol

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPH = Terphenyl-d14

## Method: 8321A - Nitroaromatic and Nitramine Compounds (Explosives) (LC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NBZ (48-130)
280-96406-1	GW0417-CLUBHOUSE INFLOW	115
LCS 280-372683/2-A	Lab Control Sample	97
LCSD 280-372683/3-A	Lab Control Sample Dup	98
MB 280-372683/1-A	Method Blank	89

### Surrogate Legend

NBZ = Nitrobenzene-d5

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-371862/1-A**

**Matrix: Water**

**Analysis Batch: 374697**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 371862**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dimethyl-3,4-Dinitrobenzene	0.24	U	5.0	0.24	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,2-Dimethyl-3,5-Dinitrobenzene	0.33	U	5.0	0.33	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,2-Dimethyl-3,6-Dinitrobenzene	0.41	U	5.0	0.41	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,2-Dimethyl-4,5-Dinitrobenzene	0.39	U	5.0	0.39	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,3-Dimethyl-2,4-Dinitrobenzene	0.45	U	5.0	0.45	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,3-Dimethyl-2,5-Dinitrobenzene	0.42	U	5.0	0.42	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,4-Dimethyl-2,3-Dinitrobenzene	0.38	U	5.0	0.38	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,4-Dimethyl-2,5-Dinitrobenzene	0.76	U	5.0	0.76	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,4-Dimethyl-2,6-Dinitrobenzene	0.22	U	5.0	0.22	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,5-Dimethyl-2,3-Dinitrobenzene	0.26	U	5.0	0.26	ug/L		05/02/17 14:00	05/22/17 19:03	1
1,5-Dimethyl-2,4-Dinitrobenzene	0.27	U	5.0	0.27	ug/L		05/02/17 14:00	05/22/17 19:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	81		48 - 135	05/02/17 14:00	05/22/17 19:03	1
2-Fluorobiphenyl	77		48 - 135	05/02/17 14:00	05/22/17 19:03	1
2-Fluorophenol	84		41 - 135	05/02/17 14:00	05/22/17 19:03	1
Nitrobenzene-d5	84		42 - 135	05/02/17 14:00	05/22/17 19:03	1
Phenol-d5	80		46 - 135	05/02/17 14:00	05/22/17 19:03	1
Terphenyl-d14	83		20 - 135	05/02/17 14:00	05/22/17 19:03	1

**Lab Sample ID: LCS 280-371862/2-A**

**Matrix: Water**

**Analysis Batch: 374697**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 371862**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2-Dimethyl-3,4-Dinitrobenzene	50.0	48.5		ug/L		97	50 - 135
1,2-Dimethyl-3,5-Dinitrobenzene	50.0	48.1		ug/L		96	50 - 135
1,2-Dimethyl-3,6-Dinitrobenzene	50.0	48.0		ug/L		96	50 - 135
1,2-Dimethyl-4,5-Dinitrobenzene	50.0	50.7		ug/L		101	50 - 135
1,3-Dimethyl-2,4-Dinitrobenzene	50.0	50.9		ug/L		102	50 - 135
1,3-Dimethyl-2,5-Dinitrobenzene	50.0	49.2		ug/L		98	50 - 135
1,4-Dimethyl-2,3-Dinitrobenzene	50.0	47.6		ug/L		95	50 - 135
1,4-Dimethyl-2,5-Dinitrobenzene	50.0	47.4		ug/L		95	50 - 135
1,4-Dimethyl-2,6-Dinitrobenzene	50.0	48.5		ug/L		97	50 - 135
1,5-Dimethyl-2,3-Dinitrobenzene	50.0	47.8		ug/L		96	50 - 135
1,5-Dimethyl-2,4-Dinitrobenzene	50.0	49.8		ug/L		100	50 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	79		48 - 135
2-Fluorobiphenyl	69		48 - 135
2-Fluorophenol	78		41 - 135
Nitrobenzene-d5	80		42 - 135
Phenol-d5	75		46 - 135
Terphenyl-d14	84		20 - 135

TestAmerica Denver

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 280-371862/3-A**

**Matrix: Water**

**Analysis Batch: 374697**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 371862**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2-Dimethyl-3,4-Dinitrobenzene	50.0	51.8		ug/L		104	50 - 135	6	30
1,2-Dimethyl-3,5-Dinitrobenzene	50.0	50.3		ug/L		101	50 - 135	5	30
1,2-Dimethyl-3,6-Dinitrobenzene	50.0	51.2		ug/L		102	50 - 135	6	30
1,2-Dimethyl-4,5-Dinitrobenzene	50.0	51.4		ug/L		103	50 - 135	1	30
1,3-Dimethyl-2,4-Dinitrobenzene	50.0	53.8		ug/L		108	50 - 135	6	30
1,3-Dimethyl-2,5-Dinitrobenzene	50.0	52.8		ug/L		106	50 - 135	7	30
1,4-Dimethyl-2,3-Dinitrobenzene	50.0	51.2		ug/L		102	50 - 135	7	30
1,4-Dimethyl-2,5-Dinitrobenzene	50.0	49.7		ug/L		99	50 - 135	5	30
1,4-Dimethyl-2,6-Dinitrobenzene	50.0	51.6		ug/L		103	50 - 135	6	30
1,5-Dimethyl-2,3-Dinitrobenzene	50.0	51.5		ug/L		103	50 - 135	7	30
1,5-Dimethyl-2,4-Dinitrobenzene	50.0	52.3		ug/L		105	50 - 135	5	30

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	83		48 - 135
2-Fluorobiphenyl	80		48 - 135
2-Fluorophenol	84		41 - 135
Nitrobenzene-d5	84		42 - 135
Phenol-d5	83		46 - 135
Terphenyl-d14	87		20 - 135

## Method: 8321A - Nitroaromatic and Nitramine Compounds (Explosives) (LC/MS)

**Lab Sample ID: MB 280-372683/1-A**

**Matrix: Water**

**Analysis Batch: 373330**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 372683**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,3,5-Trinitrobenzene	0.017	U	0.10	0.017	ug/L		05/08/17 19:40	05/12/17 16:59	1
1,3-Dinitrobenzene	0.014	U	0.10	0.014	ug/L		05/08/17 19:40	05/12/17 16:59	1
2,3-Dinitrotoluene	0.015	U	0.10	0.015	ug/L		05/08/17 19:40	05/12/17 16:59	1
2,4,6-Trinitro-3-xylene	0.012	U	0.10	0.012	ug/L		05/08/17 19:40	05/12/17 16:59	1
2,4,6-Trinitrotoluene	0.022	U	0.10	0.022	ug/L		05/08/17 19:40	05/12/17 16:59	1
2,4-Dinitrotoluene	0.019	U	0.10	0.019	ug/L		05/08/17 19:40	05/12/17 16:59	1
2,5-Dinitrotoluene	0.014	U	0.10	0.014	ug/L		05/08/17 19:40	05/12/17 16:59	1
2,6-Dinitrotoluene	0.022	U	0.10	0.022	ug/L		05/08/17 19:40	05/12/17 16:59	1
2-Amino-4,6-dinitrotoluene	0.021	U	0.10	0.021	ug/L		05/08/17 19:40	05/12/17 16:59	1
2-Nitrotoluene	0.022	U	0.10	0.022	ug/L		05/08/17 19:40	05/12/17 16:59	1
3,4-Dinitrotoluene	0.020	U	0.10	0.020	ug/L		05/08/17 19:40	05/12/17 16:59	1
3,5-Dinitrotoluene	0.034	U	0.10	0.034	ug/L		05/08/17 19:40	05/12/17 16:59	1
3-Nitrotoluene	0.025	U	0.10	0.025	ug/L		05/08/17 19:40	05/12/17 16:59	1
4-Amino-2,6-dinitrotoluene	0.019	U	0.10	0.019	ug/L		05/08/17 19:40	05/12/17 16:59	1
4-Nitrotoluene	0.026	U	0.10	0.026	ug/L		05/08/17 19:40	05/12/17 16:59	1
HMX	0.019	U	0.10	0.019	ug/L		05/08/17 19:40	05/12/17 16:59	1
Nitrobenzene	0.033	U	0.10	0.033	ug/L		05/08/17 19:40	05/12/17 16:59	1
Nitroglycerin	0.045	U	0.14	0.045	ug/L		05/08/17 19:40	05/12/17 16:59	1
PETN	0.018	U	0.10	0.018	ug/L		05/08/17 19:40	05/12/17 16:59	1
RDX	0.021	U	0.10	0.021	ug/L		05/08/17 19:40	05/12/17 16:59	1

TestAmerica Denver

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## Method: 8321A - Nitroaromatic and Nitramine Compounds (Explosives) (LC/MS) (Continued)

**Lab Sample ID: MB 280-372683/1-A**  
**Matrix: Water**  
**Analysis Batch: 373330**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 372683**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetryl	0.021	U	0.10	0.021	ug/L		05/08/17 19:40	05/12/17 16:59	1

  

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	89		48 - 130	05/08/17 19:40	05/12/17 16:59	1

**Lab Sample ID: LCS 280-372683/2-A**  
**Matrix: Water**  
**Analysis Batch: 373330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 372683**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	0.500	0.551		ug/L		110	54 - 145
1,3-Dinitrobenzene	0.500	0.525		ug/L		105	68 - 131
2,3-Dinitrotoluene	0.500	0.471		ug/L		94	50 - 150
2,4,6-Trinitro-3-xylene	0.500	0.464		ug/L		93	50 - 150
2,4,6-Trinitrotoluene	0.500	0.391		ug/L		78	20 - 147
2,4-Dinitrotoluene	0.500	0.434		ug/L		87	66 - 130
2,5-Dinitrotoluene	0.500	0.522		ug/L		104	50 - 150
2,6-Dinitrotoluene	0.500	0.465		ug/L		93	64 - 133
2-Amino-4,6-dinitrotoluene	0.500	0.550		ug/L		110	64 - 138
2-Nitrotoluene	0.500	0.435		ug/L		87	34 - 131
3,4-Dinitrotoluene	0.501	0.429		ug/L		86	50 - 150
3,5-Dinitrotoluene	0.500	0.365		ug/L		73	50 - 150
3-Nitrotoluene	0.500	0.409		ug/L		82	36 - 133
4-Amino-2,6-dinitrotoluene	0.500	0.513		ug/L		103	65 - 131
4-Nitrotoluene	0.500	0.444		ug/L		89	40 - 137
HMX	0.500	0.474		ug/L		95	56 - 134
Nitrobenzene	0.500	0.541		ug/L		108	42 - 141
Nitroglycerin	0.500	0.524		ug/L		105	37 - 147
PETN	0.500	0.580		ug/L		116	10 - 198
RDX	0.500	0.512		ug/L		102	72 - 130
Tetryl	0.500	0.370		ug/L		74	15 - 134

  

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	97		48 - 130

**Lab Sample ID: LCSD 280-372683/3-A**  
**Matrix: Water**  
**Analysis Batch: 373330**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 372683**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,3,5-Trinitrobenzene	0.500	0.579		ug/L		116	54 - 145	5	57
1,3-Dinitrobenzene	0.500	0.529		ug/L		106	68 - 131	1	39
2,3-Dinitrotoluene	0.500	0.463		ug/L		93	50 - 150	2	30
2,4,6-Trinitro-3-xylene	0.500	0.467		ug/L		93	50 - 150	1	30
2,4,6-Trinitrotoluene	0.500	0.393		ug/L		79	20 - 147	1	68
2,4-Dinitrotoluene	0.500	0.481		ug/L		96	66 - 130	10	46
2,5-Dinitrotoluene	0.500	0.470		ug/L		94	50 - 150	10	50
2,6-Dinitrotoluene	0.500	0.440		ug/L		88	64 - 133	5	44

TestAmerica Denver

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## Method: 8321A - Nitroaromatic and Nitramine Compounds (Explosives) (LC/MS) (Continued)

**Lab Sample ID: LCSD 280-372683/3-A**  
**Matrix: Water**  
**Analysis Batch: 373330**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 372683**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
2-Amino-4,6-dinitrotoluene	0.500	0.494		ug/L		99	64 - 138	11	41
2-Nitrotoluene	0.500	0.462		ug/L		92	34 - 131	6	68
3,4-Dinitrotoluene	0.501	0.424		ug/L		85	50 - 150	1	30
3,5-Dinitrotoluene	0.500	0.443		ug/L		89	50 - 150	19	30
3-Nitrotoluene	0.500	0.425		ug/L		85	36 - 133	4	89
4-Amino-2,6-dinitrotoluene	0.500	0.458		ug/L		92	65 - 131	11	36
4-Nitrotoluene	0.500	0.465		ug/L		93	40 - 137	5	72
HMX	0.500	0.458		ug/L		92	56 - 134	4	34
Nitrobenzene	0.500	0.485		ug/L		97	42 - 141	11	58
Nitroglycerin	0.500	0.537		ug/L		107	37 - 147	2	71
PETN	0.500	0.567		ug/L		113	10 - 198	2	50
RDX	0.500	0.469		ug/L		94	72 - 130	9	25
Tetryl	0.500	0.401		ug/L		80	15 - 134	8	51

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5	98		48 - 130

# QC Association Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## GC/MS Semi VOA

### Prep Batch: 371862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96406-1	GW0417-CLUBHOUSE INFLOW	Total/NA	Water	3520C	
MB 280-371862/1-A	Method Blank	Total/NA	Water	3520C	
LCS 280-371862/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 280-371862/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 374697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96406-1	GW0417-CLUBHOUSE INFLOW	Total/NA	Water	8270C	371862
MB 280-371862/1-A	Method Blank	Total/NA	Water	8270C	371862
LCS 280-371862/2-A	Lab Control Sample	Total/NA	Water	8270C	371862
LCSD 280-371862/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	371862

## LCMS

### Prep Batch: 372683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96406-1	GW0417-CLUBHOUSE INFLOW	Total/NA	Water	3535	
MB 280-372683/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-372683/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 280-372683/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

### Analysis Batch: 373330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96406-1	GW0417-CLUBHOUSE INFLOW	Total/NA	Water	8321A	372683
MB 280-372683/1-A	Method Blank	Total/NA	Water	8321A	372683
LCS 280-372683/2-A	Lab Control Sample	Total/NA	Water	8321A	372683
LCSD 280-372683/3-A	Lab Control Sample Dup	Total/NA	Water	8321A	372683



# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

**Client Sample ID: GW0417-CLUBHOUSE INFLOW**

**Lab Sample ID: 280-96406-1**

**Date Collected: 04/25/17 13:30**

**Matrix: Water**

**Date Received: 04/27/17 08:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1032.4 mL	1 mL	371862	05/02/17 14:00	JRA	TAL DEN
Total/NA	Analysis	8270C		1			374697	05/22/17 21:02	DCK	TAL DEN
Total/NA	Prep	3535			1041.4 mL	5 mL	372683	05/08/17 19:40	MAV	TAL DEN
Total/NA	Analysis	8321A		1			373330	05/12/17 18:36	AGCM	TAL DEN

#### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

# Accreditation/Certification Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-POTABLE

TestAmerica Job ID: 280-96406-1

## Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999615430	08-31-17

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**Chain of Custody Record**

<b>Client Information</b>		Lab PM: Johnston, Michelle A		Carrier Tracking No(s): FEDEX		COC No: 170425-1	
Client Contact: Ms. Sharon Nordstrom		E-Mail: michelle.johnston@testamericainc.com		Page: 1 of 1		Job #: 60525839	
Company: Chemours Company FC, LLC The		Address: c/o AECOM Sabre Building 4051 Ogletown Road, Suite 300		Analysis Requested		Preservation Codes:	
City: Newark		State, Zip: DE, 19713		Due Date Requested:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - rh 4-5 Z - other (Specify)	
Phone: 302-781-5936		PO #: LBIO-66421/9267-77201000-WH06-508001		TAT Requested (days): STANDARD		Other:	
Email: sharon.nordstrom@aecom.com		WO #:		Field Filtered Sample (Yes or No)		Total Number of Containers	
Project #: 28003388		Project Name: BAR-GW-Sampling-017-POTABLE		Perform MS/MSD (Yes or No)		Special Instructions/Note:	
Site: BARKSDALE, WI		Sample Date		8321A - full DuPont list + DNT Isomers + TNX		8270C - DNK Isomers	
Sample Identification		Sample Time		8260B - VOCs			
GW0417 - CLUBHOUSE INFLOW		4/25/17 13:30		N N A		4	
Sample Type (C=Comp, G=grab)		Preservation Code:		Matrix (W=water, S=solid, O=wastliol, BT=titans, A=As)			
G		WATER		N X X			
Possible Hazard Identification		Sample Date		Sample Time			
<input 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		4/25/17		13:30			
Deliverable Requested: I, II, III, IV, Other (specify)		Date: 3/13/17		Date: 11/25/17			
Empty Kit Relinquished by: <i>Fateruda Mue</i>		Date: 11/25/17		Date: 11:00			
Relinquished by: <i>CESI</i>		Date/Time: 4/26/17 11:00		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0.840.0 B#7 transferred by JT 4/27/17			



## Login Sample Receipt Checklist

Client: Chemours Company FC, LLC The

Job Number: 280-96406-1

**Login Number: 96406**  
**List Number: 1**  
**Creator: True, Joshua A**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

