



The Chemours Company  
500 West Jefferson Street  
Suite 1600  
Louisville, KY 40202

502-569-2301 t  
chemours.com

January 30, 2017

Mr. and Mrs. Scott Kranz  
30900 Nolander Road  
Washburn, Wisconsin 54891

**Subject: Monitoring Well Construction Summary and Sampling Results  
Nolander Road  
Town of Barksdale, Wisconsin**

Dear Mr. and Mrs. Kranz:

The purpose of this letter is to provide you with a summary of the construction and sampling results associated with the monitoring well installed on your property north of Nolander Road in the Town of Barksdale.

The well, identified as monitoring well PZ-56D, was installed in August 2016 to assist in the characterization of chemical constituents in groundwater associated with historical manufacturing of explosives at the nearby Former DuPont Barksdale Works site. The well was installed at a depth of approximately 100 feet below ground surface and protected with a locked, above-ground steel shroud, concrete pad, and four steel protective posts. The location of the well is shown on the attached figure. Construction details are included on the attached well construction form. A photograph of the above ground portion of the well and protective posts is also attached.

Groundwater samples were collected from the well in October and November 2016, and submitted to an independent laboratory for analysis. None of the constituents quantified by the laboratory were detected in the groundwater samples collected from PZ-56D. Analytical results are included on Table 1 (see attached).

I appreciate your cooperation and understanding throughout the process of the well installation and monitoring. Should you have any questions, please feel free to contact me at (812) 923-1136.

Sincerely,

A handwritten signature in blue ink that reads 'Bradley S. Nave'.

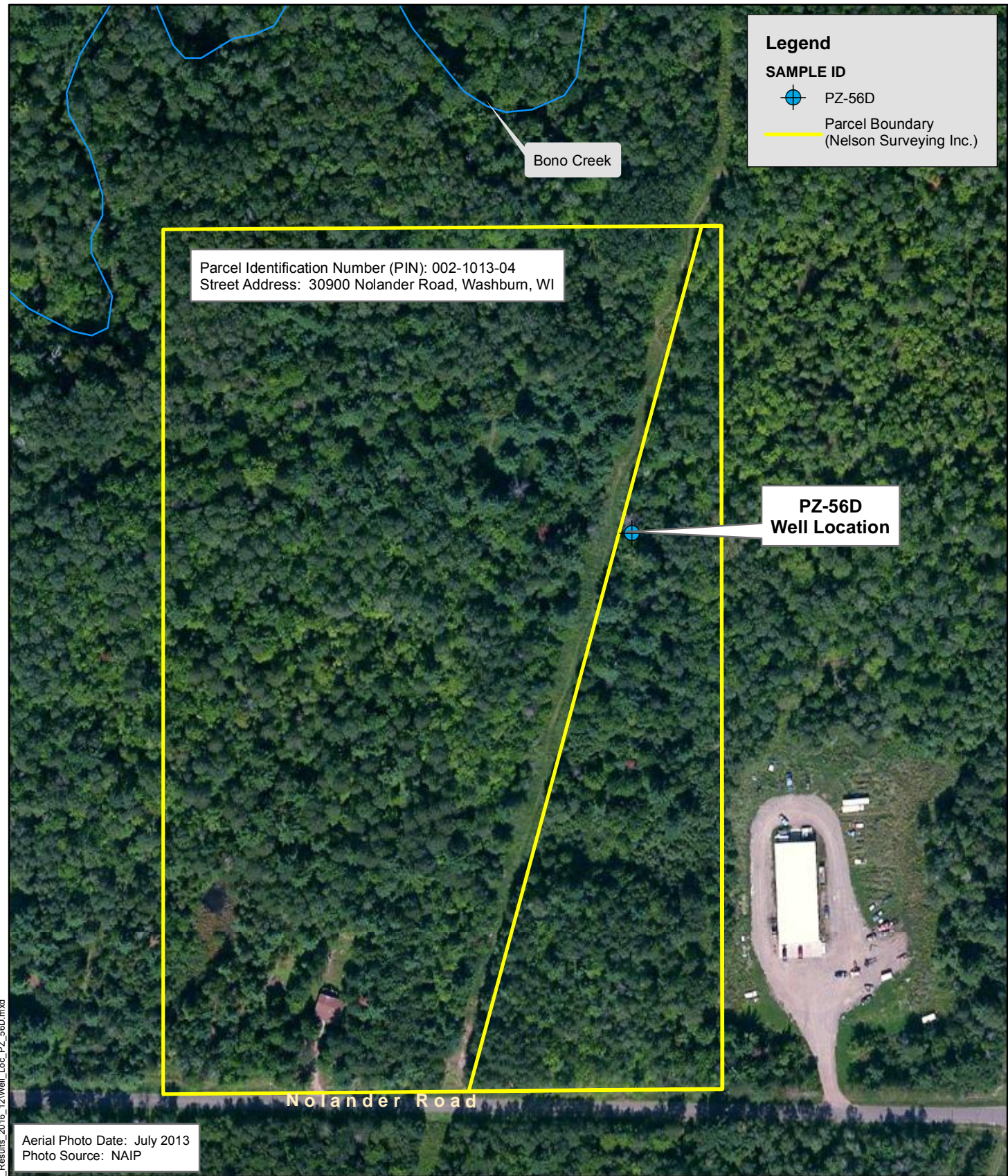
Bradley S. Nave  
Chemours Corporate Remediation Group

Attachments (5): Figure 1 – Monitoring Well PZ-56D Location  
Monitoring Well Construction Form  
Photograph of Well Location  
Table 1 – Laboratory Analytical Results  
Test America Laboratory Reports

cc: Mr. C.E. "Cary" Pooler – AECOM  
Mr. Christopher A. Saari – WDNR



**ATTACHMENT 1**

**Figure 1 – Monitoring Well PZ-56D Location**



**Legend**

**SAMPLE ID**

-  PZ-56D
-  Parcel Boundary (Nelson Surveying Inc.)

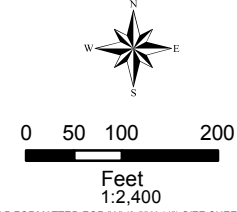
Parcel Identification Number (PIN): 002-1013-04  
 Street Address: 30900 Nolander Road, Washburn, WI

**PZ-56D  
 Well Location**

Nolander Road

Aerial Photo Date: July 2013  
 Photo Source: NAIP

O:\GIS\BAR\_GIS\Map\_Files\Offline\_GW\_Results\_2016\_12\Well\_Loc\_PZ\_56D.mxd



MAP FORMATTED FOR "A" (8.5" X 11") SIZE SHEET.  
 SCALE NOT VALID FOR DIFFERENT PAGE SIZE.

FILE NUMBER:	
DESIGNED BY:	CEP
DRAWN BY:	KJB
DATA QUALITY CHECK BY:	CEP

**AECOM**

AECOM  
 500 West Jefferson Street  
 Suite 1600  
 Louisville, Kentucky 40202

**Monitoring Well PZ-56D  
 Location**

Former DuPont Barksdale Works  
 Barksdale, Wisconsin 54806

PROJECT NUMBER:	60505619
DATE:	January 2017
FIGURE NUMBER:	1

**ATTACHMENT 2**  
**Monitoring Well Construction Form**

Facility/Project Name Former DuPont Barksdale Works	Local Grid Location of Well _____ ft. <input type="checkbox"/> N. _____ ft. <input type="checkbox"/> E. _____ ft. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.	Well Name PZ-56D
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input checked="" type="checkbox"/> ) or Well Location <input type="checkbox"/> Lat. Estimated from GIS "Long. NAD 83 w/s _____" or _____	Wis. Unique Well No. _____ DNR Well ID No. _____
Facility ID 02-04-00156	St. Plane 536047.312 ft. N., 1735675.038 ft. E. S/C/N	Date Well Installed 07/27/2016 m m d d y y v v y y
Type of Well Well Code 12 / PZ	Section Location of Waste/Source SE 1/4 of SE 1/4 of Sec. 13, T. 48 N, R. 05 <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Keith Fehrman
Distance from Waste/ Source 895 ft. N	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number _____
Enf. Stds. Apply <input type="checkbox"/>		Well Installed By: Name (first, last) and Firm Layne Christenson

Estimated surface elevation based on county GIS. To be surveyed at later date.

A. Protective pipe, top elevation --- 651 --- ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation --- 650.5 --- ft. MSL	2. Protective cover pipe: a. Inside diameter: --- 4 --- in. b. Length: --- 6 --- ft. c. Material: Steel <input checked="" type="checkbox"/> 0 4 Other <input type="checkbox"/>
C. Land surface elevation --- 648 --- ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: 4 bumpers (6" diameter)
D. Surface seal, bottom --- 643 --- ft. MSL or --- ft.	3. Surface seal: Bentonite <input type="checkbox"/> 3 0 Concrete surrounding shroud to 3 ft below ground <input checked="" type="checkbox"/> 0 1 10 inch x 4 ft concrete pad Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input checked="" type="checkbox"/> SM <input checked="" type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input checked="" type="checkbox"/> 3 0 Other <input type="checkbox"/>
13. Sieve analysis performed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: a. Granular/Chipped Bentonite <input type="checkbox"/> 3 3 b. --- Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 3 5 c. --- Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 3 1 d. 5 % Bentonite ... Bentonite-cement grout <input checked="" type="checkbox"/> 5 0 e. 14.13 Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 5 0 Hollow Stem Auger <input type="checkbox"/> 4 1 Rotosonic <input checked="" type="checkbox"/> Other <input checked="" type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 0 1 Tremie pumped <input checked="" type="checkbox"/> 0 2 Gravity <input type="checkbox"/> 0 8
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 0 2 Air <input type="checkbox"/> 0 1 Drilling Mud <input checked="" type="checkbox"/> 0 3 None <input type="checkbox"/> 9 9	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 3 3 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input type="checkbox"/> 3 2 c. Halliburton Hole Plug Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____	7. Fine sand material: Manufacturer, product name & mesh size a. Red Flint sand gravel #100 b. Volume added 0.37 ft <sup>3</sup>
17. Source of water (attach analysis, if required): Local filtered well (potable)	8. Filter pack material: Manufacturer, product name & mesh size a. Red Flint sand #15 b. Volume added 1.47 ft <sup>3</sup>
E. Bentonite seal, top --- 81 --- ft. MSL or --- ft.	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> 2 3 Flush threaded PVC schedule 80 <input checked="" type="checkbox"/> 2 4 Other <input type="checkbox"/>
F. Fine sand, top --- 86 --- ft. MSL or --- ft.	10. Screen material: PVC (schedule 80) a. Screen type: Factory cut <input checked="" type="checkbox"/> 1 1 Continuous slot <input type="checkbox"/> 0 1 Other <input type="checkbox"/>
G. Filter pack, top --- 88 --- ft. MSL or --- ft.	b. Manufacturer Hole Products c. Slot size: 0.010 in. d. Slotted length: 5 ft.
H. Screen joint, top --- 90 --- ft. MSL or --- ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 1 4 Other <input type="checkbox"/>
I. Well bottom --- 95 --- ft. MSL or --- ft.	
J. Filter pack, bottom --- 1 --- ft. MSL or --- ft.	
K. Borehole, bottom --- 96 --- ft. MSL or --- ft.	
L. Borehole, diameter --- 6 --- in.	
M. O.D. well casing --- 2.375 --- in.	
N. I.D. well casing --- 1.939 --- in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.  
Signature *[Signature]* Firm AECOM

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

**ATTACHMENT 3**  
**Photograph of Well Location**

Client Name: Chemours	Site Name: Former DuPont Barksdale Works	Field Event Name: Well Installation 2016	Proj. Number: 60505619.20161
			Proj. Name: Site Investigation 2016

Photo No.: 1	Date: 8/17/2016	Time: 9:41
-----------------	--------------------	---------------

Direction Photo Looking (if applicable):  
North

Site Area Name (if applicable):  
Kranz Property

Photograph Taken By:  
Nick Shorkey

Description:  
Well PZ-56D



**ATTACHMENT 4**

**Table 1 – Laboratory Analytical Results**



**Table 1**  
**Laboratory Analytical Results**  
 Monitoring Well Construction Summary and Sampling Results Nolander Road  
 Barksdale, Wisconsin

	Location ID	PZ-56D	PZ-56D
	Date Sampled	10/10/2016	11/09/2016
Parameter Name	Report Units	Result	Result
1,2-Dimethyl-3,4-Dinitrobenzene	UG/L	<0.23	--
1,2-Dimethyl-3,6-Dinitrobenzene	UG/L	<0.40	--
1,2-Dimethyl-4,5-Dinitrobenzene	UG/L	<0.38	--
1,3-Dimethyl-2,5-Dinitrobenzene	UG/L	<0.41	--
1,4-Dimethyl-2,3-Dinitrobenzene	UG/L	<0.37	--
1,4-Dimethyl-2,5-Dinitrobenzene	UG/L	<0.74	--
1,2-Dimethyl-3,5-Dinitrobenzene	UG/L	<0.32	--
1,3-Dimethyl-2,4-Dinitrobenzene	UG/L	<0.44	--
1,4-Dimethyl-2,6-Dinitrobenzene	UG/L	<0.21	--
1,5-Dimethyl-2,3-Dinitrobenzene	UG/L	<0.25	--
1,5-Dimethyl-2,4-Dinitrobenzene	UG/L	<0.26	--
2,4,6-Trinitroxylyene	UG/L	<0.012 UJ	<0.012

The "less than" symbol ( < ) indicates that the reading was below the method detection limit

UJ: Not detected. Reporting limit may not be accurate or precise.

UG/L: Micrograms per Liter

**ATTACHMENT 5**  
**Test America Laboratory Reports**

# 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: 280-89530-1

Client Project/Site: BAR-Full Round Well Sampling 2016

Revision: 1

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:

12/20/2016 3:20:32 PM

Michelle Johnston, Project Manager II

(303)736-0110

[michelle.johnston@testamericainc.com](mailto:michelle.johnston@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*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.*

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Method Summary . . . . .	7
Sample Summary . . . . .	8
Client Sample Results . . . . .	9
Surrogate Summary . . . . .	11
QC Sample Results . . . . .	12
QC Association Summary . . . . .	15
Lab Chronicle . . . . .	16
Certification Summary . . . . .	17
Chain of Custody . . . . .	18
Receipt Checklists . . . . .	19

# Definitions/Glossary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
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.

### 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.
F2	MS/MSD RPD exceeds control limits
X	Surrogate is outside control limits

## 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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

**Job ID: 280-89530-1**

**Laboratory: TestAmerica Denver**

## Narrative

### CASE NARRATIVE

**Client: The Chemours Company FC, LLC**  
**Project: BAR-Full Round Well Sampling 2016**  
**Report Number: 280-89530-1**

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.

#### **Revision - 12/20/2016**

In accordance with the client's instructions provided on 12/14/2016 the deliverables were revised to report the samples in separate reports.

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

The samples were received on 10/12/2016 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.9° C and 4.2° C.

#### **Receipt Exceptions**

One of two coolers was delayed by FedEx and received on 10/13/2016 one day after the first cooler was received on 10/12/2016. It can be noted that both coolers were received within temperature acceptance criteria of 0-6°C.

Additional samples/analyses requested on the chain-of-custody are reported under separate cover (280-89530-2).

No other anomalies were observed during sample receipt.

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

Samples GW1016-PZ-56D (280-89530-1) and GW1016-EB-NEW-101016 (280-89530-3) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 10/17/2016 and analyzed on 10/24/2016.

The method required MS/MSD could not be performed for prep batch 280-346875, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analyses data.

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

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

Samples GW1016-PZ-56D (280-89530-1) and GW1016-EB-NEW-101016 (280-89530-3) were analyzed for explosives in accordance with EPA SW-846 Method 8321A. The samples were prepared on 10/20/2016 and analyzed on 11/01/2016.

The following samples was re-prepared outside of preparation holding time as the initial extraction used the wrong standards: GW1016-PZ-56D (280-89530-1) and GW1016-EB-NEW-101016 (280-89530-3).

Due to sample matrix effect on the HMX13C4 internal standard (ISTD), a dilution was required for the following samples: 280-89631-F-2-A MS and 280-89631-C-2-A MSD.

# Case Narrative

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

---

## Job ID: 280-89530-1 (Continued)

---

### Laboratory: TestAmerica Denver (Continued)

The old and new column for du Pont explosives are unable to separate 2,3-Dinitrotoluene and 2,5-Dinitrotoluene; therefore, these compounds will be reported as a co-elution. Results may be biased low if only one of these compounds is actually in the sample.

The MS/MSD associated with prep batch 280-347430 was performed on a sample from another job. The MS/MSD exhibited a surrogate recovery and RPD data outside the QC control limits for 2,4,6-Trinitro-3-xylene and Nitrobenzene-d5. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Detection Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

**Client Sample ID: GW1016-PZ-56D**

**Lab Sample ID: 280-89530-1**

No Detections.

**Client Sample ID: GW1016-EB-NEW-101016**

**Lab Sample ID: 280-89530-3**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

TestAmerica Denver



# Method Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Sample Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-89530-1	GW1016-PZ-56D	Water	10/10/16 15:55	10/12/16 09:55
280-89530-3	GW1016-EB-NEW-101016	Water	10/10/16 15:40	10/12/16 09:55

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Client Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

**Client Sample ID: GW1016-PZ-56D**

**Lab Sample ID: 280-89530-1**

**Date Collected: 10/10/16 15:55**

**Matrix: Water**

**Date Received: 10/12/16 09:55**

**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	4.9	0.23	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,2-Dimethyl-3,5-Dinitrobenzene	0.32	U	4.9	0.32	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,2-Dimethyl-3,6-Dinitrobenzene	0.40	U	4.9	0.40	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,2-Dimethyl-4,5-Dinitrobenzene	0.38	U	4.9	0.38	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,3-Dimethyl-2,4-Dinitrobenzene	0.44	U	4.9	0.44	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,3-Dimethyl-2,5-Dinitrobenzene	0.41	U	4.9	0.41	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,4-Dimethyl-2,3-Dinitrobenzene	0.37	U	4.9	0.37	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,4-Dimethyl-2,5-Dinitrobenzene	0.74	U	9800	0.74	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,4-Dimethyl-2,6-Dinitrobenzene	0.21	U	4.9	0.21	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,5-Dimethyl-2,3-Dinitrobenzene	0.25	U	4.9	0.25	ug/L		10/17/16 14:50	10/24/16 20:12	1
1,5-Dimethyl-2,4-Dinitrobenzene	0.26	U	4.9	0.26	ug/L		10/17/16 14:50	10/24/16 20:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	75		48 - 135	10/17/16 14:50	10/24/16 20:12	1
2-Fluorobiphenyl	79		48 - 135	10/17/16 14:50	10/24/16 20:12	1
2-Fluorophenol	75		41 - 135	10/17/16 14:50	10/24/16 20:12	1
Nitrobenzene-d5	77		42 - 135	10/17/16 14:50	10/24/16 20:12	1
Phenol-d5	75		46 - 135	10/17/16 14:50	10/24/16 20:12	1
Terphenyl-d14	58		20 - 135	10/17/16 14:50	10/24/16 20:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trinitro-3-xylene	0.012	U H	0.10	0.012	ug/L		10/20/16 17:35	11/01/16 19:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	64		48 - 130	10/20/16 17:35	11/01/16 19:16	1

# Client Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

**Client Sample ID: GW1016-EB-NEW-101016**

**Lab Sample ID: 280-89530-3**

**Date Collected: 10/10/16 15:40**

**Matrix: Water**

**Date Received: 10/12/16 09:55**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dimethyl-3,4-Dinitrobenzene	0.24	U	4.9	0.24	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,2-Dimethyl-3,5-Dinitrobenzene	0.32	U	4.9	0.32	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,2-Dimethyl-3,6-Dinitrobenzene	0.40	U	4.9	0.40	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,2-Dimethyl-4,5-Dinitrobenzene	0.38	U	4.9	0.38	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,3-Dimethyl-2,4-Dinitrobenzene	0.44	U	4.9	0.44	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,3-Dimethyl-2,5-Dinitrobenzene	0.41	U	4.9	0.41	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,4-Dimethyl-2,3-Dinitrobenzene	0.37	U	4.9	0.37	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,4-Dimethyl-2,5-Dinitrobenzene	0.75	U	9800	0.75	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,4-Dimethyl-2,6-Dinitrobenzene	0.22	U	4.9	0.22	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,5-Dimethyl-2,3-Dinitrobenzene	0.25	U	4.9	0.25	ug/L		10/17/16 14:50	10/24/16 21:09	1
1,5-Dimethyl-2,4-Dinitrobenzene	0.26	U	4.9	0.26	ug/L		10/17/16 14:50	10/24/16 21:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	73		48 - 135	10/17/16 14:50	10/24/16 21:09	1
2-Fluorobiphenyl	80		48 - 135	10/17/16 14:50	10/24/16 21:09	1
2-Fluorophenol	78		41 - 135	10/17/16 14:50	10/24/16 21:09	1
Nitrobenzene-d5	78		42 - 135	10/17/16 14:50	10/24/16 21:09	1
Phenol-d5	79		46 - 135	10/17/16 14:50	10/24/16 21:09	1
Terphenyl-d14	84		20 - 135	10/17/16 14:50	10/24/16 21:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trinitro-3-xylene	0.011	U H	0.095	0.011	ug/L		10/20/16 17:35	11/01/16 20:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	54		48 - 130	10/20/16 17:35	11/01/16 20:21	1

# Surrogate Summary

Client: Chemours Company FC, LLC The  
 Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (48-135)	FBP (48-135)	2FP (41-135)	NBZ (42-135)	PHL (46-135)	TPH (20-135)
280-89530-1	GW1016-PZ-56D	75	79	75	77	75	58
280-89530-3	GW1016-EB-NEW-101016	73	80	78	78	79	84
LCS 280-346875/2-A	Lab Control Sample	75	82	68	80	59	88
LCS 280-346875/3-A	Lab Control Sample Dup	72	80	73	78	72	65
MB 280-346875/1-A	Method Blank	74	80	81	81	83	86

### 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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		NBZ (48-130)
280-89530-1	GW1016-PZ-56D	64
280-89530-3	GW1016-EB-NEW-101016	54
280-89631-C-2-A MSD	Matrix Spike Duplicate	55
280-89631-F-2-A MS	Matrix Spike	47 X
LCS 280-347430/2-A	Lab Control Sample	57
MB 280-347430/1-A	Method Blank	68

### Surrogate Legend

NBZ = Nitrobenzene-d5

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

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

**Lab Sample ID: MB 280-346875/1-A**  
**Matrix: Water**  
**Analysis Batch: 347868**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 346875**

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		10/17/16 14:50	10/24/16 15:29	1
1,2-Dimethyl-3,5-Dinitrobenzene	0.33	U	5.0	0.33	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,2-Dimethyl-3,6-Dinitrobenzene	0.41	U	5.0	0.41	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,2-Dimethyl-4,5-Dinitrobenzene	0.39	U	5.0	0.39	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,3-Dimethyl-2,4-Dinitrobenzene	0.45	U	5.0	0.45	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,3-Dimethyl-2,5-Dinitrobenzene	0.42	U	5.0	0.42	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,4-Dimethyl-2,3-Dinitrobenzene	0.38	U	5.0	0.38	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,4-Dimethyl-2,5-Dinitrobenzene	0.76	U	10000	0.76	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,4-Dimethyl-2,6-Dinitrobenzene	0.22	U	5.0	0.22	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,5-Dimethyl-2,3-Dinitrobenzene	0.26	U	5.0	0.26	ug/L		10/17/16 14:50	10/24/16 15:29	1
1,5-Dimethyl-2,4-Dinitrobenzene	0.27	U	5.0	0.27	ug/L		10/17/16 14:50	10/24/16 15:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		48 - 135	10/17/16 14:50	10/24/16 15:29	1
2-Fluorobiphenyl	80		48 - 135	10/17/16 14:50	10/24/16 15:29	1
2-Fluorophenol	81		41 - 135	10/17/16 14:50	10/24/16 15:29	1
Nitrobenzene-d5	81		42 - 135	10/17/16 14:50	10/24/16 15:29	1
Phenol-d5	83		46 - 135	10/17/16 14:50	10/24/16 15:29	1
Terphenyl-d14	86		20 - 135	10/17/16 14:50	10/24/16 15:29	1

**Lab Sample ID: LCS 280-346875/2-A**  
**Matrix: Water**  
**Analysis Batch: 347868**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 346875**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2-Dimethyl-3,4-Dinitrobenzene	50.0	46.9		ug/L		94	50 - 135
1,2-Dimethyl-3,5-Dinitrobenzene	51.3	49.2		ug/L		96	50 - 135
1,2-Dimethyl-3,6-Dinitrobenzene	50.0	46.9		ug/L		94	50 - 135
1,2-Dimethyl-4,5-Dinitrobenzene	50.0	45.7		ug/L		91	50 - 135
1,3-Dimethyl-2,4-Dinitrobenzene	50.0	47.1		ug/L		94	50 - 135
1,3-Dimethyl-2,5-Dinitrobenzene	50.0	47.5		ug/L		95	50 - 135
1,4-Dimethyl-2,3-Dinitrobenzene	50.0	45.7		ug/L		91	50 - 135
1,4-Dimethyl-2,5-Dinitrobenzene	50.0	46.5	J	ug/L		93	50 - 135
1,4-Dimethyl-2,6-Dinitrobenzene	50.0	46.4		ug/L		93	50 - 135
1,5-Dimethyl-2,3-Dinitrobenzene	50.0	46.3		ug/L		93	50 - 135
1,5-Dimethyl-2,4-Dinitrobenzene	50.0	46.5		ug/L		93	50 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	75		48 - 135
2-Fluorobiphenyl	82		48 - 135
2-Fluorophenol	68		41 - 135
Nitrobenzene-d5	80		42 - 135
Phenol-d5	59		46 - 135
Terphenyl-d14	88		20 - 135

TestAmerica Denver

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

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

**Lab Sample ID: LCSD 280-346875/3-A**

**Matrix: Water**

**Analysis Batch: 347868**

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

**Prep Type: Total/NA**

**Prep Batch: 346875**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
1,2-Dimethyl-3,4-Dinitrobenzene	50.0	43.6		ug/L		87	50 - 135	7	30
1,2-Dimethyl-3,5-Dinitrobenzene	51.3	46.7		ug/L		91	50 - 135	5	30
1,2-Dimethyl-3,6-Dinitrobenzene	50.0	43.9		ug/L		88	50 - 135	7	30
1,2-Dimethyl-4,5-Dinitrobenzene	50.0	43.0		ug/L		86	50 - 135	6	30
1,3-Dimethyl-2,4-Dinitrobenzene	50.0	45.8		ug/L		92	50 - 135	3	30
1,3-Dimethyl-2,5-Dinitrobenzene	50.0	45.3		ug/L		91	50 - 135	5	30
1,4-Dimethyl-2,3-Dinitrobenzene	50.0	43.6		ug/L		87	50 - 135	5	30
1,4-Dimethyl-2,5-Dinitrobenzene	50.0	44.0	J	ug/L		88	50 - 135	6	30
1,4-Dimethyl-2,6-Dinitrobenzene	50.0	44.3		ug/L		89	50 - 135	5	30
1,5-Dimethyl-2,3-Dinitrobenzene	50.0	43.2		ug/L		86	50 - 135	7	30
1,5-Dimethyl-2,4-Dinitrobenzene	50.0	44.7		ug/L		89	50 - 135	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol	72		48 - 135
2-Fluorobiphenyl	80		48 - 135
2-Fluorophenol	73		41 - 135
Nitrobenzene-d5	78		42 - 135
Phenol-d5	72		46 - 135
Terphenyl-d14	65		20 - 135

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

**Lab Sample ID: MB 280-347430/1-A**

**Matrix: Water**

**Analysis Batch: 349337**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 347430**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trinitro-3-xylene	0.012	U	0.10	0.012	ug/L		10/20/16 17:35	11/01/16 16:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	68		48 - 130	10/20/16 17:35	11/01/16 16:03	1

**Lab Sample ID: LCS 280-347430/2-A**

**Matrix: Water**

**Analysis Batch: 349337**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 347430**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4,6-Trinitro-3-xylene	0.500	0.412		ug/L		82	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	57		48 - 130

TestAmerica Denver

# QC Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

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

**Lab Sample ID: 280-89631-C-2-A MSD**

**Matrix: Water**

**Analysis Batch: 349337**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 347430**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2,4,6-Trinitro-3-xylene	0.011	U F2	0.480	0.416	F2	ug/L		87	50 - 150	31	30
<b>Surrogate</b>	<b>MSD %Recovery</b>		<b>MSD Qualifier</b>	<b>Limits</b>							
Nitrobenzene-d5	55			48 - 130							

**Lab Sample ID: 280-89631-F-2-A MS**

**Matrix: Water**

**Analysis Batch: 349337**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 347430**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2,4,6-Trinitro-3-xylene	0.011	U F2	0.480	0.304		ug/L		63	50 - 150		
<b>Surrogate</b>	<b>MS %Recovery</b>		<b>MS Qualifier</b>	<b>Limits</b>							
Nitrobenzene-d5	47		X	48 - 130							



# QC Association Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

## GC/MS Semi VOA

### Prep Batch: 346875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-89530-1	GW1016-PZ-56D	Total/NA	Water	3520C	
280-89530-3	GW1016-EB-NEW-101016	Total/NA	Water	3520C	
MB 280-346875/1-A	Method Blank	Total/NA	Water	3520C	
LCS 280-346875/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 280-346875/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 347868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-89530-1	GW1016-PZ-56D	Total/NA	Water	8270C	346875
280-89530-3	GW1016-EB-NEW-101016	Total/NA	Water	8270C	346875
MB 280-346875/1-A	Method Blank	Total/NA	Water	8270C	346875
LCS 280-346875/2-A	Lab Control Sample	Total/NA	Water	8270C	346875
LCSD 280-346875/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	346875

## LCMS

### Prep Batch: 347430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-89530-1	GW1016-PZ-56D	Total/NA	Water	3535	
280-89530-3	GW1016-EB-NEW-101016	Total/NA	Water	3535	
MB 280-347430/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-347430/2-A	Lab Control Sample	Total/NA	Water	3535	
280-89631-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	3535	
280-89631-F-2-A MS	Matrix Spike	Total/NA	Water	3535	

### Analysis Batch: 349337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-89530-1	GW1016-PZ-56D	Total/NA	Water	8321A	347430
280-89530-3	GW1016-EB-NEW-101016	Total/NA	Water	8321A	347430
MB 280-347430/1-A	Method Blank	Total/NA	Water	8321A	347430
LCS 280-347430/2-A	Lab Control Sample	Total/NA	Water	8321A	347430
280-89631-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	8321A	347430
280-89631-F-2-A MS	Matrix Spike	Total/NA	Water	8321A	347430

# Lab Chronicle

Client: Chemours Company FC, LLC The  
 Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

**Client Sample ID: GW1016-PZ-56D**

**Lab Sample ID: 280-89530-1**

**Date Collected: 10/10/16 15:55**

**Matrix: Water**

**Date Received: 10/12/16 09:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1024.7 mL	1 mL	346875	10/17/16 14:50	GLK	TAL DEN
Total/NA	Analysis	8270C		1			347868	10/24/16 20:12	DCK	TAL DEN
Total/NA	Prep	3535			984.1 mL	5 mL	347430	10/20/16 17:35	DLW	TAL DEN
Total/NA	Analysis	8321A		1			349337	11/01/16 19:16	AGCM	TAL DEN

**Client Sample ID: GW1016-EB-NEW-101016**

**Lab Sample ID: 280-89530-3**

**Date Collected: 10/10/16 15:40**

**Matrix: Water**

**Date Received: 10/12/16 09:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1020.1 mL	1 mL	346875	10/17/16 14:50	GLK	TAL DEN
Total/NA	Analysis	8270C		1			347868	10/24/16 21:09	DCK	TAL DEN
Total/NA	Prep	3535			1051.1 mL	5 mL	347430	10/20/16 17:35	DLW	TAL DEN
Total/NA	Analysis	8321A		1			349337	11/01/16 20:21	AGCM	TAL DEN

**Laboratory References:**

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

# Certification Summary

Client: Chemours Company FC, LLC The  
Project/Site: BAR-Full Round Well Sampling 2016

TestAmerica Job ID: 280-89530-1

## Laboratory: TestAmerica Denver

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	999615430	08-31-17

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

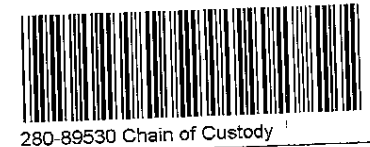
4955 Yarrow Street  
Arvada, CO 80002  
Phone (303) 736-0100 Fax (303) 431-7171

### Chain of Custody Record

<b>Client Information</b> Client Contact: Sharon Nordstrom	Sampler: <b>ERIC SCHMIDT</b>	Lab PM: Johnston, Michelle A	Carrier Tracking No(s): FedEx <b>7048 7629 3460</b>	COC No: 280-36563-14837.1
	Phone: <b>920-621-3878</b>	E-Mail: michelle.johnston@testamericainc.com	<b>7048 7629 3482</b>	Page: Page <u>1</u> of <u>1</u>

Company: The Chemours Company FC, LLC		Analysis Requested					Job #:											
Address: c/o AECOM Sabre Building, Suite 300 4051 Ogletown Road		Due Date Requested:			Total Number of Containers: 8321A Nitro organics (Full list + all extra DNT isomers + TNX) 8270 DNX isomers- Full list 8260C - Wisconsin Volatiles List - LL 6860 - Perchlorate 8321A - TNX Only					Preservation Codes:								
City: Newark		TAT Requested (days): <b>15 Business Days</b>								A - HCL			M - Hexane					
State, Zip: DE, 19713		PO #: LBIO-67048/77201000-WH06-507975								B - NaOH			N - None					
Phone: 302-892-8947(Tel)										WO #:			C - Zn Acetate			O - AsNaO2		
Email: sharon.nordstrom@aecom.com													Project #: 28003388			D - Nitric Acid		
Project Name: BAR-Full Round Well Sampling 2016		SSOW#:								E - NaHSO4			Q - Na2SO3					
Site: New 2016 Wells		Matrix (Water, Solid, Waste, etc) BT=Tissue, A=Air								F - MeOH			R - Na2S2SO3					
		Other:			G - Amchlor			S - H2SO4										
		Special Instructions/Note:			H - Ascorbic Acid			T - TSP Dodecahydrate										
					I - Ice			U - Acetone										
					J - DI Water			V - MCAA										
					K - EDTA			W - ph 4-5										
					L - EDA			Z - other (specify)										

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Waste, etc) BT=Tissue, A=Air	Total Number of Containers	Analysis Requested										Special Instructions/Note												
						8321A Nitro organics (Full list + all extra DNT isomers + TNX)	8270 DNX isomers- Full list	8260C - Wisconsin Volatiles List - LL	6860 - Perchlorate	8321A - TNX Only																		
GW1016-PZ-56D	10/10/16	1555	G	Water	N	N		X																				
GW1016-PZ-57D	10/10/16	1240	G	Water	N	N		X																				
GW1016-EB-NEW- 101016	10/10/16	1540	G	Water	N	N		X																				



<b>Possible Hazard Identification</b> <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						<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months					
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:					

Empty Kit Relinquished by: <u>Eric Schmidt</u> Date: <u>10/14/16</u> Time: <u>10:15</u> Method of Shipment:			
Relinquished by: <u>[Signature]</u> Date/Time: <u>10/11/16 0900</u> Company: <u>AECOM</u>		Received by: <u>[Signature]</u> Date/Time: <u>10/12/16 0955</u> Company: <u>JAO</u>	
Relinquished by:		Received by:	
Relinquished by:		Received by:	

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: <u>39, 4.2 + 0.0 IR # 5 DW 10/12/16, 10/13/16</u>
--	-------------------	--



# Login Sample Receipt Checklist

Client: Chemours Company FC, LLC The

Job Number: 280-89530-1

**Login Number: 89530**

**List Number: 1**

**Creator: White, Denise E**

**List Source: TestAmerica Denver**

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	

# 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: 280-90923-2

Client Project/Site: BAR-GW Resampling

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:  
12/20/2016 3:17:30 PM

Michelle Johnston, Project Manager II  
(303)736-0110  
[michelle.johnston@testamericainc.com](mailto:michelle.johnston@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*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.*

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	5
Method Summary . . . . .	6
Sample Summary . . . . .	7
Client Sample Results . . . . .	8
Surrogate Summary . . . . .	9
QC Sample Results . . . . .	10
QC Association Summary . . . . .	11
Lab Chronicle . . . . .	12
Certification Summary . . . . .	13
Chain of Custody . . . . .	14
Receipt Checklists . . . . .	15



# Definitions/Glossary

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

TestAmerica Job ID: 280-90923-2

## Qualifiers

### LCMS

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

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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-GW Resampling

TestAmerica Job ID: 280-90923-2

**Job ID: 280-90923-2**

**Laboratory: TestAmerica Denver**

**Narrative**

## CASE NARRATIVE

**Client: The Chemours Company FC, LLC**  
**Project: BAR-GW Resampling**  
**Report Number: 280-90923-2**

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.

### **Revision - 12/20/2016**

In accordance with the client's instructions provided on 12/14/2016 the deliverables were revised to report the samples in separate reports.

### **Sample Arrival and Receipt**

The sample was received on 11/11/2016 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.1° C, 2.1° C and 4.3° C. No anomalies were observed during sample receipt.

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

Sample GW1116-PZ-56D (280-90923-3) was analyzed for explosives in accordance with EPA SW-846 Method 8321A. The sample was prepared on 11/15/2016 and analyzed on 11/28/2016 and 11/29/2016.

The old and new column for du Pont explosives are unable to separate 2,3-Dinitrotoluene and 2,5-Dinitrotoluene; therefore, these compounds will be reported as a co-elution. Results may be biased low if only one of these compounds is actually in the sample.

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

# Detection Summary

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

TestAmerica Job ID: 280-90923-2

**Client Sample ID: GW1116-PZ-56D**

**Lab Sample ID: 280-90923-3**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

# Method Summary

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

TestAmerica Job ID: 280-90923-2

---

Method	Method Description	Protocol	Laboratory
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



# Sample Summary

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

TestAmerica Job ID: 280-90923-2

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-90923-3	GW1116-PZ-56D	Water	11/09/16 12:30	11/11/16 09:30

---

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Client Sample Results

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

TestAmerica Job ID: 280-90923-2

**Client Sample ID: GW1116-PZ-56D**

**Lab Sample ID: 280-90923-3**

**Date Collected: 11/09/16 12:30**

**Matrix: Water**

**Date Received: 11/11/16 09:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trinitro-3-xylene	0.012	U	0.096	0.012	ug/L		11/15/16 18:34	11/28/16 21:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	71		48 - 130				11/15/16 18:34	11/28/16 21:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Surrogate Summary

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

TestAmerica Job ID: 280-90923-2

## 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)
280-90923-3	GW1116-PZ-56D	71
280-90923-F-2-A MS	Matrix Spike	70
280-90923-G-2-A MSD	Matrix Spike Duplicate	66
LCS 280-351640/2-A	Lab Control Sample	59
MB 280-351640/1-A	Method Blank	60

#### Surrogate Legend

NBZ = Nitrobenzene-d5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Sample Results

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

TestAmerica Job ID: 280-90923-2

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

**Lab Sample ID: MB 280-351640/1-A**  
**Matrix: Water**  
**Analysis Batch: 353464**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 351640**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trinitro-3-xylene	0.012	U	0.10	0.012	ug/L		11/15/16 18:34	11/28/16 18:12	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	60		48 - 130				11/15/16 18:34	11/28/16 18:12	1

**Lab Sample ID: LCS 280-351640/2-A**  
**Matrix: Water**  
**Analysis Batch: 353464**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 351640**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4,6-Trinitro-3-xylene	0.511	0.557		ug/L		109	50 - 150
Surrogate	%Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5	59		48 - 130				

**Lab Sample ID: 280-90923-F-2-A MS**  
**Matrix: Water**  
**Analysis Batch: 353464**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 351640**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
2,4,6-Trinitro-3-xylene	0.012	U	0.498	0.503		ug/L		101	50 - 150
Surrogate	%Recovery	MS Qualifier	Limits						
Nitrobenzene-d5	70		48 - 130						

**Lab Sample ID: 280-90923-G-2-A MSD**  
**Matrix: Water**  
**Analysis Batch: 353464**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 351640**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2,4,6-Trinitro-3-xylene	0.012	U	0.491	0.525		ug/L		107	50 - 150	4	30
Surrogate	%Recovery	MSD Qualifier	Limits								
Nitrobenzene-d5	66		48 - 130								

# QC Association Summary

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

TestAmerica Job ID: 280-90923-2

## LCMS

### Prep Batch: 351640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90923-3	GW1116-PZ-56D	Total/NA	Water	3535	
MB 280-351640/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-351640/2-A	Lab Control Sample	Total/NA	Water	3535	
280-90923-F-2-A MS	Matrix Spike	Total/NA	Water	3535	
280-90923-G-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	3535	

### Analysis Batch: 353464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90923-3	GW1116-PZ-56D	Total/NA	Water	8321A	351640
MB 280-351640/1-A	Method Blank	Total/NA	Water	8321A	351640
LCS 280-351640/2-A	Lab Control Sample	Total/NA	Water	8321A	351640
280-90923-F-2-A MS	Matrix Spike	Total/NA	Water	8321A	351640
280-90923-G-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	8321A	351640



# Lab Chronicle

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

TestAmerica Job ID: 280-90923-2

**Client Sample ID: GW1116-PZ-56D**

**Lab Sample ID: 280-90923-3**

**Date Collected: 11/09/16 12:30**

**Matrix: Water**

**Date Received: 11/11/16 09:30**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			1036.9 mL	5 mL	351640	11/15/16 18:34	CDC	TAL DEN
Total/NA	Analysis	8321A		1			353464	11/28/16 21:26	AGCM	TAL DEN

**Laboratory References:**

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Certification Summary

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

TestAmerica Job ID: 280-90923-2

## Laboratory: TestAmerica Denver

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	999615430	08-31-17

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Chain of Custody Record

<b>Client Information</b>		Sampler: <b>ERIC SCHMIDT</b>		Lab PM: <b>Johnston, Michelle A</b>		Carrier Tracking No(s): <b>FedEx</b>		COC No: <b>280-59107-20714.1</b>			
Client Contact: <b>Sharon Nordstrom</b>		Phone: <b>920-621-3878</b>		E-Mail: <b>michelle.johnston@testamericainc.com</b>		<b>808774784278</b> <b>808774784289</b> <b>808774784290</b>		Page: <b>Page 1 of 1</b>			
Company: <b>Chemours Company FC, LLC The</b>		Due Date Requested:		Analysis Requested		Job #:		Preservation Codes:			
Address: <b>c/o AECOM Sabre Building, Suite 300 4051 Ogletown Road</b>		TAT Requested (days): <b>15 business days</b>		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 8321A_Explosive - (MOD) Explosives + DNT Isomers + TNX 8321A_Explosive - (MOD) TNX Only		Total Number of containers		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
City: <b>Newark</b>		PO #:				Special Instructions/Note:					
State, Zip: <b>DE, 19713</b>		WO #:									
Phone: <b>302-781-5936(Tel)</b>		Project #:									
Email: <b>sharon.nordstrom@aecom.com</b>		SSOW#:									
Project Name: <b>BAR-GW Resampling</b>		Site: <b>BARKSDALE, WI</b>									
<b>Sample Identification</b>		<b>Sample Date</b>		<b>Sample Time</b>		<b>Sample Type (C=comp, G=grab)</b>		<b>Matrix (W=water, S=solid, O=soil, A=air)</b>			
								<b>Preservation Code</b>			
GW1016-MW-05		11/09/16		14:10		G		Water			
GW1016-PZ-280				14:50				Water			
GW1016-PZ-56D				12:30				Water			
GW1016-PZ-57D				11:35				Water			
GW1016-PZ-280 -MS				14:50				Water			
GW1016-PZ-280 -MSD				14:50				Water			
GW1016-EB - 110916		↓		16:00		↓		Water			
GW1016-EB -								Water			
								Water			
								Water			
<b>Possible Hazard Identification</b>		<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		<b>Sample Dispc</b>		<b>longer than 1 month)</b>			
Deliverable Requested: I, II, III, IV, Other (specify)		Date: <b>11/4/16</b>		Time: <b>0545</b>		Method of Shipment:		Special Instructions/QC Requirements:			
Empty Kit Relinquished by: <b>[Signature]</b>		Date/Time: <b>11/10/16 10:00</b>		Company: <b>AECOM</b>		Received by: <b>[Signature]</b>		Date/Time: <b>11/11/16 0930</b>			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <b>2.14, 3.0, 1.4, 0.14, 0.14, 0.14 transferred by JT 11/11/16</b>							

Page 14 of 15

# Login Sample Receipt Checklist

Client: Chemours Company FC, LLC The

Job Number: 280-90923-2

**Login Number: 90923**

**List Number: 1**

**Creator: True, Joshua A**

**List Source: TestAmerica Denver**

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	