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Analysis Report

Sample Description: SSP14-PW-04-D Pore Water
SED SW PW 2014

LL Sample # WW 7649703
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 09:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRP4D

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,4-Dioxane	123-91-1	1	U	1	5	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX Volatiles	SW-846 8260B 25mL purge	1	C143031AA	10/30/2014 17:04	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143011AA	10/28/2014 16:27	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143011AA	10/28/2014 16:27	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143031AA	10/30/2014 17:04	Kerri E Legerlotz	1
10461	1,4-Dioxane	SW-846 8270D	1	14298WAC026	10/27/2014 22:34	Holly Berry	1
11010	8270D BNA Extraction	SW-846 3510C	1	14298WAC026	10/26/2014 08:00	David S Schrum	1

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

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Analysis Report

Sample Description: SSP14-PW-04-D-A Pore Water
SED SW PW 2014

LL Sample # WW 7649704
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 09:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BPA4D

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	L142981AA	10/25/2014 18:07	Amanda K Richards	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L142981AA	10/25/2014 18:07	Amanda K Richards	1

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

Sample Description: SSP14-PW-BALLFIELD Pore Water
SED SW PW 2014

LL Sample # WW 7649705
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 11:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRPBL

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1

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

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Analysis Report

Sample Description: SSP14-PW-BALLFIELD Pore Water
SED SW PW 2014

LL Sample # WW 7649705
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 11:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRPBL

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,4-Dioxane	123-91-1	1	U	1	5	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX Volatiles	SW-846 8260B 25mL purge	1	C143031AA	10/30/2014 17:26	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143011AA	10/28/2014 16:48	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143011AA	10/28/2014 16:48	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143031AA	10/30/2014 17:26	Kerri E Legerlotz	1
10461	1,4-Dioxane	SW-846 8270D	1	14298WAC026	10/27/2014 23:01	Holly Berry	1
11010	8270D BNA Extraction	SW-846 3510C	1	14298WAC026	10/26/2014 08:00	David S Schrum	1

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

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Analysis Report

Sample Description: SSP14-PW-BALLFIELD-A Pore Water
SED SW PW 2014

LL Sample # WW 7649706
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 11:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
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Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BPABL

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	L142981AA	10/25/2014 18:29	Amanda K Richards	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L142981AA	10/25/2014 18:29	Amanda K Richards	1

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

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Analysis Report

Sample Description: TB-102114-3 Blank Water
SED SW PW 2014

LL Sample # WW 7649707
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/21/2014 17:00 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRTB2

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1

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

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Analysis Report

Sample Description: TB-102114-3 Blank Water
SED SW PW 2014

LL Sample # WW 7649707
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/21/2014 17:00 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRTB2

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX Volatiles	SW-846 8260B 25mL purge	1	C143031AA	10/30/2014 12:33	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143011AA	10/28/2014 12:25	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143011AA	10/28/2014 12:25	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143031AA	10/30/2014 12:33	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: TB-102114-3-A Blank Water
SED SW PW 2014

LL Sample # WW 7649708
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/21/2014 17:00 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRAT2

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	L142971AA	10/24/2014 16:57	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L142971AA	10/24/2014 16:57	Angela D Sneeringer	1

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

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Analysis Report

Sample Description: TB-102314-3 Blank Water
SED SW PW 2014

LL Sample # WW 7649709
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 09:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRTB3

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1

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

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Analysis Report

Sample Description: TB-102314-3 Blank Water
SED SW PW 2014

LL Sample # WW 7649709
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 09:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRTB3

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX Volatiles	SW-846 8260B 25mL purge	1	C143031AA	10/30/2014 17:49	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143011AA	10/28/2014 12:45	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143011AA	10/28/2014 12:45	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143031AA	10/30/2014 17:49	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: TB-102314-3-A Blank Water
SED SW PW 2014

LL Sample # WW 7649710
LL Group # 1513608
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 09:45 by TO

Submitted: 10/24/2014 09:30
Reported: 10/31/2014 11:45

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BRAT3

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	L142981AA	10/25/2014 15:11	Amanda K Richards	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L142981AA	10/25/2014 15:11	Amanda K Richards	1

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1513608
Reported: 10/31/14 at 11:45 AM

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

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C143031AA	Sample number(s): 7649687,7649689,7649691,7649693,7649695,7649697-7649699,7649703,7649705,7649707,7649709									
Acetone	3.0	U	3.0	5.0	ug/l	105		60-139		
Acetonitrile	7.0	U	7.0	20	ug/l	134		50-145		
Allyl Chloride	0.1	U	0.1	0.5	ug/l	103		66-120		
Benzene	0.1	U	0.1	0.5	ug/l	103		80-120		
Bromodichloromethane	0.1	U	0.1	0.5	ug/l	105		80-120		
Bromoform	0.1	U	0.1	0.5	ug/l	97		72-138		
Bromomethane	0.1	U	0.1	0.5	ug/l	100		62-126		
2-Butanone	1.0	U	1.0	5.0	ug/l	107		63-137		
Carbon Disulfide	0.4	U	0.4	1.0	ug/l	103		70-128		
Carbon Tetrachloride	0.1	U	0.1	0.5	ug/l	114		80-135		
2-Chloro-1,3-butadiene	0.1	U	0.1	0.5	ug/l	111		78-120		
Chlorobenzene	0.1	U	0.1	0.5	ug/l	106		80-120		
Chloroethane	0.1	U	0.1	0.5	ug/l	96		68-120		
Chloroform	0.1	U	0.1	0.5	ug/l	108		80-120		
Chloromethane	0.2	U	0.2	0.5	ug/l	98		55-120		
1,2-Dibromo-3-chloropropane	0.2	U	0.2	0.5	ug/l	98		64-141		
Dibromochloromethane	0.1	U	0.1	0.5	ug/l	104		80-126		
1,2-Dibromoethane	0.1	U	0.1	0.5	ug/l	111		80-120		
Dibromomethane	0.1	U	0.1	0.5	ug/l	110		80-120		
trans-1,4-Dichloro-2-butene	1.0	U	1.0	5.0	ug/l	95		14-166		
Dichlorodifluoromethane	0.1	U	0.1	0.5	ug/l	107		35-142		
1,1-Dichloroethane	0.1	U	0.1	0.5	ug/l	104		80-120		
1,2-Dichloroethane	0.1	U	0.1	0.5	ug/l	114		76-132		
1,1-Dichloroethene	0.1	U	0.1	0.5	ug/l	108		80-123		
cis-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	104		80-120		
trans-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	108		80-120		
1,2-Dichloropropane	0.1	U	0.1	0.5	ug/l	105		80-120		
cis-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	102		80-120		
trans-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	108		80-120		
Ethyl Methacrylate	0.1	U	0.1	0.5	ug/l	106		70-120		
Ethylbenzene	0.1	U	0.1	0.5	ug/l	108		80-120		
2-Hexanone	1.0	U	1.0	5.0	ug/l	110		72-124		
Isobutyl Alcohol	10	U	10.	25	ug/l	104		73-146		
Methacrylonitrile	1.0	U	1.0	5.0	ug/l	109		59-150		
Methyl Iodide	0.1	U	0.1	0.5	ug/l	102		80-129		
Methyl Methacrylate	0.1	U	0.1	0.5	ug/l	108		56-137		
4-Methyl-2-pentanone	1.0	U	1.0	5.0	ug/l	104		71-123		
Methylene Chloride	0.2	U	0.2	0.5	ug/l	106		80-120		
Pentachloroethane	0.2	U	0.2	0.5	ug/l	107		75-126		
Propionitrile	2.0	U	2.0	10	ug/l	105		67-143		
Styrene	0.1	U	0.1	0.5	ug/l	113		80-120		
1,1,1,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	106		80-120		

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1513608
Reported: 10/31/14 at 11:45 AM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	106		80-120		
Tetrachloroethene	0.1	U	0.1	0.5	ug/l	104		80-120		
Toluene	0.1	U	0.1	0.5	ug/l	104		80-120		
1,1,1-Trichloroethane	0.1	U	0.1	0.5	ug/l	105		80-120		
1,1,2-Trichloroethane	0.1	U	0.1	0.5	ug/l	106		80-120		
Trichloroethene	0.1	U	0.1	0.5	ug/l	108		80-120		
Trichlorofluoromethane	0.1	U	0.1	0.5	ug/l	109		64-141		
1,2,3-Trichloropropane	0.3	U	0.3	1.0	ug/l	105		80-120		
Vinyl Acetate	0.2	U	0.2	0.5	ug/l	142		38-145		
Xylene (Total)	0.1	U	0.1	0.5	ug/l	110		80-120		
Batch number: E143011AA	Sample number(s): 7649687,7649689,7649691,7649693,7649695,7649697-7649699,7649703,7649705,7649707,7649709									
Vinyl Chloride	0.010	U	0.010	0.050	ug/l	106		70-130		
Batch number: L142971AA	Sample number(s): 7649688,7649708									
Acrolein	40	U	40.	100	ug/l	97		59-120		
Acrylonitrile	4	U	4.	20	ug/l	86		62-120		
Batch number: L142981AA	Sample number(s): 7649690,7649692,7649694,7649696,7649700-7649702,7649704,7649706,7649710									
Acrolein	40	U	40.	100	ug/l	70		59-120		
Acrylonitrile	4	U	4.	20	ug/l	89		62-120		
Batch number: 14298WAC026	Sample number(s): 7649687,7649689,7649691,7649693,7649695,7649697-7649699,7649703,7649705									
1,4-Dioxane	1	U	1.	5	ug/l	67		39-83		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: C143031AA	Sample number(s): 7649687,7649689,7649691,7649693,7649695,7649697-7649699,7649703,7649705,7649707,7649709 UNSPK: 7649697								
Acetone	97	98	57-163	1	30				
Acetonitrile	131*	138*	77-129	5	30				
Allyl Chloride	103	102	61-120	1	30				
Benzene	103	100	87-126	3	30				
Bromodichloromethane	110	106	82-133	3	30				
Bromoform	107	103	60-138	3	30				
Bromomethane	97	103	66-130	6	30				
2-Butanone	102	103	56-160	1	30				
Carbon Disulfide	106	103	84-141	3	30				
Carbon Tetrachloride	114	110	81-148	4	30				
2-Chloro-1,3-butadiene	113	109	78-128	4	30				
Chlorobenzene	110	108	78-133	1	30				
Chloroethane	98	108	70-139	9	30				
Chloroform	109	105	86-136	3	30				
Chloromethane	96	105	49-135	9	30				
1,2-Dibromo-3-chloropropane	105	108	53-163	3	30				

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1513608
Reported: 10/31/14 at 11:45 AM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Dibromochloromethane	110	107	79-125	3	30				
1,2-Dibromoethane	112	113	84-127	1	30				
Dibromomethane	109	106	83-126	3	30				
trans-1,4-Dichloro-2-butene	55	40	11-172	31*	30				
Dichlorodifluoromethane	108	114	28-136	5	30				
1,1-Dichloroethane	104	100	81-126	3	30				
1,2-Dichloroethane	111	109	82-135	2	30				
1,1-Dichloroethene	109	104	86-132	5	30				
cis-1,2-Dichloroethene	104	101	82-129	2	30				
trans-1,2-Dichloroethene	106	104	88-127	2	30				
1,2-Dichloropropane	106	102	91-126	3	30				
cis-1,3-Dichloropropene	97	94	74-132	3	30				
trans-1,3-Dichloropropene	105	103	71-128	2	30				
Ethyl Methacrylate	112	113	73-134	1	30				
Ethylbenzene	112	111	80-140	1	30				
2-Hexanone	120	122	51-149	2	30				
Isobutyl Alcohol	117	113	65-146	4	30				
Methacrylonitrile	102	103	58-155	1	30				
Methyl Iodide	98	96	71-137	2	30				
Methyl Methacrylate	98	102	48-152	4	30				
4-Methyl-2-pentanone	112	114	69-149	2	30				
Methylene Chloride	103	100	77-135	3	30				
Pentachloroethane	103	109	68-145	6	30				
Propionitrile	100	105	63-147	5	30				
Styrene	118	116	71-138	2	30				
1,1,1,2-Tetrachloroethane	115	112	87-126	2	30				
1,1,2,2-Tetrachloroethane	113	114	75-131	1	30				
Tetrachloroethene	106	103	75-129	3	30				
Toluene	106	104	83-127	2	30				
1,1,1-Trichloroethane	107	105	85-140	2	30				
1,1,2-Trichloroethane	112	112	85-129	0	30				
Trichloroethene	110	108	85-131	2	30				
Trichlorofluoromethane	110	117	73-139	6	30				
1,2,3-Trichloropropane	112	113	76-120	1	30				
Vinyl Acetate	140	143	27-162	2	30				
Xylene (Total)	113	113	81-137	0	30				
Batch number: E143011AA	Sample number(s): 7649687,7649689,7649691,7649693,7649695,7649697-7649699,7649703,7649705,7649707,7649709 UNSPK: 7649697								
Vinyl Chloride	112	109	70-130	3	30				
Batch number: L142971AA	Sample number(s): 7649688,7649708 UNSPK: P648045								
Acrolein	95	92	39-136	3	30				
Acrylonitrile	83	86	51-125	3	30				
Batch number: L142981AA	Sample number(s): 7649690,7649692,7649694,7649696,7649700-7649702,7649704,7649706,7649710 UNSPK: 7649700								
Acrolein	45	43	39-136	4	30				
Acrylonitrile	82	84	51-125	3	30				
Batch number: 14298WAC026	Sample number(s): 7649687,7649689,7649691,7649693,7649695,7649697-7649699,7649703,7649705 UNSPK: 7649697								

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1513608
Reported: 10/31/14 at 11:45 AM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,4-Dioxane	67	68	48-83	2	30				

Surrogate Quality Control

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

Analysis Name: Appendix IX Volatiles
Batch number: C143031AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7649687	106	104	98	100
7649689	106	103	99	101
7649691	107	105	100	100
7649693	106	104	99	99
7649695	105	103	99	100
7649697	106	102	99	100
7649698	101	101	102	106
7649699	102	100	103	105
7649703	106	103	100	100
7649705	106	104	99	100
7649707	106	104	99	100
7649709	107	102	98	100
Blank	104	103	99	102
LCS	104	104	102	106
MS	101	101	102	106
MSD	102	100	103	105
Limits:	77-114	74-113	77-110	78-110

Analysis Name: Vinyl Chloride
Batch number: E143011AA

	Dibromofluoromethane
7649687	99
7649689	101
7649691	100
7649693	100
7649695	101
7649697	101
7649698	101
7649699	99
7649703	99
7649705	100
7649707	100
7649709	100
Blank	101
LCS	100
MS	101
MSD	99
Limits:	80-120

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1513608
Reported: 10/31/14 at 11:45 AM

Surrogate Quality Control

Analysis Name: Acrolein, Acrylonitrile
Batch number: L142971AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7649688	97	100	95	90
7649708	99	102	94	90
Blank	97	100	95	90
LCS	96	101	97	93
MS	96	100	97	93
MSD	97	102	97	93
Limits:	80-116	77-113	80-113	78-113

Analysis Name: Acrolein, Acrylonitrile
Batch number: L142981AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7649690	99	99	95	89
7649692	99	101	95	90
7649694	99	102	94	89
7649696	100	103	94	90
7649700	99	100	95	89
7649701	95	99	97	94
7649702	95	97	97	93
7649704	97	99	95	89
7649706	98	101	95	90
7649710	98	100	95	89
Blank	97	100	95	90
LCS	97	101	97	93
MS	95	99	97	94
MSD	95	97	97	93
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 1,4-Dioxane
Batch number: 14298WAC026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7649687				93	90	101
7649689				95	91	102
7649691				92	90	91
7649693				91	89	107
7649695				93	93	106
7649697	36	46	64	92	90	100
7649698	48	63	79	93	88	97
7649699	51	66	84	96	90	101
7649703				92	90	98
7649705				92	91	111
Blank	48	71	98	93	90	111
LCS	56	76	101	95	89	103
MS	48	63	79	93	88	97
MSD	51	66	84	96	90	101
Limits:	10-83	10-107	22-150	60-123	67-116	40-147

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

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1513608 Sample Nos.: 7649687-710
Acc't: 06643 SF: 217503 SCR No.: 163061 Cooler No.: 27445
Cooler Temperature upon receipt: 0.6 °C Container No.: 1

30348

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380

Sampler(s): T. Ovbey, M. Epps, C. Burdorf, K. Teague

Project Name: SED SW PW 2014

Analyses Required

Comments: 3 day holding time for acrolein and acrylonitrile

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX Volatiles (8260)	Vinyl Chloride (8260 SIM)	Acrolein/Acrylonitrile (8260)*	Pore Water Condition upon receipt: Intact
SSP14-PW-10	10/21/14	1700	WW	40	HCl	5	X	X		↓
SSP14-PW-10-A	↓	↓	WW	40	None	3			X	↓
SSP14-PW-26	10/22/14	0855	WW	40	HCl	5	X	X		↓
SSP14-PW-26-A	↓	↓	WW	40	None	3			X	↓
SSP14-PW-09	10/22/14	1650	WW	40	HCl	5	X	X		↓
SSP14-PW-09-A	↓	↓	WW	40	None	3			X	↓
SSP14-PW-30	10/22/14	1735	WW	40	HCl	5	X	X		↓
SSP14-PW-30-A	↓	↓	WW	40	None	3			X	↓
SSP14-PW-29	10/22/14	1810	WW	40	HCl	5	X	X		↓
SSP14-PW-29-A	↓	↓	WW	40	None	3			X	↓

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions: *3 Day Holding Time

Bottles Relinquished by: [signature]	Date 10/21/14	Time 16:05	Bottles Received by: T. Ovbey	Date: 10/20/14	Time: 1200
Bottles Relinquished by: T. Ovbey	Date 10/23/14	Time 1215	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by: [signature]	Date: 10.24.14	Time: 9:30

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1513608 Sample Nos.: 7649687-710
Acc't: 06643 SF: 217503 SCR No.: 162828 Cooler No.: _____
Cooler Temperature upon receipt: 0.6 °C Container No.: 1

30347

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): T. Ovbey M. Epps, C. Burdorf, K. Teague	
Project Name: SED SW PW 2014	

Comments: 3 day holding time for acrolein and acrylonitrile

Pore Water
Condition upon receipt: Intact

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX Volatiles (8260)	Vinyl Chloride (8260 SIM)	Acrolein/Acrylonitrile (8260)*
SSP14-PW-04	10/23/14	0945	WW	40	HCl	5	X	X	
SSP14-PW-04 -A	↓	↓	WW	40	None	3			X
TB-102114-3	10/21/14	1700	WW	40	HCl	4	X	X	
TB-102114-3-A	↓	↓	WW	40	NONE	2			X

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions: *3 Day Holding Time

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
			[signature]	10/22/14	1030
[signature]	10/23/14	1215			
			[signature]	10.24.14	930

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 15136008 Sample Nos.: 7649687
Acc't: 06643 SF: 217503 SCR No.: 162828 Cooler No.: _____
Cooler Temperature upon receipt: 1.9 °C Container No.: 4

30342

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): M. Epps, C. Burdorf, K. Teague, T. Obvey	
Project Name: SED SW PW 2014	

Analyses Required

Comments: Pore Water

Condition upon receipt. 10.24.14

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	1,4-Dioxane (8270D)	Comments
SSP14-PW-10	10/21/14	1700	WW	250	None	2	X	Intact
SSP14-PW-26	10/22/14	0855	WW	250	NONE	2	X	
SSP14-PW-09	10/22/14	1650	WW	250	NONE	2	X	
SSP14-PW-30	10/22/14	1735	WW	250	NONE	2	X	
SSP14-PW-29	10/22/14	1810	WW	250	NONE	2	X	
SSP14-PW-04	10/23/14	0945	WW	250	NONE	2	X	

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 10/20/14	Time: 1200
Bottles Relinquished by:	Date 10/23/14	Time 1215	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 10.24.14	Time: 930

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1513608 Sample Nos.: 7649687-710
Acc't: 06643 SF: 217503 SCR No.: 162828 Cooler No.: _____
Cooler Temperature upon receipt: 1.9 °C Container No.: 4

30347

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): T. Orbey, M. Epps, K. Teague, C. Burdorf	
Project Name: SED SW PW 2014	

Comments: 3 day holding time for acrolein and acrylonitrile

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX Volatiles (8260)	Vinyl Chloride (8260 SIM)	Acrolein/Acrylonitrile (8260)*	Pore Water Condition upon receipt: Intact
SSP14-PW-04	10/23/14	0945	WW	40	HCl	5	X	X		MS
SSP14-PW-04 -A	↓	↓	WW	40	None	3			X	MS
SSP14-PW-04		0945			HCl	5	X	X		MSD
SSP14-PW-04-A					NONE	3			X	MSD
SSP14-PW-04-D					HCl	5	X	X		
SSP14-PW-04-D-A	↓	↓	↓	↓	NONE	3			X	↓

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions: *3 Day Holding Time

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
			T. Orbey	10/24/14	1200
T. Orbey	10/23/14	2100			
			[illegible]	10.24.14	930

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1513608 Sample Nos.: 7649687-710
Acc't: 06643 SF: 217503 SCR No.: 162828 Cooler No.: _____
Cooler Temperature upon receipt: 1.9 °C Container No.: 4

30348

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): T. Orbey, M. Epps, K. Teague, C. Burdorf	
Project Name: SED SW PW 2014	

Comments: 3 day holding time for acrolein and acrylonitrile

Pore Water
Condition upon receipt: Intact

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv.	No.	APPIX Volatiles (8260)	Vinyl Chloride (8260 SIM)	Acrolein/Acrylonitrile (8260)*
SSP14-PW-BALLFIELD	10/23/14	1145	WW	40	HCl	5	X	X	
SSP14-PW-BALLFIELD -A			WW	40	None	3			X
TB - 102314-3		0945	WW	40	HCl	4	X	X	
TB - 102314-3 -A			WW	40	None	2			X

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions: *3 Day Holding Time

	Date	Time		Date	Time
Bottles Relinquished by:			Bottles Received by: T. Orbey	10/20/14	1200
Bottles Relinquished by: T. Orbey	10/23/14	2100	Bottles Received by:		
Bottles Relinquished by:			Bottles Received by:		
Bottles Relinquished by:			Bottles Received by:	10.24.14	930

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1513608 Sample Nos.: 7649687-710
Acc't: 06643 SF: 217503 SCR No.: 162828 Cooler No.:
Cooler Temperature upon receipt: 1.9 °C Container No.: 4

30343

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): T. Obvey, M. Epps, C. Burdorf, K. Teague	
Project Name: SED SW PW 2014	

Analyses Required: 1,4-Dioxane (8270D)

Comments: Pore Water

Condition upon receipt: Intact

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	1,4-Dioxane (8270D)	Comments
SSP14-PW-04	10/23/14	0945	WW	250	None	2	X	MS
SSP14-PW-04	↓	↓	↓	↓	↓	2	X	MSD
SSP14-PW-04-D	↓	↓	↓	↓	↓	2	X	↓
SSP14-PW-BALLFIELD	↓	1145	↓	↓	↓	2	X	

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 10/20/14	Time: 1200
Bottles Relinquished by:	Date: 10/23/14	Time: 2100	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 10.24.14	Time: 930

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Sample Administration Receipt Documentation Log

Doc Log ID: 36375

Group Number(s): 1513608

Client: DuPont

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	10/24/2014 9:30
Number of Packages:	8	Number of Projects:	1
State/Province of Origin:	SC		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	No
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	36
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 24 HCL, 12 Unpreserved

Unpacked by Timothy Cubberley (6520) at 13:20 on 10/24/2014

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	1.2	DT	Wet	Y	Loose	N
2	DT131	0.4	DT	Wet	Y	Loose	N
3	DT131	1.1	DT	Wet	Y	Loose	N
4	DT131	1.9	DT	Wet	Y	Loose	N
5	DT131	1.5	DT	Wet	Y	Loose	N
6	DT131	1.2	DT	Wet	Y	Loose	N
7	DT131	2.3	DT	Wet	Y	Loose	N
8	DT131	1.1	DT	Wet	Y	Loose	N

Sample ID Discrepancy Details

Sample ID on COC	Sample ID on Label	Comments
PPS14-SW-04	SSP14-SW-04	
PPS14-SW-04-A	SSP14-SW-04-A	
PPS14-SW-26	SSP14-SW-26	
PPS14-SW-26-A	SSP14-SW-26-A	

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Lancaster, PA 17605-2425
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F | 717-656-2681
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Sample Administration Receipt Documentation Log

Doc Log ID: 36375

Group Number(s): 1513608

Client: DuPont

General Comments:	One of the SSP-SW-33 vials was empty.

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Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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

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

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Analysis Report

REVISED

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

November 19, 2014

Project: BRE - SED SW PW

Submittal Date: 10/25/2014
Group Number: 1514575
PO Number: LBIO-66380
State of Sample Origin: NC

Client Sample Description	Lancaster Labs (LL) #
SSP14-SED-34 Sediment	7654858
SSP14-SED-33 Sediment	7654859
SSP14-SED-35 Sediment	7654860
SSP14-SED-BALLFIELD Sediment	7654861
SSP14-SED-28 Sediment	7654862
SSP14-SED-29 Sediment	7654863
SSP14-SED-30 Sediment	7654864

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

Respectfully Submitted,

Nancy Jean Bornholm

Nancy Jean Bornholm
Principal Specialist

(717) 556-7250

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Analysis Report

REVISED

Sample Description: SSP14-SED-34 Sediment
SED SW PW 2014

LL Sample # SW 7654858
LL Group # 1514575
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/22/2014 12:40 by ME

Submitted: 10/25/2014 09:15
Reported: 11/19/2014 08:43

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**umoles/g**	**umoles/g**	**umoles/g**	
06949	Cadmium	7440-43-9	0.000626 J	0.000235	0.00711	1
06953	Copper	7440-50-8	0.0187 J	0.00415	0.0251	1
06955	Lead	7439-92-1	0.0849	0.00193	0.0116	1
06961	Nickel	7440-02-0	0.0285	0.00204	0.0272	1
06966	Silver	7440-22-4	0.00141 U	0.00141	0.00740	1
06972	Zinc	7440-66-6	0.315	0.00318	0.0489	1
	SW-846 7471B		**umoles/g**	**umoles/g**	**umoles/g**	
00159	Mercury	7439-97-6	0.000024 U	0.000024	0.000478	1
	The Laboratory Control Sample was out of specification low for mercury reading 70%. The acceptance criteria is 80-120%.					
Wet Chemistry	**EPA-821-R-91-100**		**umoles/g**	**umoles/g**	**umoles/g**	
01630	Acid Volatile Sulfide	1313-84-4	2.0 U	2.0	6.5	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	69.1	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	2	143183449001	11/14/2014 19:03	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	2	143183449001	11/14/2014 19:03	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	2	143183449001	11/14/2014 19:03	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	2	143183449001	11/14/2014 19:03	Katlin N Cataldi	1
06966	Silver	SW-846 6010C	2	143183449001	11/14/2014 19:03	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	2	143183449001	11/14/2014 19:03	Katlin N Cataldi	1
00159	Mercury	SW-846 7471B	2	143183449001	11/14/2014 10:43	Damary Valentin	1
13449	Non-digest metals - U4	EPA-821-R-91-100	1	143183449001	11/13/2014 00:00	Jennifer L Moyer	1
01630	Acid Volatile Sulfide	EPA-821-R-91-100	1	14303163001A	10/30/2014 08:55	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	14303820003B	10/30/2014 19:42	Scott W Freisher	1

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

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Analysis Report

REVISED

Sample Description: SSP14-SED-33 Sediment
SED SW PW 2014

LL Sample # SW 7654859
LL Group # 1514575
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/22/2014 13:15 by ME

Submitted: 10/25/2014 09:15
Reported: 11/19/2014 08:43

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**umoles/g**	**umoles/g**	**umoles/g**	
06949	Cadmium	7440-43-9	0.00110 J	0.000364	0.0110	1
06953	Copper	7440-50-8	0.0226 J	0.00644	0.0390	1
06955	Lead	7439-92-1	0.132	0.00299	0.0180	1
06961	Nickel	7440-02-0	0.0244 J	0.00317	0.0422	1
06966	Silver	7440-22-4	0.00218 U	0.00218	0.0115	1
06972	Zinc	7440-66-6	0.598	0.00493	0.0758	1
	SW-846 7471B		**umoles/g**	**umoles/g**	**umoles/g**	
00159	Mercury	7439-97-6	0.000037 U	0.000037	0.000742	1
	The Laboratory Control Sample was out of specification low for mercury reading 70%. The acceptance criteria is 80-120%.					
Wet Chemistry	**EPA-821-R-91-100**		**umoles/g**	**umoles/g**	**umoles/g**	
01630	Acid Volatile Sulfide	1313-84-4	3.2 U	3.2	10.1	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	80.2	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	2	143183449001	11/14/2014 19:07	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	2	143183449001	11/14/2014 19:07	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	2	143183449001	11/14/2014 19:07	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	2	143183449001	11/14/2014 19:07	Katlin N Cataldi	1
06966	Silver	SW-846 6010C	2	143183449001	11/14/2014 19:07	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	2	143183449001	11/14/2014 19:07	Katlin N Cataldi	1
00159	Mercury	SW-846 7471B	2	143183449001	11/14/2014 10:45	Damary Valentin	1
13449	Non-digest metals - U4	EPA-821-R-91-100	1	143183449001	11/13/2014 00:00	Jennifer L Moyer	1
01630	Acid Volatile Sulfide	EPA-821-R-91-100	1	14303163001A	10/30/2014 08:55	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	14303820003B	10/30/2014 19:42	Scott W Freisher	1

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

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Analysis Report

REVISED

Sample Description: SSP14-SED-35 Sediment
SED SW PW 2014

LL Sample # SW 7654860
LL Group # 1514575
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/22/2014 11:50 by ME

Submitted: 10/25/2014 09:15
Reported: 11/19/2014 08:43

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**umoles/g**	**umoles/g**	**umoles/g**	
06949	Cadmium	7440-43-9	0.000117 U	0.000117	0.00355	1
06953	Copper	7440-50-8	0.0158	0.00207	0.0126	1
06955	Lead	7439-92-1	0.0230	0.000964	0.00578	1
06961	Nickel	7440-02-0	0.00295 J	0.00102	0.0136	1
06966	Silver	7440-22-4	0.00107 J	0.000703	0.00370	1
06972	Zinc	7440-66-6	0.0734	0.00159	0.0244	1
	SW-846 7471B		**umoles/g**	**umoles/g**	**umoles/g**	
00159	Mercury	7439-97-6	0.000012 U	0.000012	0.000239	1
	The Laboratory Control Sample was out of specification low for mercury reading 70%. The acceptance criteria is 80-120%.					
Wet Chemistry	**EPA-821-R-91-100**		**umoles/g**	**umoles/g**	**umoles/g**	
01630	Acid Volatile Sulfide	1313-84-4	1.0 U	1.0	3.3	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	39.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	2	143183449001	11/14/2014 19:11	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	2	143183449001	11/14/2014 19:11	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	2	143183449001	11/14/2014 19:11	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	2	143183449001	11/14/2014 19:11	Katlin N Cataldi	1
06966	Silver	SW-846 6010C	2	143183449001	11/14/2014 19:11	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	2	143183449001	11/14/2014 19:11	Katlin N Cataldi	1
00159	Mercury	SW-846 7471B	2	143183449001	11/14/2014 10:47	Damary Valentin	1
13449	Non-digest metals - U4	EPA-821-R-91-100	1	143183449001	11/13/2014 00:00	Jennifer L Moyer	1
01630	Acid Volatile Sulfide	EPA-821-R-91-100	1	14303163001A	10/30/2014 08:55	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	14303820003B	10/30/2014 19:42	Scott W Freisher	1

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

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Analysis Report

REVISED

Sample Description: SSP14-SED-BALLFIELD Sediment
SED SW PW 2014

LL Sample # SW 7654861
LL Group # 1514575
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 12:15 by ME

Submitted: 10/25/2014 09:15
Reported: 11/19/2014 08:43

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URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		umoles/g	umoles/g	umoles/g	
06949	Cadmium	7440-43-9	0.0000950 U	0.0000950	0.00288	1
06953	Copper	7440-50-8	0.00514 J	0.00168	0.0102	1
06955	Lead	7439-92-1	0.00808	0.000781	0.00469	1
06961	Nickel	7440-02-0	0.00106 J	0.000826	0.0110	1
06966	Silver	7440-22-4	0.000570 U	0.000570	0.00300	1
06972	Zinc	7440-66-6	0.0396	0.00129	0.0198	1
	SW-846 7471B		umoles/g	umoles/g	umoles/g	
00159	Mercury	7439-97-6	0.0000097 U	0.0000097	0.000194	1
	The Laboratory Control Sample was out of specification low for mercury reading 70%. The acceptance criteria is 80-120%.					
Wet Chemistry	**EPA-821-R-91-100**		umoles/g	umoles/g	umoles/g	
01630	Acid Volatile Sulfide	1313-84-4	0.83 U	0.83	2.6	1
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	23.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	2	143183449001	11/14/2014 19:15	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	2	143183449001	11/14/2014 19:15	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	2	143183449001	11/14/2014 19:15	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	2	143183449001	11/14/2014 19:15	Katlin N Cataldi	1
06966	Silver	SW-846 6010C	2	143183449001	11/14/2014 19:15	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	2	143183449001	11/14/2014 19:15	Katlin N Cataldi	1
00159	Mercury	SW-846 7471B	2	143183449001	11/14/2014 10:49	Damary Valentin	1
13449	Non-digest metals - U4	EPA-821-R-91-100	1	143183449001	11/13/2014 00:00	Jennifer L Moyer	1
01630	Acid Volatile Sulfide	EPA-821-R-91-100	1	14303163001A	10/30/2014 08:55	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	14303820003B	10/30/2014 19:42	Scott W Freisher	1

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Analysis Report

REVISED

Sample Description: SSP14-SED-28 Sediment
SED SW PW 2014

LL Sample # SW 7654862
LL Group # 1514575
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 15:55 by ME

Submitted: 10/25/2014 09:15
Reported: 11/19/2014 08:43

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CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**umoles/g**	**umoles/g**	**umoles/g**	
06949	Cadmium	7440-43-9	0.000102 U	0.000102	0.00308	1
06953	Copper	7440-50-8	0.0234	0.00180	0.0109	1
06955	Lead	7439-92-1	0.00922	0.000837	0.00502	1
06961	Nickel	7440-02-0	0.00542 J	0.000885	0.0118	1
06966	Silver	7440-22-4	0.000610 U	0.000610	0.00321	1
06972	Zinc	7440-66-6	0.0917	0.00138	0.0212	1
	SW-846 7471B		**umoles/g**	**umoles/g**	**umoles/g**	
00159	Mercury	7439-97-6	0.000010 U	0.000010	0.000207	1
	The Laboratory Control Sample was out of specification low for mercury reading 70%. The acceptance criteria is 80-120%.					
Wet Chemistry	**EPA-821-R-91-100**		**umoles/g**	**umoles/g**	**umoles/g**	
01630	Acid Volatile Sulfide	1313-84-4	0.90 U	0.90	2.8	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	29.8	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	2	143183449001	11/14/2014 19:19	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	2	143183449001	11/14/2014 19:19	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	2	143183449001	11/14/2014 19:19	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	2	143183449001	11/14/2014 19:19	Katlin N Cataldi	1
06966	Silver	SW-846 6010C	2	143183449001	11/14/2014 19:19	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	2	143183449001	11/14/2014 19:19	Katlin N Cataldi	1
00159	Mercury	SW-846 7471B	2	143183449001	11/14/2014 10:51	Damary Valentin	1
13449	Non-digest metals - U4	EPA-821-R-91-100	1	143183449001	11/13/2014 00:00	Jennifer L Moyer	1
01630	Acid Volatile Sulfide	EPA-821-R-91-100	1	14303163001A	10/30/2014 08:55	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	14303820003B	10/30/2014 19:42	Scott W Freisher	1

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Analysis Report

REVISED

Sample Description: SSP14-SED-29 Sediment
SED SW PW 2014

LL Sample # SW 7654863
LL Group # 1514575
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 15:40 by ME

Submitted: 10/25/2014 09:15
Reported: 11/19/2014 08:43

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CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**umoles/g**	**umoles/g**	**umoles/g**	
06949	Cadmium	7440-43-9	0.000111 U	0.000111	0.00337	1
06953	Copper	7440-50-8	0.0428	0.00197	0.0119	1
06955	Lead	7439-92-1	0.0156	0.000915	0.00549	1
06961	Nickel	7440-02-0	0.253	0.000968	0.0129	1
06966	Silver	7440-22-4	0.000667 U	0.000667	0.00351	1
06972	Zinc	7440-66-6	0.0632	0.00151	0.0232	1
	SW-846 7471B		**umoles/g**	**umoles/g**	**umoles/g**	
00159	Mercury	7439-97-6	0.000011 U	0.000011	0.000227	1
	The Laboratory Control Sample was out of specification low for mercury reading 70%. The acceptance criteria is 80-120%.					
Wet Chemistry	**EPA-821-R-91-100**		**umoles/g**	**umoles/g**	**umoles/g**	
01630	Acid Volatile Sulfide	1313-84-4	0.97 U	0.97	3.1	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	35.0	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	2	143183449001	11/14/2014 19:22	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	2	143183449001	11/14/2014 19:22	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	2	143183449001	11/14/2014 19:22	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	2	143183449001	11/14/2014 19:22	Katlin N Cataldi	1
06966	Silver	SW-846 6010C	2	143183449001	11/14/2014 19:22	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	2	143183449001	11/14/2014 19:22	Katlin N Cataldi	1
00159	Mercury	SW-846 7471B	2	143183449001	11/14/2014 10:53	Damary Valentin	1
13449	Non-digest metals - U4	EPA-821-R-91-100	1	143183449001	11/13/2014 00:00	Jennifer L Moyer	1
01630	Acid Volatile Sulfide	EPA-821-R-91-100	1	14303163001A	10/30/2014 08:55	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	14303820003B	10/30/2014 19:42	Scott W Freisher	1

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

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Analysis Report

REVISED

Sample Description: SSP14-SED-30 Sediment
SED SW PW 2014

LL Sample # SW 7654864
LL Group # 1514575
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/23/2014 15:30 by ME

Submitted: 10/25/2014 09:15
Reported: 11/19/2014 08:43

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		umoles/g	umoles/g	umoles/g	
06949	Cadmium	7440-43-9	0.0000934 U	0.0000934	0.00283	1
06953	Copper	7440-50-8	0.00796 J	0.00165	0.0100	1
06955	Lead	7439-92-1	0.0105	0.000768	0.00461	1
06961	Nickel	7440-02-0	0.0125	0.000812	0.0108	1
06966	Silver	7440-22-4	0.000790 J	0.000560	0.00295	1
06972	Zinc	7440-66-6	0.0344	0.00126	0.0195	1
	SW-846 7471B		umoles/g	umoles/g	umoles/g	
00159	Mercury	7439-97-6	0.0000095 U	0.0000095	0.000190	1
	The Laboratory Control Sample was out of specification low for mercury reading 70%. The acceptance criteria is 80-120%.					
Wet Chemistry	**EPA-821-R-91-100**		umoles/g	umoles/g	umoles/g	
01630	Acid Volatile Sulfide	1313-84-4	0.81 U	0.81	2.6	1
Wet Chemistry	**SM 2540 G-1997**		%	%	%	
00111	Moisture	n.a.	22.6	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	2	143183449001	11/14/2014 19:26	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	2	143183449001	11/14/2014 19:26	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	2	143183449001	11/14/2014 19:26	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	2	143183449001	11/14/2014 19:26	Katlin N Cataldi	1
06966	Silver	SW-846 6010C	2	143183449001	11/14/2014 19:26	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	2	143183449001	11/14/2014 19:26	Katlin N Cataldi	1
00159	Mercury	SW-846 7471B	2	143183449001	11/14/2014 10:56	Damary Valentin	1
13449	Non-digest metals - U4	EPA-821-R-91-100	1	143183449001	11/13/2014 00:00	Jennifer L Moyer	1
01630	Acid Volatile Sulfide	EPA-821-R-91-100	1	14303163001A	10/30/2014 08:55	Susan E Hibner	1
00111	Moisture	SM 2540 G-1997	1	14303820003B	10/30/2014 19:42	Scott W Freisher	1

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

REVISED

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1514575
Reported: 11/19/14 at 08:43 AM

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

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 143183449001	Sample number(s): 7654858-7654864								
Cadmium	0.000073 U	0.000073	0.00223	umoles/g	103		80-120		
Copper	0.00130 U	0.00130	0.00787	umoles/g	100		80-120		
Lead	0.000646 J	0.000604	0.00362	umoles/g	106		80-120		
Mercury	0.0000075 U	0.0000075	0.000150	umoles/g	70*		80-120		
Nickel	0.000639 U	0.000639	0.00852	umoles/g	102		80-120		
Silver	0.000440 U	0.000440	0.00232	umoles/g	96		80-120		
Zinc	0.00291 J	0.000995	0.0153	umoles/g	105		80-120		
Batch number: 14303163001A	Sample number(s): 7654858-7654864								
Acid Volatile Sulfide	0.63 U	0.63	2.0	umoles/g	48		40-95		
Batch number: 14303820003B	Sample number(s): 7654858-7654864								
Moisture					100		99-101		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 143183449001	Sample number(s): 7654858-7654864 UNSPK: P654867 BKG: P654867								
Cadmium	86	88	75-125	2	20	0.000078 J	0.000071 U	200* (1)	20
Copper	94	88	75-125	6	20	0.0103	0.0160	43* (1)	20
Lead	87	87	75-125	0	20	0.00634	0.00580	9 (1)	20
Mercury	24*	22*	75-125	8	20	0.0000073 U	0.0000073 U	0 (1)	20
Nickel	109	88	75-125	21*	20	0.0122	0.0518	124* (1)	20
Silver	82	82	75-125	0	20	0.00110 J	0.000921 J	18 (1)	20
Zinc	92	93	75-125	1	20	0.0531	0.0497	7 (1)	20
Batch number: 14303163001A	Sample number(s): 7654858-7654864 UNSPK: P654867 BKG: P654867								
Acid Volatile Sulfide	44	43	37-119	3	20	0.63 U	0.63 U	0 (1)	20

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

REVISED

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1514575
Reported: 11/19/14 at 08:43 AM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14303820003B	Sample number(s): 7654858-7654864					BKG: P654867			
Moisture						30.5	30.8	1	5

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

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only #1514575 10/29/14 (6) 7654858-64
Group No.: ~~1513826~~ Sample Nos.: ~~7651656-63~~
Acc't: 06643 SF: 217483 SCR No.: 162827 Cooler No.: C26391 **30334**
Cooler Temperature upon receipt: 1.0 °C Container No.: 1

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100CWH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): M. Epps, C. Burdorf, K. Teague, T. Obvey	
Project Name: SED SW PW 2014	

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX SVs+site specific cmpds (8270D)	AVS (EPA-821-R-91-100)	Glycols (8015C)	Grain Size (ASTM D422)	APPIX Metals+Fe,Mn (6010/6020/7471B)	Moisture (2540 G)	NO2 (300.0)	NO3 (300.0)	TOC (SW-846 9060A) mod					Comments:
SSP14-SED-34	10/22/14	1240	SW	125	None	1	X				X	X			X					Sediment
SSP14-SED-34			SW	125	None	1			X											Condition upon receipt: intact
SSP14-SED-34			SW	500	None	1				X										
SSP14-SED-34			SW	125	None	1		X												
SSP14-SED-33		1315	SW	125	None	1	X				X	X			X					
SSP14-SED-33			SW	125	None	1			X											
SSP14-SED-33			SW	500	None	1				X										
SSP14-SED-33			SW	125	None	1		X												

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by: Lisa Mycoske	Date 10/16/14	Time 10:58	Bottles Received by: T. Obvey	Date: 10/20/14	Time: 1200
Bottles Relinquished by: T. Obvey	Date 10/24/14	Time 1200	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 10/25/14	Time: 915

Analysis Request / Environmental Services Chain of Custody

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For Lancaster Laboratories Use Only
Group No.: 1513826 Sample Nos.: 7654858-64
Acc't: 06643 SF: 217483 SCR No.: 162827 Cooler No.: 22095 30341
Cooler Temperature upon receipt: 1.0 °C Container No.: 1

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100CWH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380

Sampler(s): M. Epps, K. Teague, C. Burdorf, T. Obvey

Project Name: SED SW PW 2014

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX Volatiles (8260)	APPIX SVs + Site Specific Compounds 8270D	AVS (EPA-821-R-91-100)	Glycols (8015C)	Grain Size (ASTM D422)	Appix Metals + Fe, Mn (6010, 6020, 7470)	Moisture (2540G)	NO2 (300.0) 10/22	NO3 (300.0) 10/23	TOC (SW-846 9060A) mod				Comments:
TB- 102214-2	10/22/14	1150	WW	40	HCl	2	X													Sediment
SSP14-SED-35	10/22/14	1150	SW	125	NONE	1		X				X	X			X				Condition upon receipt: intact
SSP14-SED-35	↓	↓	SW	125	NONE	1				X										
SSP14-SED-35	↓	↓	SW	500	NONE	1					X									
SSP14-SED-35	↓	↓	SW	125	NONE	1			X											
SSP14-SED-BALLFIELD	10/23/14	1215	SW	125	NONE	1		X				X	X			X				
SSP14-SED-BALLFIELD	↓	↓	SW	125	NONE	1				X										
SSP14-SED-BALLFIELD	↓	↓	SW	500	NONE	1					X									
SSP14-SED-BALLFIELD	↓	↓	SW	125	NONE	1			X											

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions:

	Date	Time		Date	Time
Bottles Relinquished by: Zach Megarshke	10/16/14	10:58	Bottles Received by: T. Obvey	10/20/14	1200
Bottles Relinquished by: T. Obvey	10/24/14	1200	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	10/25/14	915

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only 1514575 10/29/14 @ 7654858-64
Group No.: ~~1513826~~ Sample Nos.: ~~7651656-63~~
Acc't: 06643 SF: 217483 SCR No.: 162827 Cooler No.: C26391 **30335**
Cooler Temperature upon receipt: 0.5 °C Container No.: 2

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100CWH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): T. Ovbey, M. Epps, C. Burdorf, K. Teague	
Project Name: SED SW PW 2014	

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX SVs+site specific cmpds (8270D)	AVS (EPA-821-R-91-100)	Glycols (8015C)	Grain Size (ASTM D422)	APPIX Metals+Fe,Mn (6010/6020/7471B)	Moisture (2540 G)	NO2 (300.0)	NO3 (300.0)	TOC (SW-846 9060A) mod					Comments:
SSP14-SED- 28	10/23/14	1555	SW	125	None	1	X				X	X			X					Condition upon receipt: intact
SSP14-SED- 28			SW	125	None	1			X											
SSP14-SED- 28			SW	500	None	1				X										
SSP14-SED- 28			SW	125	None	1		X												
SSP14-SED- 29		1540	SW	125	None	1	X				X	X			X					
SSP14-SED- 29			SW	125	None	1			X											
SSP14-SED- 29			SW	500	None	1				X										
SSP14-SED- 29			SW	125	None	1		X												

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Dina Mugabiko	10/16/14	10:58	T. Ovbey	10/20/14	1200
T. Ovbey	10/24/14	1200			
				10/25/14	915

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Copies: White copy should accompany samples to Lancaster Laboratories. The pink copy should be retained by the samplers.

Analysis Request / Environmental Services Chain of Custody

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For Lancaster Laboratories Use Only 1514575 #4 10/20/14 7654858-64 (3)
Group No.: ~~1513826~~ Sample Nos.: ~~7651020-63~~
Acc't: 06643 SF: 217483 SCR No.: 162827 Cooler No.: C2639 | 30332
Cooler Temperature upon receipt: 0.5 °C Container No.: 2

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100CWH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): T. Oubey, K. Teague, M. Epps, C. Burdorf	
Project Name: SED SW PW 2014	

Comments:

Condition upon receipt: intact

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX SVs+site specific cmpds (8270D)	AVS (EPA-821-R-91-100)	Glycols (8015C)	Grain Size (ASTM D422)	APPIX Metals+Fe,Mn (6010/6020/7471B)	Moisture (2540 G)	NO2 (300.0)	NO3 (300.0)	TOC (SW-846 9060A) mod
SSP14-SED-30	10/23/14	1530	SW	125	None	1	X				X	X			X
SSP14-SED-30	↓	↓	SW	125	None	1			X						
SSP14-SED-30			SW	500	None	1				X					
SSP14-SED-30			SW	125	None	1		X							
~~SSP14-SED~~			~~SW~~	~~125~~	~~None~~	~~1~~	~~X~~				~~X~~	~~X~~			~~X~~
~~SSP14-SED~~			~~SW~~	~~125~~	~~None~~	~~1~~			~~X~~						
~~SSP14-SED-~~			~~SW~~	~~500~~	~~None~~	~~1~~				~~X~~					
~~SSP14-SED~~			~~SW~~	~~125~~	~~None~~	~~1~~		~~X~~							

SW 10/23/14

Turnaround Time Requested (please circle): Standard RUSH Number of days: 8

Special Instructions:

	Date	Time
Bottles Relinquished by: Alex Mizashko	10/16/14	10:58
Bottles Relinquished by: T. Oubey	10/24/14	1200
Bottles Relinquished by:		
Bottles Relinquished by:		

	Date	Time
Bottles Received by: T. Oubey	10/20/14	1200
Bottles Received by:		
Bottles Received by:		
Bottles Received by:	10/25/14	915

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Sample Administration Receipt Documentation Log

Doc Log ID: 36646

Group Number(s): ~~1513826~~ 1514575 JH 10/29/14 (3)

Client: Dupont Brevard

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	10/25/2014 9:15
Number of Packages:	2	Number of Projects:	1
State/Province of Origin:	NC		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Wesley Miller (2308) at 15:44 on 10/25/2014

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	1.0	DT	Wet	Y	Loose	N
2	DT121	0.5	DT	Wet	Y	Loose/Bag	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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

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

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

November 12, 2014

Project: BRE - SED SW PW

Submittal Date: 10/31/2014
Group Number: 1515172
PO Number: LBIO-67047
State of Sample Origin: NC

Client Sample Description	Lancaster Labs (LL) #
SSP14-SW-07 Surface Water	7657620
SSP14-SW-07-Z Filtered Surface Water	7657621
SSP14-SW-07-A Surface Water	7657622
SSP14-SW-27 Surface Water	7657623
SSP14-SW-27-Z Filtered Surface Water	7657624
SSP14-SW-27-A Surface Water	7657625

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

Respectfully Submitted,

Nancy Jean Bornholm

Nancy Jean Bornholm
Principal Specialist

(717) 556-7250

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Analysis Report

Sample Description: SSP14-SW-07 Surface Water
SED SW PW 2014

LL Sample # WW 7657620
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 15:10 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1

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

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Analysis Report

Sample Description: SSP14-SW-07 Surface Water
SED SW PW 2014

LL Sample # WW 7657620
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 15:10 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SM 2340 B-1997**		**mg/l**		**mg/l**	**mg/l**	
06256	Total Hardness as CaCO3	471-34-1	4.0		0.033	0.40	1
	SW-846 6010C		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0050	J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
01750	Calcium	7440-70-2	1.03		0.0334	0.400	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.259	J	0.0334	0.400	1
01757	Magnesium	7439-95-4	0.360		0.0167	0.200	1
07058	Manganese	7439-96-5	0.0162		0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024	U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0038	J	0.0020	0.0400	1
	SW-846 6020A		**mg/l**		**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033	U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082	U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017	U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082	U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015	U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**		**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060	U	0.000060	0.00020	1

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

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Analysis Report

Sample Description: SSP14-SW-07 Surface Water
SED SW PW 2014

LL Sample # WW 7657620
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 15:10 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 D-1997**		**mg/l**		**mg/l**	**mg/l**	
10457	Total Suspended Solids	n.a.	1.00	J	1.00	3.00	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 06:31	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/04/2014 00:43	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/04/2014 00:43	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014 06:31	Kevin A Sposito	1
10461	Dowtherm + 1,4-Dioxane	SW-846 8270D	1	14309WAI026	11/07/2014 18:08	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014 22:20	Karen L Beyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014 00:13	Tyler O Griffin	1
06256	Total Hardness as CaCO3	SM 2340 B-1997	1	143096256010	11/05/2014 07:45	Jennifer L Moyer	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
01750	Calcium	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
01757	Magnesium	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 17:06	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014 08:34	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014 08:34	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014 08:34	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014 08:34	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014 08:34	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014 07:11	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014 08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014 08:58	Micaela L Dishong	1

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

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Analysis Report

Sample Description: SSP14-SW-07 Surface Water
SED SW PW 2014

LL Sample # WW 7657620
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 15:10 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014 10:25	Micaela L Dishong	1
10457	Total Suspended Solids	SM 2540 D-1997	1	14309145703B	11/05/2014 10:31	Noah M Rainbow	1

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

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Analysis Report

Sample Description: SSP14-SW-07-Z Filtered Surface Water
SED SW PW 2014

LL Sample # WW 7657621
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 15:10 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW07Z

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		mg/l	mg/l	mg/l	
07046	Barium	7440-39-3	0.0044 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.156 J	0.0334	0.400	1
07058	Manganese	7439-96-5	0.0103	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0069 J	0.0020	0.0400	1
	SW-846 6020A		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 17:10	Katlin N Cataldi	1

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

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Analysis Report

Sample Description: SSP14-SW-07-Z Filtered Surface Water
SED SW PW 2014

LL Sample # WW 7657621
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 15:10 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW07Z

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014 08:36	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014 08:36	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014 08:36	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014 08:36	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014 08:36	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014 07:13	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014 08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014 08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014 10:25	Micaela L Dishong	1

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

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Analysis Report

Sample Description: SSP14-SW-07-A Surface Water
SED SW PW 2014

LL Sample # WW 7657622
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 15:10 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW07A

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 13:29	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 13:29	Sarah A Guill	1

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

Sample Description: SSP14-SW-27 Surface Water
SED SW PW 2014

LL Sample # WW 7657623
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 14:25 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-27

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1

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

Sample Description: SSP14-SW-27 Surface Water
SED SW PW 2014

LL Sample # WW 7657623
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 14:25 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-27

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SM 2340 B-1997**		**mg/l**		**mg/l**	**mg/l**	
06256	Total Hardness as CaCO3	471-34-1	4.3		0.033	0.40	1
	SW-846 6010C		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0052	J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
01750	Calcium	7440-70-2	1.10		0.0334	0.400	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.308	J	0.0334	0.400	1
01757	Magnesium	7439-95-4	0.372		0.0167	0.200	1
07058	Manganese	7439-96-5	0.0293		0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024	U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0036	J	0.0020	0.0400	1
	SW-846 6020A		**mg/l**		**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033	U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082	U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017	U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082	U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015	U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**		**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060	U	0.000060	0.00020	1

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

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Analysis Report

Sample Description: SSP14-SW-27 Surface Water
SED SW PW 2014

LL Sample # WW 7657623
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 14:25 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-27

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 D-1997**		**mg/l**		**mg/l**	**mg/l**	
10457	Total Suspended Solids	n.a.	1.30	J	1.00	3.00	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 06:53	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/04/2014 01:03	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/04/2014 01:03	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014 06:53	Kevin A Sposito	1
10461	Dowtherm + 1,4-Dioxane	SW-846 8270D	1	14309WAI026	11/07/2014 18:35	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014 22:20	Karen L Beyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014 00:28	Tyler O Griffin	1
06256	Total Hardness as CaCO3	SM 2340 B-1997	1	143096256010	11/05/2014 07:45	Jennifer L Moyer	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
01750	Calcium	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
01757	Magnesium	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 17:13	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014 08:41	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014 08:41	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014 08:41	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014 08:41	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014 08:41	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014 07:15	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014 08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014 08:58	Micaela L Dishong	1

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

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Analysis Report

Sample Description: SSP14-SW-27 Surface Water
SED SW PW 2014

LL Sample # WW 7657623
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 14:25 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW-27

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014 10:25	Micaela L Dishong	1
10457	Total Suspended Solids	SM 2540 D-1997	1	14309145701A	11/05/2014 07:39	Noah M Rainbow	1

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

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Analysis Report

Sample Description: SSP14-SW-27-Z Filtered Surface Water
SED SW PW 2014

LL Sample # WW 7657624
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 14:25 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW27Z

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		mg/l	mg/l	mg/l	
07046	Barium	7440-39-3	0.0048 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.205 J	0.0334	0.400	1
07058	Manganese	7439-96-5	0.0224	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0087 J	0.0020	0.0400	1
	SW-846 6020A		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 17:17	Katlin N Cataldi	1

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

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Analysis Report

Sample Description: SSP14-SW-27-Z Filtered Surface Water
SED SW PW 2014

LL Sample # WW 7657624
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 14:25 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW27Z

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:43	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:43	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:43	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:43	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:43	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	07:17	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1

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

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Analysis Report

Sample Description: SSP14-SW-27-A Surface Water
SED SW PW 2014

LL Sample # WW 7657625
LL Group # 1515172
Account # 06643

Project Name: BRE - SED SW PW

Collected: 10/30/2014 14:25 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 12:58

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

SW27A

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 13:53	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 13:53	Sarah A Guill	1

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515172
Reported: 11/12/14 at 12:58 PM

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

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C143082AA	Sample number(s): 7657620,7657623									
Acetone	3.0	U	3.0	5.0	ug/l	89		60-139		
Acetonitrile	7.0	U	7.0	20	ug/l	81		50-145		
Allyl Chloride	0.1	U	0.1	0.5	ug/l	96		66-120		
Benzene	0.1	U	0.1	0.5	ug/l	103		80-120		
Bromodichloromethane	0.1	U	0.1	0.5	ug/l	100		80-120		
Bromoform	0.1	U	0.1	0.5	ug/l	97		72-138		
Bromomethane	0.1	U	0.1	0.5	ug/l	89		62-126		
2-Butanone	1.0	U	1.0	5.0	ug/l	100		63-137		
Carbon Disulfide	0.4	U	0.4	1.0	ug/l	104		70-128		
Carbon Tetrachloride	0.1	U	0.1	0.5	ug/l	107		80-135		
2-Chloro-1,3-butadiene	0.1	U	0.1	0.5	ug/l	99		78-120		
Chlorobenzene	0.1	U	0.1	0.5	ug/l	107		80-120		
Chloroethane	0.1	U	0.1	0.5	ug/l	93		68-120		
Chloroform	0.1	U	0.1	0.5	ug/l	105		80-120		
Chloromethane	0.2	U	0.2	0.5	ug/l	92		55-120		
1,2-Dibromo-3-chloropropane	0.2	U	0.2	0.5	ug/l	104		64-141		
Dibromochloromethane	0.1	U	0.1	0.5	ug/l	99		80-126		
1,2-Dibromoethane	0.1	U	0.1	0.5	ug/l	104		80-120		
Dibromomethane	0.1	U	0.1	0.5	ug/l	105		80-120		
trans-1,4-Dichloro-2-butene	1.0	U	1.0	5.0	ug/l	31		14-166		
Dichlorodifluoromethane	0.1	U	0.1	0.5	ug/l	99		35-142		
1,1-Dichloroethane	0.1	U	0.1	0.5	ug/l	101		80-120		
1,2-Dichloroethane	0.1	U	0.1	0.5	ug/l	107		76-132		
1,1-Dichloroethene	0.1	U	0.1	0.5	ug/l	107		80-123		
cis-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	100		80-120		
trans-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	106		80-120		
1,2-Dichloropropane	0.1	U	0.1	0.5	ug/l	103		80-120		
cis-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	86		80-120		
trans-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	94		80-120		
Ethyl Methacrylate	0.1	U	0.1	0.5	ug/l	93		70-120		
Ethylbenzene	0.1	U	0.1	0.5	ug/l	103		80-120		
2-Hexanone	1.0	U	1.0	5.0	ug/l	99		72-124		
Isobutyl Alcohol	10	U	10.	25	ug/l	104		73-146		
Methacrylonitrile	1.0	U	1.0	5.0	ug/l	110		59-150		
Methyl Iodide	0.1	U	0.1	0.5	ug/l	101		80-129		
Methyl Methacrylate	0.1	U	0.1	0.5	ug/l	101		56-137		
4-Methyl-2-pentanone	1.0	U	1.0	5.0	ug/l	92		71-123		
Methylene Chloride	0.2	U	0.2	0.5	ug/l	104		80-120		
Pentachloroethane	0.2	U	0.2	0.5	ug/l	100		75-126		
Propionitrile	2.0	U	2.0	10	ug/l	108		67-143		
Styrene	0.1	U	0.1	0.5	ug/l	110		80-120		
1,1,1,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	104		80-120		
1,1,2,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	109		80-120		

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515172
Reported: 11/12/14 at 12:58 PM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Tetrachloroethene	0.1	U	0.1	0.5	ug/l	102		80-120		
Toluene	0.1	U	0.1	0.5	ug/l	104		80-120		
1,1,1-Trichloroethane	0.1	U	0.1	0.5	ug/l	101		80-120		
1,1,2-Trichloroethane	0.1	U	0.1	0.5	ug/l	106		80-120		
Trichloroethene	0.1	U	0.1	0.5	ug/l	106		80-120		
Trichlorofluoromethane	0.1	U	0.1	0.5	ug/l	89		64-141		
1,2,3-Trichloropropane	0.3	U	0.3	1.0	ug/l	102		80-120		
Vinyl Acetate	0.2	U	0.2	0.5	ug/l	122		38-145		
Xylene (Total)	0.1	U	0.1	0.5	ug/l	107		80-120		
Batch number: E143071AA	Sample number(s): 7657620,7657623									
Vinyl Chloride	0.010	U	0.010	0.050	ug/l	102		70-130		
Batch number: W143061AA	Sample number(s): 7657622,7657625									
Acrolein	40	U	40.	100	ug/l	96		59-120		
Acrylonitrile	4	U	4.	20	ug/l	75		62-120		
Batch number: 14309WAI026	Sample number(s): 7657620,7657623									
1,1'-Biphenyl	0.5	U	0.5	1	ug/l	100		56-134		
1,4-Dioxane	1	U	1.	5	ug/l	66		39-83		
Diphenyl ether	0.5	U	0.5	1	ug/l	98		77-113		
Batch number: 143090027A	Sample number(s): 7657620,7657623									
Diethylene glycol	8.0	U	8.0	10	mg/l	97		55-122		
Ethylene glycol	8.0	U	8.0	10	mg/l	96		54-129		
Propylene glycol	8.0	U	8.0	10	mg/l	95		57-137		
Triethylene glycol	8.0	U	8.0	10	mg/l	88		46-118		
Batch number: 143070636001	Sample number(s): 7657620-7657621,7657623-7657624									
Barium	0.00033	U	0.00033	0.0100	mg/l	97		80-120		
Beryllium	0.00067	U	0.00067	0.0100	mg/l	97		80-120		
Calcium	0.0609	J	0.0334	0.400	mg/l	100		80-120		
Chromium	0.0013	U	0.0013	0.0300	mg/l	96		80-120		
Cobalt	0.0010	U	0.0010	0.0100	mg/l	99		80-120		
Copper	0.0028	U	0.0028	0.0200	mg/l	98		80-120		
Iron	0.0334	U	0.0334	0.400	mg/l	100		80-120		
Magnesium	0.0342	J	0.0167	0.200	mg/l	99		80-120		
Manganese	0.00083	U	0.00083	0.0100	mg/l	97		80-120		
Nickel	0.0016	U	0.0016	0.0200	mg/l	101		80-120		
Selenium	0.0048	U	0.0048	0.0400	mg/l	94		80-120		
Silver	0.0018	U	0.0018	0.0100	mg/l	86		80-120		
Tin	0.0024	U	0.0024	0.0400	mg/l	98		80-120		
Vanadium	0.0019	U	0.0019	0.0100	mg/l	99		80-120		
Zinc	0.0038	J	0.0020	0.0400	mg/l	97		80-120		
Batch number: 143070639001A	Sample number(s): 7657620-7657621,7657623-7657624									
Antimony	0.00033	U	0.00033	0.0020	mg/l	95		80-120		
Arsenic	0.00082	U	0.00082	0.0040	mg/l	92		80-120		
Cadmium	0.00017	U	0.00017	0.0010	mg/l	98		80-120		
Lead	0.000082	U	0.000082	0.0020	mg/l	97		80-120		
Thallium	0.00015	U	0.00015	0.0010	mg/l	94		80-120		
Batch number: 143075713001	Sample number(s): 7657620-7657621,7657623-7657624									
Mercury	0.000060	U	0.000060	0.00020	mg/l	93		80-120		

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515172
Reported: 11/12/14 at 12:58 PM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14309145701A	Sample number(s): 7657623									
Total Suspended Solids	1.00	U	1.00	3.00	mg/l	99		91-105		
Batch number: 14309145703B	Sample number(s): 7657620									
Total Suspended Solids	1.00	U	1.00	3.00	mg/l	96		91-105		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: C143082AA	Sample number(s): 7657620,7657623 UNSPK: P658000								
Acetone	97	100	57-163	4	30				
Acetonitrile	82	79	77-129	4	30				
Allyl Chloride	104	107	61-120	3	30				
Benzene	109	107	87-126	2	30				
Bromodichloromethane	109	105	82-133	3	30				
Bromoform	109	106	60-138	4	30				
Bromomethane	93	92	66-130	1	30				
2-Butanone	98	104	56-160	6	30				
Carbon Disulfide	112	112	84-141	0	30				
Carbon Tetrachloride	119	117	81-148	2	30				
2-Chloro-1,3-butadiene	113	112	78-128	0	30				
Chlorobenzene	113	111	78-133	2	30				
Chloroethane	93	90	70-139	3	30				
Chloroform	111	109	86-136	2	30				
Chloromethane	93	94	49-135	1	30				
1,2-Dibromo-3-chloropropane	103	111	53-163	8	30				
Dibromochloromethane	111	109	79-125	2	30				
1,2-Dibromoethane	111	110	84-127	1	30				
Dibromomethane	111	109	83-126	2	30				
trans-1,4-Dichloro-2-butene	69	77	11-172	12	30				
Dichlorodifluoromethane	106	105	28-136	1	30				
1,1-Dichloroethane	107	106	81-126	1	30				
1,2-Dichloroethane	113	110	82-135	3	30				
1,1-Dichloroethene	116	114	86-132	2	30				
cis-1,2-Dichloroethene	109	107	82-129	1	30				
trans-1,2-Dichloroethene	115	111	88-127	3	30				
1,2-Dichloropropane	108	107	91-126	1	30				
cis-1,3-Dichloropropene	104	104	74-132	0	30				
trans-1,3-Dichloropropene	110	109	71-128	1	30				
Ethyl Methacrylate	107	109	73-134	2	30				
Ethylbenzene	112	111	80-140	1	30				
2-Hexanone	108	107	51-149	1	30				
Isobutyl Alcohol	103	108	65-146	4	30				
Methacrylonitrile	103	113	58-155	9	30				
Methyl Iodide	105	104	71-137	1	30				
Methyl Methacrylate	99	111	48-152	11	30				
4-Methyl-2-pentanone	103	103	69-149	0	30				
Methylene Chloride	109	108	77-135	1	30				

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515172
Reported: 11/12/14 at 12:58 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Pentachloroethane	109	111	68-145	2	30				
Propionitrile	102	107	63-147	4	30				
Styrene	119	117	71-138	2	30				
1,1,1,2-Tetrachloroethane	112	112	87-126	1	30				
1,1,2,2-Tetrachloroethane	108	111	75-131	3	30				
Tetrachloroethene	112	109	75-129	2	30				
Toluene	113	110	83-127	3	30				
1,1,1-Trichloroethane	111	109	85-140	2	30				
1,1,2-Trichloroethane	115	108	85-129	6	30				
Trichloroethene	113	111	85-131	2	30				
Trichlorofluoromethane	100	100	73-139	0	30				
1,2,3-Trichloropropane	113	111	76-120	2	30				
Vinyl Acetate	123	118	27-162	4	30				
Xylene (Total)	118	115	81-137	3	30				
Batch number: E143071AA	Sample number(s): 7657620,7657623 UNSPK: P658000								
Vinyl Chloride	113	120	70-130	6	30				
Batch number: W143061AA	Sample number(s): 7657622,7657625 UNSPK: P658008								
Acrolein	104	105	39-136	1	30				
Acrylonitrile	73	75	51-125	3	30				
Batch number: 14309WAI026	Sample number(s): 7657620,7657623 UNSPK: P658000								
1,1'-Biphenyl	110	105	73-114	5	30				
1,4-Dioxane	66	66	48-83	1	30				
Diphenyl ether	109*	103	81-105	5	30				
Batch number: 143090027A	Sample number(s): 7657620,7657623 UNSPK: P658000								
Diethylene glycol	93	90	52-122	4	20				
Ethylene glycol	96	92	54-123	4	20				
Propylene glycol	97	92	55-131	6	20				
Triethylene glycol	83	82	33-123	1	20				
Batch number: 143070636001	Sample number(s): 7657620-7657621,7657623-7657624 UNSPK: P658000 BKG: P658000								
Barium	99	100	75-125	0	20	0.0056 J	0.0054 J	3 (1)	20
Beryllium	98	99	75-125	1	20	0.00067 U	0.00067 U	0 (1)	20
Calcium	96	99	75-125	2	20	1.08	1.10	2 (1)	20
Chromium	101	98	75-125	3	20	0.0013 U	0.0013 U	0 (1)	20
Cobalt	102	100	75-125	1	20	0.0010 U	0.0010 U	0 (1)	20
Copper	97	100	75-125	3	20	0.0028 U	0.0028 U	0 (1)	20
Iron	99	103	75-125	3	20	0.299 J	0.292 J	2 (1)	20
Magnesium	98	99	75-125	1	20	0.393	0.378	4 (1)	20
Manganese	97	99	75-125	2	20	0.0263	0.0259	2 (1)	20
Nickel	103	102	75-125	1	20	0.0016 U	0.0016 U	0 (1)	20
Selenium	98	98	75-125	0	20	0.0048 U	0.0048 U	0 (1)	20
Silver	73*	86	75-125	16	20	0.0018 U	0.0018 U	0 (1)	20
Tin	99	100	75-125	1	20	0.0024 U	0.0024 U	0 (1)	20
Vanadium	96	101	75-125	5	20	0.0019 U	0.0019 U	0 (1)	20
Zinc	97	98	75-125	1	20	0.0043 J	0.0037 J	17 (1)	20
Batch number: 143070639001A	Sample number(s): 7657620-7657621,7657623-7657624 UNSPK: P658000 BKG: P658000								
Antimony	97	93	75-125	3	20	0.00033 U	0.00033 U	0 (1)	20

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515172
Reported: 11/12/14 at 12:58 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Arsenic	98	100	75-125	3	20	0.00082 U	0.00082 U	0 (1)	20
Cadmium	103	100	75-125	3	20	0.00017 U	0.00017 U	0 (1)	20
Lead	99	101	75-125	3	20	0.000082 U	0.000082 U	0 (1)	20
Thallium	100	97	75-125	3	20	0.00015 U	0.00015 U	0 (1)	20
Batch number: 143075713001	Sample number(s): 7657620-7657621,7657623-7657624 UNSPK: P658000 BKG: P658000								
Mercury	92	90	80-120	2	20	0.000060 U	0.000060 U	0 (1)	20
Batch number: 14309145701A	Sample number(s): 7657623 BKG: P656490								
Total Suspended Solids						96.0	98.0	2 (1)	5
Batch number: 14309145703B	Sample number(s): 7657620 BKG: P660118								
Total Suspended Solids						410	388	6*	5

Surrogate Quality Control

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

Analysis Name: Appendix IX Volatiles
Batch number: C143082AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7657620	103	104	96	97
7657623	103	105	98	96
Blank	102	106	96	97
LCS	101	102	101	104
MS	101	100	100	104
MSD	100	100	100	103
Limits:	77-114	74-113	77-110	78-110

Analysis Name: Vinyl Chloride
Batch number: E143071AA

	Dibromofluoromethane
7657620	109
7657623	109
Blank	102
LCS	108
MS	108
MSD	108
Limits:	80-120

Analysis Name: Acrolein, Acrylonitrile
Batch number: W143061AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7657622	105	102	95	94
7657625	105	103	95	93
Blank	100	99	97	95
LCS	101	99	100	99

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515172
Reported: 11/12/14 at 12:58 PM

Surrogate Quality Control

MS	104	103	99	99
MSD	103	99	100	100
Limits:	80-116	77-113	80-113	78-113

Analysis Name: Dowtherm + 1,4-Dioxane
Batch number: 14309WAI026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7657620	87	101	125
7657623	86	99	124
Blank	82	98	133
LCS	83	94	102
MS	84	100	116
MSD	80	95	120
Limits:	60-123	67-116	40-147

Analysis Name: 4 Gylcol Compounds
Batch number: 143090027A

	Tetramethylene glycol
7657620	94
7657623	109
Blank	98
LCS	99
MS	95
MSD	96
Limits:	54-136

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

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515172 Sample Nos.: 7657620-25
Acc't: 06643 SF: 217503 SCR No.: 162828 Cooler No.: _____
Cooler Temperature upon receipt: 0.6 °C Container No.: 1

30347

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): ME, HL	
Project Name: SED SW PW 2014	

Comments: 3 day holding time for acrolein and acrylonitrile

Surface ~~Pore~~ Water 10/29/14

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Containers Preserv	Containers No.	APPIX Volatiles (8260)	Vinyl Chloride (8260 SIM)	Acrolein/Acrylonitrile (8260)*	Condition upon receipt:
SSP14-SW-07	10/30/14	1510	WW	40	HCl	5	X	X		Intact
SSP14-SW-07-A			WW	40	None	3			X	
SSP14-SW-27		1425	WW	40	HCl	5	X	X		
SSP14-SW-27-A			WW	40	NONE	3			X	

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions: *3 Day Holding Time

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
				10/28/14	1200
	10/30/14	1830			
				10/31/14	0925

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515172 Sample Nos.: 7657620-25
Acc't: 06643 SF: 217703 SCR No.: 162890 Cooler No.: C24247 30361
Cooler Temperature upon receipt: 0.4 °C Container No.: 2

Facility Name: Brevard
Facility Contact: Chet Meinzer
Facility Address: DuPont Brevard
1300 Staton Road
Cedar Mountain NC 28718
Sampler(s): ME, HL
Project Name: SED SW PW 2014

Project Manager: Tracy Obvey
Facility Contact Phone No.: 828-862-8379
Job No.: 9267-7720100C-WH06504681
Release No.:
PO Number: LBIO-66380

Comments:

Surface Water

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	Dowtherm + 1,4-Dioxane (8270D)	Glycols (8015C)	APPIX Metals+Fe,Mn (6010/6020/7470A)	TSS (2540 D)	Hardness (SM18 2340)	Condition upon receipt:
SSP14-SW-07	10/30/14	1510	WW	500 / 1000	None	2				X		Intact
SSP14-SW-07			WW	250	HNO3	1			X			
SSP14-SW-07			WW	250	HNO3	1					X	
SSP14-SW-07			WW	250	None	2	X					
SSP14-SW-07			WW	40	None	2		X				
SSP14-SW-07 -Z			WW	250	HNO3	1			X			empty

Turnaround Time Requested (please circle): Standard RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Luca Mygadko	10/12/14	12:34		10/28/14	1200
	10/30/14	1830			
				10/31/14	0925

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515172 Sample Nos.: 7657620-25
Acc't: 06643 SF: 217703 SCR No.: 162890 Cooler No.: C24247 30361
Cooler Temperature upon receipt: 0.4 °C Container No.: 2

Facility Name: Brevard
Facility Contact: Chet Meinzer
Facility Address: DuPont Brevard
1300 Staton Road
Cedar Mountain NC 28718
Sampler(s): MA HL
Project Name: SED SW PW 2014

Project Manager: Tracy Obvey
Facility Contact Phone No.: 828-862-8379
Job No.: 9267-7720100C-WH06504681
Release No.:
PO Number: LBIO-66380

Analyses Required

Comments:

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	Dowtherm + 1,4-Dioxane (8270D)	Glycols (8015C)	APPIX Metals+Fe,Mn (6010/6020/7470A)	TSS (2540 D)	Hardness (SM18 2340)	Surface Water Condition upon receipt:
SSP14-SW-27	10/30/14	1425	WW	500 / 1000	None	2				X		Intact
SSP14-SW-27			WW	250	HNO3	1			X			
SSP14-SW-27			WW	250	HNO3	1					X	
SSP14-SW-27			WW	250	None	2	X					
SSP14-SW-27			WW	40	None	2		X				
SSP14-SW-27-Z			WW	250	HNO3	1			X			empty

Turnaround Time Requested (please circle): Standard RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Lisa Mugashko	10/17/14	12:34	[signature]	10/28/14	1200
[signature]	10/30/14	1830			

Bottles Received by: [signature] Date: 10/31/14 Time: 0925

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Sample Administration Receipt Documentation Log

Doc Log ID: 37717

Group Number(s): 1515172

Client: DUPONT BREVARD

SED SW PW 2014

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	10/31/2014 9:25
Number of Packages:	4	Number of Projects:	1
State/Province of Origin:	NC		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	12
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 8 HCL 4 UNPRESERVED

Unpacked by Corey Eshleman (3647) at 11:08 on 10/31/2014

Samples Chilled Details: SED SW PW 2014

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	0.6	DT	Wet	Y	Loose	N
2	DT121	0.4	DT	Wet	Y	Loose	N
3	DT121	0.4	DT	Wet	Y	Loose	N
4	DT121	0.3	DT	Wet	Y	Loose	N

General Comments: SSP14-SW-07 AND SSP14-SW-27 GLYCOL VIALS RECEIVED EMPTY

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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

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APPENDIX C
SITE-SPECIFIC REMEDIAL LEVELS DOCUMENT

General DuPont Comment:
This response to comments includes a response to NCDENR's comments dated August 21, 2014 on the Draft Site-Specific Remedial Levels Report and incorporates a response to verbal comments received by the agency during a conference call on August 22, 2014 (see Comments 8 and 9). Revisions to the report are indicated with red underline text.

Comment	Response
1. The exposure assumptions for the direct contact pathways for soil are all acceptable. All pathways currently evaluated assume that the rangers or visitors at the park will only come into contact with the contaminated surface soil only a quarter of the time they are on the property. Is this area going to be capped, posted or clearly identified on the plat map for the land use restriction? Would future developments of offices or trails in the contaminated area be prohibited? I think we need to discuss all potential uses for the site in discussing this comment. We need to make sure all parties understand the potential uses of the site and the restrictions that will be in place.	As discussed with NC DENR during a meeting on April 11, 2014, DuPont intends to minimize/eliminate potential for future exposure through the implementation of the following institutional controls (ICs): soil use/excavation management plan; vapor intrusion protection plan; groundwater use and restrictions plan; appropriate long-term O&M plan; and, deed notices/restrictions. Engineering controls are also planned to control/isolate waste materials which may remain in place. DuPont will work with closely with the NC Department of Agriculture and North Carolina National Guard (NCNG) and DuPont State Recreational Forest staff (DSRF) to identify areas of the site where re-development (intrusive activity or placement of structures) will be restricted or where engineering controls would be required for any new construction. Section 4 (Site Conceptual Model) of the report has been revised to include this language.
2. Include a trespasser scenario where the individual spent significant time in the contaminated areas.	As discussed during our conference call on August 22, 2014, since future land use would be unrestricted, an evaluation of a trespasser scenario is not considered applicable. Supporting rationale has been added to Section 5.3.1 (Potential Receptors) of the report.
3. The Division assumes additivity of risk for contaminants that adversely affect the same target organ or exhibit the same critical effect. The acceptable target hazard index (sum of hazard quotients) is one. The hazard quotient used to calculate the alternative remediation levels in this document is 1. This assumes no additivity. Change target hazard quotient to reflect either number of contaminants with non-carcinogenic effects or consider target organ/critical effect.	The attached Table 1 provides a comparison of the maximum detected concentration for constituents of potential concern (COPCs) with non-carcinogenic effects in site surface soil to the lowest remedial level calculated based on a hazard quotient (HQ) of 1. As shown in the table, while the total hazard index (HI) is 1.4, the total HI by target organ is less than 1. A similar result was observed for subsurface soil. While the total HI was 1.6, the total HI by target organ did not exceed 1. Therefore, an adjustment to the HQ in the RL calculation is not necessary.
4. Since this is going to be a public facility there will probably be a few enclosed structures built in the future. There are chlorinated solvents in groundwater. Will there be restrictions on building structures above groundwater plume? Please provide rationale why vapor intrusion pathway is not complete and therefore not evaluated in the narrative.	As noted in the response to Comment 1, DuPont will develop a vapor intrusion protection plan. This plan will identify areas of the site where future construction will require vapor mitigation measures. This language has been added to Section 4 of the report.
5. Sediment samples must be collected both in DERA Creek and Little River. If contaminants are detected ecological risk must be evaluated. Surface Water at DERA Creek has to meet class C and trout water standards like little river.	Consistent with the Final Remedial Investigation Work Plan dated August 1, 2014, surface water and sediment were collected in both Lake DERA and DERA Creek during the sampling event conducted in October/November 2014. An evaluation of the data will be conducted consistent with the approach presented in the NCDENR approved Work Plan.

Comment	Response
6. The site conceptual model does identify surface water pathway as complete. Provide in the narrative characteristics of DERA Creek at the site like dimensions, flow and fish and aquatic life population. Would visitors fish or wade in DERA Creek? Provide similar analysis for the on-site lake in the narrative. I assume surface water pathway will be addressed in detail in future editions once additional sampling is complete. I would imagine that comments 5 and 6 will be the most important part of our discussion Friday. In Section 5.1 of the SSRLs, DuPont proposes a simple dilution calculation with the Little River as the discharge point. Based on the comment above, DWM considers DERA Creek (and Lake DERA also) as a receptor for discharge of contaminated groundwater. Calculations demonstrating protection of receptors must consider DERA Creek. Obviously this will affect the site specific levels calculated for each environmental media.	Additional discussion of DERA Creek and Lake DERA characteristics has been added to Section 3 (Site Environmental Setting) of the report. As noted in Section 5 of the report, site-specific RLs were not presented for surface water and sediment, but may be developed later for protection of human and ecological receptors based on the results of the final phase of the RFI. Surface water and sediment were not identified as media of concern during prior investigations. Based on the hydrogeologic SCM developed for the site, the overall flow pattern within the surficial aquifer across the Site is in an east to southeasterly direction (Figures 7 and 8). Surficial groundwater also appears to flow radially from the bedrock mound beneath the SWMU 17 area. In addition, the potentiometric surface indicates that a mounding occurs at Lake DERA and groundwater flows away from the lake also towards Little River. As a result, the majority of site shallow groundwater flows towards the Little River. Only a small portion of shallow groundwater at the site may potentially discharge to DERA Creek. Moving from west to east, groundwater flow is parallel to the Creek and does not intersect or move toward the creek until near SWMU 12A. Well clusters MW-206A/B, 224A/B, and 209 A/B all likely monitor groundwater that may have some influence on water quality of the creek. Therefore, an evaluation of groundwater release to DERA Creek was performed in order to determine whether concentrations of constituents detected in these groundwater monitoring wells are likely to result in exceedances of relevant surface-water quality criteria in the creek. Consistent with the evaluations conducted to support the positive EI CA750 determination for the site, maximum detected concentrations in these groundwater monitoring wells were compared to the surface water screening criteria with an applied conservative dilution factor of 10 to account for groundwater to surface water interaction. As shown in Table 2, only one constituent, barium, had a maximum detected concentration which exceeded the adjusted groundwater-to-surface water screening criteria. However, the average concentration was less than the adjusted groundwater-to-surface water screening criteria. In addition, barium has not been detected in DERA Creek surface water samples. As a result, potential groundwater discharge to surface water of DERA Creek is considered acceptable. Since DERA Creek flows into Little River, Little River is considered the ultimate receptor of site groundwater discharge and the most appropriate point for ACL derivation. Section 5.1 has been revised to provide additional discussion regarding the attenuation factor (AF) calculation and assumptions regarding discharge
7. I tried to follow protection of groundwater (surface water) value calculation for soil. Based on the equation on table 10 the Cw is the ACL x 20. I assumed this was the ACL from table 5. I did not come up with the same Cw. Please clarify.	An error was noted in Table 10. This error has been corrected and a revised table is included. As indicated in the revised table, RLs for protection of migration to groundwater have increased due to the correction. The revised RLs were also updated in Table 11.

Comment	Response
8. Verbal Comment: Clearly articulate how the scenarios compare.	Section 5.3.1 has been revised to provide additional information regarding the potential receptors and planned future land uses. As previously discussed in Section 5.3.4, one exceedance of site-specific RLs was observed at one unit (AOC A). No other exceedances were noted.
9. Verbal Comment: Discuss how and where the site will be used for Wounded Warrior Rehab.	Section 5.3.1 has been revised to address future land use plans for Wounded Warrior rehab. DuPont's current understanding is that Lake DERA would be used to provide primitive camping and recreational opportunities for Wounded Warriors. Camping would be conducted at the existing Lake DERA campground. No SWMUs or AOCs are located on this side of Lake DERA. In addition, Lake DERA surface water and sediment were not identified as media of concern during prior investigations. As a result, no complete exposure pathways have been identified for this receptor. This will be confirmed based on the results of the final phase of the RFI.

Table 1
Evaluation of Target Hazard Quotient
Former DuPont Brevard Facility
Cedar Mountain, NC

Surface Soil

Analyte[1]	Maximum Detect (mg/kg)	RL (mg/kg)[2]	Calculated HQ[3]	Target Organ
Antimony	9.01E+00	4.06E+02	0.02	Circulatory
Cobalt	1.71E+01	3.04E+02	0.06	Endocrine (Thyroid)
Silver	5.30E+02	5.07E+03	0.1	Dermal
Thallium	4.29E+00	1.01E+01	0.4	Dermal (Hair)
Vanadium	8.63E+02	5.07E+03	0.2	Dermal
Biphenyl	1.70E+02	2.99E+02	0.6	Kidney
Naphthalene	2.80E+01	8.73E+02	0.03	Developmental
		Total HI	**1.4**	

Maximum Total HI by Target Organ

Target Organ	Total HI
Circulatory	0.02
Endocrine	0.06
Dermal	0.7
Systemic (Kidney)	0.6
Developmental	0.03

Subsurface Soil

Analyte[1]	Maximum Detect (mg/kg)	RL (mg/kg)[2]	Calculated HQ[3]	Target Organ
Antimony	2.95E+02	3.54E+03	0.08	Circulatory
Arsenic	2.13E+01	3.81E+03	0.006	Dermal (Skin)
Cobalt	3.61E+01	2.65E+03	0.01	Endocrine (Thyroid)
Nickel	3.52E+02	1.75E+05	0.002	Systemic (Body Weight)
Silver	6.72E+02	4.42E+04	0.02	Dermal
Thallium	1.67E+01	8.85E+01	0.2	Dermal (Hair)
Vanadium	3.29E+03	4.41E+04	0.07	Dermal
Zinc	2.06E+05	2.65E+06	0.08	Circulatory
1,1,2,2-Tetra	2.20E+02	1.77E+05	0.001	Systemic (Liver)
1,1,2-Trichlo	3.60E+00	1.69E+02	0.02	Systemic (Liver)
1,2-Dichloro	5.50E-01	3.52E+03	0.0002	Systemic (Kidney)
1-Methylnap	3.90E+01	4.39E+05	0.00009	Respiratory
2-Methylnap	5.50E+01	2.51E+04	0.002	Respiratory
Benzene	2.10E+00	9.25E+03	0.0002	Circulatory
Biphenyl	5.10E+03	5.38E+03	0.9	Systemic (Kidney)
cis-1,2-Dichl	1.00E+02	1.77E+04	0.006	Systemic (Kidney)
Dibenzofura	4.60E+01	8.85E+03	0.005	
Diphenyl Eth	1.30E+04	1.49E+06	0.009	NOAEL
Ethylbenzen	1.10E+01	3.81E+05	0.00003	Systemic (Liver, Kidney)
Naphthalen	1.60E+02	1.45E+04	0.01	Developmental
Tetrachloro	6.80E+01	9.17E+03	0.007	Systemic (Body Weight, Liver)
Trichloroeth	7.10E+01	4.66E+02	0.2	Endocrine (Thymus); Circulatory (Heart); Developmental Immunotoxicity
		Total HI	**1.6**	

Maximum Total HI by Target Organ

Target Organ	Total HI
Circulatory	0.3
Dermal	0.3
Developmental	0.2
Endocrine	0.2
NOAEL	0.009
Respiratory	0.002
Systemic (Body Weight)	0.009
Systemic (Liver)	0.03
Systemic (Kidney)	0.95

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Notes:
1 - COPC with non-carcinogenic effects
2 - Lowest remedial level calculated for non-carcinogenic effects, based on a HQ=1
3 = Calculated HQ = Conc/RL

Table 2
DERA Creek Groundwater-to-Surface Water Evaluation
Former DuPont Brevard Facility
Cedar Mountain, NC

Location ID	Date Sampled	Parameter Name	Parameter Code	Result	Units	Water Quality Screening Level							Lowest WQSL * 10	Conc Exceeds?
						Protection of Human Health[1]			Protection of Aquatic Life[2]					
						15A NCAC 2B - Fish Consumption	Secondary Screening Level	Source	15A NCAC 2B - FW Chronic	15A NCAC 2B - Trout Waters	Secondary Screening Level	Source		
MW-206B	2/13/2009	1,1,1-Trichloroethane	71-55-6	0.2 J	UG/L	NE	2.00E+02	NC 2L	2.50E+03	NE			2.00E+03	No
MW-206B	2/13/2009	1,1,2,2-Tetrachloroethane	79-34-5	0.5	UG/L	4.00E+00			NE	NE	6.10E+02	Tier II SCV	4.00E+01	No
MW-224A	2/16/2009	1,1-Dichloroethene	75-35-4	0.2 J	UG/L	7.10E+03			5.40E+03				5.40E+04	No
MW-209A	2/11/2009	1,4-Dioxane	123-91-1	1 J	UG/L	8.00E+01			NE	NE	2.20E+04	Region V	8.00E+02	No
MW-209B	2/11/2009	1,4-Dioxane	123-91-1	26	UG/L	8.00E+01			NE	NE	2.20E+04	Region V	8.00E+02	No
MW-209A	2/11/2009	Acetone	67-64-1	4.2 J	UG/L	NE	6.00E+03	NC 2L	2.00E+03				2.00E+04	No
MW-224A	2/16/2009	Acetone	67-64-1	3.3 J	UG/L	NE	6.00E+03	NC 2L	2.00E+02				2.00E+03	No
MW-224B	2/16/2009	Acetone	67-64-1	3 J	UG/L	NE	6.00E+03	NC 2L	2.00E+03				2.00E+04	No
MW-209B	2/11/2009	Benzene	71-43-2	0.2 J	UG/L	5.10E+01			NE	NE	1.30E+02	Tier II SCV	5.10E+02	No
MW-206B	2/13/2009	cis-1,2 Dichloroethene	156-59-2	2.9	UG/L	4.90E+03			NE	NE	5.90E+02	Tier II SCV	5.90E+03	No
MW-206A	2/13/2009	Dichlorodifluoromethane	75-71-8	0.3 J	UG/L	NE	1.00E+03	NC 2L	NE	NE			1.00E+04	No
MW-209A	2/11/2009	Diphenyl Ether	101-84-8	11 J	UG/L	NE	1.00E+02	NC IMAC	NE	NE	1.10E+03	DuPont	1.00E+03	No
MW-209B	2/11/2009	Diphenyl Ether	101-84-8	3 J	UG/L	NE	1.00E+02	NC IMAC	NE	NE	1.10E+03	DuPont	1.00E+03	No
MW-206B	2/13/2009	Tetrachloroethene	127-18-4	0.7	UG/L	3.30E+00			NE	NE	9.80E+01	Tier II SCV	3.30E+01	No
MW-206B	2/13/2009	trans-1,2-Dichloroethene	156-60-5	0.1 J	UG/L	1.00E+04			NE	NE	5.90E+02	Tier II SCV	5.90E+03	No
MW-206B	2/13/2009	Trichloroethene	79-01-6	20	UG/L	3.00E+01			NE	NE	4.70E+01	Tier II SCV	3.00E+02	No
MW-206A	2/13/2009	Trichlorofluoromethane	75-69-4	11	UG/L	6.70E+04			NE	NE			6.70E+05	No
MW-224A	2/16/2009	Trichlorofluoromethane	75-69-4	2.1	UG/L	6.70E+04			NE	NE			6.70E+05	No
MW-209A	2/11/2009	Vinyl Chloride	75-01-4	0.015 J	UG/L	2.40E+00			NE	NE	9.30E+02	Region III	2.40E+01	No
MW-209B	2/11/2009	Vinyl Chloride	75-01-4	0.011 J	UG/L	2.40E+00			NE	NE	9.30E+02	Region III	2.40E+01	No
MW-206A	2/13/2009	Barium	7440-39-3	0.0905	MG/L	2.00E+02			LD	NE	4.00E-03	Tier II SCV	4.00E-02	**Yes**
MW-206B	2/13/2009	Barium	7440-39-3	0.0126	MG/L	2.00E+02			LD	NE	4.00E-03	Tier II SCV	4.00E-02	No
MW-209A	2/11/2009	Barium	7440-39-3	0.0019 J	MG/L	2.00E+02			LD	NE	4.00E-03	Tier II SCV	4.00E-02	No
MW-209B	2/11/2009	Barium	7440-39-3	0.0287	MG/L	2.00E+02			LD	NE	4.00E-03	Tier II SCV	4.00E-02	No
MW-224A	2/16/2009	Barium	7440-39-3	0.0698	MG/L	2.00E+02			LD	NE	4.00E-03	Tier II SCV	4.00E-02	**Yes**
MW-224B	2/16/2009	Barium	7440-39-3	0.0331	MG/L	2.00E+02			LD	NE	4.00E-03	Tier II SCV	4.00E-02	No
MW-209B	2/11/2009	Cobalt	7440-48-4	0.0023 J	MG/L	4.00E+00			NE	NE	2.30E+01	Tier II SCV	4.00E+01	No
MW-224A	2/16/2009	Copper	7440-50-8	0.0032 B	MG/L	NE	1.00E+00	NC 2L	7.00E-03				7.00E-02	No
MW-209A	2/11/2009	Iron	7439-89-6	0.162 J	MG/L	NE	1.40E+04	DuPont	1.00E+03	NE			1.00E+04	No
MW-224B	2/16/2009	Iron	7439-89-6	0.0569 B	MG/L	NE	1.40E+04	DuPont	1.00E+03	NE			1.00E+04	No
MW-206A	2/13/2009	Manganese	7439-96-5	0.414	MG/L	NE	1.40E+03	DuPont	NE	NE	1.20E+02	Tier II SCV	1.20E+03	No
MW-206B	2/13/2009	Manganese	7439-96-5	0.0098	MG/L	NE	1.40E+03	DuPont	NE	NE	1.20E+02	Tier II SCV	1.20E+03	No
MW-209A	2/11/2009	Manganese	7439-96-5	0.169	MG/L	NE	1.40E+03	DuPont	NE	NE	1.20E+02	Tier II SCV	1.20E+03	No
MW-209B	2/11/2009	Manganese	7439-96-5	0.0318	MG/L	NE	1.40E+03	DuPont	NE	NE	1.20E+02	Tier II SCV	1.20E+03	No
MW-224A	2/16/2009	Manganese	7439-96-5	0.0214	MG/L	NE	1.40E+03	DuPont	NE	NE	1.20E+02	Tier II SCV	1.20E+03	No
MW-224B	2/16/2009	Manganese	7439-96-5	0.0072	MG/L	NE	1.40E+03	DuPont	NE	NE	1.20E+02	Tier II SCV	1.20E+03	No
MW-206A	2/13/2009	Mercury	7439-97-6	0.00000811	MG/L	NE	1.00E-03	NC 2L	1.20E-05	NE			1.20E-04	No

Table 2
DERA Creek Groundwater-to-Surface Water Evaluation
Former DuPont Brevard Facility
Cedar Mountain, NC

Location ID	Date Sampled	Parameter Name	Parameter Code	Result	Units	Water Quality Screening Level							Lowest WQSL * 10	Conc Exceeds?
						Protection of Human Health[1]			Protection of Aquatic Life[2]					
						15A NCAC 2B - Fish Consumption	Secondary Screening Level	Source	15A NCAC 2B - FW Chronic	15A NCAC 2B - Trout Waters	Secondary Screening Level	Source		
MW-209A	2/11/2009	Mercury	7439-97-6	0.00000201	MG/L	NE	1.00E-03	NC 2L	1.20E-05	NE			1.20E-04	No
MW-209B	2/11/2009	Mercury	7439-97-6	0.00000149	MG/L	NE	1.00E-03	NC 2L	1.20E-05	NE			1.20E-04	No
MW-224A	2/16/2009	Mercury	7439-97-6	.000000403	MG/L	NE	1.00E-03	NC 2L	1.20E-05	NE			1.20E-04	No
MW-224B	2/16/2009	Mercury	7439-97-6	.000000207	MG/L	NE	1.00E-03	NC 2L	1.20E-05	NE			1.20E-04	No
MW-206B	2/13/2009	Zinc	7440-66-6	0.01 J	MG/L	NE	1.00E+00	NC 2L	5.00E-02	NE			5.00E-01	No

NE - None Established LD - Limited Data
UG/L - micrograms per liter MG/L - milligrams per liter

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1 - North Carolina Surface Water Standards found in 15A NCAC 02B.0208 for protection of human health (organism only)
DERA Creek is a Class C water and is not used as a water supply.
In the absence of fish consumption values, the following secondary screening levels were utilized:
DuPont -Where NC 2B for HH-org were unavailable, then a surface water standard (SS) was derived consistent with 15A NCAC 02B.0208 for protection of human health (fish consumption).
MCL - Federal Maximum Contaminant Levels (Summer 2010)
NC 2L - North Carolina 2L Drinking Water Standard 15A NCAC 2L (April 2013)
NC IMAC - North Carolina Interim Maximum Allowable Concentration (April 2013)
2 - North Carolina Surface Water Standards found in 15A NCAC 02B.0208 for protection of aquatic life and trout waters
In the absence of chronic values, the following ecological surface water benchmarks were utilized:
Tier II Secondary Chronic Value (SCV) - Suter, G.W. II, and Tsao, C.L. 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota
EPA Region III - Freshwater Ecological Screening Benchmark
EPA Region V - Surface Water Ecological Screening Level
NAWQC - National Recommended Water Quality Criteria (2009) for protection of aquatic life (freshwater chronic).
DuPont - DuPont-derived effects threshold concentration

DRAFT FOR REVIEW

Site-Specific Remedial Levels
Former DuPont Brevard Facility
Cedar Mountain, NC

Date: July 2014 (Revised December 2014) Project No.: 18986428

DRAFT

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Appendix A Future Land Use Plan
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Executive Summary

This report describes the development of site-specific soil and groundwater remedial levels (RLs) for the Former E. I. du Pont de Nemours and Company (DuPont) Brevard Facility (the site) located in Cedar Mountain, North Carolina. The site is no longer used for manufacturing operations and has been dismantled. Planned future use of the site includes military training and recreational uses consistent with land use plans identified by the NC Department of Agriculture and North Carolina National Guard (NCNG) and DuPont State Recreational Forest staff (DSRF).

Corrective action at the site is currently being conducted in accordance with requirements set forth in the Hazardous Waste Management Permit No. No. NCD003152329-R-2 issued by the North Carolina Department of Environment and Natural Resources (NCDENR) on August 4, 2008 and revised on April 11, 2011. In accordance with the Permit, DuPont is required to conduct RCRA Facility Investigation (RFI) activities at the site to address confirmed or suspected releases to the environment from RCRA solid waste management units (SWMUs) and/or areas of concern (AOCs). Since 2002, DuPont has completed three phases of the RFI. The final phase of the RFI began in the Fall 2014.

Consistent with the NCDENR February 27, 2014 document entitled "Establishing Remediation Goals for the DuPont Brevard Facility", site-specific RLs for groundwater and soil were developed for the protection of human health and the environment based on planned future uses as proposed by the DSRF and the NCNG. These RLs will be used to support the remedial approach for the site.

As part of the RFI, a site conceptual model (SCM) was developed to address potential human and ecological exposure pathways. In developing these site-specific RLs, receptors and routes of exposure were refined based on the currently proposed uses. Constituents of potential concern (COPCs) were identified based on comparison of existing RFI data against screening levels for appropriate media and exposure pathways. As a result, RLs are presented in this report for the following:

- Groundwater concentrations protective of receptors in Little River (human and ecological)
- Soil concentrations protective of potential groundwater receptors (Little River)
- Direct contact soil concentrations protective of potential future land use scenarios (i.e., military and recreational) and the following receptors: Forest Ranger, National Guard, Utility Worker and Trail User (Adult/Child)

Additional sampling activities are planned during the final phase of the RFI. These RLs will be used to evaluate the data collected during the investigation and provide information to support remedial-decision making based on planned future land uses.

Site-specific RLs are not presented in this report for surface water and sediment because there are no exceedances of appropriate screening levels currently. Hence, no COPCs have been identified. RLs for these media may be developed for protection of human and ecological receptors based on the results of the final phase of the RFI.

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1.0 Introduction

This report describes the development of site-specific remedial levels (RLs) for the Former E. I. du Pont de Nemours and Company (DuPont) Brevard Facility (the site) located in Cedar Mountain, North Carolina. The RLs will be used to support the remedial approach for the site.

The following RLs are presented in this report:

- Groundwater concentrations protective of receptors in Little River (human and ecological)
- Soil concentrations protective of potential groundwater receptors (Little River)
- Direct contact soil concentrations protective of potential future land use scenarios

These RLs have been derived for the protection of human health and the environment based on planned future uses. Receptors and exposure routes addressed in the RLs are based on the use of a site conceptual model (SCM). The SCM has been developed to address potential ecological and human exposure pathways for the site and has been used to guide the development of the RLs.

1.1 Report Organization

The remainder of this report is organized into the following sections:

- Section 2 provides a brief description of the site operational history and corrective action background
- Section 3 details the site environmental setting
- Section 4 presents the current Site Conceptual Model (SCM)
- Section 5 provides the technical approach for RL calculations
- Section 6 summarizes the site-specific RLs for soil and groundwater
- Section 7 provides the references that were used in the development of this report

Tables, figures and appendices referenced herein are attached to the end of this document. Appendix A provides the future land use plans for the site. Appendix B details groundwater flows calculated for site groundwater and for the Little River. Appendix C contains site-specific RL calculations for soil direct contact.

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2.0 Brief Site History and Background

The site began operations under DuPont in 1957 and was operated by the Chemicals and Pigments (C&P) Department during the first five years of operation, producing high purity silicon. The property was then transferred to the Imaging Department, for production of medical imaging (x-ray) films. In addition to manufacturing processes, DuPont historically operated a powerhouse, a wastewater treatment facility, a Save-All System (silver recovery unit), the Alternate Fuel Boiler (AFB), and permitted solid waste landfills.

The manufacturing area was divested to Sterling Diagnostic Imaging Inc. (Sterling) on March 29, 1996. On May 14, 1999, Sterling divested the manufacturing facility to AGFA Corporation. Both AGFA and Sterling conducted the same operations as DuPont. AGFA discontinued operations at the DuPont Brevard Facility in December 2002. An agreement was reached with AGFA to perform demolition and removal (D&R) activities for major assets of the facility (February 2004) prior to DuPont reacquisition of the property. Completion of all required D&R activities was completed in May 2006 and ownership of the site was divested to DuPont (July 2006).

Corrective action at the site is currently being conducted in accordance with requirements set forth in the Hazardous Waste Management Permit No. No. NCD003152329-R-2 issued by the North Carolina Department of Environment and Natural Resources (NCDENR) on August 4, 2008 and revised on April 11, 2011. Consistent with the Permit, DuPont is required to conduct RCRA Facility Investigation (RFI) activities at the site to address confirmed or suspected releases to the environment from RCRA solid waste management units (SWMUs) and/or areas of concern (AOCs). Since 2002, DuPont has completed three phases of the RFI. Results of these investigations are documented in the following reports:

- DuPont CRG, 2003. *Phase I RFI Report*
- DuPont CRG, 2004. *Phase II RFI Report*
- DuPont CRG, 2008. *Interim Phase III RFI Report*
- Parsons, 2009. *Phase III RFI Report*

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3.0 Site Environmental Setting

The site is located approximately six miles southeast of the town of Brevard, near Cedar Mountain, in Transylvania County, North Carolina, in the Blue Ridge Physiographic Province Region of the Appalachian Mountains. The Blue Ridge Physiographic Province is characterized by mountainous terrain with relatively high relief. Local elevations range from 1,010 to 4,000 feet above mean sea level (MSL). The manufacturing facility is situated on a fairly level plateau at 2,550 feet above MSL and is located on 79.41 acres. The site is bounded by the Little River on the south and east, and heavily wooded mountain land to the north.

During the RFI, two aquifers have been identified and characterized at the site: surficial and bedrock. Generally, the surficial aquifer consists of subsurface overburden materials (soils) and residuum materials [unconsolidated saprolite and partially weathered rock (PWR)] that overlay crystalline bedrock composed of granite and gneiss. The thickness of the surficial aquifer (residuum combined with the overburden) can be correlated to the relief of the underlying bedrock outcrop (Parsons, 2009).

Groundwater occurrence within the surficial aquifer is based on observations made during the collection of the lithologic borings installed as part of the piezometer and monitoring well installations completed during the RFI field investigations. In the majority of the site, groundwater in the surficial aquifer was observed as the borings were advanced into the saprolitic materials. In areas adjacent to the river (such as MW-106, MW-107, and MW-213 through MW-215), groundwater is present in shallow [i.e., 5 feet below ground surface (bgs) to 10 feet bgs] overburden/overbank materials in addition to the saprolite and PWR. Depths to PWR along the river are estimated to range from 15 feet bgs to 40 feet bgs.

In the western portion of the site (west of the former manufacturing areas) groundwater flow is predominantly downward from the surficial aquifer to the bedrock aquifer. While in the eastern half of the site groundwater flow is predominately upward from deep soil/bedrock to surficial aquifer. As a result, the direction of gradient flow tends to be upward in areas where groundwater is being discharged to the surface and downward where recharge is believed to occur. In the case of the site, the topographical highs tend to be on the western half of the site, and are the most likely sources of recharge, whereas the eastern half of the site is topographically lower, and is more likely to have locations of discharge (Parsons, 2009).

Based on the hydrogeologic SCM developed for the site, the surficial aquifer is in communication with the Little River. The Little River flows from the south to north across the site and may receive discharge for the overburden/over-bank portion of the surficial aquifer. Overall flow in the surficial aquifer at the Site flows in an east to southeasterly direction towards the Little River. Flow patterns have been observed to move in a manner that follows bedrock topography. Horizontal gradients are noted to be the steepest in areas where bedrock topography is greatest and lowest where the topography begins to level off in the presence of the Little River (Parsons, 2009).

Groundwater flow within the bedrock aquifer is also to the east/southeast towards the Little River. However, direct communication between the bedrock aquifer and the river is

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limited to the extent of the river between High Falls and Hooker Falls where the residuum thins and bedrock outcrops have been observed. The bedrock aquifer does not appear to be in direct communication with the extent of the river between Bridal Veil Falls to High Falls [see Figures 12- 20 and Appendix A in the *Phase III RFI Report* (Parsons, 2009)].

The Little River is classified by NCDENR as Class C fresh surface water (aquatic propagation and survival, fishing, wildlife, secondary recreation, and agricultural use). In addition, the Little River has a supplemental classification of Class TR (Trout Waters - intended to protect freshwaters for natural trout propagation and survival of stocked trout).

Additional surface water features at the site include Lake DERA and DERA Creek. Lake DERA, also known as Lake DuPont, is an approximate 19-acre lake located in the northwest of the former manufacturing area. The lake features a silty bottom, with limited amounts of submerged aquatic vegetation (SAV) along its shallower reaches. An assessment of Lake DERA was conducted by the North Carolina Wildlife Resources Commission on August 10, 2010. The assessment consisted of a snorkel survey and use of a YSI® Pro20 to develop a temperature and dissolved oxygen profile of the lake. The snorkel survey revealed that the northern portion of the lake is shallow and contains some emergent vegetation which serves as habitat for young-ofthe- year and adult littoral fish species. Overall, fish density and diversity were low; three fish species were observed: largemouth bass (Micropterus salmoides), bluegill (Lepomis macrochirus), and redbreast sunfish (Lepomis auritus). YSI® measurements confirmed that the relatively shallow Lake is fully mixed by wind and has adequate dissolved oxygen levels throughout the water column. Consequently, the ecological quality of Lake DERA is considered moderate due to limited aquatic vegetation and a low diversity of aquatic life (URS, 2011).

DERA Creek flows from west to east (Lake DERA to Little River) through the Site, and has year-round flow. During an ecological assessment of the site conducted in 2011, bluegill and bass were observed in the outfall pool, just east of the Lake DERA dam; however, sediments in this area were notably marked by iron flocculant (URS, 2011). Swamp Forest-Bog and Acidic Cove Forest were found to occur along the creek, limiting access. In addition, the creek is too shallow for swimming, canoeing or rafting.

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4.0 Site Conceptual Model

During the RFI process, DuPont has strived to incorporate information from individual SWMUs and AOCs, along with more general site data, into a facility-wide SCM. The use of a SCM provides a means of documenting and periodically updating general facility information and data regarding potential releases to the environment (USEPA, Regional VI, 2008). The SCM also provides a framework for problem definition; aids in the identification of data gaps which can then be addressed in the investigation; and assists in the identification of appropriate remedial technologies, if necessary.

The SCM for the Former DuPont Brevard Facility was developed and designed to assess the relative potential for the site to impact human health and the environment and to facilitate the identification of data gaps that would aid in the assessment. The assessment is based on an integrated analysis of potential exposure pathways, hazardous substance release constituent concentrations, environmental fate and transport mechanisms, and risk to human health and the environment.

The SCM is dynamic and should be tested and refined from its original state as information, collected in a phased approach, is fed into it. Consequently in support of this report, the conceptual exposure model (CEM) component that has been presented in previous reports was updated. The CEM, included as Figure 1 to this report, depicts exposure pathways by which potential human and ecological receptors may be exposed to constituents in environmental media at the site under reasonably anticipated future land- and water-use conditions.

The CEM was developed with the following considerations:

- The site is no longer used for manufacturing operations and has been dismantled. Planned future use of the site include military training and recreational uses consistent with land use plans identified by the NC Department of Agriculture and North Carolina National Guard (NCNG) and DuPont State Recreational Forest staff (DSRF). Specifically,:
    - NCNG Military Training with lodging and administration facilities
    - Forest Ranger Office
    - Parking for surrounding DuPont State Recreational Forest
    - Managed recreation center at Lake DERA for Wounded Warrior REHAB, including primitive camping, water recreation and designated fishing areas
    - Multi-Use Trail in Nature Preserve Primary Area
- The majority of SWMU/AOC boundaries have been defined and their wastes characterized. Some units have been proposed for additional investigation as part of the final phase of the RFI to facilitate remedial decisions.
- Releases in soil (surface and subsurface) and groundwater have been identified.
- Potential migration pathways of constituents of potential concern (COPCs) identified in environmental media at the site include:

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- Surface runoff during rain events into drainage ditches and storm sewers (historically before site dismantlement);
- Airborne transport of particulates generated by wind erosion and physical disturbance of soil (surface and subsurface) in SWMUs or AOCs to downwind locations;
- Leaching of constituents in soil (surface and subsurface) to shallow groundwater;
- Volatilization of constituents in shallow groundwater into indoor air; and,
- Migration of dissolved constituents in shallow groundwater beneath the site vertically to the deeper bedrock aquifer and horizontally to downgradient locations, including the Little River.

- Under current conditions, vapor intrusion pathways are incomplete. No occupied structures are located near volatile constituents in the subsurface.
- DuPont will work with closely with the NCNG and DSRF to identify areas of the site where re-development (intrusive activity or placement of structures) will be restricted or where engineering controls would be required for any new construction.
- Currently, wooded areas and surface water bodies[1] adjacent to the site are popular recreational locations for the surrounding community.
- Location and recreational activities associated with the Wounded Warrior REHAB program will take remaining site conditions into account.
- Groundwater in the surficial aquifer is not currently used on or in the immediate vicinity of the site as drinking water. Deed restrictions would prohibit its use on-site as drinking water in the future.
- Groundwater in the bedrock aquifer is currently used on-site for sanitary purposes and is used at the NCDSFS Visitor Center for potable and sanitary uses. An interim remedial measure (IRM) has been completed at the visitor center bedrock well.

[1] If the site is transferred to the State of North Carolina, then the Little River and NCDSFS Visitor Center would be within the site boundary.

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5.0 Remedial Level Approach

Consistent with NCDENR February 27, 2014 document entitled "Establishing Remediation Goals for the DuPont Brevard Facility", site-specific RLs for groundwater and soil were developed for the protection of human health and the environment based on planned future uses. Site-specific RLs are not presented in this report for surface water and sediment, but may be developed later for protection of human and ecological receptors based on the results of the final phase of the RFI.

As presented to DuPont on February 28, 2014 by the NC Department of Agriculture and NCNG, the DSRF has developed a preliminary map of possible uses of the DuPont property that could be compatible with both State Forest use and the proposed uses of the NCNG (see Appendix A). These possible uses include the following:

- NCNG Military Training
- Forest Ranger Office
- Parking for surrounding DuPont State Recreational Forest
- Managed recreation center at Lake DERA
- Multi-Use Trail in Nature Preserve Primary Area

5.1 Site-Specific Groundwater Remedial Levels

Under current conditions, groundwater is not used on-site for drinking water purposes and future use will be prohibited as part of a Groundwater Use and Restrictions Plan. Residential users of shallow groundwater have not been identified downgradient of the site. Furthermore, the downgradient Little River is not used for water supply purposes. However, shallow groundwater may discharge to DERA Creek and the Little River. The majority of site shallow groundwater may discharge to the Little River. However, a portion of shallow groundwater may also discharge to DERA Creek. Since DERA Creek flows into Little River, Little River is considered the ultimate receptor of site groundwater discharge.

Downgradient users of deep groundwater in the immediate vicinity of the site are limited to the NCDSFS Visitor Center (which has a water treatment unit installed). The drinking water source for municipal groundwater in the surrounding area is Cathey's Creek, Bradley Creek or the North Fork of the Mills River, each of which is over 5 miles from the site.

Therefore, and consistent with NCDENR's *Guidelines for Establishing Remediation Goals at RCRA Hazardous Waste Sites* (HWS Guidance), groundwater remedial levels [hereafter referred to as alternate concentration limits (ACLs)] were calculated to be protective of potential human and ecological receptors in the Little River. COPCs identified for ACL derivation were selected based on a comparison to North Carolina groundwater standards established in 15A NCAC 2L .0200 (NC2L standards) or NC Interim Maximum Allowable Concentrations (IMACs). The data set evaluated included groundwater samples collected between 2007 and 2013 at 77 monitoring well locations and six water supply wells (WSW) during the most recent RFI monitoring events and

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semi-annual CAMU groundwater monitoring. Tables 1 – 3 identify COPCs for the surficial aquifer, bedrock aquifer and water supply wells.

The approach for the ACL derivation was to essentially run groundwater mass flux calculations backwards to establish an ACL at the point of compliance (POC) considering an initial risk-based concentration in the Little River (the point of exposure [or POE]). First, acceptable levels protective of human health or aquatic life (such as NC 2B values) were identified for the POE. Second, an attenuation factor (AF) based on dilution into the receiving water body was calculated. Inputs to the AF are detailed in Appendix B.

$$AF = \frac{Q_r \times F \times 86{,}400 \text{ sec/day}}{Q_a}$$

Where:

Q_a = Flow in aquifer (cf/day)
Q_r = Flow in river (cf/sec) (*either the harmonic mean or 7Q10*)
F = Mixing fraction of river (unitless)

The ACL was then determined by multiplying the risk-based POE value by the site-specific AF.

Acceptable levels protective of human health or aquatic life were based on the lower of the 15A NCAC 2B (NC2B standards) for protection of freshwater organisms (chronic), protection of trout waters and protection of human health (organism only). Where these values were not available, the following secondary screening levels were used in the derivation.

Receptor	Primary Screening Level	Secondary Screening Level	
Protection of Human Health	15A NCAC 2B (Human Health)	NC IMAC or Federal MCL	DuPont-derived screening level protective of fish consumption (see Table 4)
Protection of Aquatic Life	15A NCAC 2B (Freshwater Aquatic Life) or 15A NCAC 2B (Trout Waters)	USEPA Tier II freshwater secondary chronic values (SCV) (Suter and Taos, 1996)	National Recommended Ambient Water Quality Criteria (NAWQC) or USEPA Region V Ecological Screening Level

Risk-based POE values are tabulated in Table 5.

As detailed in Appendix B, the total contribution of site groundwater to the Little River is significantly less than 1 cubic feet per second (cfs) (0.027 cfs). Data provided by the USGS indicates that flow in the Little River near the site ranges between 15 cfs and 63 cfs based on years from 1962 – 1991 (see Appendix B). Therefore, it is anticipated that constituents present in the groundwater under the site entering surface water in the Little River would be diluted by a factor of at least 558. To account for variable flow within the groundwater and surface water systems a dilution factor of 500 was assumed as the AF.

In the AF calculation, groundwater was assumed to mix completely in the river flow (total discharge), assuming a groundwater flow divide down the center of the river bottom. A lower mixing fraction (such as 0.33), which is consistent with NCDENR guidance under the National Pollutant Discharge Elimination System (NPDES) program, would be considered to be more appropriate for the present evaluation because

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groundwater is released through a porous medium over a large portion of the riverbank and bottom. However, the lower mixing fraction would result in a higher and less conservative AF.

Table 5 tabulates ACL calculations for each groundwater COPC identified in site groundwater. As indicated in the table, if the calculated ACL exceeded water solubility limits for organic groundwater constituents, then the ACL was established at the water solubility limit. These ACLs are considered conservative because other attenuation mechanisms such as degradation, dispersion or adsorption were not considered in the calculation.

Table 5 also includes a comparison of concentrations measured at the POC (i.e., monitoring wells adjacent to the Little River). As indicated in the table, maximum detected concentrations in these locations were well less than the ACLs.

To further evaluate the groundwater-to-surface water pathway, samples have been collected from DERA Creek and the Little River as part of the site NPDES program, 1995 Environmental Site Assessment (ESA) and RFI investigations. During the most recent Phase III RFI (2009), four surface-water samples were collected from Little River (SW-4 – SW-7), three surface-water samples were collected from DERA Creek (SW-8 – SW-10) and two samples were collected below High Falls (SW-12 and SW-13). Additional sampling of Little River has also been conducted semi-annually since 2012 as part of CAMU groundwater monitoring.

A comparison of the analytical results to applicable surface water screening criteria is provided in Table 6. As detailed in Table 6, of the 23 COPCs identified in groundwater, only two organics (cis-1,2-dichloroethene and vinyl chloride) and five inorganics (total chromium, iron, lead, manganese and vanadium) were detected in the surface water samples. Only total manganese was detected just above generic screening criteria in DERA Creek protective of potential ecological receptors. However, none of the constituents were detected in Little River surface water above the screening criteria.

Additional surface water sampling is planned as part of the final phase of the RFI. Sediment sampling is also planned. As noted earlier, site-specific RLs are not presented in this report for surface water and sediment, but may be developed later based on the results of the RFI sampling.

5.2 Site-Specific Soil RLs Protective of Soil Migration to Groundwater

Soil migration-to-groundwater RLs were calculated using the soil screening level (SSL) equation provided as Figure 1 in the HWS guidance. COPCs identified for the RLs were based on comparison to NC DENR Inactive Hazardous Site Branch (IHSB) Preliminary Soil Remediation Goals (PSRGs) for Protection of Groundwater (January 2014 version) (see Tables 7 and 8). In addition, constituent concentrations in soil and groundwater were used to determine whether a unit was a potential contamination source to groundwater. A summary of the COPCs is provided in Table 9. The RL calculations, which are presented in Table 10, used NC DENR-recommended soil parameter inputs with the ACLs derived above as the target groundwater concentration.

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Protection of soil migration to groundwater RLs are intended to serve as comparison levels for surface and subsurface soil to evaluate remedial action on the basis of groundwater migration to the Little River. Table 11 provides a comparison of constituents detected in soil during the RFI to the calculated RLs. Based on a review of the data set and as indicated in the table:

- Exceedances in soil samples were observed in less than 10% of the RFI soil samples collected.
- Most exceedances in waste samples were observed at SWMUs 13 and 16, which are over 900 feet from the Little River.
- None of the COPCs have been detected in groundwater above 10 times the NC 2B at POC monitoring wells.
- None of the COPCs have been detected in Little River or DERA Creek[2] surface water.

Based on these observations, potential impact of these constituents from the migration to groundwater route to potential receptors in surface water is not expected.

5.3 Site-Specific Soil RLs Protective of Human Health (Direct Contact Exposure Pathways)

Direct Contact RLs are intended to serve as evaluation criteria for surface and subsurface soil to evaluate remedial action on the basis of human health exposure.

RLs values protective of multiple-route exposure were calculated using USEPA risk assessment methodology (USEPA, 1989). The USEPA risk assessment equations calculate risk levels based on the constituent concentration, magnitude of exposure, and the toxicity of the constituent. To calculate the RLs, the equations are rearranged to solve for an allowable constituent concentration based on a target risk level (hazard quotient of 1 or cancer risk of 10^{-6}), magnitude of exposure, and toxicity.

The following sections describe the potential receptors, exposure assumptions and toxicity values used in the RL derivation. COPCs for human health direct contact exposure pathways were identified based on a comparison to IHSB PSRGs for Residential Land Use (January 2014 version). The data set evaluated included surface soil (from intervals between 0 and 2 ft bgs)[3] and subsurface soil samples (from discrete intervals between 2 and 15 ft bgs) collected from 88 soil boring locations during the ESA and RFI. A summary of the surface soil and subsurface soil COPCs are provided in Tables 7 and 8, respectively.

For adult receptors, RLs were calculated to be protective of potential carcinogenic and non-carcinogenic (systemic) effects. However, consistent with EPA guidance, for exposures which involved adult and child receptors, potential systemic effects (or non-cancerous health hazards) were evaluated for young children (age 0 to 6 years) while

[2] DERA Creek COPCs for soil-to-groundwater migration are limited to Dowtherm constituents observed in one SWMU 18 boring.
[3] Soil or waste samples with start depths less than two feet (i.e., collected from 1 to 5 ft bgs) were conservatively included in the surface soil data set.

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potential carcinogenic effects (or excess cancer risks) were evaluated over a lifetime of exposure (as a young child continuing into the adult years).

As detailed in Appendix C, consistent with Section § 130A-310.68 (b)(9) of House Bill 45 (also known as the Risk Bill), RLs were derived using the range of acceptable target cancer risk levels (10^{-6} to 10^{-4}).

5.3.1 Potential Receptors

The site is no longer used for manufacturing operations and physical assets have been dismantled and removed. Therefore, the following potential receptors considered for the soil RL derivation were based on the planned future land uses identified earlier in this report:

- Future North Carolina National Guard (Military Exercises and Training)
  The NCNG personnel are potentially exposed to COPCs in surface soil during military exercises and training. The NCNG has identified the larger parking lot located near the former manufacturing area for training. The motorcycle and driving course would be designed using the parking lot and the looping roads around the plant site. The lot would also be used to stage significant events, such as large training exercises, staging of equipment and helibase functions. Temporary housing (Quonset huts), latrines and administration buildings are also proposed.
- Future DuPont State Recreational Forest Worker (Ranger Office/Visitor Center/Lake DERA Recreation Area Worker)
  Future DSRF workers are potentially exposed to COPCs in surface soil. The DSRF staff has proposed a new Ranger Office, near the current entrance to the site off Staton Road. A worker may also be hired to assume daily operations of managed recreation at Lake DERA.
- Future On-Site Utility/Excavation Worker
  The future on-site utility/excavation worker is potentially exposed to COPCs in surface soil and subsurface soil while repairing or installing sanitary sewer, electrical, water, or other utility lines at the site. For this receptor, it was conservatively assumed that exposure would occur each year during different repair or maintenance events.
- Future DuPont State Recreational Forest User (Adult/Child Trail User)
  A variety of trials will be accessible to DSRF users. Trail users are potentially exposed to COPCs in soil. A multi-use trail is proposed in the Nature Preserve Primary Area. SWMUs and AOCs are not located in this area.

Following re-development, unrestricted use of the site will occur. Therefore, trespassers were not considered potential receptors. In addition, NCNG and DSRF staff will be present on site to coordinate NCNG's activities and security needs with permitted site uses.

Lake DERA surface water and sediment are not current media of concern and SWMUs and AOCs are not located near planned managed Lake DERA recreation areas to be used for the Wounded Warrior REHAB site. Therefore, these individuals are not considered

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potential receptors at this time. This scenario will be revisited based on the findings of the final phase of the RFI.

5.3.2 Exposure Assumptions

Appendix C details the calculation of the RLs for the direct contact and inhalation pathways. The RL values were calculated using the assumptions summarized in Table 12. The assumptions are conservative (likely to overestimate actual exposure) but can be used for developing remediation standards. As shown in the tables, exposure assumptions were based on a combination of USEPA recommended[4] values and professional judgment considering site-specific information. Rationale for selection of a portion of these exposure assumptions is provided below.

Soil Ingestion Rate

The soil ingestion rate refers to the amount of soil that is ingested daily due to incidental ingestion (e.g., hand-to-mouth contact). The USEPA recommended default soil ingestion rate of 100 milligrams per day (mg/day) (USEPA, 2014a) for outdoor workers was assumed for Future NCNG Users and Future DuPont State Recreational Forest Workers.

USEPA's recommended soil ingestion rate of 330 mg/day (USEPA, 2002) for construction workers was assumed for Future Utility/Excavation Workers. Similarly, USEPA recommended soil ingestion rates for adult and child residents (100 mg/day and 200 mg/day, respectively) were assumed for Future DuPont State Recreational Forest Users (Adult/Child Trail Users).

Exposed Skin Surface Area

Exposed skin surface area is relevant when evaluating uptake of chemicals that are absorbed dermally. USEPA default body surface areas (3,470 cm^2) calculated for potential exposure to head, hands and forearms were used to evaluate Future NCNG Users, Future DuPont State Recreational Forest Workers and Future Utility/Excavation Workers (USEPA, 2014a).

USEPA-recommended body surface areas for adult and child residents (6,032 cm^2 and 2,690 cm^2) were used to evaluate Future DuPont State Recreational Forest Users (Adult/Child Trail Users) (USEPA, 2014a).

Soil Adherence Rate

Dermal soil adherence is used, in conjunction with exposed skin surface area, to define the total amount of soil adhering to exposed skin surfaces. A soil adherence rate of 0.3 mg/cm^2 was used to evaluate Future NCNG Users and Future Utility/Excavation Workers. The value is based on the 95th percentile weighted adherence factor (AF) for construction workers (USEPA, 2004a) and is consistent with USEPA's recommendations for construction workers in USEPA's *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 2002).

The USEPA-recommended soil adherence rate of 0.12 mg/cm^2 for industrial/commercial workers (USEPA, 2014a) was used to evaluate Future DuPont State Recreational Forest

[4] The HWS Guidance recommends exposure assumptions consistent with EPA's Regional Screening Level Table (USEPA, 2014c).

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Workers. This value is based on the arithmetic average of weighted mean of body part specific (hands, forearms, and face) mean adherence factors for adult commercial/industrial activities.

USEPA-recommended soil adherence rates for adult and child residents (0.07 mg/cm^2 and 0.2 mg/cm^2, respectively) were used to evaluate Future DuPont State Recreational Forest Users (Adult/Child Trail Users) (USEPA, 2014a).

Dermal Absorption

Dermal absorption values are used to estimate chemical absorption from soil through the skin (see Appendix C). Consistent with USEPA guidance (USEPA, 2004a), no default absorption values were applied to VOCs, as VOCs would tend to volatilize from soil on skin and are accounted for via the inhalation route. Similarly, USEPA recommends that the dermal pathway not be quantitated for inorganics without an available chemical-specific dermal absorption factor since the speciation of the compound is critical to the dermal absorption (USEPA, 2004a).

Fraction Contacted

SWMUs or AOCs are not located in the Nature Preserve Primary Area where the multi-use trail is planned. Therefore, it was assumed that a trail user would come into contact with COPCs in surface soil only a portion of the time present on site. A similar assumption was used for the Future Forest Ranger. It was assumed that workers in the Ranger Office would spend most of their time in the office or in portions of the site where trails or public use areas are located, the nature preserve primary area and proposed ranger office is not located near COPCs in surface soil.

Soil Exposure Frequency, Duration and Time

Exposure frequency refers to the number of days per year that an individual is exposed to site COPCs. Exposure duration refers to the number of years in which exposure occurs.

Future NCNG User

Typically, NCNG members are required to attend one drill weekend each month and one annual training period (usually 2 weeks in the summer) each year. Weekend drills usually consist of one Saturday and Sunday each month, but occasionally include reporting for duty on Friday night. Therefore, a site-specific exposure frequency of 3 days per month (for 11 months) plus 2 weeks per year (or 47 days/year) was assumed. An exposure time of 24 hours/day was assumed since overnight stays would occur. An exposure duration of 8 years was assumed, which is consistent with the minimum service obligation.

Future DuPont State Recreational Forest Worker

A site-specific exposure frequency of five days per week for nine months was assumed (or 180 days per year) for future DSRF workers. The exposure frequency assumes that limited soil contact would occur during the winter months (when the ground is covered with frost or is frozen for 3 months out of the year).

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Future Utility/Excavation Workers

For on-site utility/excavation workers, it was assumed that a worker may come into contact with soil (surface and subsurface) during inspection and repair of utility lines for eight hours per day, two work weeks per year (or 10 days per year) for 25 years.

Future DuPont State Recreational Forest Users (Adult/Child Trail Users)

Based on professional judgment, conservative estimates of exposure time, frequency and duration were assumed for future trail users. It was assumed that potential receptors would visit the DSRF more frequently in the summer months (5 days per week) and less frequently in the spring and fall months (2 days per week). This value (108 days per year) is considered consistent with activity patterns discussed in the USEPA's *Exposure Factors Handbook* (USEPA, 2011) and the range of values recommended by other states and regions for recreational land use (such as Maine – 90 days per year and Virginia – 195 days per year).

An exposure time of 8 hour per day was assumed consistent with picnic pavilion rental periods.

5.3.3 Toxicity Values

Tables provided in Appendix C lists the numerical toxicity values that were used in the RL derivation. The values are reference doses (RfDs) or reference concentrations (RfCs) for systemic (noncancer) effects and slope factors (SFs) or unit risk factors (URFs) for cancer effects. In accordance with USEPA guidance (USEPA, 2003), toxicity values specific to the oral and inhalation pathways were obtained from EPA's Integrated Risk Information System (IRIS) online database (USEPA, 2014b). Where a toxicity value was not available in IRIS the following hierarchy of sources was reviewed to identify the most up-to-date toxicity information:

- Provisional toxicity values obtained from the USEPA Environmental Criteria and Assessment Office (ECAO) as reported in the USEPA's Regional Screening Level Table (USEPA, 2014c).
- Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs) (ATSDR, 2013).
- California EPA toxicity values as cited in the USEPA's Regional Screening Level Table (USEPA, 2014c).
- Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997)

Oral toxicity values used to evaluate dermal absorption were considered for adjustment in the RL derivation using the recommended criteria as found in the 2004 USEPA *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment)*. Following the guidance document, toxicity values are adjusted for gastrointestinal absorption only where chemical-specific gastrointestinal absorption values were less than 50%. The following site-specific constituents met this criterion: antimony, nickel, silver and vanadium.

Recommendations presented in the USEPA *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens* (USEPA 2005a) were utilized in

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the RL derivation. This guidance document recommends 10-fold and 3-fold adjustments in SFs to be combined with age-specific exposure estimates when estimating cancer risks from early life exposure (young children and adolescents) to carcinogens that act through a mutagenic mode of action (such as benzo[a]pyrene). Age-dependent adjustment factors (ADAFs) for child trail users are detailed in the Appendix C tables.

5.3.4 Direct Contact RL Summary

Table 13 provides a summary of the RLs calculated for each potential receptor. The lower of the non-carcinogenic and carcinogenic values is shown in the table for each analyte for each receptor. The minimum, or lowest, RL represents the trail user (adult/child) scenario or forest ranger scenario.

The site-specific direct contact RLs presented in the table should not considered a "not-to-exceed" concentration, but rather consistent with USEPA guidance (USEPA, 2004b) are recommended to be implemented an average concentration (such as a 95 percent upper confidence limit of the mean [UCL_{95}]) during remedial action.

Table 14 provides a comparison of historical RFI surface soil data to the RL range. As shown in the table, only one COPC (7,12-dimethylbenz(a)anthracene) had a UCL above the upper end of the RLs based on a HQ=1 and a target risk of $1x10^{-6}$ range. The COPC exceedance was observed in one surface soil sample location collected at AOC A (Fuel Oil Tank Farm). No detections were noted above the RLs based on a HQ=1 and a target risk of $1x10^{-4}$. Additional surface soil sampling is planned at AOC A and other site areas during the final phase of the RFI.

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6.0 Summary

A summary of the site-specific soil and groundwater RL values derived for protection of human health and the environment is provided on the following pages and in Table 15. Included in the summary are:

- Site-specific groundwater RLs,
- Site-specific soil RLs protective of the soil migration to groundwater pathway, and
- Site-specific direct contact soil RLs. The direct contact soil RLs are presented as a range (minimum and maximum) for each COPC identified in surface and subsurface soils. The minimum and maximum values are derived from the evaluation of specific receptors using the acceptable target cancer risk levels (10^{-6} to 10^{-4}) and a target HQ of 1, where the lower of the non-carcinogenic or carcinogenic value is the RL. For surface soils, potential receptors are: Forest Ranger, National Guard, Utility Worker, Trail User (Adult/Child). For subsurface soils, a Utility Worker is the only potential receptor. The full list of values for individual receptors at a HQ of 1 and risk levels of 10^{-6}, 10^{-5}, and 10^{-4} is provided in Table 13.

As noted earlier, the RLs will be used to support the remedial approach for the site. Additional sampling activities are planned during the final phase of the RFI. These RLs will be used to evaluate the data collected during the investigation and provide information to support remedial-decision making based on planned future land uses.

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Analyte		Groundwater RLs[1] (ug/L)	Soil RLs (mg/kg)				
			Soil RL for Protection of Migration to Groundwater[2]	Surface Soil Direct Contact Min RL[3] (HQ=1, 10^{-6} Risk)	Surface Soil Direct Contact Max RLs[4] (HQ=1, 10^{-4} Risk)	Subsurface Soil Direct Contact Min RLs[5] (HQ=1, 10^{-6} Risk)	Subsurface Soil Direct Contact Max RLs[5] (HQ=1, 10^{-4} Risk)
Volatile Organic Compounds							
1,1,2,2-Tetrachloroethane	c	2.00E+03	1.18E+01	-	-	5.08E+01	5.08E+03
1,1,2-Trichloroethane	c	8.00E+03	4.22E+01	-	-	1.11E+02	1.69E+02
1,2-Dichloroethane	c	1.85E+04	9.02E+01	-	-	4.78E+01	3.52E+03
Benzene	c	2.55E+04	1.86E+02	-	-	1.12E+02	9.25E+03
Carbon Tetrachloride	c	8.00E+02	-	-	-	-	-
Chloroform	c	1.40E+04	-	-	-	-	-
cis-1,2 Dichloroethene	n	2.95E+05	1.50E+03	-	-	-	-
Ethylbenzene	c	-	-	-	-	5.62E+02	5.62E+04
Tetrachloroethene	c	1.65E+03	1.18E+01	-	-	2.38E+03	9.17E+03
Trichloroethene	c	1.50E+04	8.87E+01	-	-	-	-
Vinyl Chloride	c	1.20E+03	7.69E+00	-	-	-	-
Semivolatile Organic Compounds			-	-	-	2.35E+01	2.35E+03
1,2-Diphenylhydrazine	c	-	-	-	-	6.06E+02	6.06E+04
1-Methylnaphthalene	c	-	-	-	-	2.51E+04	2.51E+04
2-Methylnaphthalene	n	-	-	-	-	-	-
1,4-Dioxane	c	4.00E+04	-	7.02E-02	1.21E+02	-	-
3-Methylcholanthrene	c	-	-	5.79E-03	9.24E+00	-	-
7,12-Dimethylbenz[A] Anthracene	c	-	-	1.98E+00	3.16E+03	2.41E+01	2.41E+03
Benzo(a)anthracene	c	-	-	1.98E+00	3.16E+03	2.41E+01	2.41E+03
Benzo(b)fluoranthene	c	-	-	1.98E+01	3.16E+04	-	-
Benzo(k)fluoranthene	c	-	-	1.98E-01	3.16E+02	2.41E+00	2.41E+02
Benzo(a)pyrene	c	-	-	1.98E+02	3.16E+05	-	-
Chrysene	c	-	-	1.98E-01	3.16E+02	-	-
Dibenz(a,h)anthracene	c	-	-	-	-	8.85E+03	8.85E+03
Dibenzofuran	n	-	-	1.98E+00	3.16E+03	-	-
Indeno(1,2,3-cd)pyrene	c	-	-	2.50E+01	1.45E+04	4.50E+02	1.45E+04
Naphthalene	c	-	-				
Dowtherm Constituents			7.40E+02	2.99E+02	5.38E+03	3.10E+03	5.38E+03
Biphenyl	c	6.94E+03	8.96E+02	-	-	1.00E+05	1.00E+05
Diphenyl Ether	n	1.60E+04					*
Inorganics			-	4.06E+02	3.54E+03	3.54E+03	3.54E+03
Antimony	n	1.50E+04	-	-	-	2.38E+01	2.38E+03
Arsenic	c	5.00E+03	-	-	-	-	-
Beryllium	c	3.25E+03	-	-	-	-	-
Cadmium	c	2.00E+02	-	-	-	-	-
Chromium	c	2.50E+04	1.18E+01	-	-	5.08E+01	5.08E+03

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Analyte		Groundwater RLs[1] (ug/L)	Soil RLs (mg/kg)					
			Soil RL for Protection of Migration to Groundwater[2]	Surface Soil Direct Contact Min RL[3] (HQ=1, 10^{-6} Risk)	Surface Soil Direct Contact Max RLs[4] (HQ=1, 10^{-4} Risk)	Subsurface Soil Direct Contact Min RLs[5] (HQ=1, 10^{-6} Risk)	Subsurface Soil Direct Contact Max RLs[5] (HQ=1, 10^{-4} Risk)	
Cobalt	c	2.00E+03	-	3.04E+02	2.65E+03	2.65E+03	2.65E+03	
Iron	n	5.00E+05	-	-	-	-	-	
Lead		7.50E+03	-	-	-	-	-	
Manganese	n	6.00E+04	-	-	-	-	-	
Nickel	c	-	-	-	-	1.00E+05	1.00E+05	*
Silver	n	-	-	5.07E+03	4.42E+04	4.42E+04	4.42E+04	
Thallium	n	-	-	1.01E+01	8.85E+01	8.85E+01	8.85E+01	
Vanadium	n	1.00E+04	-	5.07E+03	4.41E+04	4.41E+04	4.41E+04	
Zinc	n	-	-	-	-	1.00E+05	1.00E+05	*

1 - Groundwater RLs calculations are detailed in Table 5.
2 - RLs for protection of migration to groundwater are calculated in Table 10.
3 - RL shown is the minimum RL from the RLs calculated for each of the four receptors (Forest Ranger, National Guard User, Utility Worker or Trail User) evaluated for the endpoint indicated (target risk and HQ).
RLs are presented for each receptor in Table 13.
4 - RL shown in the maximum RL from the RLs calculated for each of the four receptors (Forest Ranger, National Guard User, Utility Worker or Trail User) evaluated for the endpoint indicated (target risk and HQ).
RLs are presented for each receptor in Table 13.
5 - RL shown is the RL calculated for the utility worker for the endpoint indicated (target risk and HQ).
RLs are presented for each receptor in Table 13.

* - A non-risk-based "ceiling limit" concentration of 10^5 mg/kg
HQ = Hazard Quotient
mg/kg - milligrams per kilogram
c - carcinogen
n - non-carcinogen

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Tables

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Table 1
Constituents of Potential Concern in Surficial Aquifer Groundwater
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Detection Frequency	Minimum Detect	Maximum Detect	NC 2L[2]	NC IMAC[2]	COPC Y/N?[3]
Volatile Organic Compounds										
1,1,1-Trichloroethane	71-55-6	UG/L	167	6	4%	0.2	2.5	200		No
1,1,2,2-Tetrachloroethane	79-34-5	UG/L	167	15	9%	0.2	93	0.2		Yes
1,1,2-Trichloroethane	79-00-5	UG/L	167	13	8%	0.1	6.1		0.6	Yes
1,1,2-Trichlorotrifluoroethane	76-13-1	UG/L	74	5	7%	0.3	11	200000		No
1,1-Dichloroethane	75-34-3	UG/L	167	37	22%	0.1	1.6	6		No
1,1-Dichloroethene	75-35-4	UG/L	167	32	19%	0.1	3.1	7		No
1,2,4-Trichlorobenzene	120-82-1	UG/L	137	1	1%	0.2	0.2	70		No
1,2-Dichlorobenzene	95-50-1	UG/L	197	1	1%	0.2	0.2	20		No
1,2-Dichloroethane	107-06-2	UG/L	167	13	8%	0.1	1.7	0.4		Yes
1,4-Dichlorobenzene	106-46-7	UG/L	197	4	2%	0.1	0.12	6		No
Acetone	67-64-1	UG/L	167	90	54%	1.2	29	6000		No
Benzene	71-43-2	UG/L	167	55	33%	0.1	9	1		Yes
Carbon Tetrachloride	56-23-5	UG/L	167	5	3%	0.12	5.3	0.3		Yes
Chlorodibromomethane	124-48-1	UG/L	167	1	1%	0.13	0.13	0.4		No
Chloroform	67-66-3	UG/L	167	16	10%	0.1	6.1	70		No
cis-1,2 Dichloroethene	156-59-2	UG/L	167	63	38%	0.1	660	70		Yes
Cumene	98-82-8	UG/L	74	3	4%	0.1	0.2	70		No
Cyclohexane	110-82-7	UG/L	74	3	4%	0.1	0.2	No Value	No Value	-
Dichlorodifluoromethane	75-71-8	UG/L	167	6	4%	0.13	0.72	1000		No
Ethyl Chloride	75-00-3	UG/L	167	25	15%	0.1	2.5	3000		No
Ethylbenzene	100-41-4	UG/L	167	5	3%	0.2	0.7	600		No
Iodomethane	74-88-4	UG/L	93	1	1%	0.47	0.47	No Value	No Value	-
Meta- And Para-Xylene	EVS0253	UG/L	63	1	2%	0.23	0.23	500		No
Methyl Ethyl Ketone	78-93-3	UG/L	167	3	2%	2.7	300	4000		No
Methyl Isobutyl Ketone	108-10-1	UG/L	167	1	1%	0.58	0.58		100	No
Methylene Bromide	74-95-3	UG/L	93	1	1%	0.28	0.28		70	No
Methylene Chloride	75-09-2	UG/L	167	15	9%	0.1	0.34	5		No
Tetrachloroethene	127-18-4	UG/L	167	45	27%	0.1	43	0.7		Yes
Toluene	108-88-3	UG/L	167	27	16%	0.1	9.7	600		No
trans-1,2-Dichloroethene	156-60-5	UG/L	167	29	17%	0.1	81	100		No
Trichloroethene	79-01-6	UG/L	167	42	25%	0.1	310	3		Yes
Trichlorofluoromethane	75-69-4	UG/L	167	20	12%	0.1	26	2000		No
Vinyl Chloride	75-01-4	UG/L	167	72	43%	0.0045	32	0.03		Yes
Xylenes	1330-20-7	UG/L	167	6	4%	0.2	0.5	500		No
Semivolatile Organic Compounds										
1,2-Diphenylhydrazine	122-66-7	UG/L	93	3	3%	0.6	0.9	No Value	No Value	-
1,4-Dioxane	123-91-1	UG/L	167	37	22%	1	62	3		Yes
1-Methylnaphthalene	90-12-0	UG/L	93	4	4%	0.016	0.1		1	No
2-Methylnaphthalene	91-57-6	UG/L	197	15	8%	0.011	0.15	30		No
Acenaphthene	83-32-9	UG/L	167	8	5%	0.012	0.14	80		No
Benzo(A)Anthracene	56-55-3	UG/L	167	2	1%	0.0092	0.022	0.05		No
Benzo(B)Fluoranthene	205-99-2	UG/L	167	3	2%	0.0089	0.033	0.05		No
Benzo(G,H,I)Perylene	191-24-2	UG/L	167	1	1%	0.034	0.034	200		No
Benzo(K)Fluoranthene	207-08-9	UG/L	167	3	2%	0.0091	0.034	0.5		No
Benzo[A]Pyrene	50-32-8	UG/L	167	2	1%	0.0086	0.027	0.005		LFD
Bis(2-Ethylhexyl)Phthalate	117-81-7	UG/L	137	3	2%	1.3	1.6	3		No
Chrysene	218-01-9	UG/L	167	1	1%	0.023	0.023	5		No
Dibenz(A,H)Anthracene	53-70-3	UG/L	167	1	1%	0.033	0.033	0.005		LFD

Table 1
Constituents of Potential Concern in Surficial Aquifer Groundwater
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Detection Frequency	Minimum Detect	Maximum Detect	NC 2L[2]	NC IMAC[2]	COPC Y/N?[3]
Dibenzofuran	132-64-9	UG/L	167	5	3%	2	4		28	No
Diethyl Phthalate	84-66-2	UG/L	137	18	13%	1	24	6000		No
Fluoranthene	206-44-0	UG/L	167	2	1%	0.0098	0.012	300		No
Fluorene	86-73-7	UG/L	167	18	11%	0.0065	0.13	300		No
Indeno (1,2,3-CD) Pyrene	193-39-5	UG/L	167	1	1%	0.032	0.032	0.05		No
Naphthalene	91-20-3	UG/L	197	80	41%	0.0051	4	6		No
Phenanthrene	85-01-8	UG/L	167	13	8%	0.024	0.11	200		No
Phenol	108-95-2	UG/L	167	3	2%	0.6	2	30		No
Pyrene	129-00-0	UG/L	167	3	2%	0.0082	0.015	200		No
Dowtherm Constituents										
Biphenyl	92-52-4	UG/L	104	17	16%	0.9	630	400		Yes
Diphenyl Ether	101-84-8	UG/L	104	36	35%	1	2100		100	Yes
Glycols										
Diethylene Glycol	111-46-6	UG/L	102	8	8%	5280	12400	No Value	No Value	-
Ethylene Glycol	107-21-1	UG/L	102	2	2%	5690	8910	10000		No
Triethylene Glycol	112-27-6	UG/L	102	1	1%	8220	8220	No Value	No Value	-
Inorganics										
Antimony	7440-36-0	MG/L	165	2	1%	0.0032	0.0409		0.001	LFD
Arsenic	7440-38-2	MG/L	165	7	4%	0.0005	0.02	0.01		Yes
Barium	7440-39-3	MG/L	165	158	96%	0.0006	0.39	0.7		No
Beryllium	7440-41-7	MG/L	165	38	23%	0.00051	0.0046		0.004	Yes
Cadmium	7440-43-9	MG/L	165	7	4%	0.00011	0.0037	0.002		Yes
Chromium	7440-47-3	MG/L	165	22	13%	0.00091	0.0137	0.01		Yes
Cobalt	7440-48-4	MG/L	165	52	32%	0.00072	0.0911		0.001	Yes
Copper	7440-50-8	MG/L	165	22	13%	0.002	0.0194	1		No
Iron	7439-89-6	MG/L	73	52	71%	0.0569	76.4	0.3		Yes
Lead	7439-92-1	MG/L	165	25	15%	0.000062	0.0284	0.015		Yes
Manganese	7439-96-5	MG/L	73	72	99%	0.0023	7.58	0.05		Yes
Mercury	7439-97-6	MG/L	165	61	37%	0.000000132	0.00024	0.001		No
Nickel	7440-02-0	MG/L	165	47	28%	0.00067	0.0318	0.1		No
Selenium	7782-49-2	MG/L	165	1	1%	0.008	0.008	0.02		No
Silver	7440-22-4	MG/L	165	1	1%	0.0065	0.0065	0.02		No
Thallium	7440-28-0	MG/L	165	1	1%	0.0098	0.0098		0.0002	LFD
Tin	7440-31-5	MG/L	62	5	8%	0.0074	0.0111		2	No
Vanadium	7440-62-2	MG/L	165	25	15%	0.0007	0.0391		0.0003	Yes
Zinc	7440-66-6	MG/L	165	89	54%	0.0022	0.1	1		No

ug/L - micrograms per liter
mg/L - milligrams per liter

Notes:
1 - Constituents detected in surficial aquifer monitoring wells during RFI and CAMU sampling between 2007 and 2013. Field duplicates included in statistical summary.
2 - Sources of screening criteria:
NC 2L - North Carolina 2L Drinking Water Standard 15A NCAC 2L (April 2013)
NC IMAC - North Carolina Interim Maximum Allowable Concentration (April 2013)
3 - COPC Notes
LFD - Low frequency of detection (<5%) and not a site-related constituents or breakdown product of a site-related constituent

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Indicates exceedance of a screening level.

Table 2
Constituents of Potential Concern in Bedrock Groundwater
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Detection Frequency	Minimum Detect	Maximum Detect	NC 2L[2]	NC IMAC[2]	COPC Y/N?
Volatile Organic Compounds										
1,1,2-Trichlorotrifluoroethane	76-13-1	UG/L	7	2	29%	0.9	1.3	200000		No
Acetone	67-64-1	UG/L	7	7	100%	3.7	7.9	6000		No
Benzene	71-43-2	UG/L	7	1	14%	0.1	0.1	1		No
Chloroform	67-66-3	UG/L	7	3	43%	1	6.3	70		No
cis-1,2 Dichloroethene	156-59-2	UG/L	7	3	43%	0.6	1.7	70		No
Methylene Chloride	75-09-2	UG/L	7	1	14%	0.2	0.2	5		No
Tetrachloroethene	127-18-4	UG/L	7	3	43%	0.2	3.7	0.7		Yes
Toluene	108-88-3	UG/L	7	1	14%	0.2	0.2	600		No
trans-1,2-Dichloroethene	156-60-5	UG/L	7	2	29%	0.2	0.6	100		No
Trichloroethene	79-01-6	UG/L	7	4	57%	1	61	3		Yes
Trichlorofluoromethane	75-69-4	UG/L	7	2	29%	0.1	0.5	2000		No
Vinyl Chloride	75-01-4	UG/L	7	1	14%	0.012	0.012	0.03		No
Semivolatile Organic Compounds										
1,4-Dioxane	123-91-1	UG/L	7	1	14%	4	4	3		Yes
Dowtherm Constituents										
Biphenyl	92-52-4	UG/L	7	1	14%	10	10	400		No
Diphenyl Ether	101-84-8	UG/L	7	1	14%	30	30		100	No
Glycols										
Ethylene Glycol	107-21-1	UG/L	7	1	14%	6460	6460	10000		No
Inorganics										
Barium	7440-39-3	MG/L	7	7	100%	0.0009	0.0792	0.7		No
Beryllium	7440-41-7	MG/L	7	1	14%	0.0032	0.0032		0.004	No
Copper	7440-50-8	MG/L	7	1	14%	0.0038	0.0038	1		No
Iron	7439-89-6	MG/L	7	7	100%	0.495	19.3	0.3		Yes
Lead	7439-92-1	MG/L	7	1	14%	0.0178	0.0178	0.015		Yes
Manganese	7439-96-5	MG/L	7	7	100%	0.0108	1.23	0.05		Yes
Mercury	7439-97-6	MG/L	7	7	100%	0.000000148	0.000022	0.001		No
Zinc	7440-66-6	MG/L	7	3	43%	0.0123	0.0314	1		No

ug/L - micrograms per liter
mg/L - milligrams per liter

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Notes:
1 - Constituents detected in bedrock monitoring wells during the Phase III RFI (2009). Field duplicates included in statistical summary.
2 - Sources of screening criteria:
NC 2L - North Carolina 2L Drinking Water Standard 15A NCAC 2L (April 2013)
NC IMAC - North Carolina Interim Maximum Allowable Concentration (April 2013)

Indicates exceedance of a screening level.

Table 3
Constituents of Potential Concern in Water Supply Wells
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Detection Frequency	Minimum Detect	Maximum Detect	NC 2L[2]	NC IMAC[2]	COPC Y/N?[3]
Volatile Organic Compounds										
1,1,1-Trichloroethane	71-55-6	UG/L	18	1	6%	0.21	0.21	200		No
1,1,2-Trichloroethane	79-00-5	UG/L	18	1	6%	0.11	0.11		0.6	No
1,1-Dichloroethane	75-34-3	UG/L	18	1	6%	1.1	1.1	6		No
1,1-Dichloroethene	75-35-4	UG/L	18	1	6%	0.11	0.11	7		No
1,2-Dichloropropane	78-87-5	UG/L	18	1	6%	0.24	0.24	0.6		No
1,4-Dichlorobenzene	106-46-7	UG/L	20	3	15%	0.12	0.22	6		No
Acetone	67-64-1	UG/L	18	9	50%	1.4	3.8	6000		No
Benzoic Acid	65-85-0	UG/L	4	2	50%	9	10	30000		No
Bromodichloromethane	75-27-4	UG/L	18	1	6%	30	30	0.6		No (See Note)
Bromoform	75-25-2	UG/L	18	1	6%	0.83	0.83	4		No
Carbon Disulfide	75-15-0	UG/L	18	3	17%	0.17	2.7	700		No
Carbon Tetrachloride	56-23-5	UG/L	18	1	6%	5.1	5.1	0.3		Yes
Chlorodibromomethane	124-48-1	UG/L	18	1	6%	6.3	6.3	0.4		No (See Note)
Chloroform	67-66-3	UG/L	18	6	33%	0.39	1000	70		Yes
cis-1,2 Dichloroethene	156-59-2	UG/L	18	4	22%	13	20	70		No
Ethyl Chloride	75-00-3	UG/L	18	1	6%	1.5	1.5	3000		No
Methyl Ethyl Ketone	78-93-3	UG/L	18	2	11%	2.3	2.8	4000		No
Methylene Chloride	75-09-2	UG/L	18	7	39%	0.15	1.1	5		No
Tetrachloroethene	127-18-4	UG/L	18	4	22%	0.16	0.23	0.7		No
trans-1,2-Dichloroethene	156-60-5	UG/L	18	2	11%	0.29	0.9	100		No
Trichloroethene	79-01-6	UG/L	18	4	22%	4.9	9.1	3		Yes
Vinyl Chloride	75-01-4	UG/L	18	5	28%	0.0087	0.098	0.03		Yes
Semivolatile Organic Compounds										
Benzo(A)Anthracene	56-55-3	UG/L	18	1	6%	0.031	0.031	0.05		No
Benzo(B)Fluoranthene	205-99-2	UG/L	18	1	6%	0.039	0.039	0.05		No
Benzo(G,H,I)Perylene	191-24-2	UG/L	18	1	6%	0.038	0.038	200		No
Benzo(K)Fluoranthene	207-08-9	UG/L	18	1	6%	0.047	0.047	0.5		No
Benzo[A]Pyrene	50-32-8	UG/L	18	1	6%	0.026	0.026	0.005		No (See Note)
Chrysene	218-01-9	UG/L	18	1	6%	0.038	0.038	5		No
Dibenz(A,H)Anthracene	53-70-3	UG/L	18	1	6%	0.039	0.039	0.005		No (See Note)
Fluoranthene	206-44-0	UG/L	18	1	6%	0.01	0.01	300		No
Fluorene	86-73-7	UG/L	18	1	6%	0.0091	0.0091	300		No
Indeno (1,2,3-CD) Pyrene	193-39-5	UG/L	18	1	6%	0.037	0.037	0.05		No
Naphthalene	91-20-3	UG/L	18	9	50%	0.0058	0.017	6		No
Phenol	108-95-2	UG/L	18	2	11%	4.4	4.6	30		No
Pyrene	129-00-0	UG/L	18	1	6%	0.01	0.01	200		No
Inorganics										
Antimony	7440-36-0	MG/L	18	2	11%	0.0043	0.0096		0.001	Yes
Arsenic	7440-38-2	MG/L	18	1	6%	0.0042	0.0042	0.01		No
Barium	7440-39-3	MG/L	18	13	72%	0.00069	0.0079	0.7		No
Beryllium	7440-41-7	MG/L	18	4	22%	0.00052	0.0007		0.004	No
Cadmium	7440-43-9	MG/L	18	3	17%	0.00033	0.00099	0.002		No
Chromium	7440-47-3	MG/L	18	6	33%	0.001	0.0096	0.01		No
Cobalt	7440-48-4	MG/L	18	2	11%	0.00088	0.00096		0.001	No
Copper	7440-50-8	MG/L	18	12	67%	0.0023	0.219	1		No
Iron	7439-89-6	MG/L	7	4	57%	0.0728	7.9	0.3		Yes
Lead	7439-92-1	MG/L	18	3	17%	0.0039	0.0074	0.015		No
Manganese	7439-96-5	MG/L	7	5	71%	0.0012	0.0286	0.05		No

Table 3
Constituents of Potential Concern in Water Supply Wells
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Detection Frequency	Minimum Detect	Maximum Detect	NC 2L[2]	NC IMAC[2]	COPC Y/N?[3]
Mercury	7439-97-6	MG/L	18	5	28%	0.000000168	0.000000526	0.001		No
Nickel	7440-02-0	MG/L	18	9	50%	0.00069	0.0082	0.1		No
Tin	7440-31-5	MG/L	11	4	36%	0.0073	0.0113		2	No
Vanadium	7440-62-2	MG/L	18	4	22%	0.00095	0.0045		0.0003	Yes
Zinc	7440-66-6	MG/L	18	11	61%	0.0038	0.35	1		No

ug/L - micrograms per liter
mg/L - milligrams per liter

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Notes:
1 - Constituents detected in water supply wells during RFI sampling between 2007 and 2009. Field duplicates included in statistical summary.
2 - Sources of screening criteria:
NC 2L - North Carolina 2L Drinking Water Standard 15A NCAC 2L (April 2013)
NC IMAC - North Carolina Interim Maximum Allowable Concentration (April 2013)
3 - COPC Notes
No (See Note) - Analyte detected one time in one monitoring well location during 2007 sampling, ND in 2009 sampling.

Indicates exceedance of a screening level.

Table 4
Site-Specific Surface Water Screening Levels
DuPont Former Brevard Facility

Water Quality Standard (mg/L) - Fish Tissue Consumption

WQS = (RfD x BW) / (IRf x BCF) Non-carcinogenic Endpoint

Intake Parameter		Value	Source
WQS	Water Quality Standard (mg/L)	Calculated	
RfD	Reference Dose - oral (mg/kg-day)	Chemical-specific	USEPA, 2013
FCR	Fish Consumption Rate (kg/day)	0.0175	15A NCAC 02B.0208
BCF	Bioconcentration factor (L/kg)	Chemical-specific	RAIS (EPISUITE for Vanadium)
BW	Body Weight (kg)	70	15A NCAC 02B.0208

COPC	RfDo	BCF	WQS
Beryllium	2.00E-03	100	8.00E-02
Cadmium	5.00E-04	200	1.00E-02
Iron	7.00E-01	2.00E+02	1.40E+01
Manganese	1.40E-01	4.00E+02	1.40E+00
Vanadium	5.04E-03	3.16E+00	6.38E+00

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References:

Risk Assessment Information System (RAIS), 2014. Available on-line http://rais.ornl.gov/cgi-bin/tools/TOX_search?select=chem_spef

USEPA, 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000)* .
Office of Water. Washington, D.C. EPA/822/B/00004. October.

USEPA, 2013. Regional Screening Level Table. November 2013.

Table 5
Proposed ACLs
Former DuPont Brevard Facility
Cedar Mountain, NC

Groundwater COPCs[1]	CAS No.	Surficial Aquifer	WSW	Bedrock	Fate and Transport Characteristics						Water Quality Screening Level							Limiting Water Quality Criteria (ug/L)	Basis[8]	Proposed ACL (ug/L)[9]	Perimter Max Detect (ug/L)[10]
											Protection of Human Health[6]			Protection of Aquatic Life[7]							
					MW[2] (g/mole)	Solubility (mg/L)[2]	Koc (L/kg) or Kd (cm^3/kg)[2,3]	Henry's Law Constant (atm-m^3/mole)[2]	BCF (L/kg)[4]	Volatilization Half-Life (hours)[5]	15A NCAC 2B - Fish Consumption	Secondary Screening Level	Source	15A NCAC 2B - FW Chronic	15A NCAC 2B - Trout Waters	Secondary Screening Level	Source				
Volatile Organic Compounds																					
1,1,2,2-Tetrachloroethane	79-34-5	X			1.68E+02	2.83E+03	9.49E+01	3.67E-04	1.30E+01	3.40E+00	4.00E+00			NE	NE	6.10E+02	Tier II SCV	4.00E+00	HH	2.00E+03	1.10E+01
1,1,2-Trichloroethane	79-00-5	X			1.33E+02	4.59E+03	6.07E+01	8.24E-04	5.00E+00	4.61E+02	1.60E+01			NE	NE	1.20E+03	Tier II SCV	1.60E+01	HH	8.00E+03	2.00E-01
1,2-Dichloroethane	107-06-2	X			9.90E+01	8.60E+03	3.96E+01	1.18E-03	4.40E+00	1.50E+00	3.70E+01			NE	NE	9.10E+02	Tier II SCV	3.70E+01	HH	1.85E+04	3.00E-01
Benzene	71-43-2	X			7.81E+01	1.79E+03	1.46E+02	5.55E-03	4.27E+00	<1	5.10E+01			NE	NE	1.30E+02	Tier II SCV	5.10E+01	HH	2.55E+04	1.20E+00
Carbon Tetrachloride	56-23-5	X			1.54E+02	7.93E+02	4.39E+01	2.76E-02	7.40E+00	3.66E+00	1.60E+00			NE	NE	9.80E+00	Tier II SCV	1.60E+00	HH	8.00E+02	4.20E+00
Chloroform	67-66-3		X		1.19E+02	7.95E+03	3.18E+01	3.67E-03	1.30E+01	1.30E+00	1.70E+02			NE	NE	2.80E+01	Tier II SCV	2.80E+01	AQ	1.40E+04	6.30E+00
cis-1,2 Dichloroethene	156-59-2	X			9.69E+01	6.41E+03	3.96E+01	4.08E-03	1.11E+01	1.10E+00	7.20E+02			NE	NE	5.90E+02	Tier II SCV	5.90E+02	AQ	2.95E+05	1.30E+01
Tetrachloroethene	127-18-4	X		X	1.66E+02	2.06E+02	9.49E+01	1.77E-02	5.20E+01	1.40E+00	3.30E+00			NE	NE	9.80E+01	Tier II SCV	3.30E+00	HH	1.65E+03	6.90E+00
Trichloroethene	79-01-6	X	X	X	1.31E+02	1.28E+03	6.07E+01	9.85E-03	1.60E+01	1.20E+00	3.00E+01			NE	NE	4.70E+01	Tier II SCV	3.00E+01	HH	1.50E+04	1.10E+02
Vinyl Chloride	75-01-4	X	X		6.25E+01	8.80E+03	2.17E+01	2.78E-02	5.47E+00	<1	2.40E+00			NE	NE	9.30E+02	Region III	2.40E+00	HH	1.20E+03	1.20E+00
Semivolatile Organic Compounds																					
1,4-Dioxane	123-91-1	X		X	8.81E+01	1.00E+06	2.63E+00	4.80E-06	5.00E-01	1.75E+02	8.00E+01			NE	NE	2.20E+04	Region V	8.00E+01	HH	4.00E+04	1.60E+01
Dowtherm Constituents																					
Biphenyl	92-52-4	X			1.54E+02	6.94E+00	5.13E+03	3.08E-04	4.37E+02	7.17E+00	8.60E+02			1.80E+01	NE			1.80E+01	AQ	6.94E+03	1.40E+01
Diphenyl Ether	101-84-8	X			1.70E+02	1.60E+01	2.60E+03	2.80E-04	NA	NA	NE	1.00E+02	NC IMAC	NE	NE	1.10E+03	DuPont	1.00E+02	HH	1.60E+04	1.60E+02
Inorganics																					
Antimony	7440-36-0		X		1.25E+02	-	4.50E+01	-	1.00E+02	-	6.40E+02			NE	NE	3.00E+01	NAWQC	3.00E+01	AQ	1.50E+04	ND
Arsenic	7440-38-2	X			7.80E+01	-	2.90E+01	-	3.00E+02	-	1.00E+01			5.00E+01	NE			1.00E+01	HH	5.00E+03	5.00E-01
Beryllium	7440-41-7	X			9.01E+00	-	7.90E+02	-	1.00E+02	-	NE	8.00E+01	DuPont	6.50E+00	NE			6.50E+00	AQ	3.25E+03	4.60E+00
Cadmium	7440-43-9	X			1.12E+02	-	7.50E+01	-	2.00E+02	-	NE	1.00E+01	DuPont	2.00E+00	4.00E-01			4.00E-01	AQ	2.00E+02	1.10E-01
Chromium	7440-47-3	X			5.20E+01	-	1.80E+06	-	2.00E+02	-	NE	1.00E+02	MCL	5.00E+01	NE			5.00E+01	AQ	2.50E+04	7.20E+00
Cobalt	7440-48-4	X			5.89E+01	-	4.50E+01	-	3.00E+02	-	4.00E+00			NE	NE	2.30E+01	Tier II SCV	4.00E+00	HH	2.00E+03	4.92E+01
Iron	7439-89-6	X	X	X	5.59E+01	-	2.50E+01	-	2.00E+02	-	NE	1.40E+04	DuPont	1.00E+03	NE			1.00E+03	AQ	5.00E+05	7.64E+04
Lead	7439-92-1	X		X	2.07E+02	-	9.00E+02	-	3.00E+02	-	NE	1.50E+01	NC 2L	2.50E+01	NE			1.50E+01	HH	7.50E+03	1.78E+01
Manganese	7439-96-5	X		X	5.49E+01	-	6.50E+01	-	4.00E+02	-	NE	1.40E+03	DuPont	NE	NE	1.20E+02	Tier II SCV	1.20E+02	AQ	6.00E+04	7.58E+03
Vanadium	7440-62-2	X	X		5.09E+01	-	1.00E+03	-	-	-	NE	6.38E+03	DuPont	NE	NE	2.00E+01	Tier II SCV	2.00E+01	AQ	1.00E+04	1.52E+01

COPC = Constituent of Potential Concern
CAS = Chemical Abstracts Service
MW = molecular weight
g/mole = Grams per mole
ACL = Alternate Concentration Limit

mg/L = milligrams per liter
L/kg = liters per kilogram
atm-m3/mole =
Koc = partition coefficient
Kd = distribution coefficient

HH - human health
AQ - aquatic
ND - Not detected
NE - Not established

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Table 5
Proposed ACLs
Former DuPont Brevard Facility
Cedar Mountain, NC

Notes:
1 - Constituents identified as COPCs in Tables 1-3.
2 - Values obtained from USEPA Regional Screening Level Table, November 2013
Highly soluble (S > 100 mg/L), highly volatile (Henry's law constant > 10-3 atm-m3/mol), highly sorptive (log Koc >3)
3 - Kd values obtained from Risk Assessment Information System (RAIS), Constituents with Kd>10 are highly sorptive.
4 - Bioconcentration Factor (BCF) values obtained from RAIS. Values less than 100 L/kg have low potential for bioaccumulation.
5 - Volatilization half-lives based on a model river, obtained from EPISUITE. Constituents with half-lives < 5 days are considered highly biodegradable.
6 - North Carolina Surface Water Standards found in 15A NCAC 02B.0208 for protection of human health (organism only)
Little River is a Class C water and is not used as a water supply.
In the absence of fish consumption values, the following secondary screening levels were utilized:
DuPont -Where NC 2B for HH-org were unavailable, then a surface water standard (SS) was derived consistent with 15A NCAC 02B.0208 for protection of human health (fish consumption).
MCL - Federal Maximum Contaminant Levels (Summer 2010)
NC 2L - North Carolina 2L Drinking Water Standard 15A NCAC 2L (April 2013)
NC IMAC - North Carolina Interim Maximum Allowable Concentration (April 2013)
7 - North Carolina Surface Water Standards found in 15A NCAC 02B.0208 for protection of aquatic life and trout waters
In the absence of chronic values, the following ecological surface water benchmarks were utilized:
Tier II Secondary Chronic Value (SCV) - Suter, G.W. II, and Tsao, C.L. 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota
EPA Region III - Freshwater Ecological Screening Benchmark
EPA Region V - Surface Water Ecological Screening Level
NAWQC - National Recommended Water Quality Criteria (2009) for protection of aquatic life (freshwater chronic).
DuPont - DuPont-derived effects threshold concentration
8 - Lower of the values for protection of human health (fish consumption or secondary screening levels, where fish values not available)
and protection of aquatic life (chronic values or secondary screening levels, where 2B values not available)
9 - Proposed ACL is the limiting water quality criterion with an applied attenuation factor of 500; with the exception of values in excess of solubility, which are set at the solubility limit.
10 - Surficial and bedrock aquifer perimeter monitoring wells (BR-1, BR-3, BR-5, BR-9, BR-11, MW104A/B, MW105, MW106A/B, MW107A/B, MW108, MW111A/B, MW112A/B, MW207A/B, MW210A/B, MW213, MW214, MW215, MW301A/B, MW302A/B, R87-S8, R87-S9 and R87-S10) .

Table 6
Comparison of Surface Water Analytical Results to NC 2B Standards
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	Units	15A NCAC 2B - Organism Only	15A NCAC 2B - FW Chronic	15A NCAC 2B - Trout Waters	Field Sample ID	21399026	21399028	28223566	GW1H13-SW-5	GW2H13-SW-5	21399030	28223569	GW1H13-SW-6
					Location	SW-4	SW-5	SW-5	SW-5	SW-5	SW-6	SW-6	SW-6
					Sample Date	02/04/2009	02/04/2009	09/26/2012	04/10/2013	10/10/2013	02/04/2009	09/26/2012	04/10/2013
					Sample Purpose	Regular Sample	Regular Sample	Regular Sample	Regular Sample	Regular Sample	Regular Sample	Regular Sample	Regular Sample
Volatile Organic Compound													
cis-1,2 Dichloroethene	UG/L	4900	590 (Tier II SCV)	No Value		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl Chloride	UG/L	2.4	930 (Region III)	No Value		<0.010	0.024 J	<0.010	<0.010	<0.010	0.012 J	<0.010	<0.010
Inorganics													
Chromium	MG/L	0.10 (MCL)	0.05	No Value		<0.0030	<0.0030	<0.0011	<0.0011	<0.0016	<0.0030	0.0017 J	<0.0011
Iron	MG/L	14 (DuPont)	1	No Value		0.184 J	0.263				0.141 J		
Lead	MG/L	0.015 (NC 2L)	0.025	No Value		<0.0069	<0.0069	0.000068 J	0.00015 B	<0.000085	<0.0069	0.000081 J	<0.000073
Manganese	MG/L	1.4 (DuPont)	0.120 (Tier II SCV)	No Value		0.0343	0.0368				0.0218		
Vanadium	MG/L	6.4 (DuPont)	0.020 (Tier II SCV)	No Value		<0.0025 UJ	<0.0025 UJ	0.0013 J	<0.0013	<0.0020	<0.0025 UJ	0.0024 J	<0.0013

ug/L - micrograms per liter
mg/L - milligrams per liter

B - Not detected substantially above the level reported in the laboratory or fieldblanks.
J - Analyte present. Reported value may not be accurate or precise.
UJ - Not detected. Reporting limit may not be accurate or precise.

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1 - Groundwater COPCs detected in Little River and DERA Creek Tributary between 2009 and 2013 during RFI and CAMU sampling.
2 - North Carolina Surface Water Standards found in 15A NCAC 02B.0208 for protection of human health (organism only) and aquatic life
Little River is a Class C water and is not used as a water supply.
( ) indicates source of secondary value. See Table 5.

[ ] and Yellow Shading indicates an exceedance of screening criteria

Table 6
Comparison of Surface Water Analytical Results to NC 2B Standards
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	Units	15A NCAC 2B - Organism Only	15A NCAC 2B - FW Chronic	15A NCAC 2B - Trout Waters	Field Sample ID	GW2H13-SW-6	21399032	21396408	21396410	21399034	21399035	21396414	21396416
					Location	SW-6	SW-7	SW-8	SW-9	SW-10	SW-10	SW-12	SW-13
					Sample Date	10/10/2013	02/04/2009	02/04/2009	02/04/2009	02/04/2009	02/04/2009	02/05/2009	02/05/2009
					Sample Purpose	Regular Sample	Regular Sample	Regular Sample	Regular Sample	Regular Sample	Field Duplicate	Regular Sample	Regular Sample
Volatile Organic Compound													
cis-1,2 Dichloroethene	UG/L	4900	590 (Tier II SCV)	No Value		<0.1	<0.1	<0.1	0.2 J	0.1 J	0.1 J	<0.1	<0.1
Vinyl Chloride	UG/L	2.4	930 (Region III)	No Value		<0.010	<0.010	<0.010	0.064	0.042 J	0.045 J	<0.010	<0.010
Inorganics													
Chromium	MG/L	0.10 (MCL)	0.05	No Value		<0.0016	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030 UJ	<0.0030 UJ
Iron	MG/L	14 (DuPont)	1	No Value			0.125 J	0.566	0.499	0.553	0.574	0.201	0.27
Lead	MG/L	0.015 (NC 2L)	0.025	No Value		<0.000085	<0.0069	<0.0069	<0.0069	<0.0069	<0.0069	<0.0069	<0.0069
Manganese	MG/L	1.4 (DuPont)	0.120 (Tier II SCV)	No Value			0.014	[0.178]	[0.274]	[0.332]	[0.347]	0.0566 J	0.0644 J
Vanadium	MG/L	6.4 (DuPont)	0.020 (Tier II SCV)	No Value		<0.0020	<0.0025 UJ	<0.0025 UJ	<0.0025 UJ	<0.0025 UJ	<0.0025 UJ	<0.0025 UJ	<0.0025 UJ

ug/L - micrograms per liter
mg/L - milligrams per liter

B - Not detected substantially above the level reported in the laboratory or fieldblanks.
J - Analyte present. Reported value may not be accurate or precise.
UJ - Not detected. Reporting limit may not be accurate or precise.

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1 - Groundwater COPCs detected in Little River and DERA Creek Tributary between 2009 and 2013 during RFI and CAMU sampling.
2 - North Carolina Surface Water Standards found in 15A NCAC 02B.0208 for protection of human health (organism only) and aquatic life
Little River is a Class C water and is not used as a water supply.
( ) indicates source of secondary value. See Table 5.

[ ] and Yellow Shading indicates an exceedance of screening criteria

Table 7
Constituents of Potential Concern in Surface Soil
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Site-Specific Background[2]	IHSB PSRG Res Soil[3]	Exceeds Y/N?	IHSB PSRG Protection of GW[3]	Exceeds Y/N?
Volatile Organic Compounds											
Acetone	67-64-1	ug/kg	24	19	14	220		12000000	No	24000	No
Carbon Disulfide	75-15-0	ug/kg	24	6	0.9	2		160000	No	3800	No
Chloroform	67-66-3	ug/kg	24	1	1	1		290	No	340	No
Ethylbenzene	100-41-4	ug/kg	24	1	15	15		5400	No	8100	No
Methyl Ethyl Ketone	78-93-3	ug/kg	24	3	12	37		5600000	No	16000	No
Methylene Chloride	75-09-2	ug/kg	24	5	4	19		56000	No	23	No
Tetrachloroethene	127-18-4	ug/kg	24	1	21	21		17000	No	5	Yes
Toluene	108-88-3	ug/kg	24	2	2	17		820000	No	5500	No
Trichlorofluoromethane	75-69-4	ug/kg	25	9	2	15000		160000	No	24000	No
Xylenes	1330-20-7	ug/kg	24	1	97	97		130000	No	5800	No
Semivolatile Organic Compounds											
1-Methylnaphthalene	90-12-0	ug/kg	11	2	4600	8100		16000	No	55	Yes
2-Methylnaphthalene	91-57-6	ug/kg	24	4	77	11000		46000	No	1600	Yes
3-Methylcholanthrene	56-49-5	ug/kg	24	2	130	1300		5.2	Yes	NV	No
7,12-Dimethylbenz[A]Anthracene	57-97-6	ug/kg	24	2	39	5700		0.43	Yes	NV	No
Acenaphthene	83-32-9	ug/kg	24	8	50	25000		680000	No	8400	Yes
Acenaphthylene	208-96-8	ug/kg	24	4	56	520		NV	No	21000	No
Anthracene	120-12-7	ug/kg	24	9	74	37000		3400000	No	660000	No
Benzo(A)Anthracene	56-55-3	ug/kg	24	11	52	48000		150	Yes	180	Yes
Benzo(B)Fluoranthene	205-99-2	ug/kg	24	11	61	51000		150	Yes	600	Yes
Benzo(G,H,I)Perylene	191-24-2	ug/kg	24	11	41	12000		NV	No	7800000	No
Benzo(K)Fluoranthene	207-08-9	ug/kg	24	9	85	23000		1500	Yes	5900	Yes
Benzo[A]Pyrene	50-32-8	ug/kg	24	11	49	41000		15	Yes	59	Yes
Bis(2-Ethylhexyl)Phthalate	117-81-7	ug/kg	24	8	82	470		35000	No	7200	No
Butyl Benzyl Phthalate	85-68-7	ug/kg	24	3	130	290		260000	No	150000	No
Carbazole	86-74-8	ug/kg	11	2	420	21000		NV	No	370	Yes
Chrysene	218-01-9	ug/kg	24	11	47	54000		15000	Yes	18000	Yes
Dibenz(A,H)Anthracene	53-70-3	ug/kg	24	9	60	4200		15	Yes	190	Yes
Dibenzofuran	132-64-9	ug/kg	24	8	95	15000		16000	No	5200	Yes
Di-N-Butyl Phthalate	84-74-2	ug/kg	24	1	140	140		1200000	No	19000	No
Fluoranthene	206-44-0	ug/kg	24	12	68	130000		460000	No	330000	No
Fluorene	86-73-7	ug/kg	24	8	43	26000		460000	No	56000	No
Indeno (1,2,3-CD) Pyrene	193-39-5	ug/kg	24	10	81	15000		150	Yes	2000	Yes
Naphthalene	91-20-3	ug/kg	24	7	64	28000		3600	Yes	210	Yes
Nitrobenzene	98-95-3	ug/kg	24	1	550	550		4800	No	NV	No
Phenanthrene	85-01-8	ug/kg	24	13	46	130000		NV	No	68000	Yes
Phenol	108-95-2	ug/kg	24	1	170	170		3600000	No	230	No
Pyrene	129-00-0	ug/kg	24	12	57	100000		340000	No	220000	No
Dowtherm Constituents											
Biphenyl	92-52-4	ug/kg	23	8	49	170000		10000	Yes	43000	Yes
Diphenyl Ether	101-84-8	ug/kg	23	8	81	1000000		2700000	No	5600	Yes
Glycols											
Ethylene Glycol	107-21-1	ug/kg	23	3	2600	3800		24000000	No	40000	No
Inorganics											
Antimony	7440-36-0	mg/kg	36	6	0.334	9.01	DL	6.2	Yes	0.9	Yes
Arsenic	7440-38-2	mg/kg	36	36	0.61	4.01	4.81	0.61	No	5.8	No
Barium	7440-39-3	mg/kg	36	36	19.8	224	133	3000	No	580	No
Beryllium	7440-41-7	mg/kg	36	36	0.231	1.69	2.7	32	No	63	No

Table 7
Constituents of Potential Concern in Surface Soil
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Site-Specific Background[2]	IHSB PSRG Res Soil[3]	Exceeds Y/N?	IHSB PSRG Protection of GW[3]	Exceeds Y/N?
Cadmium	7440-43-9	mg/kg	36	8	0.205	1	DL	14	No	3	No
Chromium	7440-47-3	mg/kg	36	35	1.03	25.5	5.16	24000	No	360000	No
Cobalt	7440-48-4	mg/kg	36	36	0.846	17.1	14.7	4.6	Yes	0.9	Yes
Copper	7440-50-8	mg/kg	36	36	1.06	28.6	3.72	620	No	700	No
Lead	7439-92-1	mg/kg	36	36	5.69	50.5	20.5	400	No	270	No
Mercury	7439-97-6	mg/kg	39	31	0.0133	0.367	0.0215	2	No	1	No
Nickel	7440-02-0	mg/kg	36	36	0.964	63.2	5.54	300	No	130	No
Silver	7440-22-4	mg/kg	39	25	0.148	530	DL	78	Yes	3.4	Yes
Thallium	7440-28-0	mg/kg	36	21	0.164	4.29	DL	0.16	Yes	0.28	Yes
Tin	7440-31-5	mg/kg	36	36	1.96	6.41	DL	9400	No	10000	No
Vanadium	7440-62-2	mg/kg	36	36	5.19	863	22.8	78	Yes	6	Yes
Zinc	7440-66-6	mg/kg	36	36	13.8	249	49.1	4600	No	1200	No

ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram

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Notes:
1 - Constituents detected in surface soil (defined as less than 2 feet bgs). Field duplicates included in statistical summary.
2 - Site-specific background concentrations presented in Phase III RFI Report.
DL - background value is the detection limit
3 - NCDENR Inactive Hazardous Site Branch Preliminary Soils Remediation Goals (January 2014)
Value for chromium is trivalent chromium.
Value for diphenyl ether is DuPont-derived value.

Indicates exceedance of a screening level and site-specific background (for inorganics).

Table 8
Constituents of Potential Concern in Subsurface Soil
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Site-Specific Background[2]	IHSB PSRG Res Soil[3]	Exceeds Y/N?	IHSB PSRG Protection of GW[3]	Exceeds Y/N?
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	ug/kg	72	4	2	310		640000	No	1200	No
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	72	14	24	220000		560	Yes	1.2	Yes
1,1,2-Trichloroethane	79-00-5	ug/kg	72	7	2	3600		320	Yes	3.2	Yes
1,1-Dichloroethane	75-34-3	ug/kg	72	1	2	2		3300	No	30	No
1,1-Dichloroethene	75-35-4	ug/kg	72	1	330	330		48000	No	2300	No
1,2,4-Trichlorobenzene	120-82-1	ug/kg	73	1	1100	1100		12000	No	2200	No
1,2-Dichloroethane	107-06-2	ug/kg	72	5	1	550		430	Yes	2	Yes
2-Hexanone	591-78-6	ug/kg	72	1	7	7		42000	No	170	No
Acetone	67-64-1	ug/kg	72	34	7	1200		12000000	No	24000	No
Benzene	71-43-2	ug/kg	72	6	1	2100		1100	Yes	7.3	Yes
Carbon Disulfide	75-15-0	ug/kg	72	7	1	5		160000	No	3800	No
Chlorobenzene	108-90-7	ug/kg	72	2	4	230		58000	No	430	No
Chloroform	67-66-3	ug/kg	72	3	1	23		290	No	340	No
cis-1,2 Dichloroethene	156-59-2	ug/kg	72	19	2	100000		32000	Yes	360	Yes
Ethylbenzene	100-41-4	ug/kg	72	11	1	11000		5400	Yes	8100	Yes
Methyl Ethyl Ketone	78-93-3	ug/kg	72	5	5	340		5600000	No	16000	No
Methyl Isobutyl Ketone	108-10-1	ug/kg	72	1	8	8		1100000	No	430	No
Methylene Chloride	75-09-2	ug/kg	72	5	2	240		56000	No	23	Yes
Pentachloroethane	76-01-7	ug/kg	53	3	3	620		5400	No	NV	No
Tetrachloroethene	127-18-4	ug/kg	72	16	3	68000		17000	Yes	5	Yes
Toluene	108-88-3	ug/kg	72	14	2	5200		820000	No	5500	No
trans-1,2-Dichloroethene	156-60-5	ug/kg	72	9	2	1200		30000	No	510	Yes
Trichloroethene	79-01-6	ug/kg	72	13	4	71000		880	Yes	18	Yes
Trichlorofluoromethane	75-69-4	ug/kg	72	1	15	15		160000	No	24000	No
Vinyl Chloride	75-01-4	ug/kg	72	1	1	1		60	No	0.19	Yes
Xylenes	1330-20-7	ug/kg	72	13	2	64000		130000	No	5800	Yes
Semivolatile Organic Compounds											
1-Methylnaphthalene	90-12-0	ug/kg	38	7	45	39000		16000	Yes	55	Yes
2,4-Dimethylphenol	105-67-9	ug/kg	73	1	53	53		240000	No	1400	No
2-Chloronaphthalene	91-58-7	ug/kg	73	2	11000	36000		180000	No	NV	No
1,2-Diphenylhydrazine	122-66-7	ug/kg	37	2	79	1200		610	Yes	NV	No
2-Methylnaphthalene	91-57-6	ug/kg	73	8	58	55000		46000	Yes	1600	Yes
4-Methylphenol (P-Cresol)	106-44-5	ug/kg	54	2	170	370		1200000	No	12000	No
Acenaphthene	83-32-9	ug/kg	73	1	23000	23000		680000	No	8400	Yes
Anthracene	120-12-7	ug/kg	73	2	410	15000		3400000	No	660000	No
Benzaldehyde	100-52-7	ug/kg	37	2	92	3700		1200000	No	3000	Yes
Benzo(A)Anthracene	56-55-3	ug/kg	73	3	190	15000		150	Yes	180	Yes
Benzo(B)Fluoranthene	205-99-2	ug/kg	73	4	250	3000		150	Yes	600	Yes
Benzo(G,H,I)Perylene	191-24-2	ug/kg	73	2	170	340		NV	No	7800000	No
Benzo(K)Fluoranthene	207-08-9	ug/kg	73	1	95	95		1500	No	5900	No

Table 8
Constituents of Potential Concern in Subsurface Soil
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	CAS No.	Units	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Site-Specific Background[2]	IHSB PSRG Res Soil[3]	Exceeds Y/N?	IHSB PSRG Protection of GW[3]	Exceeds Y/N?
Benzo[A]Pyrene	50-32-8	ug/kg	73	3	170	400		15	Yes	59	Yes
Benzoic Acid	65-85-0	ug/kg	56	3	340	2100		48000000	No	130000	No
Bis(2-Ethylhexyl)Phthalate	117-81-7	ug/kg	73	10	160	5500		35000	No	7200	No
Butyl Benzyl Phthalate	85-68-7	ug/kg	73	1	160	160		260000	No	150000	No
Carbazole	86-74-8	ug/kg	37	1	9700	9700		NV	No	370	Yes
Chrysene	218-01-9	ug/kg	73	4	270	13000		15000	No	18000	No
Diallate	2303-16-4	ug/kg	54	2	96	600		8000	No	NV	No
Dibenzofuran	132-64-9	ug/kg	73	10	52	46000		16000	Yes	5200	Yes
Di-N-Butyl Phthalate	84-74-2	ug/kg	73	8	83	1800		1200000	No	19000	No
Fluoranthene	206-44-0	ug/kg	73	7	330	110000		460000	No	330000	No
Fluorene	86-73-7	ug/kg	73	3	150	37000		460000	No	56000	No
Indeno (1,2,3-CD) Pyrene	193-39-5	ug/kg	73	1	140	140		150	No	2000	No
Naphthalene	91-20-3	ug/kg	73	9	42	160000		3600	Yes	210	Yes
N-Dioctyl Phthalate	117-84-0	ug/kg	73	1	260	260		NV	No	38000	No
N-Nitrosodiphenylamine	86-30-6	ug/kg	73	1	860	860		99000	No	NV	No
Phenanthrene	85-01-8	ug/kg	73	8	51	200000		NV	No	68000	Yes
Phenol	108-95-2	ug/kg	73	8	67	1800		3600000	No	230	Yes
Pyrene	129-00-0	ug/kg	73	5	57	79000		340000	No	220000	No
Dowtherm Constituents											
Biphenyl	92-52-4	ug/kg	49	17	610	5100000		10000	Yes	43000	Yes
Diphenyl Ether	101-84-8	ug/kg	49	20	63	13000000		2300000	Yes	5600	Yes
Glycols											
Ethylene Glycol	107-21-1	ug/kg	55	4	3200	974000		24000000	No	40000	Yes
Inorganics											
Antimony	7440-36-0	mg/kg	59	16	0.852	295	DL	6.2	Yes	0.9	Yes
Arsenic	7440-38-2	mg/kg	90	74	0.241	21.3	4.81	0.61	Yes	5.8	Yes
Barium	7440-39-3	mg/kg	90	90	12.1	208	133	3000	No	580	No
Beryllium	7440-41-7	mg/kg	59	59	0.332	2.58	2.7	32	No	63	No
Cadmium	7440-43-9	mg/kg	90	22	0.0643	12.6	DL	14	No	3	Yes
Chromium	7440-47-3	mg/kg	90	78	0.382	1190	5.16	24000	No	360000	No
Cobalt	7440-48-4	mg/kg	59	59	0.367	36.1	14.7	4.6	Yes	0.9	Yes
Copper	7440-50-8	mg/kg	59	57	0.186	199	3.72	620	No	700	No
Lead	7439-92-1	mg/kg	90	90	3.53	90.3	20.5	400	No	270	No
Mercury	7439-97-6	mg/kg	93	32	0.0065	0.889	0.0215	2	No	1	No
Nickel	7440-02-0	mg/kg	59	48	0.303	352	5.54	300	Yes	130	Yes
Silver	7440-22-4	mg/kg	109	30	0.165	672	DL	78	Yes	3.4	Yes
Thallium	7440-28-0	mg/kg	59	27	0.22	16.7	DL	0.16	Yes	0.28	Yes
Tin	7440-31-5	mg/kg	59	58	1.97	97.7	DL	9400	No	10000	No
Vanadium	7440-62-2	mg/kg	59	59	2.34	3290	22.8	78	Yes	6	Yes
Zinc	7440-66-6	mg/kg	59	59	9.27	206000	49.1	4600	Yes	1200	Yes

Table 8
Constituents of Potential Concern in Subsurface Soil
Former DuPont Brevard Facility
Cedar Mountain, NC

ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram

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Notes:
1 - Constituents detected in subsurface soil and waste (defined as greater than 2 feet bgs). Field duplicates included in statistical summary.
2 - Site-specific background concentrations presented in Phase III RFI Report.
DL - background value is the detection limit
3 - NCDENR Inactive Hazardous Site Branch Preliminary Soils Remediation Goals (January 2014)
Value for chromium is trivalent chromium.
Value for diphenyl ether is DuPont-derived value.

Indicates exceedance of a screening level and site-specific background (for inorganics).

Table 9
Constituents of Potential Concern for Soil Migration to Groundwater
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	Detected in Surface Soil Above IHSB PSRGs	Detected in Subsurface Soil (or Waste) Above IHSB PSRGs	Detected in Groundwater (>NC 2L or IMAC)	Detected in Groundwater (> NC 2B)
1,1,2,2-Tetrachloroethane		*X*	*X*	*X*
1,1,2-Trichloroethane		*X*	*X*	
1,2-Dichloroethane		*X*	*X*	
1-Methylnaphthalene	X	X		
2-Methylnaphthalene	X	X		
Acenaphthene	X	X		
Benzaldehyde		X		
Benzene		*X*	*X*	
Benzo(A)Anthracene	X	X		
Benzo(B)Fluoranthene	X	X		
Benzo[A]Pyrene	X	X		
Biphenyl	*X*	*X*	*X*	
Carbazole	X	X		
Chrysene	X	X		
cis-1,2 Dichloroethene		*X*	*X*	
Dibenz(A,H)Anthracene	X	X		
Dibenzofuran	X	X		
Diphenyl Ether	*X*	*X*	*X*	*X*
Ethylbenzene		X		
Ethylene Glycol		X		
Indeno (1,2,3-CD) Pyrene	X	X		
Methylene Chloride		X		
Naphthalene	X	X		
Phenanthrene	X	X		
Phenol		X		
Tetrachloroethene	*X*	*X*	*X*	*X*
trans-1,2-Dichloroethene		X		
Trichloroethene		*X*	*X*	*X*
Vinyl Chloride		*X*	*X*	*X*
Xylenes		X		
Antimony	X	X	See Note 2	
Arsenic		X		
Cadmium		X		
Cobalt	X	X		
Nickel		X		
Silver	X	X		
Thallium	X			
Vanadium	X		See Note 2	
Zinc				

Notes:
1 - COPCs in surface and subsurface soil identified in Tables 7 and 8. Groundwater COPCs detailed in Tables 1 - 3.
NCDENR Inactive Hazardous Site Branch Preliminary Soils Remediation Goals (PSRGs) (January 2014)
2 - Antimony and vanadium not identified as COPCs for groundwater migration. Antimony not a COPC in groundwater.
Vanadium does not exceed PSRGs in subsurface soil or waste.

Indicates COPC for RL Derivation

Table 10

RL for Protection of Migration to Groundwater

Former DuPont Brevard Facility

Cedar Mountain, NC

Soil Screening Level Partitioning Equation for Migration to Groundwater

$$RL\ (mg/kg) = C_w * \left[K_{oc} f_{oc} + \frac{\Theta_w + \Theta_a H'}{P_b} \right]$$

NC DENR, 2013 - Equation 1

Parameter	Definition	Value	Source
RL	Remedial Level for protection of migration to groundwater (mg/kg)		NC DENR, 2013
C_w	Target soil leachate concentration (mg/L)	Calculated	
where	Cw = ACL x DAF		
SL	Target soil leachate concentration (mg/L)	Chemical-Specific	ACL
DAF	Dilution Attenuation Factor, unitless	20	0.5-acre source default
K_{oc}	Organic carbon partition coefficient (L/kg)	Chemical-Specific	See Below
f_{oc}	Fraction of organic carbon (g/g)	0.001	Default
Q_w	Water-filled soil porosity (Lwater/Lsoil)	0.3	Default
Q_a	Air-filled soil porosity (Lpore/Lsoil)	0.13	Default
H'	Henry's Law Constant (dimensionless)	Chemical-Specific	See Below
P_b	Dry Soil Bulk Density (kg/L)	1.5	Default

COPC	Koc	H'	ACL (mg/L)	Cw (mg/L)	RL (mg/kg)
1,1,2,2-Tetrachloroethane	94.94	0.0150103	2.00E+00	4.00E+01	1.18E+01
1,1,2-Trichloroethane	60.7	0.0337016	8.00E+00	1.60E+02	4.22E+01
1,2-Dichloroethane	39.6	0.048262	1.85E+01	3.70E+02	9.02E+01
Benzene	145.8	0.226995	2.55E+01	5.10E+02	1.86E+02
Biphenyl	5129	0.0125972	6.94E+00	1.39E+02	7.40E+02
cis-1,2 Dichloroethene	39.6	0.166872	2.95E+02	5.90E+03	1.50E+03
Diphenyl Ether	2600	0.011452	1.60E+01	3.20E+02	8.96E+02
Tetrachloroethene	94.94	0.72393	1.65E+00	3.30E+01	1.18E+01
Trichloroethene	60.7	0.402865	1.50E+01	3.00E+02	8.87E+01
Vinyl Chloride	21.73	1.13702	1.20E+00	2.40E+01	7.69E+00

References:

NC DENR, 2013. Guidelines for Establishing Remediation Goals at RCRA Hazardous Waste Sites. Divison of Waste Management Section, Hazardous Waste Section. December 11, 2013.

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Table 11
Comparison of Soil Protection of Migration RLs to Site Data
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	RL (mg/kg)[2]	Maximum Detect (mg/kg)[3]	No. of Samples	No. of Detects Above RL[3]	Associated Unit(s)[3]	Unit Distance to Little River (Feet)[4]	Detected in Perimeter GW Above 10 x NC 2B?[5]	Detected in Little River or DERA Creek Surface Water?[6]
Volatile Organic Compounds								
1,1,2,2-Tetrachloroethane	1.18E+01	2.20E+02	96	4	SWMUs 13, 16	900 (SWMU 16)	No	No
1,1,2-Trichloroethane	4.22E+01	3.60E+00	96	0	SWMUs 13, 16	900 (SWMU 16)	No	No
1,2-Dichloroethane	9.02E+01	5.50E-01	96	0	SWMU 13	1680 (SWMU 13)	No	No
Benzene	1.86E+02	2.10E+00	96	0	No release to gw indicated	-	No	No
cis-1,2 Dichloroethene	1.50E+03	1.00E+02	96	0	SWMUs 13, 16	900 (SWMU 16)	No	No
Tetrachloroethene	1.18E+01	6.80E+01	96	3	SWMU 16	900 (SWMU 16)	No	No
Trichloroethene	8.87E+01	7.10E+01	96	0	SWMUs 13, 16	900 (SWMU 16)	No	No
Vinyl Chloride	7.69E+00	1.00E-03	96	0	-	-	No	No
Dowtherm Constituents								
Biphenyl	7.40E+02	5.10E+03	72	3	SWMUs 13, 16	900 (SWMU 16)	No	No
Diphenyl Ether	8.96E+02	1.30E+04	72	6	SWMUs 13, 16; AOCs I and J	Varies	No	No

Notes:
1 - COPCs identified in Table 10.
2- RL for Protection of Migration to Groundwater derived in Table 11.
3- Detects in surface, subsurface soil and waste material above RLs. SWMU 17 data excluded from the evaluation.
4 - Distance measured from unit to Little River. With exception of SWMU 18, groundwater flows from these units towards Little River. SWMU 18 is cross-gradient to DERA Creek.
5 - Perimeter groundwater comparison detailed in Table 5.
6 -Surface water data provided in Table 6.

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Table 12
Exposure Assumptions
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Intake Factors (kg soil/kg BW-day or kg/m^3-air)

Ingestion =	(IR x EF x ED x FC x CFs)/ (AT x BW)	non-carcinogens
Ingestion =	(IRadj x EF x FC x CFs)/ (AT)	carcinogen or mutagen
Dermal Absorption =	(ABS x SA x AF x EF x ED x FC x CFs)/(AT x BW)	non-carcinogens
Dermal Absorption =	(ABS x SAadj x EF x FC x CFs)/(AT)	carcinogen or mutagen

Air Intake Factor (kg / m^3 - air)

Inhalation =	(ET x EF x ED x FC x 1 day/24 hours x (1/VF + 1/PEF)) / (AT)	non-carcinogens
Inhalation =	(ET x EF x ED x FC x 1 day/24 hours x (1/VF + 1/PEF)) / (AT x CFa)	carcinogens
Inhalation =	(EDadj x FC x 1 day/24 hours x (1/VF + 1/PEF)) / (AT x CFa)	mutagen

Intake Parameter		National Guard	Forest Ranger	Utlity Worker	Trail User (Adult)	Trail User (Child)
IR	Ingestion Rate, soil (mg/day) (1)	100	100	330	100	200
IRadj	Ingestion rate (soil), age-adjusted mg-yr/kg-d (2)				105	
IRadj-m	Ingestion rate (soil), age-adjusted, mutagen mg-yr/kg-d (2)				477	
FC	Fraction contacted (3)	1	0.5	1	0.25	0.25
AF	Dermal Adherence Factor, soil (mg/cm^2) (4)	0.3	0.12	0.3	0.07	0.2
AB	Dermal Absorption Fraction (unitless) (5)	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific
PEF	Particulate Emission Factor (m^3/kg) (6)	1.36E+09	1.36E+09	1.36E+09	1.36E+09	1.36E+09
VF	Soil to Air Volatilization Factor, m^3/kg (6)	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific
SA	Skin Surface Area, (cm^2) (7)	3470	3470	3470	6032	2690
DFs	Soil Dermal Factor, age-adjusted mg-yr/kg-d (2)				321	
DFs-m	Soil Dermal Factor, age-adjusted, mutagen mg-yr/kg-d (2)				1359	
ET	Exposure Time (hours/day) (8)	24	8	8	8	8
EF	Exposure Frequency (days/year) (8)	47	180	10	108	108
ED	Exposure Duration - (years) , (8)	8	25	25	20	6
EDadj-m	Exposure Duration, age-adjusted, mutagen (2)					2280
CFs	Conversion Factor, soil (kg/mg)	1.E-06	1.E-06	1.E-06	1.E-06	1.E-06
CFa	Conversion Factor, air (ug/mg)	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
BW	Body Weight - (kg) (9)	80	80	80	80	15
AT	Averaging Time (days) (10)					
	Noncarcinogenic, ED x 365 d/yr	2,920	9,125	9,125	7,300	2,190
	Carcinogenic,70 yr x 365d/yr	25,550	25,550	25,550	25,550	25,550

Table 12
Exposure Assumptions
Former DuPont Brevard Facility
Cedar Mountain, NC

Notes:

(1) Soil ingestion rate: USEPA recommended values for outdoor worker and construction worker (Exhibit 1-2, USEPA, 2002).
USEPA's recommended total daily soil intake value for residential exposures was conservatively assumed for a trail users (USEPA, 2014b)

(2) Age-adjusted rates were utilized to evaluate combined recreational exposure to carcinogens (USEPA, 1991) and mutagens (USEPA, 2005).
Equations consistent with EPA's Regional Screening Level Table User's Guide were used (USEPA, 2014a).

(3) It was assumed that workers in the Ranger Office would spend most of their time in the office or in portions of the site where trails or public use areas are located, the nature preserve primary area and proposed ranger office is not located near COPCs in surface soil.

(4) Adherence Factor: USEPA recommended default values (USEPA, 2014b),
worker value represents 95th percentile for high-end soil activity. USEPA recommended value for resident assumed for trail users.

(5) Chemical specific values obtained from Exhibit 3-4 in USEPA 2004. Default values are not available for VOCs and inorganic compound classes.

(6) Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014a).

(7) Skin Surface Area: EPA recommended value for workers (USEPA, 2014b) assumed for National Guard and workers.
EPA recommended value for residents (USEPA, 2014b) assumed for trail users.

(8) Exposure Frequency, Time and Duration: For the National Guard,a site-specific exposure frequency of 3 days per month (for 11 months) plus 2 weeks per year (or 47 days/year) was assumed based on required weekend drill training and one annual trainng period . An exposure time of 24 hours/day was assumed since overnight stays would occur.
An exposure duration of 8 years was assumed, which is consistent with the minimum service obligation.
Ranger - a site-specific exposure frequency of 5 days per week for 9 months was assumed (or 180 days per year).
Exposure time and duration constistent with USEPA-recommended values was used (8 hours/day, 25 years).
Trail Users - It was assumed that trail users would visit the site 5 days/week during the 3 summer months (June, July, August) and less frequently (2 days/ week) during the Spring and Fall months (6 months), which results in 108 days/year. Recommended exposure duration for residents was used for the trail user (USEPA, 2014b).

(9) Body weight: USEPA recommended value for adult and child receptors (USEPA, 2014b).

(10) Averaging time: Noncarcinogens = ED expressed in days. Carcinogens = 70-year lifetime expressed in days.

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References:

USEPA, 1991. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part B: Development of Risk-Based Preliminary Remediation Goals). Interim Final. Office of Emergency and Remedial Response, Washington D.C. December.

USEPA. 2011. Exposure Factors Handbook: 2011 Edition. EPA/600/R-09/052F. September.

USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. OSWER 9355.4-24. December.

USEPA, 2004. Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part E Supplemental Guidance for Dermal Risk Assessment).Final. EPA/540/R/99/005. July 2004 (updated November 2007)

USEPA, 2014a. EPA Regional Screening Level Table. May 2014.

USEPA, 2014b. Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER Directive 9200.1-120 dated February 6, 2014.

Table 13
Summary of Soil Direct Contact Remedial Levels
Former DuPont Brevard Facility
Cedar Mountain, NC

Surface Soil Direct Contact Remedial Levels (RLs)

			Target Risk 1 x 10^{-6}, HQ=1				Target Risk 1 x 10^{-5}, HQ=1				Target Risk 1 x 10^{-4}, HQ=1			
Analyte[1]	CAS No.	Units	Forest Ranger	National Guard	Utility Worker	Trail User (Adult/Child)	Forest Ranger	National Guard	Utility Worker	Trail User (Adult/Child)	Forest Ranger	National Guard	Utility Worker	Trail User (Adult/Child)
Antimony	7440-36-0	mg/kg	6.49E+02	2.49E+03	3.54E+03	4.06E+02	6.49E+02	2.49E+03	3.54E+03	4.06E+02	6.49E+02	2.49E+03	3.54E+03	4.06E+02
Cobalt	7440-48-4	mg/kg	4.82E+02	1.81E+03	2.65E+03	3.04E+02	4.82E+02	1.81E+03	2.65E+03	3.04E+02	4.82E+02	1.81E+03	2.65E+03	3.04E+02
Silver	7440-22-4	mg/kg	8.11E+03	3.11E+04	4.42E+04	5.07E+03	8.11E+03	3.11E+04	4.42E+04	5.07E+03	8.11E+03	3.11E+04	4.42E+04	5.07E+03
Thallium	7440-28-0	mg/kg	1.62E+01	6.21E+01	8.85E+01	1.01E+01	1.62E+01	6.21E+01	8.85E+01	1.01E+01	1.62E+01	6.21E+01	8.85E+01	1.01E+01
Vanadium	7440-62-2	mg/kg	8.03E+03	3.02E+04	4.41E+04	5.07E+03	8.03E+03	3.02E+04	4.41E+04	5.07E+03	8.03E+03	3.02E+04	4.41E+04	5.07E+03
3-Methylcholanthrene	56-49-5	mg/kg	1.46E-01	1.21E+00	8.56E-01	7.02E-02	1.46E+00	1.21E+01	8.56E+00	7.02E-01	1.46E+01	1.21E+02	8.56E+01	7.02E+00
7,12-Dimethylbenz[A]Anthracene	57-97-6	mg/kg	1.18E-02	9.24E-02	7.03E-02	5.79E-03	1.18E-01	9.24E-01	7.03E-01	5.79E-02	1.18E+00	9.24E+00	7.03E+00	5.79E-01
Benzo(a)anthracene	56-55-3	mg/kg	4.04E+00	3.16E+01	2.41E+01	1.98E+00	4.04E+01	3.16E+02	2.41E+02	1.98E+01	4.04E+02	3.16E+03	2.41E+03	1.98E+02
Benzo(b)fluoranthene	205-99-2	mg/kg	4.04E+00	3.16E+01	2.41E+01	1.98E+00	4.04E+01	3.16E+02	2.41E+02	1.98E+01	4.04E+02	3.16E+03	2.41E+03	1.98E+02
Benzo(k)fluoranthene	207-08-9	mg/kg	4.04E+01	3.16E+02	2.41E+02	1.98E+01	4.04E+02	3.16E+03	2.41E+03	1.98E+02	4.04E+03	3.16E+04	2.41E+04	1.98E+03
Benzo(a)pyrene	50-32-8	mg/kg	4.04E-01	3.16E+00	2.41E+00	1.98E-01	4.04E+00	3.16E+01	2.41E+01	1.98E+00	4.04E+01	3.16E+02	2.41E+02	1.98E+01
Biphenyl	92-52-4	mg/kg	2.99E+02	3.82E+02	3.10E+03	1.13E+03	2.99E+02	3.82E+02	5.38E+03	1.99E+03	2.99E+02	3.82E+02	5.38E+03	1.99E+03
Chrysene	218-01-9	mg/kg	4.04E+02	3.16E+03	2.41E+03	1.98E+02	4.04E+03	3.16E+04	2.41E+04	1.98E+03	4.04E+04	3.16E+05	2.41E+05	1.98E+04
Dibenz(a,h)anthracene	53-70-3	mg/kg	4.04E-01	3.16E+00	2.41E+00	1.98E-01	4.04E+00	3.16E+01	2.41E+01	1.98E+00	4.04E+01	3.16E+02	2.41E+02	1.98E+01
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	4.04E+00	3.16E+01	2.41E+01	1.98E+00	4.04E+01	3.16E+02	2.41E+02	1.98E+01	4.04E+02	3.16E+03	2.41E+03	1.98E+02
Naphthalene	91-20-3	mg/kg	2.50E+01	9.97E+01	4.50E+02	1.60E+02	2.50E+02	9.97E+02	4.50E+03	1.60E+03	8.73E+02	1.14E+03	1.45E+04	4.32E+03

Table 13
Summary of Soil Direct Contact Remedial Levels
Former DuPont Brevard Facility
Cedar Mountain, NC

Subsurface Soil Direct Contact Remedial Levels (RLs)

			Target Risk 1×10^{-6}, HQ=1	Target Risk 1×10^{-5}, HQ=1	Target Risk 1×10^{-4}, HQ=1	
Analyte[1]	CAS No.	Units	Utility Worker	Utility Worker	Utility Worker	
Antimony	7440-36-0	mg/kg	3.54E+03	3.54E+03	3.54E+03	
Arsenic	7440-38-2	mg/kg	2.38E+01	2.38E+02	2.38E+03	
Cobalt	7440-48-4	mg/kg	2.65E+03	2.65E+03	2.65E+03	
Nickel	7440-02-0	mg/kg	1.00E+05	1.00E+05	1.00E+05	*
Silver	7440-22-4	mg/kg	4.42E+04	4.42E+04	4.42E+04	
Thallium	7440-28-0	mg/kg	8.85E+01	8.85E+01	8.85E+01	
Vanadium	7440-62-2	mg/kg	4.41E+04	4.41E+04	4.41E+04	
Zinc	7440-66-6	mg/kg	1.00E+05	1.00E+05	1.00E+05	*
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	5.08E+01	5.08E+02	5.08E+03	
1,1,2-Trichloroethane	79-00-5	mg/kg	1.11E+02	1.69E+02	1.69E+02	
1,2-Dichloroethane	107-06-2	mg/kg	4.78E+01	4.78E+02	3.52E+03	
1,2-Diphenylhydrazine	122-66-7	mg/kg	2.35E+01	2.35E+02	2.35E+03	
1-Methylnaphthalene	90-12-0	mg/kg	6.06E+02	6.06E+03	6.06E+04	
2-Methylnaphthalene	91-57-6	mg/kg	2.51E+04	2.51E+04	2.51E+04	
Benzene	71-43-2	mg/kg	1.12E+02	1.12E+03	9.25E+03	
Benzo(a)anthracene	56-55-3	mg/kg	2.41E+01	2.41E+02	2.41E+03	
Benzo(b)fluoranthene	205-99-2	mg/kg	2.41E+01	2.41E+02	2.41E+03	
Benzo(a)pyrene	50-32-8	mg/kg	2.41E+00	2.41E+01	2.41E+02	
Biphenyl	92-52-4	mg/kg	3.10E+03	5.38E+03	5.38E+03	
cis-1,2-Dichloroethene	156-59-2	mg/kg	1.77E+04	1.77E+04	1.77E+04	
Dibenzofuran	132-64-9	mg/kg	8.85E+03	8.85E+03	8.85E+03	
Diphenyl Ether	101-84-8	mg/kg	1.00E+05	1.00E+05	1.00E+05	*
Ethylbenzene	100-41-4	mg/kg	5.62E+02	5.62E+03	5.62E+04	
Naphthalene	91-20-3	mg/kg	4.50E+02	4.50E+03	1.45E+04	
Tetrachloroethene	127-18-4	mg/kg	2.38E+03	9.17E+03	9.17E+03	
Trichloroethene	79-0-16	mg/kg	1.34E+02	4.66E+02	4.66E+02	

1 - COPCs identified in Tables 7 and 8.
2 - RL calculations are detailed in Attachment C. The RL shown for each receptor is the lower of the carcinogenic and non-carcinogenic values.
* - A non-risk-based "ceiling limit" concentration of 10^5 mg/kg

HQ = Hazard Quotient
mg/kg - milligrams per kilogram

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Table 14
Comparison of RFI Surface Soil Data to Direct Contact RLs
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte[1]	No. of Detects	Maximum Detection (mg/kg)	95% UCL (mg/kg)	Max Detect Location	Depth	Sample Type	Min RL (mg/kg)	Max RL (mg/kg)	Min RL (mg/kg)	Max RL (mg/kg)	Max Detect > Lowest RL	No. of Detects Above Min RL Range	UCL > Min RL Range	No. of Detects Above Max RL Range	
							(HQ=1, 10^{-6} Risk)*		(HQ=1, 10^{-4} Risk)*						
Antimony	6	9.01E+00	-	-	-	-	4.06E+02	3.54E+03	4.06E+02	3.54E+03	No	0	-	-	
Cobalt	36	1.71E+01	-	-	-	-	3.04E+02	2.65E+03	3.04E+02	2.65E+03	No	0	-	-	
Silver	25	5.30E+02	-	-	-	-	5.07E+03	4.42E+04	5.07E+03	4.42E+04	No	0	-	-	
Thallium	21	4.29E+00	-	-	-	-	1.01E+01	8.85E+01	1.01E+01	8.85E+01	No	0	-	-	
Vanadium	36	8.63E+02	-	-	-	-	5.07E+03	4.41E+04	5.07E+03	4.41E+04	No	0	-	-	
3-Methylcholanthrene	2	1.30E+00	NC	SWMU16-SS-1	1-5	Waste	7.02E-02	1.21E+00	7.02E+00	1.21E+02	**Yes**	1	NC	0	
7,12-Dimethylbenz[A]Anthracene	2	5.70E+00	3.67E+00	AOCA-SS-6	0-2	Soil	5.79E-03	9.24E-02	5.79E-01	9.24E+00	**Yes**	1	**Yes**	0	*limited to one sample in AOC A*
Benzo(a)anthracene	11	4.80E+01	1.46E+00	SWMU16-SS-1	1-5	Waste	1.98E+00	3.16E+01	1.98E+02	3.16E+03	**Yes**	1	No	0	
Benzo(b)fluoranthene	11	5.10E+01	1.66E+00	SWMU16-SS-1	1-5	Waste	1.98E+00	3.16E+01	1.98E+02	3.16E+03	**Yes**	1	No	0	
Benzo(k)fluoranthene	9	2.30E+01	NC	SWMU16-SS-1	1-5	Waste	1.98E+01	3.16E+02	1.98E+03	3.16E+04	**Yes**	0	-	-	
Benzo(a)pyrene	11	4.10E+01	1.46E+00	SWMU16-SS-1	1-5	Waste	1.98E-01	3.16E+00	1.98E+01	3.16E+02	**Yes**	5	No	0	
Biphenyl	8	1.70E+02	-	-	-	-	2.99E+02	3.10E+03	2.99E+02	5.38E+03	No	0	-	-	
Chrysene	11	5.40E+01	-	-	-	-	1.98E+02	3.16E+03	1.98E+04	3.16E+05	No	0	-	-	
Dibenz(a,h)anthracene	9	4.20E+00	2.84E-01	SWMU16-SS-1	1-5	Waste	1.98E-01	3.16E+00	1.98E+01	3.16E+02	**Yes**	1	No	0	
Indeno(1,2,3-cd)pyrene	10	1.50E+01	7.87E-01	SWMU16-SS-1	1-5	Waste	1.98E+00	3.16E+01	1.98E+02	3.16E+03	**Yes**	0	-	-	
Naphthalene	7	2.80E+01	NC	SWMU16-SS-1	1-5	Waste	2.50E+01	4.50E+02	8.73E+02	1.45E+04	**Yes**	0	-	-	

Notes:
1- Surface soil Direct Contact COPCs identified in Table 7.
NC - Not calculated, exceed limited to one location in SWMU 16
*Soil RLs as shown in Table 13.

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Table 15
Summary of Site-Specific Groundwater and Soil Remedial Levels
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte		Groundwater RLs[1] (ug/L)	Soil RLs (mg/kg)					
			Soil RL for Protection of Migration to Groundwater[2]	Surface Soil Direct Contact Min RL[3] (HQ=1, 10^{-6} Risk)	Surface Soil Direct Contact Max RLs[4] (HQ=1, 10^{-4} Risk)	Subsurface Soil Direct Contact Min RLs[5] (HQ=1, 10^{-6} Risk)	Subsurface Soil Direct Contact Max RLs[5] (HQ=1, 10^{-4} Risk)	
Volatile Organic Compounds								
1,1,2,2-Tetrachloroethane	c	2.00E+03	1.18E+01	-	-	5.08E+01	5.08E+03	
1,1,2-Trichloroethane	c	8.00E+03	4.22E+01	-	-	1.11E+02	1.69E+02	
1,2-Dichloroethane	c	1.85E+04	9.02E+01	-	-	4.78E+01	3.52E+03	
Benzene	c	2.55E+04	1.86E+02	-	-	1.12E+02	9.25E+03	
Carbon Tetrachloride	c	8.00E+02	-	-	-	-	-	
Chloroform	c	1.40E+04	-	-	-	-	-	
cis-1,2 Dichloroethene	n	2.95E+05	1.50E+03	-	-	-	-	
Ethylbenzene	c	-	-	-	-	5.62E+02	5.62E+04	
Tetrachloroethene	c	1.65E+03	1.18E+01	-	-	2.38E+03	9.17E+03	
Trichloroethene	c	1.50E+04	8.87E+01	-	-	-	-	
Vinyl Chloride	c	1.20E+03	7.69E+00	-	-	-	-	
Semivolatile Organic Compounds								
1,2-Diphenylhydrazine	c	-	-	-	-	2.35E+01	2.35E+03	
1-Methylnaphthalene	c	-	-	-	-	6.06E+02	6.06E+04	
2-Methylnaphthalene	n	-	-	-	-	2.51E+04	2.51E+04	
1,4-Dioxane	c	4.00E+04	-	-	-	-	-	
3-Methylcholanthrene	c	-	-	7.02E-02	1.21E+02	-	-	
7,12-Dimethylbenz[A]Anthracene	c	-	-	5.79E-03	9.24E+00	-	-	
Benzo(a)anthracene	c	-	-	1.98E+00	3.16E+03	2.41E+01	2.41E+03	
Benzo(b)fluoranthene	c	-	-	1.98E+00	3.16E+03	2.41E+01	2.41E+03	
Benzo(k)fluoranthene	c	-	-	1.98E+01	3.16E+04	-	-	
Benzo(a)pyrene	c	-	-	1.98E-01	3.16E+02	2.41E+00	2.41E+02	
Chrysene	c	-	-	1.98E+02	3.16E+05	-	-	
Dibenz(a,h)anthracene	c	-	-	1.98E-01	3.16E+02	-	-	
Dibenzofuran	n	-	-	-	-	8.85E+03	8.85E+03	
Indeno(1,2,3-cd)pyrene	c	-	-	1.98E+00	3.16E+03	-	-	
Naphthalene	c	-	-	2.50E+01	1.45E+04	4.50E+02	1.45E+04	
Dowtherm Constituents			-					
Biphenyl	c	6.94E+03	7.40E+02	2.99E+02	5.38E+03	3.10E+03	5.38E+03	
Diphenyl Ether	n	1.60E+04	8.96E+02	-	-	1.00E+05	1.00E+05	*
Inorganics								
Antimony	n	1.50E+04	-	4.06E+02	3.54E+03	3.54E+03	3.54E+03	
Arsenic	c	5.00E+03	-	-	-	2.38E+01	2.38E+03	
Beryllium	c	3.25E+03	-	-	-	-	-	
Cadmium	c	2.00E+02	-	-	-	-	-	
Chromium	c	2.50E+04	-	-	-	-	-	
Cobalt	c	2.00E+03	-	3.04E+02	2.65E+03	2.65E+03	2.65E+03	
Iron	n	5.00E+05	-	-	-	-	-	
Lead		7.50E+03	-	-	-	-	-	
Manganese	n	6.00E+04	-	-	-	-	-	
Nickel	c	-	-	-	-	1.00E+05	1.00E+05	*
Silver	n	-	-	5.07E+03	4.42E+04	4.42E+04	4.42E+04	
Thallium	n	-	-	1.01E+01	8.85E+01	8.85E+01	8.85E+01	
Vanadium	n	1.00E+04	-	5.07E+03	4.41E+04	4.41E+04	4.41E+04	
Zinc	n	-	-	-	-	1.00E+05	1.00E+05	*

1 - Groundwater RLs calculations are detailed in Table 5.
2 - RLs for protection of migration to groundwater are calculated in Table 10.
3 - RL shown is the minimum RL from the RLs calculated for each of the four receptors (Forest Ranger, National Guard User, Utility Worker or Trail User) evaluated for the endpoint indicated (target risk and HQ). RLs are presented for each receptor in Table 13.
4 - RL shown in the maximum RL from the RLs calculated for each of the four receptors (Forest Ranger, National Guard User, Utility Worker or Trail User) evaluated for the endpoint indicated (target risk and HQ). RLs are presented for each receptor in Table 13.
5 - RL shown is the RL calculated for the utility worker for the endpoint indicated (target risk and HQ). RLs are presented for each receptor in Table 13.

* - A non-risk-based "ceiling limit" concentration of 10^5 mg/kg
HQ = Hazard Quotient
mg/kg - milligrams per kilogram
c - carcinogen
n - non-carcinogen

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Figures

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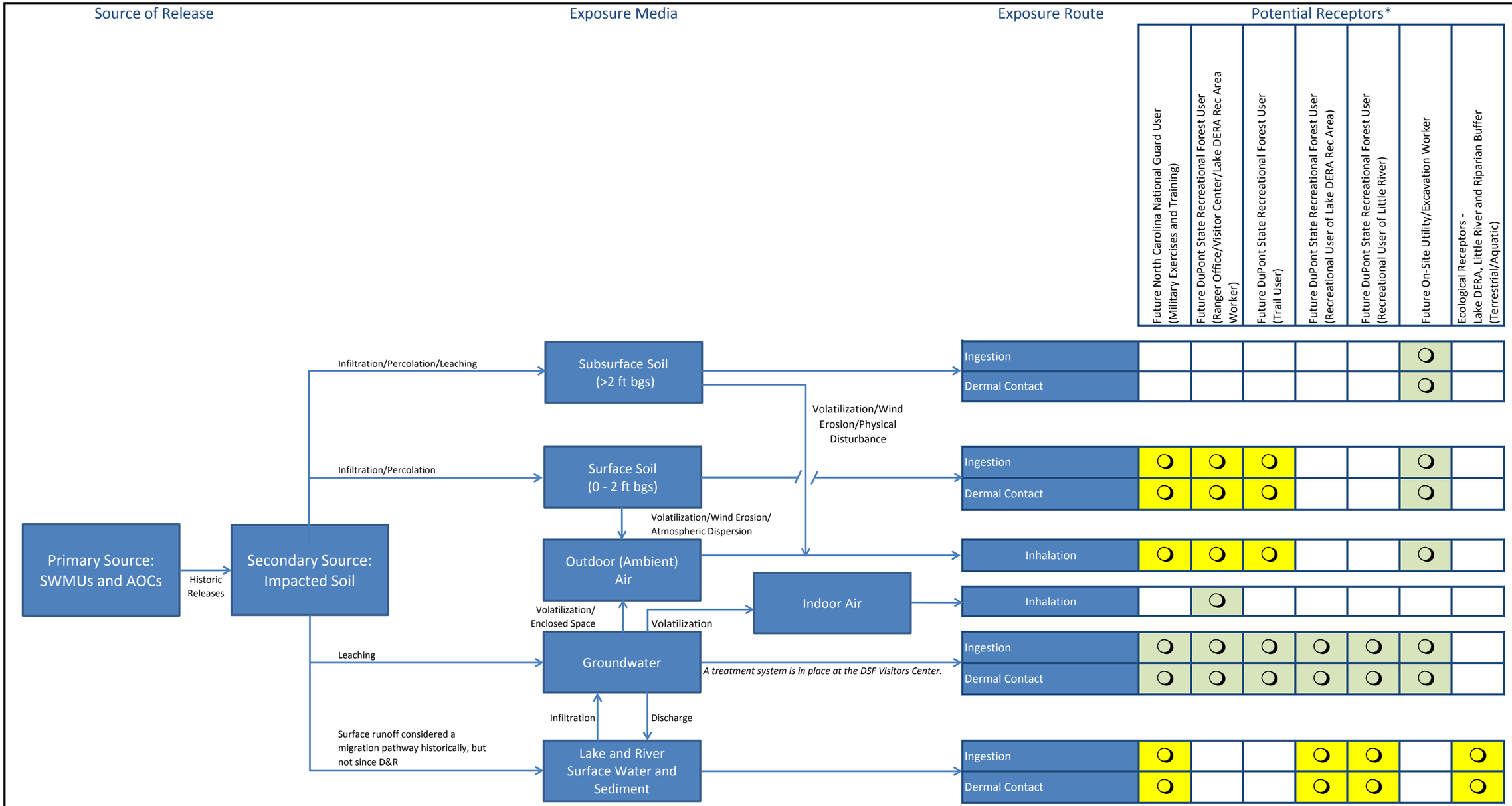

* Potential receptors based on NC Department of Agriculture February 25, 2014 memorandum titled *Proposed North Carolina National Guard (NCNG) and North Carolina Forest Service (NCFS) uses on the DuPont Corporation Property* . Potential groundwater exposure pathways consider installation of a well in the bedrock aquifer for potable and non-potable use.

Legend

- ⊗ Not a media or pathway of concern
- Incomplete pathway, receptors would not be in contact with affected media
- ❍ Potentially complete pathway; receptors may be in contact with affected media
- ❍ Potentially complete pathway that could be addressed with adminstrative or engineering controls.

URS

URS Corporation
335 Commerce Drive
Suite 300
Fort Washington, PA 19034

Conceptual Exposure Model

Former DuPont Brevard Facility,
Cedar Mountain, NC

4/10/2014

Fig. 1

Appendices

DRAFT

Appendix A
Future Land Use Plan

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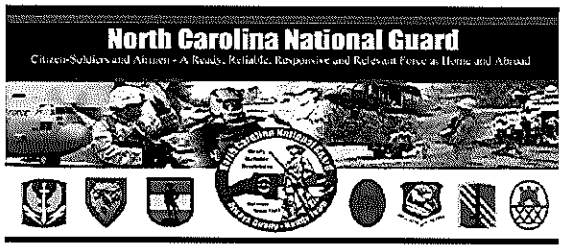


Opportunities in DuPont Region

Mission Statement :

On order, the North Carolina National Guard's Always Ready-Ready Team deploys military capabilities, in support of State and/or National authorities, in order to protect the lives and properties of fellow Citizens, defend the State and Nation, and secure our American way of life.

NCNG could use the DuPont site to facilitate the training for Military and Civilian Support.

Proposed timeline and activities

Within six months

- Dismounted Military Training
- Military Vehicle Training
- Motor Cycle Operators Course
- Land Navigation Course
- Bivouac Training
- Engineers Training
- Leaders Reaction Course
- Helicopter Aquatic Rescue Training
- Mountain Operations

Within one Year :

Military Usage

- Obstacle Course
- Un-Manned Aerial System Training Area
- Short-term stays with lodging

Morale and Recreation site

- Primitive Camping
- Water Recreation on the DuPont Lake
- Designated Fishing Areas

Two Years and Beyond:

- Partner with Veterans Groups and Air Guard , establishing permanent camp sites, Wounded Warrior REHAB site
- Small Arms Range
- NG Mobile Training Team, National Site
- NG Civil Support Center of Excellent
- Permanent Lodging/ Admin facilities to support training

NCNG

The NCNG is able to utilize the Du-Pont "doughnut hole" beginning within 6 months, and has a vision to expand both training and recreational opportunities well into the future. In order for the area to be fully utilized, the NCNG along with other State Agencies must partner and develop dual use facilities to foster efficiency.

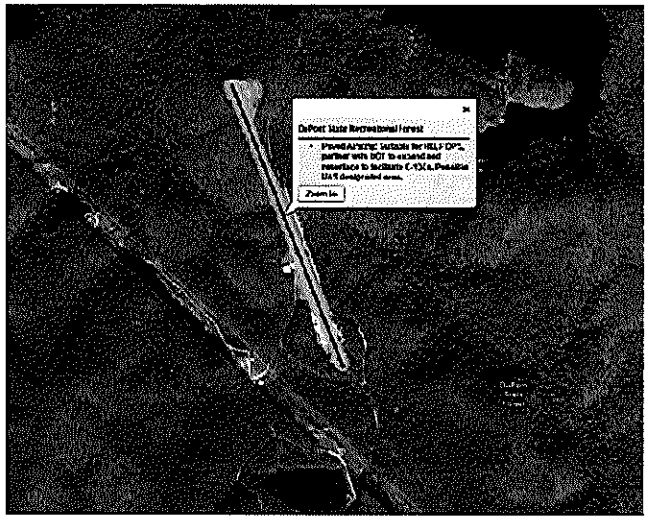
Potential State and Federal Partners Utilizing DuPont and the Headwaters

- North Carolina National Guard
- NC Emergency Management
- NC Highway Patrol
- NC Department of Public Safety
- NC Forest Service
- U.S .Special forces Command
- U.S. Army ROTC
-

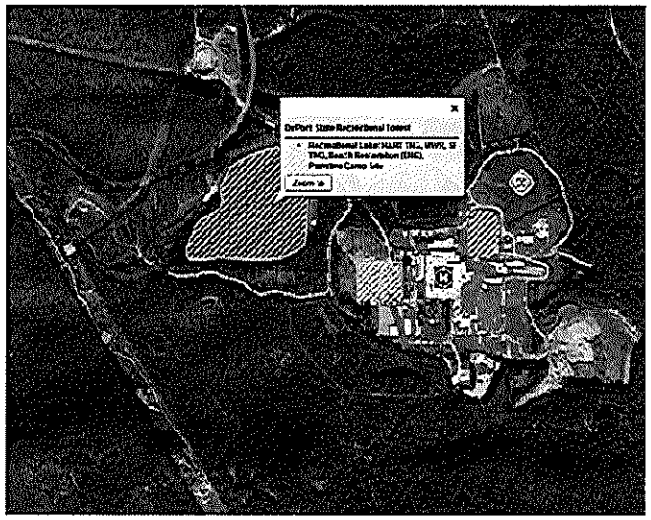
ARMY ROTC

Motorcycle Safety Course

Paved Airstrip could facilitate C-130 and UAS

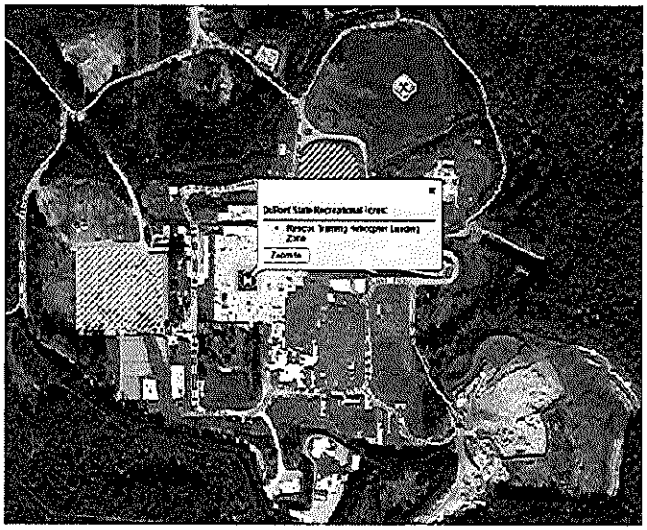


Recreation Area

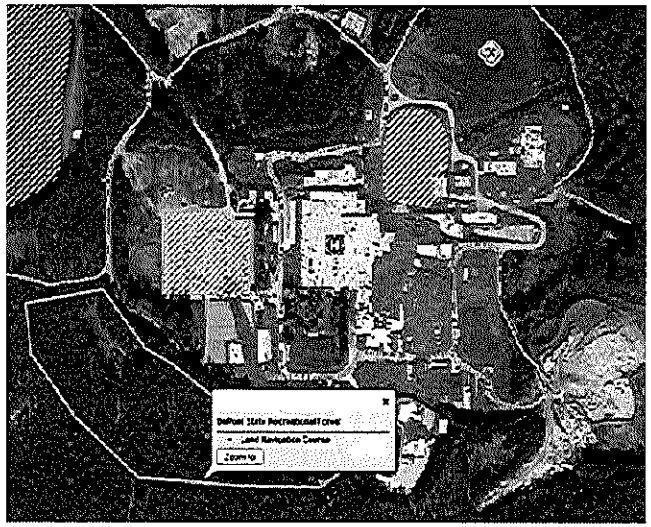


Drivers Training Course

Helicopter Landing Site



Land Navigation Course



Appendix B
Groundwater Discharge Calculations

DRAFT

Flow in Aquifer (Qa) Calculation

Parameter		Value	Reference
Qa =	Flow in aquifer, cf/sec	2.69E-02	=Qa / 86400 sec/day
Qa =	Flow in aquifer, cf/day		
where			
Qa =	Qgw x Z x L	2.32E+03	Calculated
and			
Qgw =	Groundwater discharge, cf/ft-day	3.81E-01	Calculated
Z =	Fraction of aquifer flow	1.00E+00	Total discharge
L =	Length of discharge zone, ft	6.10E+03	Conservative river reach between perimeter wells MW-104A to MW-209A
where Qgw =	K x I x A		
K =	Hydraulic conductivity (ft/min)	4.86E-04	Geometric mean (2.47 cm/second)
I =	Hydraulic gradient (ft/ft)	1.60E-02	Average site-specific gradient in eastern portion of the site (April 2009- Parsons, 2009)
A =	Aquifer thickness (ft)	3.40E+01	Average site-specific saturated thickness (Figure 23 - Parsons, 2009)

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Flow in River (Qr)

Qr =	Flow in river (at USGS station 03441440), cfs			Little River Above High Falls near Cedar Mountain, NC
	Harmonic mean flow (for carcinogens)	6.30E+01	USGS	1962 to 1991
	7Q10 (for noncarcinogenic substances and for protection of aquatic life)	1.50E+01	NCDENR	Table 1 in Low Flow Characteristics of Streams in NC

Appendix C
Direct Contact Soil Remedial Level Calculations

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Attachment C
Forest Ranger Remedial Level Calculations
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway

$$\textbf{RL} = \frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$$

IF = Intake Factors

IFS = IF Soil Ingestion	noncancer	1.62E+06
	cancer	4.54E+06
IFD = IF, Soil Dermal	noncancer	3.90E+05
	cancer	1.09E+06
IFI = IF, Soil Inhalation	noncancer	6.08E+00
	cancer	1.70E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-06
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, (mg/kgBW-day)$^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor (ug/m^3)$^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	6.49E+02	0.00E+00	6.00E-05	-	-	-	-	-	6.49E+02
Cobalt	3.00E-04	PPRTV	4.87E+02	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	4.96E+04	4.82E+02
Silver	5.00E-03	IRIS	8.11E+03	0.00E+00	2.00E-04	-	-	-	-	-	8.11E+03
Thallium	1.00E-05	PPRTV Appendix	1.62E+01	0.00E+00	1.00E-05	-	-	-	-	-	1.62E+01
Vanadium	5.00E-03	See Comment	8.11E+03	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	8.27E+05	8.03E+03
Biphenyl	5.00E-01	IRIS	8.11E+05	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	2.99E+02	2.99E+02
Naphthalene	2.00E-02	IRIS	3.24E+04	1.30E-01	2.00E-02	5.99E+04	3.00E-03	IRIS	4.99E+04	9.11E+02	8.73E+02

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	2.57E+03	2.57E+03
3-Methylcholanthrene	2.20E+01	Cal EPA	2.06E-01	1.00E-01	2.20E+01	4.96E-01	6.30E-03	Cal EPA	-	3.68E+03	1.46E-01
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	1.82E-02	1.30E-01	2.50E+02	3.36E-02	7.10E-02	Cal EPA	-	3.26E+02	1.18E-02
Benzo(a)anthracene	7.30E-01	NCEA	6.22E+00	1.30E-01	7.30E-01	1.15E+01	1.10E-04	Cal EPA	-	2.11E+05	4.04E+00
Benzo(b)fluoranthene	7.30E-01	NCEA	6.22E+00	1.30E-01	7.30E-01	1.15E+01	1.10E-04	Cal EPA	-	2.11E+05	4.04E+00
Benzo(k)fluoranthene	7.30E-02	NCEA	6.22E+01	1.30E-01	7.30E-02	1.15E+02	1.10E-04	Cal EPA	-	2.11E+05	4.04E+01
Benzo(a)pyrene	7.30E+00	IRIS	6.22E-01	1.30E-01	7.30E+00	1.15E+00	1.10E-03	Cal EPA	-	2.11E+04	4.04E-01
Biphenyl	8.00E-03	IRIS	5.68E+02	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	5.68E+02
Chrysene	7.30E-03	NCEA	6.22E+02	1.30E-01	7.30E-03	1.15E+03	1.10E-05	Cal EPA	-	2.11E+06	4.04E+02
Dibenz(a,h)anthracene	7.30E+00	NCEA	6.22E-01	1.30E-01	7.30E+00	1.15E+00	1.20E-03	Cal EPA	-	1.93E+04	4.04E-01
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	6.22E+00	1.30E-01	7.30E-01	1.15E+01	1.10E-04	Cal EPA	-	2.11E+05	4.04E+00
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	2.50E+01	2.50E+01

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	6.49E+02
Cobalt	4.82E+02
Silver	8.11E+03
Thallium	1.62E+01
Vanadium	8.03E+03
3-Methylcholanthrene	1.46E-01
7,12-Dimethylbenz[A]Anthracene	1.18E-02
Benzo(a)anthracene	4.04E+00
Benzo(b)fluoranthene	4.04E+00
Benzo(k)fluoranthene	4.04E+01
Benzo(a)pyrene	4.04E-01
Biphenyl	2.99E+02
Chrysene	4.04E+02
Dibenz(a,h)anthracene	4.04E-01
Indeno(1,2,3-cd)pyrene	4.04E+00
Naphthalene	2.50E+01

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Natl Guard Remedial Level Calculations
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway

$$\textbf{RL} = \frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	6.21E+06
	cancer	5.44E+07
IFD = IF, Soil Dermal	noncancer	5.97E+05
	cancer	5.22E+06
IFI = IF, Soil Inhalation	noncancer	7.77E+00
	cancer	6.80E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-06
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	2.49E+03	0.00E+00	6.00E-05	-	-	-	-	-	2.49E+03
Cobalt	3.00E-04	PPRTV	1.86E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	6.34E+04	1.81E+03
Silver	5.00E-03	IRIS	3.11E+04	0.00E+00	2.00E-04	-	-	-	-	-	3.11E+04
Thallium	1.00E-05	PPRTV Appendix	6.21E+01	0.00E+00	1.00E-05	-	-	-	-	-	6.21E+01
Vanadium	5.00E-03	See Comment	3.11E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.06E+06	3.02E+04
Biphenyl	5.00E-01	IRIS	3.11E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	3.82E+02	3.82E+02
Naphthalene	2.00E-02	IRIS	1.24E+05	1.30E-01	2.00E-02	9.18E+04	3.00E-03	IRIS	4.99E+04	1.16E+03	1.14E+03

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	1.03E+04	1.03E+04
3-Methylcholanthrene	2.20E+01	Cal EPA	2.47E+00	1.00E-01	2.20E+01	2.37E+00	6.30E-03	Cal EPA	-	1.47E+04	1.21E+00
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	2.17E-01	1.30E-01	2.50E+02	1.61E-01	7.10E-02	Cal EPA	-	1.30E+03	9.24E-02
Benzo(a)anthracene	7.30E-01	NCEA	7.45E+01	1.30E-01	7.30E-01	5.50E+01	1.10E-04	Cal EPA	-	8.40E+05	3.16E+01
Benzo(b)fluoranthene	7.30E-01	NCEA	7.45E+01	1.30E-01	7.30E-01	5.50E+01	1.10E-04	Cal EPA	-	8.40E+05	3.16E+01
Benzo(k)fluoranthene	7.30E-02	NCEA	7.45E+02	1.30E-01	7.30E-02	5.50E+02	1.10E-04	Cal EPA	-	8.40E+05	3.16E+02
Benzo(a)pyrene	7.30E+00	IRIS	7.45E+00	1.30E-01	7.30E+00	5.50E+00	1.10E-03	Cal EPA	-	8.40E+04	3.16E+00
Biphenyl	8.00E-03	IRIS	6.80E+03	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	6.80E+03
Chrysene	7.30E-03	NCEA	7.45E+03	1.30E-01	7.30E-03	5.50E+03	1.10E-05	Cal EPA	-	8.40E+06	3.16E+03
Dibenz(a,h)anthracene	7.30E+00	NCEA	7.45E+00	1.30E-01	7.30E+00	5.50E+00	1.20E-03	Cal EPA	-	7.70E+04	3.16E+00
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	7.45E+01	1.30E-01	7.30E-01	5.50E+01	1.10E-04	Cal EPA	-	8.40E+05	3.16E+01
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	9.97E+01	9.97E+01

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	2.49E+03
Cobalt	1.81E+03
Silver	3.11E+04
Thallium	6.21E+01
Vanadium	3.02E+04
3-Methylcholanthrene	1.21E+00
7,12-Dimethylbenz[A]Anthracene	9.24E-02
Benzo(a)anthracene	3.16E+01
Benzo(b)fluoranthene	3.16E+01
Benzo(k)fluoranthene	3.16E+02
Benzo(a)pyrene	3.16E+00
Biphenyl	3.82E+02
Chrysene	3.16E+03
Dibenz(a,h)anthracene	3.16E+00
Indeno(1,2,3-cd)pyrene	3.16E+01
Naphthalene	9.97E+01

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Utility Worker Remedial Level Calculations
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway

$$RL = \frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	8.85E+06
	cancer	2.48E+07
IFD = IF, Soil Dermal	noncancer	2.80E+06
	cancer	7.85E+06
IFI = IF, Soil Inhalation	noncancer	1.10E+02
	cancer	3.07E-01

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-06
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	3.54E+03	0.00E+00	6.00E-05	-	-	-	-	-	3.54E+03
Cobalt	3.00E-04	PPRTV	2.65E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	8.94E+05	2.65E+03
Silver	5.00E-03	IRIS	4.42E+04	0.00E+00	2.00E-04	-	-	-	-	-	4.42E+04
Thallium	1.00E-05	PPRTV Appendix	8.85E+01	0.00E+00	1.00E-05	-	-	-	-	-	8.85E+01
Vanadium	5.00E-03	See Comment	4.42E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.49E+07	4.41E+04
Biphenyl	5.00E-01	IRIS	4.42E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	5.39E+03	5.38E+03
Naphthalene	2.00E-02	IRIS	1.77E+05	1.30E-01	2.00E-02	4.32E+05	3.00E-03	IRIS	4.99E+04	1.64E+04	1.45E+04

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	4.63E+04	4.63E+04
3-Methylcholanthrene	2.20E+01	Cal EPA	1.13E+00	1.00E-01	2.20E+01	3.57E+00	6.30E-03	Cal EPA	-	6.62E+04	8.56E-01
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	9.91E-02	1.30E-01	2.50E+02	2.42E-01	7.10E-02	Cal EPA	-	5.87E+03	7.03E-02
Benzo(a)anthracene	7.30E-01	NCEA	3.39E+01	1.30E-01	7.30E-01	8.28E+01	1.10E-04	Cal EPA	-	3.79E+06	2.41E+01
Benzo(b)fluoranthene	7.30E-01	NCEA	3.39E+01	1.30E-01	7.30E-01	8.28E+01	1.10E-04	Cal EPA	-	3.79E+06	2.41E+01
Benzo(k)fluoranthene	7.30E-02	NCEA	3.39E+02	1.30E-01	7.30E-02	8.28E+02	1.10E-04	Cal EPA	-	3.79E+06	2.41E+02
Benzo(a)pyrene	7.30E+00	IRIS	3.39E+00	1.30E-01	7.30E+00	8.28E+00	1.10E-03	Cal EPA	-	3.79E+05	2.41E+00
Biphenyl	8.00E-03	IRIS	3.10E+03	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	3.10E+03
Chrysene	7.30E-03	NCEA	3.39E+03	1.30E-01	7.30E-03	8.28E+03	1.10E-05	Cal EPA	-	3.79E+07	2.41E+03
Dibenz(a,h)anthracene	7.30E+00	NCEA	3.39E+00	1.30E-01	7.30E+00	8.28E+00	1.20E-03	Cal EPA	-	3.47E+05	2.41E+00
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	3.39E+01	1.30E-01	7.30E-01	8.28E+01	1.10E-04	Cal EPA	-	3.79E+06	2.41E+01
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	4.50E+02	4.50E+02

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	3.54E+03
Cobalt	2.65E+03
Silver	4.42E+04
Thallium	8.85E+01
Vanadium	4.41E+04
3-Methylcholanthrene	8.56E-01
7,12-Dimethylbenz[A]Anthracene	7.03E-02
Benzo(a)anthracene	2.41E+01
Benzo(b)fluoranthene	2.41E+01
Benzo(k)fluoranthene	2.41E+02
Benzo(a)pyrene	2.41E+00
Biphenyl	3.10E+03
Chrysene	2.41E+03
Dibenz(a,h)anthracene	2.41E+00
Indeno(1,2,3-cd)pyrene	2.41E+01
Naphthalene	4.50E+02

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Utility Worker Subsurface Soil Remedial Level Calculations
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway

$$RL = \frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	8.85E+06
	cancer	2.48E+07
IFD = IF, Soil Dermal	noncancer	2.80E+06
	cancer	7.85E+06
IFI = IF, Soil Inhalation	noncancer	1.10E+02
	cancer	3.07E-01

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-06
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	3.54E+03	0.00E+00	6.00E-05	-	-	-	-	-	3.54E+03
Arsenic	3.00E-04	IRIS	4.42E+03	3.00E-02	3.00E-04	2.80E+04	1.50E-05	Cal EPA	-	2.23E+06	3.81E+03
Cobalt	3.00E-04	PPRTV	2.65E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	8.94E+05	2.65E+03
Nickel	2.00E-02	IRIS	1.77E+05	0.00E+00	8.00E-04	-	9.00E-05	ATSDR	-	1.34E+07	1.75E+05
Silver	5.00E-03	IRIS	4.42E+04	0.00E+00	2.00E-04	-	-	-	-	-	4.42E+04
Thallium	1.00E-05	PPRTV Appendix	8.85E+01	0.00E+00	1.00E-05	-	-	-	-	-	8.85E+01
Vanadium	5.00E-03	See Comment	4.42E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.49E+07	4.41E+04
Zinc	3.00E-01	IRIS	2.65E+06	0.00E+00	3.00E-01	-	-	-	-	-	2.65E+06
1,1,2,2-Tetrachloroethane	2.00E-02	IRIS	1.77E+05	0.00E+00	2.00E-02	-	-	-	1.63E+04	-	1.77E+05
1,1,2-Trichloroethane	4.00E-03	IRIS	3.54E+04	0.00E+00	4.00E-03	-	2.00E-04	PPRTV Appendix	7.77E+03	1.70E+02	1.69E+02
1,2-Dichloroethane	6.00E-03	PPRTV Appendix	5.31E+04	0.00E+00	6.00E-03	-	7.00E-03	PPRTV	4.92E+03	3.77E+03	3.52E+03
1-Methylnaphthalene	7.00E-02	ATSDR	6.19E+05	1.30E-01	7.00E-02	1.51E+06	-	-	6.31E+04	-	4.39E+05
2-Methylnaphthalene	4.00E-03	IRIS	3.54E+04	1.30E-01	4.00E-03	8.63E+04	-	-	6.24E+04	-	2.51E+04
Benzene	4.00E-03	IRIS	3.54E+04	0.00E+00	4.00E-03	-	3.00E-02	IRIS	3.81E+03	1.25E+04	9.25E+03
Biphenyl	5.00E-01	IRIS	4.42E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	5.39E+03	5.38E+03
cis-1,2-Dichloroethene	2.00E-03	IRIS	1.77E+04	0.00E+00	2.00E-03	-	-	-	2.69E+03	-	1.77E+04
Dibenzofuran	1.00E-03	PPRTV Appendix	8.85E+03	0.00E+00	1.00E-03	-	-	-	-	-	8.85E+03
Diphenyl Ether	3.00E-01	DuPont	2.65E+06	0.00E+00	3.00E-01	-	3.50E-01	DuPont	8.86E+04	3.40E+06	1.49E+06
Ethylbenzene	1.00E-01	IRIS	8.85E+05	0.00E+00	1.00E-01	-	1.00E+00	IRIS	6.10E+03	6.68E+05	3.81E+05
Naphthalene	2.00E-02	IRIS	1.77E+05	1.30E-01	2.00E-02	4.32E+05	3.00E-03	IRIS	4.99E+04	1.64E+04	1.45E+04
Tetrachloroethylene	6.00E-03	IRIS	5.31E+04	0.00E+00	6.00E-03	-	4.00E-02	IRIS	2.53E+03	1.11E+04	9.17E+03
Trichloroethene	5.00E-04	IRIS	4.42E+03	0.00E+00	5.00E-04	-	2.00E-03	IRIS	2.38E+03	5.21E+02	4.66E+02

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Arsenic	1.50E+00	IRIS	2.75E+01	3.00E-02	1.50E+00	1.75E+02	4.30E-03	IRIS	-	9.70E+04	2.38E+01
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	4.63E+04	4.63E+04
Nickel	-	-	-	0.00E+00	-	-	2.60E-04	Cal EPA	-	1.60E+06	1.60E+06
1,1,2,2-Tetrachloroethane	2.00E-01	IRIS	1.24E+02	0.00E+00	2.00E-01	-	5.80E-05	Cal EPA	1.63E+04	8.62E+01	5.08E+01
1,1,2-Trichloroethane	5.70E-02	IRIS	4.35E+02	0.00E+00	5.70E-02	-	1.60E-05	IRIS	7.77E+03	1.49E+02	1.11E+02
1,2-Dichloroethane	9.10E-02	IRIS	2.72E+02	0.00E+00	9.10E-02	-	2.60E-05	IRIS	4.92E+03	5.80E+01	4.78E+01
1,2-Diphenylhydrazine	8.00E-01	IRIS	3.10E+01	1.00E-01	8.00E-01	9.82E+01	2.20E-04	IRIS	-	1.90E+06	2.35E+01
1-Methylnaphthalene	2.90E-02	PPRTV	8.54E+02	1.30E-01	2.90E-02	2.08E+03	-	-	6.31E+04	-	6.06E+02
Benzene	5.50E-02	IRIS	4.50E+02	0.00E+00	5.50E-02	-	7.80E-06	IRIS	3.81E+03	1.50E+02	1.12E+02
Benzo(a)anthracene	7.30E-01	NCEA	3.39E+01	1.30E-01	7.30E-01	8.28E+01	1.10E-04	Cal EPA	-	3.79E+06	2.41E+01
Benzo(b)fluoranthene	7.30E-01	NCEA	3.39E+01	1.30E-01	7.30E-01	8.28E+01	1.10E-04	Cal EPA	-	3.79E+06	2.41E+01
Benzo(a)pyrene	7.30E+00	IRIS	3.39E+00	1.30E-01	7.30E+00	8.28E+00	1.10E-03	Cal EPA	-	3.79E+05	2.41E+00
Biphenyl	8.00E-03	IRIS	3.10E+03	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	3.10E+03
Ethylbenzene	1.10E-02	Cal EPA	2.25E+03	0.00E+00	1.10E-02	-	2.50E-06	Cal EPA	6.10E+03	7.48E+02	5.62E+02
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	4.50E+02	4.50E+02
Tetrachloroethylene	2.10E-03	IRIS	1.18E+04	0.00E+00	2.10E-03	-	2.60E-07	IRIS	2.53E+03	2.98E+03	2.38E+03
Trichloroethene	4.60E-02	IRIS	5.39E+02	0.00E+00	4.60E-02	-	4.10E-06	IRIS	2.38E+03	1.78E+02	1.34E+02

Attachment C
Utility Worker Subsurface Soil Remedial Level Calculations
Former DuPont Brevard Facility
Cedar Mountain, NC

Lower of the RLn and RLc

Constituent	RL (mg/kg)
Antimony	3.54E+03
Arsenic	2.38E+01
Cobalt	2.65E+03
Nickel	1.75E+05
Silver	4.42E+04
Thallium	8.85E+01
Vanadium	4.41E+04
Zinc	2.65E+06
1,1,2,2-Tetrachloroethane	5.08E+01
1,1,2-Trichloroethane	1.11E+02
1,2-Dichloroethane	4.78E+01
1,2-Diphenylhydrazine	2.35E+01
1-Methylnaphthalene	6.06E+02
2-Methylnaphthalene	2.51E+04
Benzene	1.12E+02
Benzo(a)anthracene	2.41E+01
Benzo(b)fluoranthene	2.41E+01
Benzo(a)pyrene	2.41E+00
Biphenyl	3.10E+03
cis-1,2-Dichloroethene	1.77E+04
Dibenzofuran	8.85E+03
Diphenyl Ether	1.49E+06
Ethylbenzene	5.62E+02
Naphthalene	4.50E+02
Tetrachloroethylene	2.38E+03
Trichloroethene	1.34E+02

Arsenic soil ingestion has been adjusted using a relative bioavailability factor of 0.6
Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Trail User Remedial Level Calculations
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	1.01E+06
	cancer	9.01E+06
	mutagen	1.99E+06
IFD = IF, Soil Dermal	noncancer	3.77E+05
	cancer	2.95E+06
	mutagen	6.96E+05
IFI = IF, Soil Inhalation	noncancer	4.06E+01
	cancer	1.09E-01
	mutagen	3.74E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-06
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	4.06E+02	0.00E+00	6.00E-05	-	-	-	-	-	4.06E+02
Cobalt	3.00E-04	PPRTV	3.04E+02	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	3.31E+05	3.04E+02
Silver	5.00E-03	IRIS	5.07E+03	0.00E+00	2.00E-04	-	-	-	-	-	5.07E+03
Thallium	1.00E-05	PPRTV Appendix	1.01E+01	0.00E+00	1.00E-05	-	-	-	-	-	1.01E+01
Vanadium	5.00E-03	See Comment	5.07E+03	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	5.52E+06	5.06E+03
Biphenyl	5.00E-01	IRIS	5.07E+05	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	2.00E+03	1.99E+03
Naphthalene	2.00E-02	IRIS	2.03E+04	1.30E-01	2.00E-02	5.80E+04	3.00E-03	IRIS	4.99E+04	6.07E+03	4.32E+03

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway	
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**	
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	1.65E+04	1.65E+04	
3-Methylcholanthrene	2.20E+01	Cal EPA	9.02E-02	1.00E-01	2.20E+01	3.17E-01	6.30E-03	Cal EPA	-	8.06E+03	7.02E-02	m
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	7.94E-03	1.30E-01	2.50E+02	2.14E-02	7.10E-02	Cal EPA	-	7.16E+02	5.79E-03	m
Benzo(a)anthracene	7.30E-01	NCEA	2.72E+00	1.30E-01	7.30E-01	7.34E+00	1.10E-04	Cal EPA	-	4.62E+05	1.98E+00	m
Benzo(b)fluoranthene	7.30E-01	NCEA	2.72E+00	1.30E-01	7.30E-01	7.34E+00	1.10E-04	Cal EPA	-	4.62E+05	1.98E+00	m
Benzo(k)fluoranthene	7.30E-02	NCEA	2.72E+01	1.30E-01	7.30E-02	7.34E+01	1.10E-04	Cal EPA	-	4.62E+05	1.98E+01	m
Benzo(a)pyrene	7.30E+00	IRIS	2.72E-01	1.30E-01	7.30E+00	7.34E-01	1.10E-03	Cal EPA	-	4.62E+04	1.98E-01	m
Biphenyl	8.00E-03	IRIS	1.13E+03	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	1.13E+03	
Chrysene	7.30E-03	NCEA	2.72E+02	1.30E-01	7.30E-03	7.34E+02	1.10E-05	Cal EPA	-	4.62E+06	1.98E+02	m
Dibenz(a,h)anthracene	7.30E+00	NCEA	2.72E-01	1.30E-01	7.30E+00	7.34E-01	1.20E-03	Cal EPA	-	4.23E+04	1.98E-01	m
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	2.72E+00	1.30E-01	7.30E-01	7.34E+00	1.10E-04	Cal EPA	-	4.62E+05	1.98E+00	m
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	1.60E+02	1.60E+02	

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	4.06E+02
Cobalt	3.04E+02
Silver	5.07E+03
Thallium	1.01E+01
Vanadium	5.06E+03
3-Methylcholanthrene	7.02E-02
7,12-Dimethylbenz[A]Anthracene	5.79E-03
Benzo(a)anthracene	1.98E+00
Benzo(b)fluoranthene	1.98E+00
Benzo(k)fluoranthene	1.98E+01
Benzo(a)pyrene	1.98E-01
Biphenyl	1.13E+03
Chrysene	1.98E+02
Dibenz(a,h)anthracene	1.98E-01
Indeno(1,2,3-cd)pyrene	1.98E+00
Naphthalene	1.60E+02

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Forest Ranger Remedial Level Calculations, 1 x 10-5 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	1.62E+06
	cancer	4.54E+06
IFD = IF, Soil Dermal	noncancer	3.90E+05
	cancer	1.09E+06
IFI = IF, Soil Inhalation	noncancer	6.08E+00
	cancer	1.70E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-05
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	6.49E+02	0.00E+00	6.00E-05	-	-	-	-	-	6.49E+02
Cobalt	3.00E-04	PPRTV	4.87E+02	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	4.96E+04	4.82E+02
Silver	5.00E-03	IRIS	8.11E+03	0.00E+00	2.00E-04	-	-	-	-	-	8.11E+03
Thallium	1.00E-05	PPRTV Appendix	1.62E+01	0.00E+00	1.00E-05	-	-	-	-	-	1.62E+01
Vanadium	5.00E-03	See Comment	8.11E+03	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	8.27E+05	8.03E+03
Biphenyl	5.00E-01	IRIS	8.11E+05	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	2.99E+02	2.99E+02
Naphthalene	2.00E-02	IRIS	3.24E+04	1.30E-01	2.00E-02	5.99E+04	3.00E-03	IRIS	4.99E+04	9.11E+02	8.73E+02

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	2.57E+04	2.57E+04
3-Methylcholanthrene	2.20E+01	Cal EPA	2.06E+00	1.00E-01	2.20E+01	4.96E+00	6.30E-03	Cal EPA	-	3.68E+04	1.46E+00
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	1.82E-01	1.30E-01	2.50E+02	3.36E-01	7.10E-02	Cal EPA	-	3.26E+03	1.18E-01
Benzo(a)anthracene	7.30E-01	NCEA	6.22E+01	1.30E-01	7.30E-01	1.15E+02	1.10E-04	Cal EPA	-	2.11E+06	4.04E+01
Benzo(b)fluoranthene	7.30E-01	NCEA	6.22E+01	1.30E-01	7.30E-01	1.15E+02	1.10E-04	Cal EPA	-	2.11E+06	4.04E+01
Benzo(k)fluoranthene	7.30E-02	NCEA	6.22E+02	1.30E-01	7.30E-02	1.15E+03	1.10E-04	Cal EPA	-	2.11E+06	4.04E+02
Benzo(a)pyrene	7.30E+00	IRIS	6.22E+00	1.30E-01	7.30E+00	1.15E+01	1.10E-03	Cal EPA	-	2.11E+05	4.04E+00
Biphenyl	8.00E-03	IRIS	5.68E+03	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	5.68E+03
Chrysene	7.30E-03	NCEA	6.22E+03	1.30E-01	7.30E-03	1.15E+04	1.10E-05	Cal EPA	-	2.11E+07	4.04E+03
Dibenz(a,h)anthracene	7.30E+00	NCEA	6.22E+00	1.30E-01	7.30E+00	1.15E+01	1.20E-03	Cal EPA	-	1.93E+05	4.04E+00
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	6.22E+01	1.30E-01	7.30E-01	1.15E+02	1.10E-04	Cal EPA	-	2.11E+06	4.04E+01
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	2.50E+02	2.50E+02

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	6.49E+02
Cobalt	4.82E+02
Silver	8.11E+03
Thallium	1.62E+01
Vanadium	8.03E+03
3-Methylcholanthrene	1.46E+00
7,12-Dimethylbenz[A]Anthracene	1.18E-01
Benzo(a)anthracene	4.04E+01
Benzo(b)fluoranthene	4.04E+01
Benzo(k)fluoranthene	4.04E+02
Benzo(a)pyrene	4.04E+00
Biphenyl	2.99E+02
Chrysene	4.04E+03
Dibenz(a,h)anthracene	4.04E+00
Indeno(1,2,3-cd)pyrene	4.04E+01
Naphthalene	2.50E+02

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Natl Guard Remedial Level Calculations, 1 x10-5 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway

$$RL = \frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	6.21E+06
	cancer	5.44E+07
IFD = IF, Soil Dermal	noncancer	5.97E+05
	cancer	5.22E+06
IFI = IF, Soil Inhalation	noncancer	7.77E+00
	cancer	6.80E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-05
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	2.49E+03	0.00E+00	6.00E-05	-	-	-	-	-	2.49E+03
Cobalt	3.00E-04	PPRTV	1.86E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	6.34E+04	1.81E+03
Silver	5.00E-03	IRIS	3.11E+04	0.00E+00	2.00E-04	-	-	-	-	-	3.11E+04
Thallium	1.00E-05	PPRTV Appendix	6.21E+01	0.00E+00	1.00E-05	-	-	-	-	-	6.21E+01
Vanadium	5.00E-03	See Comment	3.11E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.06E+06	3.02E+04
Biphenyl	5.00E-01	IRIS	3.11E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	3.82E+02	3.82E+02
Naphthalene	2.00E-02	IRIS	1.24E+05	1.30E-01	2.00E-02	9.18E+04	3.00E-03	IRIS	4.99E+04	1.16E+03	1.14E+03

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	1.03E+05	1.03E+05
3-Methylcholanthrene	2.20E+01	Cal EPA	2.47E+01	1.00E-01	2.20E+01	2.37E+01	6.30E-03	Cal EPA	-	1.47E+05	1.21E+01
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	2.17E+00	1.30E-01	2.50E+02	1.61E+00	7.10E-02	Cal EPA	-	1.30E+04	9.24E-01
Benzo(a)anthracene	7.30E-01	NCEA	7.45E+02	1.30E-01	7.30E-01	5.50E+02	1.10E-04	Cal EPA	-	8.40E+06	3.16E+02
Benzo(b)fluoranthene	7.30E-01	NCEA	7.45E+02	1.30E-01	7.30E-01	5.50E+02	1.10E-04	Cal EPA	-	8.40E+06	3.16E+02
Benzo(k)fluoranthene	7.30E-02	NCEA	7.45E+03	1.30E-01	7.30E-02	5.50E+03	1.10E-04	Cal EPA	-	8.40E+06	3.16E+03
Benzo(a)pyrene	7.30E+00	IRIS	7.45E+01	1.30E-01	7.30E+00	5.50E+01	1.10E-03	Cal EPA	-	8.40E+05	3.16E+01
Biphenyl	8.00E-03	IRIS	6.80E+04	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	6.80E+04
Chrysene	7.30E-03	NCEA	7.45E+04	1.30E-01	7.30E-03	5.50E+04	1.10E-05	Cal EPA	-	8.40E+07	3.16E+04
Dibenz(a,h)anthracene	7.30E+00	NCEA	7.45E+01	1.30E-01	7.30E+00	5.50E+01	1.20E-03	Cal EPA	-	7.70E+05	3.16E+01
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	7.45E+02	1.30E-01	7.30E-01	5.50E+02	1.10E-04	Cal EPA	-	8.40E+06	3.16E+02
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	9.97E+02	9.97E+02

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	2.49E+03
Cobalt	1.81E+03
Silver	3.11E+04
Thallium	6.21E+01
Vanadium	3.02E+04
3-Methylcholanthrene	1.21E+01
7,12-Dimethylbenz[A]Anthracene	9.24E-01
Benzo(a)anthracene	3.16E+02
Benzo(b)fluoranthene	3.16E+02
Benzo(k)fluoranthene	3.16E+03
Benzo(a)pyrene	3.16E+01
Biphenyl	3.82E+02
Chrysene	3.16E+04
Dibenz(a,h)anthracene	3.16E+01
Indeno(1,2,3-cd)pyrene	3.16E+02
Naphthalene	9.97E+02

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Utlity Worker Remedial Level Calculations, 1 x10-5 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	8.85E+06
	cancer	2.48E+07
IFD = IF, Soil Dermal	noncancer	2.80E+06
	cancer	7.85E+06
IFI = IF, Soil Inhalation	noncancer	1.10E+02
	cancer	3.07E-01

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-05
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, (mg/kgBW-day)$^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor (ug/m^3)$^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	3.54E+03	0.00E+00	6.00E-05	-	-	-	-	-	3.54E+03
Cobalt	3.00E-04	PPRTV	2.65E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	8.94E+05	2.65E+03
Silver	5.00E-03	IRIS	4.42E+04	0.00E+00	2.00E-04	-	-	-	-	-	4.42E+04
Thallium	1.00E-05	PPRTV Appendix	8.85E+01	0.00E+00	1.00E-05	-	-	-	-	-	8.85E+01
Vanadium	5.00E-03	See Comment	4.42E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.49E+07	4.41E+04
Biphenyl	5.00E-01	IRIS	4.42E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	5.39E+03	5.38E+03
Naphthalene	2.00E-02	IRIS	1.77E+05	1.30E-01	2.00E-02	4.32E+05	3.00E-03	IRIS	4.99E+04	1.64E+04	1.45E+04

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	4.63E+05	4.63E+05
3-Methylcholanthrene	2.20E+01	Cal EPA	1.13E+01	1.00E-01	2.20E+01	3.57E+01	6.30E-03	Cal EPA	-	6.62E+05	8.56E+00
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	9.91E-01	1.30E-01	2.50E+02	2.42E+00	7.10E-02	Cal EPA	-	5.87E+04	7.03E-01
Benzo(a)anthracene	7.30E-01	NCEA	3.39E+02	1.30E-01	7.30E-01	8.28E+02	1.10E-04	Cal EPA	-	3.79E+07	2.41E+02
Benzo(b)fluoranthene	7.30E-01	NCEA	3.39E+02	1.30E-01	7.30E-01	8.28E+02	1.10E-04	Cal EPA	-	3.79E+07	2.41E+02
Benzo(k)fluoranthene	7.30E-02	NCEA	3.39E+03	1.30E-01	7.30E-02	8.28E+03	1.10E-04	Cal EPA	-	3.79E+07	2.41E+03
Benzo(a)pyrene	7.30E+00	IRIS	3.39E+01	1.30E-01	7.30E+00	8.28E+01	1.10E-03	Cal EPA	-	3.79E+06	2.41E+01
Biphenyl	8.00E-03	IRIS	3.10E+04	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	3.10E+04
Chrysene	7.30E-03	NCEA	3.39E+04	1.30E-01	7.30E-03	8.28E+04	1.10E-05	Cal EPA	-	3.79E+08	2.41E+04
Dibenz(a,h)anthracene	7.30E+00	NCEA	3.39E+01	1.30E-01	7.30E+00	8.28E+01	1.20E-03	Cal EPA	-	3.47E+06	2.41E+01
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	3.39E+02	1.30E-01	7.30E-01	8.28E+02	1.10E-04	Cal EPA	-	3.79E+07	2.41E+02
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	4.50E+03	4.50E+03

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	3.54E+03
Cobalt	2.65E+03
Silver	4.42E+04
Thallium	8.85E+01
Vanadium	4.41E+04
3-Methylcholanthrene	8.56E+00
7,12-Dimethylbenz[A]Anthracene	7.03E-01
Benzo(a)anthracene	2.41E+02
Benzo(b)fluoranthene	2.41E+02
Benzo(k)fluoranthene	2.41E+03
Benzo(a)pyrene	2.41E+01
Biphenyl	5.38E+03
Chrysene	2.41E+04
Dibenz(a,h)anthracene	2.41E+01
Indeno(1,2,3-cd)pyrene	2.41E+02
Naphthalene	4.50E+03

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Utility Worker Subsurface Soil Remedial Level Calculations, 1 x 10-5 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	8.85E+06
	cancer	2.48E+07
IFD = IF, Soil Dermal	noncancer	2.80E+06
	cancer	7.85E+06
IFI = IF, Soil Inhalation	noncancer	1.10E+02
	cancer	3.07E-01

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-05
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	3.54E+03	0.00E+00	6.00E-05	-	-	-	-	-	3.54E+03
Arsenic	3.00E-04	IRIS	4.42E+03	3.00E-02	3.00E-04	2.80E+04	1.50E-05	Cal EPA	-	2.23E+06	3.81E+03
Cobalt	3.00E-04	PPRTV	2.65E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	8.94E+05	2.65E+03
Nickel	2.00E-02	IRIS	1.77E+05	0.00E+00	8.00E-04	-	9.00E-05	ATSDR	-	1.34E+07	1.75E+05
Silver	5.00E-03	IRIS	4.42E+04	0.00E+00	2.00E-04	-	-	-	-	-	4.42E+04
Thallium	1.00E-05	PPRTV Appendix	8.85E+01	0.00E+00	1.00E-05	-	-	-	-	-	8.85E+01
Vanadium	5.00E-03	See Comment	4.42E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.49E+07	4.41E+04
Zinc	3.00E-01	IRIS	2.65E+06	0.00E+00	3.00E-01	-	-	-	-	-	2.65E+06
1,1,2,2-Tetrachloroethane	2.00E-02	IRIS	1.77E+05	0.00E+00	2.00E-02	-	-	-	1.63E+04	-	1.77E+05
1,1,2-Trichloroethane	4.00E-03	IRIS	3.54E+04	0.00E+00	4.00E-03	-	2.00E-04	PPRTV Appendix	7.77E+03	1.70E+02	1.69E+02
1,2-Dichloroethane	6.00E-03	PPRTV Appendix	5.31E+04	0.00E+00	6.00E-03	-	7.00E-03	PPRTV	4.92E+03	3.77E+03	3.52E+03
1-Methylnaphthalene	7.00E-02	ATSDR	6.19E+05	1.30E-01	7.00E-02	1.51E+06	-	-	6.31E+04	-	4.39E+05
2-Methylnaphthalene	4.00E-03	IRIS	3.54E+04	1.30E-01	4.00E-03	8.63E+04	-	-	6.24E+04	-	2.51E+04
Benzene	4.00E-03	IRIS	3.54E+04	0.00E+00	4.00E-03	-	3.00E-02	IRIS	3.81E+03	1.25E+04	9.25E+03
Biphenyl	5.00E-01	IRIS	4.42E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	5.39E+03	5.38E+03
cis-1,2-Dichloroethene	2.00E-03	IRIS	1.77E+04	0.00E+00	2.00E-03	-	-	-	2.69E+03	-	1.77E+04
Dibenzofuran	1.00E-03	PPRTV Appendix	8.85E+03	0.00E+00	1.00E-03	-	-	-	-	-	8.85E+03
Diphenyl Ether	3.00E-01	DuPont	2.65E+06	0.00E+00	3.00E-01	-	3.50E-01	DuPont	8.86E+04	3.40E+06	1.49E+06
Ethylbenzene	1.00E-01	IRIS	8.85E+05	0.00E+00	1.00E-01	-	1.00E+00	IRIS	6.10E+03	6.68E+05	3.81E+05
Naphthalene	2.00E-02	IRIS	1.77E+05	1.30E-01	2.00E-02	4.32E+05	3.00E-03	IRIS	4.99E+04	1.64E+04	1.45E+04
Tetrachloroethylene	6.00E-03	IRIS	5.31E+04	0.00E+00	6.00E-03	-	4.00E-02	IRIS	2.53E+03	1.11E+04	9.17E+03
Trichloroethene	5.00E-04	IRIS	4.42E+03	0.00E+00	5.00E-04	-	2.00E-03	IRIS	2.38E+03	5.21E+02	4.66E+02

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Arsenic	1.50E+00	IRIS	2.75E+02	3.00E-02	1.50E+00	1.75E+03	4.30E-03	IRIS	-	9.70E+05	2.38E+02
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	4.63E+05	4.63E+05
Nickel	-	-	-	0.00E+00	-	-	2.60E-04	Cal EPA	-	1.60E+07	1.60E+07
1,1,2,2-Tetrachloroethane	2.00E-01	IRIS	1.24E+03	0.00E+00	2.00E-01	-	5.80E-05	Cal EPA	1.63E+04	8.62E+02	5.08E+02
1,1,2-Trichloroethane	5.70E-02	IRIS	4.35E+03	0.00E+00	5.70E-02	-	1.60E-05	IRIS	7.77E+03	1.49E+03	1.11E+03
1,2-Dichloroethane	9.10E-02	IRIS	2.72E+03	0.00E+00	9.10E-02	-	2.60E-05	IRIS	4.92E+03	5.80E+02	4.78E+02
1,2-Diphenylhydrazine	8.00E-01	IRIS	3.10E+02	1.00E-01	8.00E-01	9.82E+02	2.20E-04	IRIS	-	1.90E+07	2.35E+02
1-Methylnaphthalene	2.90E-02	PPRTV	8.54E+03	1.30E-01	2.90E-02	2.08E+04	-	-	6.31E+04	-	6.06E+03
Benzene	5.50E-02	IRIS	4.50E+03	0.00E+00	5.50E-02	-	7.80E-06	IRIS	3.81E+03	1.50E+03	1.12E+03
Benzo(a)anthracene	7.30E-01	NCEA	3.39E+02	1.30E-01	7.30E-01	8.28E+02	1.10E-04	Cal EPA	-	3.79E+07	2.41E+02
Benzo(b)fluoranthene	7.30E-01	NCEA	3.39E+02	1.30E-01	7.30E-01	8.28E+02	1.10E-04	Cal EPA	-	3.79E+07	2.41E+02
Benzo(a)pyrene	7.30E+00	IRIS	3.39E+01	1.30E-01	7.30E+00	8.28E+01	1.10E-03	Cal EPA	-	3.79E+06	2.41E+01
Biphenyl	8.00E-03	IRIS	3.10E+04	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	3.10E+04
Ethylbenzene	1.10E-02	Cal EPA	2.25E+04	0.00E+00	1.10E-02	-	2.50E-06	Cal EPA	6.10E+03	7.48E+03	5.62E+03
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	4.50E+03	4.50E+03
Tetrachloroethylene	2.10E-03	IRIS	1.18E+05	0.00E+00	2.10E-03	-	2.60E-07	IRIS	2.53E+03	2.98E+04	2.38E+04
Trichloroethene	4.60E-02	IRIS	5.39E+03	0.00E+00	4.60E-02	-	4.10E-06	IRIS	2.38E+03	1.78E+03	1.34E+03

Attachment C
Utility Worker Subsurface Soil Remedial Level Calculations, 1 x 10-5 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Lower of the RLn and RLc

Constituent	RL (mg/kg)
Antimony	3.54E+03
Arsenic	2.38E+02
Cobalt	2.65E+03
Nickel	1.75E+05
Silver	4.42E+04
Thallium	8.85E+01
Vanadium	4.41E+04
Zinc	2.65E+06
1,1,2,2-Tetrachloroethane	5.08E+02
1,1,2-Trichloroethane	1.69E+02
1,2-Dichloroethane	4.78E+02
1,2-Diphenylhydrazine	2.35E+02
1-Methylnaphthalene	6.06E+03
2-Methylnaphthalene	2.51E+04
Benzene	1.12E+03
Benzo(a)anthracene	2.41E+02
Benzo(b)fluoranthene	2.41E+02
Benzo(a)pyrene	2.41E+01
Biphenyl	5.38E+03
cis-1,2-Dichloroethene	1.77E+04
Dibenzofuran	8.85E+03
Diphenyl Ether	1.49E+06
Ethylbenzene	5.62E+03
Naphthalene	4.50E+03
Tetrachloroethylene	9.17E+03
Trichloroethene	4.66E+02

Arsenic soil ingestion has been adjusted using a relative bioavailability factor of 0.6
Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Trail User Remedial Level Calculations, 1 x 10-5 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	1.01E+06
	cancer	9.01E+06
	mutagen	1.99E+06
IFD = IF, Soil Dermal	noncancer	3.77E+05
	cancer	2.95E+06
	mutagen	6.96E+05
IFI = IF, Soil Inhalation	noncancer	4.06E+01
	cancer	1.09E-01
	mutagen	3.74E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-05
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	4.06E+02	0.00E+00	6.00E-05	-	-	-	-	-	4.06E+02
Cobalt	3.00E-04	PPRTV	3.04E+02	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	3.31E+05	3.04E+02
Silver	5.00E-03	IRIS	5.07E+03	0.00E+00	2.00E-04	-	-	-	-	-	5.07E+03
Thallium	1.00E-05	PPRTV Appendix	1.01E+01	0.00E+00	1.00E-05	-	-	-	-	-	1.01E+01
Vanadium	5.00E-03	See Comment	5.07E+03	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	5.52E+06	5.06E+03
Biphenyl	5.00E-01	IRIS	5.07E+05	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	2.00E+03	1.99E+03
Naphthalene	2.00E-02	IRIS	2.03E+04	1.30E-01	2.00E-02	5.80E+04	3.00E-03	IRIS	4.99E+04	6.07E+03	4.32E+03

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway	
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**	
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	1.65E+05	1.65E+05	
3-Methylcholanthrene	2.20E+01	Cal EPA	9.02E-01	1.00E-01	2.20E+01	3.17E+00	6.30E-03	Cal EPA	-	8.06E+04	7.02E-01	m
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	7.94E-02	1.30E-01	2.50E+02	2.14E-01	7.10E-02	Cal EPA	-	7.16E+03	5.79E-02	m
Benzo(a)anthracene	7.30E-01	NCEA	2.72E+01	1.30E-01	7.30E-01	7.34E+01	1.10E-04	Cal EPA	-	4.62E+06	1.98E+01	m
Benzo(b)fluoranthene	7.30E-01	NCEA	2.72E+01	1.30E-01	7.30E-01	7.34E+01	1.10E-04	Cal EPA	-	4.62E+06	1.98E+01	m
Benzo(k)fluoranthene	7.30E-02	NCEA	2.72E+02	1.30E-01	7.30E-02	7.34E+02	1.10E-04	Cal EPA	-	4.62E+06	1.98E+02	m
Benzo(a)pyrene	7.30E+00	IRIS	2.72E+00	1.30E-01	7.30E+00	7.34E+00	1.10E-03	Cal EPA	-	4.62E+05	1.98E+00	m
Biphenyl	8.00E-03	IRIS	1.13E+04	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	1.13E+04	
Chrysene	7.30E-03	NCEA	2.72E+03	1.30E-01	7.30E-03	7.34E+03	1.10E-05	Cal EPA	-	4.62E+07	1.98E+03	m
Dibenz(a,h)anthracene	7.30E+00	NCEA	2.72E+00	1.30E-01	7.30E+00	7.34E+00	1.20E-03	Cal EPA	-	4.23E+05	1.98E+00	m
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	2.72E+01	1.30E-01	7.30E-01	7.34E+01	1.10E-04	Cal EPA	-	4.62E+06	1.98E+01	m
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	1.60E+03	1.60E+03	

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	4.06E+02
Cobalt	3.04E+02
Silver	5.07E+03
Thallium	1.01E+01
Vanadium	5.06E+03
3-Methylcholanthrene	7.02E-01
7,12-Dimethylbenz[A]Anthracene	5.79E-02
Benzo(a)anthracene	1.98E+01
Benzo(b)fluoranthene	1.98E+01
Benzo(k)fluoranthene	1.98E+02
Benzo(a)pyrene	1.98E+00
Biphenyl	1.99E+03
Chrysene	1.98E+03
Dibenz(a,h)anthracene	1.98E+00
Indeno(1,2,3-cd)pyrene	1.98E+01
Naphthalene	1.60E+03

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Forest Ranger Remedial Level Calculations, 1 x 10-4 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	1.62E+06
	cancer	4.54E+06
IFD = IF, Soil Dermal	noncancer	3.90E+05
	cancer	1.09E+06
IFI = IF, Soil Inhalation	noncancer	6.08E+00
	cancer	1.70E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-04
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, (mg/kgBW-day)$^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor (ug/m^3)$^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	6.49E+02	0.00E+00	6.00E-05	-	-	-	-	-	6.49E+02
Cobalt	3.00E-04	PPRTV	4.87E+02	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	4.96E+04	4.82E+02
Silver	5.00E-03	IRIS	8.11E+03	0.00E+00	2.00E-04	-	-	-	-	-	8.11E+03
Thallium	1.00E-05	PPRTV Appendix	1.62E+01	0.00E+00	1.00E-05	-	-	-	-	-	1.62E+01
Vanadium	5.00E-03	See Comment	8.11E+03	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	8.27E+05	8.03E+03
Biphenyl	5.00E-01	IRIS	8.11E+05	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	2.99E+02	2.99E+02
Naphthalene	2.00E-02	IRIS	3.24E+04	1.30E-01	2.00E-02	5.99E+04	3.00E-03	IRIS	4.99E+04	9.11E+02	8.73E+02

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	2.57E+05	2.57E+05
3-Methylcholanthrene	2.20E+01	Cal EPA	2.06E+01	1.00E-01	2.20E+01	4.96E+01	6.30E-03	Cal EPA	-	3.68E+05	1.46E+01
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	1.82E+00	1.30E-01	2.50E+02	3.36E+00	7.10E-02	Cal EPA	-	3.26E+04	1.18E+00
Benzo(a)anthracene	7.30E-01	NCEA	6.22E+02	1.30E-01	7.30E-01	1.15E+03	1.10E-04	Cal EPA	-	2.11E+07	4.04E+02
Benzo(b)fluoranthene	7.30E-01	NCEA	6.22E+02	1.30E-01	7.30E-01	1.15E+03	1.10E-04	Cal EPA	-	2.11E+07	4.04E+02
Benzo(k)fluoranthene	7.30E-02	NCEA	6.22E+03	1.30E-01	7.30E-02	1.15E+04	1.10E-04	Cal EPA	-	2.11E+07	4.04E+03
Benzo(a)pyrene	7.30E+00	IRIS	6.22E+01	1.30E-01	7.30E+00	1.15E+02	1.10E-03	Cal EPA	-	2.11E+06	4.04E+01
Biphenyl	8.00E-03	IRIS	5.68E+04	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	5.68E+04
Chrysene	7.30E-03	NCEA	6.22E+04	1.30E-01	7.30E-03	1.15E+05	1.10E-05	Cal EPA	-	2.11E+08	4.04E+04
Dibenz(a,h)anthracene	7.30E+00	NCEA	6.22E+01	1.30E-01	7.30E+00	1.15E+02	1.20E-03	Cal EPA	-	1.93E+06	4.04E+01
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	6.22E+02	1.30E-01	7.30E-01	1.15E+03	1.10E-04	Cal EPA	-	2.11E+07	4.04E+02
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	2.50E+03	2.50E+03

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	6.49E+02
Cobalt	4.82E+02
Silver	8.11E+03
Thallium	1.62E+01
Vanadium	8.03E+03
3-Methylcholanthrene	1.46E+01
7,12-Dimethylbenz[A]Anthracene	1.18E+00
Benzo(a)anthracene	4.04E+02
Benzo(b)fluoranthene	4.04E+02
Benzo(k)fluoranthene	4.04E+03
Benzo(a)pyrene	4.04E+01
Biphenyl	2.99E+02
Chrysene	4.04E+04
Dibenz(a,h)anthracene	4.04E+01
Indeno(1,2,3-cd)pyrene	4.04E+02
Naphthalene	8.73E+02

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Natl Guard Remedial Level Calculations, 1 x 10-4 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway

$$RL = \frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	6.21E+06
	cancer	5.44E+07
IFD = IF, Soil Dermal	noncancer	5.97E+05
	cancer	5.22E+06
IFI = IF, Soil Inhalation	noncancer	7.77E+00
	cancer	6.80E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-04
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	2.49E+03	0.00E+00	6.00E-05	-	-	-	-	-	2.49E+03
Cobalt	3.00E-04	PPRTV	1.86E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	6.34E+04	1.81E+03
Silver	5.00E-03	IRIS	3.11E+04	0.00E+00	2.00E-04	-	-	-	-	-	3.11E+04
Thallium	1.00E-05	PPRTV Appendix	6.21E+01	0.00E+00	1.00E-05	-	-	-	-	-	6.21E+01
Vanadium	5.00E-03	See Comment	3.11E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.06E+06	3.02E+04
Biphenyl	5.00E-01	IRIS	3.11E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	3.82E+02	3.82E+02
Naphthalene	2.00E-02	IRIS	1.24E+05	1.30E-01	2.00E-02	9.18E+04	3.00E-03	IRIS	4.99E+04	1.16E+03	1.14E+03

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	1.03E+06	1.03E+06
3-Methylcholanthrene	2.20E+01	Cal EPA	2.47E+02	1.00E-01	2.20E+01	2.37E+02	6.30E-03	Cal EPA	-	1.47E+06	1.21E+02
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	2.17E+01	1.30E-01	2.50E+02	1.61E+01	7.10E-02	Cal EPA	-	1.30E+05	9.24E+00
Benzo(a)anthracene	7.30E-01	NCEA	7.45E+03	1.30E-01	7.30E-01	5.50E+03	1.10E-04	Cal EPA	-	8.40E+07	3.16E+03
Benzo(b)fluoranthene	7.30E-01	NCEA	7.45E+03	1.30E-01	7.30E-01	5.50E+03	1.10E-04	Cal EPA	-	8.40E+07	3.16E+03
Benzo(k)fluoranthene	7.30E-02	NCEA	7.45E+04	1.30E-01	7.30E-02	5.50E+04	1.10E-04	Cal EPA	-	8.40E+07	3.16E+04
Benzo(a)pyrene	7.30E+00	IRIS	7.45E+02	1.30E-01	7.30E+00	5.50E+02	1.10E-03	Cal EPA	-	8.40E+06	3.16E+02
Biphenyl	8.00E-03	IRIS	6.80E+05	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	6.80E+05
Chrysene	7.30E-03	NCEA	7.45E+05	1.30E-01	7.30E-03	5.50E+05	1.10E-05	Cal EPA	-	8.40E+08	3.16E+05
Dibenz(a,h)anthracene	7.30E+00	NCEA	7.45E+02	1.30E-01	7.30E+00	5.50E+02	1.20E-03	Cal EPA	-	7.70E+06	3.16E+02
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	7.45E+03	1.30E-01	7.30E-01	5.50E+03	1.10E-04	Cal EPA	-	8.40E+07	3.16E+03
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	9.97E+03	9.97E+03

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	2.49E+03
Cobalt	1.81E+03
Silver	3.11E+04
Thallium	6.21E+01
Vanadium	3.02E+04
3-Methylcholanthrene	1.21E+02
7,12-Dimethylbenz[A]Anthracene	9.24E+00
Benzo(a)anthracene	3.16E+03
Benzo(b)fluoranthene	3.16E+03
Benzo(k)fluoranthene	3.16E+04
Benzo(a)pyrene	3.16E+02
Biphenyl	3.82E+02
Chrysene	3.16E+05
Dibenz(a,h)anthracene	3.16E+02
Indeno(1,2,3-cd)pyrene	3.16E+03
Naphthalene	1.14E+03

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Utility Worker Remedial Level Calculations, 1 x 10-4 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway

$$\textbf{RL} = \frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	8.85E+06
	cancer	2.48E+07
IFD = IF, Soil Dermal	noncancer	2.80E+06
	cancer	7.85E+06
IFI = IF, Soil Inhalation	noncancer	1.10E+02
	cancer	3.07E-01

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-04
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	3.54E+03	0.00E+00	6.00E-05	-	-	-	-	-	3.54E+03
Cobalt	3.00E-04	PPRTV	2.65E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	8.94E+05	2.65E+03
Silver	5.00E-03	IRIS	4.42E+04	0.00E+00	2.00E-04	-	-	-	-	-	4.42E+04
Thallium	1.00E-05	PPRTV Appendix	8.85E+01	0.00E+00	1.00E-05	-	-	-	-	-	8.85E+01
Vanadium	5.00E-03	See Comment	4.42E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.49E+07	4.41E+04
Biphenyl	5.00E-01	IRIS	4.42E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	5.39E+03	5.38E+03
Naphthalene	2.00E-02	IRIS	1.77E+05	1.30E-01	2.00E-02	4.32E+05	3.00E-03	IRIS	4.99E+04	1.64E+04	1.45E+04

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	4.63E+06	4.63E+06
3-Methylcholanthrene	2.20E+01	Cal EPA	1.13E+02	1.00E-01	2.20E+01	3.57E+02	6.30E-03	Cal EPA	-	6.62E+06	8.56E+01
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	9.91E+00	1.30E-01	2.50E+02	2.42E+01	7.10E-02	Cal EPA	-	5.87E+05	7.03E+00
Benzo(a)anthracene	7.30E-01	NCEA	3.39E+03	1.30E-01	7.30E-01	8.28E+03	1.10E-04	Cal EPA	-	3.79E+08	2.41E+03
Benzo(b)fluoranthene	7.30E-01	NCEA	3.39E+03	1.30E-01	7.30E-01	8.28E+03	1.10E-04	Cal EPA	-	3.79E+08	2.41E+03
Benzo(k)fluoranthene	7.30E-02	NCEA	3.39E+04	1.30E-01	7.30E-02	8.28E+04	1.10E-04	Cal EPA	-	3.79E+08	2.41E+04
Benzo(a)pyrene	7.30E+00	IRIS	3.39E+02	1.30E-01	7.30E+00	8.28E+02	1.10E-03	Cal EPA	-	3.79E+07	2.41E+02
Biphenyl	8.00E-03	IRIS	3.10E+05	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	3.10E+05
Chrysene	7.30E-03	NCEA	3.39E+05	1.30E-01	7.30E-03	8.28E+05	1.10E-05	Cal EPA	-	3.79E+09	2.41E+05
Dibenz(a,h)anthracene	7.30E+00	NCEA	3.39E+02	1.30E-01	7.30E+00	8.28E+02	1.20E-03	Cal EPA	-	3.47E+07	2.41E+02
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	3.39E+03	1.30E-01	7.30E-01	8.28E+03	1.10E-04	Cal EPA	-	3.79E+08	2.41E+03
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	4.50E+04	4.50E+04

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	3.54E+03
Cobalt	2.65E+03
Silver	4.42E+04
Thallium	8.85E+01
Vanadium	4.41E+04
3-Methylcholanthrene	8.56E+01
7,12-Dimethylbenz[A]Anthracene	7.03E+00
Benzo(a)anthracene	2.41E+03
Benzo(b)fluoranthene	2.41E+03
Benzo(k)fluoranthene	2.41E+04
Benzo(a)pyrene	2.41E+02
Biphenyl	5.38E+03
Chrysene	2.41E+05
Dibenz(a,h)anthracene	2.41E+02
Indeno(1,2,3-cd)pyrene	2.41E+03
Naphthalene	1.45E+04

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Utility Worker Subsurface Soil Remedial Level Calculations, 1 x10-4 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	8.85E+06
	cancer	2.48E+07
IFD = IF, Soil Dermal	noncancer	2.80E+06
	cancer	7.85E+06
IFI = IF, Soil Inhalation	noncancer	1.10E+02
	cancer	3.07E-01

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-04
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, (mg/kgBW-day)$^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor (ug/m^3)$^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	3.54E+03	0.00E+00	6.00E-05	-	-	-	-	-	3.54E+03
Arsenic	3.00E-04	IRIS	4.42E+03	3.00E-02	3.00E-04	2.80E+04	1.50E-05	Cal EPA	-	2.23E+06	3.81E+03
Cobalt	3.00E-04	PPRTV	2.65E+03	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	8.94E+05	2.65E+03
Nickel	2.00E-02	IRIS	1.77E+05	0.00E+00	8.00E-04	-	9.00E-05	ATSDR	-	1.34E+07	1.75E+05
Silver	5.00E-03	IRIS	4.42E+04	0.00E+00	2.00E-04	-	-	-	-	-	4.42E+04
Thallium	1.00E-05	PPRTV Appendix	8.85E+01	0.00E+00	1.00E-05	-	-	-	-	-	8.85E+01
Vanadium	5.00E-03	See Comment	4.42E+04	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	1.49E+07	4.41E+04
Zinc	3.00E-01	IRIS	2.65E+06	0.00E+00	3.00E-01	-	-	-	-	-	2.65E+06
1,1,2,2-Tetrachloroethane	2.00E-02	IRIS	1.77E+05	0.00E+00	2.00E-02	-	-	-	1.63E+04	-	1.77E+05
1,1,2-Trichloroethane	4.00E-03	IRIS	3.54E+04	0.00E+00	4.00E-03	-	2.00E-04	PPRTV Appendix	7.77E+03	1.70E+02	1.69E+02
1,2-Dichloroethane	6.00E-03	PPRTV Appendix	5.31E+04	0.00E+00	6.00E-03	-	7.00E-03	PPRTV	4.92E+03	3.77E+03	3.52E+03
1-Methylnaphthalene	7.00E-02	ATSDR	6.19E+05	1.30E-01	7.00E-02	1.51E+06	-	-	6.31E+04	-	4.39E+05
2-Methylnaphthalene	4.00E-03	IRIS	3.54E+04	1.30E-01	4.00E-03	8.63E+04	-	-	6.24E+04	-	2.51E+04
Benzene	4.00E-03	IRIS	3.54E+04	0.00E+00	4.00E-03	-	3.00E-02	IRIS	3.81E+03	1.25E+04	9.25E+03
Biphenyl	5.00E-01	IRIS	4.42E+06	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	5.39E+03	5.38E+03
cis-1,2-Dichloroethene	2.00E-03	IRIS	1.77E+04	0.00E+00	2.00E-03	-	-	-	2.69E+03	-	1.77E+04
Dibenzofuran	1.00E-03	PPRTV Appendix	8.85E+03	0.00E+00	1.00E-03	-	-	-	-	-	8.85E+03
Diphenyl Ether	3.00E-01	DuPont	2.65E+06	0.00E+00	3.00E-01	-	3.50E-01	DuPont	8.86E+04	3.40E+06	1.49E+06
Ethylbenzene	1.00E-01	IRIS	8.85E+05	0.00E+00	1.00E-01	-	1.00E+00	IRIS	6.10E+03	6.68E+05	3.81E+05
Naphthalene	2.00E-02	IRIS	1.77E+05	1.30E-01	2.00E-02	4.32E+05	3.00E-03	IRIS	4.99E+04	1.64E+04	1.45E+04
Tetrachloroethylene	6.00E-03	IRIS	5.31E+04	0.00E+00	6.00E-03	-	4.00E-02	IRIS	2.53E+03	1.11E+04	9.17E+03
Trichloroethene	5.00E-04	IRIS	4.42E+03	0.00E+00	5.00E-04	-	2.00E-03	IRIS	2.38E+03	5.21E+02	4.66E+02

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**
Arsenic	1.50E+00	IRIS	2.75E+03	3.00E-02	1.50E+00	1.75E+04	4.30E-03	IRIS	-	9.70E+06	2.38E+03
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	4.63E+06	4.63E+06
Nickel	-	-	-	0.00E+00	-	-	2.60E-04	Cal EPA	-	1.60E+08	1.60E+08
1,1,2,2-Tetrachloroethane	2.00E-01	IRIS	1.24E+04	0.00E+00	2.00E-01	-	5.80E-05	Cal EPA	1.63E+04	8.62E+03	5.08E+03
1,1,2-Trichloroethane	5.70E-02	IRIS	4.35E+04	0.00E+00	5.70E-02	-	1.60E-05	IRIS	7.77E+03	1.49E+04	1.11E+04
1,2-Dichloroethane	9.10E-02	IRIS	2.72E+04	0.00E+00	9.10E-02	-	2.60E-05	IRIS	4.92E+03	5.80E+03	4.78E+03
1,2-Diphenylhydrazine	8.00E-01	IRIS	3.10E+03	1.00E-01	8.00E-01	9.82E+03	2.20E-04	IRIS	-	1.90E+08	2.35E+03
1-Methylnaphthalene	2.90E-02	PPRTV	8.54E+04	1.30E-01	2.90E-02	2.08E+05	-	-	6.31E+04	-	6.06E+04
Benzene	5.50E-02	IRIS	4.50E+04	0.00E+00	5.50E-02	-	7.80E-06	IRIS	3.81E+03	1.50E+04	1.12E+04
Benzo(a)anthracene	7.30E-01	NCEA	3.39E+03	1.30E-01	7.30E-01	8.28E+03	1.10E-04	Cal EPA	-	3.79E+08	2.41E+03
Benzo(b)fluoranthene	7.30E-01	NCEA	3.39E+03	1.30E-01	7.30E-01	8.28E+03	1.10E-04	Cal EPA	-	3.79E+08	2.41E+03
Benzo(a)pyrene	7.30E+00	IRIS	3.39E+02	1.30E-01	7.30E+00	8.28E+02	1.10E-03	Cal EPA	-	3.79E+07	2.41E+02
Biphenyl	8.00E-03	IRIS	3.10E+05	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	3.10E+05
Ethylbenzene	1.10E-02	Cal EPA	2.25E+05	0.00E+00	1.10E-02	-	2.50E-06	Cal EPA	6.10E+03	7.48E+04	5.62E+04
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	4.50E+04	4.50E+04
Tetrachloroethylene	2.10E-03	IRIS	1.18E+06	0.00E+00	2.10E-03	-	2.60E-07	IRIS	2.53E+03	2.98E+05	2.38E+05
Trichloroethene	4.60E-02	IRIS	5.39E+04	0.00E+00	4.60E-02	-	4.10E-06	IRIS	2.38E+03	1.78E+04	1.34E+04

Attachment C
Utility Worker Subsurface Soil Remedial Level Calculations, 1 x10-4 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Lower of the RLn and RLc

Constituent	RL (mg/kg)
Antimony	3.54E+03
Arsenic	2.38E+03
Cobalt	2.65E+03
Nickel	1.75E+05
Silver	4.42E+04
Thallium	8.85E+01
Vanadium	4.41E+04
Zinc	2.65E+06
1,1,2,2-Tetrachloroethane	5.08E+03
1,1,2-Trichloroethane	1.69E+02
1,2-Dichloroethane	3.52E+03
1,2-Diphenylhydrazine	2.35E+03
1-Methylnaphthalene	6.06E+04
2-Methylnaphthalene	2.51E+04
Benzene	9.25E+03
Benzo(a)anthracene	2.41E+03
Benzo(b)fluoranthene	2.41E+03
Benzo(a)pyrene	2.41E+02
Biphenyl	5.38E+03
cis-1,2-Dichloroethene	1.77E+04
Dibenzofuran	8.85E+03
Diphenyl Ether	1.49E+06
Ethylbenzene	5.62E+04
Naphthalene	1.45E+04
Tetrachloroethylene	9.17E+03
Trichloroethene	4.66E+02

Arsenic soil ingestion has been adjusted using a relative bioavailability factor of 0.6
Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

Attachment C
Trail User Remedial Level Calculations, 1 x 10-4 Risk Target
Former DuPont Brevard Facility
Cedar Mountain, NC

Soil Ingestion
RLn = HQ x IFSn x RfDo
RLc = TR x IFSc / SFo
Where:

Soil Dermal Absorption
RLn = HQ x IFDn x RfDd/(ABS)
RLc = TR x IFDc / (SFd x ABS)

Soil Inhalation
RLn = HQ x IFIn x RfC / (1/VF + 1/PEF)
RLc = TR x IFIc / URF x (1/VF + 1/PEF)

Multiple Pathway
RL = $\frac{1}{(1/RLing + 1/RLder + 1/RLinh)}$

IF = Intake Factors		
IFS = IF Soil Ingestion	noncancer	1.01E+06
	cancer	9.01E+06
	mutagen	1.99E+06
IFD = IF, Soil Dermal	noncancer	3.77E+05
	cancer	2.95E+06
	mutagen	6.96E+05
IFI = IF, Soil Inhalation	noncancer	4.06E+01
	cancer	1.09E-01
	mutagen	3.74E-02

RBCn = Risk-based concentration for noncancer effects (mg/kg)	Calculated
RBCc = Risk-based concentration for carcinogens (mg/kg)	Calculated
HQ =Target hazard quotient for noncancer effects	1
TR = Target cancer risk level	1.00E-04
RfDo = Oral Reference Dose, mg/kgBW-day	chem-spec
RfDd = Dermal Reference Dose, mg/kgBW-day	chem-spec
SF = Cancer Slope Factor, $(mg/kgBW\text{-}day)^{-1}$	chem-spec
RfC = Inhalation Reference Concentration (mg/m^3)	chem-spec
URF = Inhalation Unit Risk Factor $(ug/m^3)^{-1}$	chem-spec
ABS = Dermal absorption factor	chem-spec
VF = Soil to Air Volatilization Factor, m^3/kg	chem-spec
PEF = Particulate Emission Factor, m^3/kg	1.36E+09

Noncancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway
Constituent	**RfDo**	**Source**	**RLn**	**ABS**	**RfDd**	**RLn**	**RfC**	**Source**	**VF**	**RLn**	**RLn**
Antimony	4.00E-04	IRIS	4.06E+02	0.00E+00	6.00E-05	-	-	-	-	-	4.06E+02
Cobalt	3.00E-04	PPRTV	3.04E+02	0.00E+00	3.00E-04	-	6.00E-06	PPRTV	-	3.31E+05	3.04E+02
Silver	5.00E-03	IRIS	5.07E+03	0.00E+00	2.00E-04	-	-	-	-	-	5.07E+03
Thallium	1.00E-05	PPRTV Appendix	1.01E+01	0.00E+00	1.00E-05	-	-	-	-	-	1.01E+01
Vanadium	5.00E-03	See Comment	5.07E+03	0.00E+00	1.30E-04	-	1.00E-04	ATSDR	-	5.52E+06	5.06E+03
Biphenyl	5.00E-01	IRIS	5.07E+05	0.00E+00	5.00E-01	-	4.00E-04	PPRTV Appendix	1.23E+05	2.00E+03	1.99E+03
Naphthalene	2.00E-02	IRIS	2.03E+04	1.30E-01	2.00E-02	5.80E+04	3.00E-03	IRIS	4.99E+04	6.07E+03	4.32E+03

Cancer Effects	Ingestion			Dermal			Inhalation				Multi-pathway	
Constituent	**SFo**	**Source**	**RLc**	**ABS**	**SFd**	**RLc**	**URF**	**Source**	**VF**	**RLc**	**RLc**	
Cobalt	-	-	-	0.00E+00	-	-	9.00E-03	PPRTV	-	1.65E+06	1.65E+06	
3-Methylcholanthrene	2.20E+01	Cal EPA	9.02E+00	1.00E-01	2.20E+01	3.17E+01	6.30E-03	Cal EPA	-	8.06E+05	7.02E+00	m
7,12-Dimethylbenz[A]Anthracene	2.50E+02	Cal EPA	7.94E-01	1.30E-01	2.50E+02	2.14E+00	7.10E-02	Cal EPA	-	7.16E+04	5.79E-01	m
Benzo(a)anthracene	7.30E-01	NCEA	2.72E+02	1.30E-01	7.30E-01	7.34E+02	1.10E-04	Cal EPA	-	4.62E+07	1.98E+02	m
Benzo(b)fluoranthene	7.30E-01	NCEA	2.72E+02	1.30E-01	7.30E-01	7.34E+02	1.10E-04	Cal EPA	-	4.62E+07	1.98E+02	m
Benzo(k)fluoranthene	7.30E-02	NCEA	2.72E+03	1.30E-01	7.30E-02	7.34E+03	1.10E-04	Cal EPA	-	4.62E+07	1.98E+03	m
Benzo(a)pyrene	7.30E+00	IRIS	2.72E+01	1.30E-01	7.30E+00	7.34E+01	1.10E-03	Cal EPA	-	4.62E+06	1.98E+01	m
Biphenyl	8.00E-03	IRIS	1.13E+05	0.00E+00	8.00E-03	-	-	-	1.23E+05	-	1.13E+05	
Chrysene	7.30E-03	NCEA	2.72E+04	1.30E-01	7.30E-03	7.34E+04	1.10E-05	Cal EPA	-	4.62E+08	1.98E+04	m
Dibenz(a,h)anthracene	7.30E+00	NCEA	2.72E+01	1.30E-01	7.30E+00	7.34E+01	1.20E-03	Cal EPA	-	4.23E+06	1.98E+01	m
Indeno(1,2,3-cd)pyrene	7.30E-01	NCEA	2.72E+02	1.30E-01	7.30E-01	7.34E+02	1.10E-04	Cal EPA	-	4.62E+07	1.98E+02	m
Naphthalene	-	-	-	1.30E-01	-	-	3.40E-05	Cal EPA	4.99E+04	1.60E+04	1.60E+04	

Lower of the RLn and RLc

Constituent	**RL (mg/kg)**
Antimony	4.06E+02
Cobalt	3.04E+02
Silver	5.07E+03
Thallium	1.01E+01
Vanadium	5.06E+03
3-Methylcholanthrene	7.02E+00
7,12-Dimethylbenz[A]Anthracene	5.79E-01
Benzo(a)anthracene	1.98E+02
Benzo(b)fluoranthene	1.98E+02
Benzo(k)fluoranthene	1.98E+03
Benzo(a)pyrene	1.98E+01
Biphenyl	1.99E+03
Chrysene	1.98E+04
Dibenz(a,h)anthracene	1.98E+01
Indeno(1,2,3-cd)pyrene	1.98E+02
Naphthalene	4.32E+03

Vanadium RfD is based on the RfD for vandium pentoxide adjusted as described in the EPA Regional Screening Level Table User's Guide.

Particulate Emission Factor or Volatilization Factor: USEPA default value PEF used for non-volatile compounds or chemical-specific VF used for volatile compounds (USEPA, 2014).

APPENDIX D
INCREMENTAL SAMPLING METHODOLOGY STATISTICAL CALCULATIONS

					Location ID	DU-1A			DU-1B			DU-1C			DU-1										
					Date Sampled	11/05/2014			11/07/2014			11/10/2014									95% UCL				
					Number of Increments	31			31			31									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																								
Parameter Name	Residential Health Based	Industrial Health Based	Site Specic Background	Site Specific RL for Surface Soil	Units	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Arithmetic Mean	Std. Dev. (SD) of Replicates	Std. Dev. (SD) of Increments	Coef. of Variation (CV) of DU	Std. Error of DU	Dispersion (Error)	Low Dispersion (Error)	Medium to High Dispersion	RPD-A/B	RPD-B/C	95% UCL
Acenaphthene	680,000	6,600,000	--	--	UG/KG	6	Y	J	2	N		2	N		3.3	2.3	12.9	3.9	1.3	High	7.2	9.1	100.0	0.0	9.1
Acenaphthylene	NA	NA	--	--	UG/KG	8	Y	J	7	Y	J	2	N		5.7	3.2	17.9	3.2	1.9	High	11.1	13.8	13.3	111.1	13.8
Anthracene	3,400,000	34,000,000	--	--	UG/KG	9	Y	J	5	Y	J	6	Y	J	6.7	2.1	11.6	1.7	1.2	Medium	10.2	11.9	57.1	-18.2	11.9
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	27	Y		25	Y		25	Y		25.7	1.2	6.4	0.3	0.7	Low	27.6	28.6	7.7	0.0	27.6
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	37	Y		41	Y		39	Y		39.0	2.0	11.1	0.3	1.2	Low	42.4	44.0	-10.3	5.0	42.4
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	27	Y		19	Y	J	20	Y		22.0	4.4	24.3	1.1	2.5	Low	29.3	33.0	34.8	-5.1	29.3
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	14	Y	J	15	Y	J	15	Y	J	14.7	0.6	3.2	0.2	0.3	Low	15.6	16.1	-6.9	0.0	15.6
Benzo[A]Pyrene	15	210	--	--	UG/KG	21	Y		23	Y		26	Y		23.3	2.5	14.0	0.6	1.5	Low	27.6	29.7	-9.1	-12.2	27.6
Chrysene	15,000	210,000	--	--	UG/KG	30	Y		33	Y		29	Y		30.7	2.1	11.6	0.4	1.2	Low	34.2	35.9	-9.5	12.9	34.2
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	7	Y	J	8	Y	J	9	Y	J	8.0	1.0	5.6	0.7	0.6	Low	9.7	10.5	-13.3	-11.8	9.7
Fluoranthene	460,000	4,400,000	--	--	UG/KG	46	Y		51	Y		42	Y		46.3	4.5	25.1	0.5	2.6	Low	53.9	57.7	-10.3	19.4	53.9
Fluorene	460,000	4,400,000	--	--	UG/KG	2	N		2	N		4	Y	J	2.7	1.2	6.4	2.4	0.7	Medium	4.6	5.6	0.0	-66.7	5.6
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	19	Y	J	13	Y	J	15	Y	J	15.7	3.1	17.0	1.1	1.8	Low	20.8	23.4	37.5	-14.3	20.8
Naphthalene	3,600	18,000	--	873,000	UG/KG	2	N		2	N		7	Y	J	3.7	2.9	16.1	4.4	1.7	High	8.5	10.9	0.0	-111.1	10.9
Phenanthrene	--	--	--	--	UG/KG	28	Y		27	Y		30	Y		28.3	1.5	8.5	0.3	0.9	Low	30.9	32.2	3.6	-10.5	30.9
Pyrene	340,000	3,400,000	--	--	UG/KG	44	Y		49	Y		38	Y		43.7	5.5	30.7	0.7	3.2	Low	53.0	57.5	-10.8	25.3	53.0
Arsenic	0.61	2.4	4.81	--	MG/KG	1.67	Y		2.02	Y		1.9	Y		1.9	0.2	1.0	0.5	0.1	Low	2.2	2.3	-19.0	6.1	2.2
Barium	3,000	38,000	133	--	MG/KG	36.2	Y		29.6	Y		30.6	Y		32.1	3.6	19.8	0.6	2.1	Low	38.1	41.1	20.1	-3.3	38.1
Beryllium	32	400	2.7	--	MG/KG	1.01	Y	J	0.787	Y	J	0.832	Y	J	0.9	0.1	0.7	0.7	0.1	Low	1.1	1.2	24.8	-5.6	1.1
Chromium	24,000	100,000	5.16	--	MG/KG	5.17	Y		5.54	Y		5.98	Y		5.6	0.4	2.3	0.4	0.2	Low	6.2	6.6	-6.9	-7.6	6.2
Cobalt	4.6	60	14.7	304	MG/KG	1.9	Y		1.77	Y		1.9	Y		1.9	0.1	0.4	0.2	0.0	Low	2.0	2.0	7.1	-7.1	2.0
Copper	620	8,200	3.72	--	MG/KG	4.74	Y		4.95	Y		4.35	Y		4.7	0.3	1.7	0.4	0.2	Low	5.2	5.4	-4.3	12.9	5.2
Lead	400	800	20.5	--	MG/KG	14.3	Y		14.5	Y		12.2	Y		13.7	1.3	7.1	0.5	0.7	Low	15.8	16.9	-1.4	17.2	15.8
Mercury	2	3.1	0.0215	--	MG/KG	0.0219	Y	J	0.0282	Y	J	0.0266	Y	J	0.0256	0.0033	0.0182	0.7131	0.0019	Low	0.0311	0.0338	-25.1	5.8	0.0311
Nickel	300	4,000	5.54	--	MG/KG	12	Y	J	14.6	Y	J	12.1	Y	J	12.9	1.5	8.2	0.6	0.9	Low	15.4	16.6	-19.5	18.7	15.4
Selenium	78	1,000	--	--	MG/KG	0.234	Y	J	0.328	Y	J	0.345	Y	J	0.3	0.1	0.3	1.1	0.0	Low	0.4	0.5	-33.5	-5.1	0.4
Thallium	0.16	2	DL	10.1	MG/KG	0.22	Y	J	0.223	Y	J	0.196	Y	J	0.2	0.0	0.1	0.4	0.0	Low	0.2	0.3	-1.4	12.9	0.2
Tin	9,400	100,000	DL	--	MG/KG	2.55	Y	B	2.5	Y	B	2.43	Y	B	2.5	0.1	0.3	0.1	0.0	Low	2.6	2.6	2.0	2.8	2.6
Vanadium	78	1,000	22.8	5,070	MG/KG	14.1	Y		15.5	Y		16.1	Y		15.2	1.0	5.7	0.4	0.6	Low	17.0	17.8	-9.5	-3.8	17.0
Zinc	4,600	62,000	49	--	MG/KG	25.9	Y		25.8	Y		24.4	Y		25.4	0.8	4.7	0.2	0.5	Low	26.8	27.5	0.4	5.6	26.8

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-2A			DU-2B			DU-2C			DU-2										
					Date Sampled	11/12/2014			11/13/2014			11/18/2014									95% UCL				
					Number of Increments	49			49			49									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																				Low	Medium to			
	Residential	Industrial	Site Specic	Site Specific RL												Std. Dev.	Std. Dev.	Coef. of			Dispersion	High			
Parameter Name	Health Based	Health Based	Background	for Surface Soil	Units	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Arithmetic Mean	(SD) of Replicates	(SD) of Increments	Variation (CV) of DU	Std. Error of DU	Dispersion (Error)	(Error)	Dispersion	RPD-A/B	RPD-B/C	95% UCL
Xylenes	130,000	260,000	--	--	UG/KG	29.5	N		150	Y	J	32.5	N		70.7	68.7	481.0	6.8	39.7	High	186.5	243.6	-134.3	128.8	243.6
2-Methylnaphthalene	46,000	370,000	--	--	UG/KG	12	Y	J	2	N		7	Y	J	7.0	5.0	35.0	5.0	2.9	High	15.4	19.6	142.9	-111.1	19.6
Acenaphthene	680,000	6,600,000	--	--	UG/KG	62	Y		10	Y	J	58	Y		43.3	28.9	202.6	4.7	16.7	High	92.1	116.2	144.4	-141.2	116.2
Acenaphthylene	NA	NA	--	--	UG/KG	17	Y	J	2	N		14	Y	J	11.0	7.9	55.6	5.1	4.6	High	24.4	31.0	157.9	-150.0	31.0
Anthracene	3,400,000	34,000,000	--	--	UG/KG	190	Y		32	Y		230	Y		150.7	104.7	732.9	4.9	60.4	High	327.2	414.1	142.3	-151.1	414.1
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	620	Y		110	Y		690	Y		473.3	316.6	2216.2	4.7	182.8	High	1007.1	1270.1	139.7	-145.0	1,270.1
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	780	Y		120	Y		840	Y		580.0	399.5	2796.5	4.8	230.7	High	1253.5	1585.4	146.7	-150.0	1,585.4
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	410	Y		80	Y		390	Y		293.3	185.0	1295.2	4.4	106.8	High	605.3	759.0	134.7	-131.9	759.0
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	260	Y		64	Y		320	Y		214.7	133.9	937.2	4.4	77.3	High	440.4	551.6	121.0	-133.3	551.6
Benzo[A]Pyrene	15	210	--	--	UG/KG	610	Y		110	Y		640	Y		453.3	297.7	2084.0	4.6	171.9	High	955.2	1202.6	138.9	-141.3	1,202.6
Chrysene	15,000	210,000	--	--	UG/KG	590	Y		110	Y		660	Y		453.3	299.4	2095.7	4.6	172.9	High	958.1	1206.8	137.1	-142.9	1,206.8
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	85	Y		22	Y		86	Y		64.3	36.7	256.7	4.0	21.2	High	126.1	156.6	117.8	-118.5	156.6
Dibenzofuran	16,000	170,000	--	--	UG/KG	29	Y	J	9.5	N		33	Y	J	23.8	12.6	88.0	3.7	7.3	High	45.0	55.5	101.3	-110.6	55.5
Diphenyl Ether	--	--	--	--	UG/KG	9.5	N		21	Y	J	25	Y	J	18.5	8.0	56.3	3.0	4.6	High	32.1	38.8	-75.4	-17.4	38.8
Fluoranthene	460,000	4,400,000	--	--	UG/KG	1200	Y		210	Y		1400	Y		936.7	637.2	4460.5	4.8	367.9	High	2010.9	2540.3	140.4	-147.8	2,540.3
Fluorene	460,000	4,400,000	--	--	UG/KG	70	Y		12	Y	J	57	Y		46.3	30.4	213.1	4.6	17.6	High	97.6	122.9	141.5	-130.4	122.9
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	350	Y		68	Y		390	Y		269.3	175.5	1228.5	4.6	101.3	High	565.2	711.0	134.9	-140.6	711.0
Naphthalene	3,600	18,000	--	873,000	UG/KG	28	Y		10	Y	J	8	Y	J	15.3	11.0	77.1	5.0	6.4	High	33.9	43.1	94.7	22.2	43.1
Phenanthrene	--	--	--	--	UG/KG	660	Y		120	Y		850	Y		543.3	378.7	2651.1	4.9	218.7	High	1181.8	1496.4	138.5	-150.5	1,496.4
Pyrene	340,000	3,400,000	--	--	UG/KG	1000	Y		180	Y		1200	Y		793.3	540.5	3783.5	4.8	312.1	High	1704.5	2153.5	139.0	-147.8	2,153.5
PCB 1254	1,000	1,000	--	--	UG/KG	20	Y		9.5	N		1.95	N		10.5	9.1	63.5	6.1	5.2	High	25.8	33.3	71.2	131.9	33.3
Antimony	6.2	82	DL	406	MG/KG	0.191	Y	J	0.107	Y	J	0.149	Y	J	0.1	0.0	0.3	2.0	0.0	Medium	0.2	0.3	56.4	-32.8	0.3
Arsenic	0.61	2.4	4.81	--	MG/KG	1.51	Y		1.53	Y		1.85	Y		1.6	0.2	1.3	0.8	0.1	Low	2.0	2.1	-1.3	-18.9	2.0
Barium	3,000	38,000	133	--	MG/KG	55	Y		60.8	Y		65.1	Y	J	60.3	5.1	35.5	0.6	2.9	Low	68.8	73.1	-10.0	-6.8	68.8
Beryllium	32	400	2.7	--	MG/KG	1.04	Y	J	1.09	Y	J	1.24	Y		1.1	0.1	0.7	0.6	0.1	Low	1.3	1.4	-4.7	-12.9	1.3
Cadmium	14	160	DL	--	MG/KG	0.0181	N		0.0183	N		0.207	Y	J	0.1	0.1	0.8	9.4	0.1	High	0.3	0.4	-1.1	-167.5	0.4
Chromium	24,000	100,000	5.16	--	MG/KG	6.14	Y		6.74	Y		11	Y	J	8.0	2.6	18.5	2.3	1.5	Medium	12.4	14.6	-9.3	-48.0	14.6
Cobalt	4.6	60	14.7	304	MG/KG	3.56	Y		3.62	Y		3.81	Y		3.7	0.1	0.9	0.2	0.1	Low	3.9	4.0	-1.7	-5.1	3.9
Copper	620	8,200	3.72	--	MG/KG	7.64	Y		6.66	Y		6.89	Y		7.1	0.5	3.6	0.5	0.3	Low	7.9	8.4	13.7	-3.4	7.9
Lead	400	800	20.5	--	MG/KG	14.6	Y		14.7	Y		13.7	Y		14.3	0.6	3.9	0.3	0.3	Low	15.3	15.7	-0.7	7.0	15.3
Mercury	2	3.1	0.0215	--	MG/KG	0.0211	Y	J	0.0162	Y	J	0.0204	Y	J	0.0192	0.0027	0.0186	0.9645	0.0015	Low	0.0237	0.0259	26.3	-23.0	0.0237
Nickel	300	4,000	5.54	--	MG/KG	21.1	Y	J	32.9	Y	J	22	Y	J	25.3	6.6	46.0	1.8	3.8	Medium	36.4	41.9	-43.7	39.7	41.9
Selenium	78	1,000	--	--	MG/KG	0.209	Y	J	0.198	Y	J	0.057	N		0.2	0.1	0.6	3.8	0.0	High	0.3	0.4	5.4	110.6	0.4
Silver	78	1,000	DL	5,070	MG/KG	4.85	Y		1.17	Y		3.39	Y	J	3.1	1.9	13.0	4.1	1.1	High	6.3	7.8	122.3	-97.4	7.8
Thallium	0.16	2	DL	10.1	MG/KG	0.295	Y		0.299	Y		0.308	Y		0.3	0.0	0.0	0.2	0.0	Low	0.3	0.3	-1.3	-3.0	0.3
Tin	9,400	100,000	DL	--	MG/KG	2.44	Y	B	2.4	Y	B	2.9	Y	B	2.6	0.3	1.9	0.8	0.2	Low	3.0	3.3	1.7	-18.9	3.0
Vanadium	78	1,000	22.8	507	MG/KG	18	Y		19.1	Y		20.9	Y		19.3	1.5	10.2	0.5	0.8	Low	21.8	23.0	-5.9	-9.0	21.8
Zinc	4,600	62,000	49	--	MG/KG	41.5	Y		37.2	Y		42.4	Y	J	40.4	2.8	19.5	0.5	1.6	Low	45.1	47.4	10.9	-13.1	45.1

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-3A			DU-3B			DU-3C			DU-3										
					Date Sampled	11/19/2014			11/19/2014			11/20/2014									95% UCL				
					Number of Increments	23			23			23									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																				Low	Medium to			
	Residential	Industrial Health	Site Specic	Site Specific RL		Report		Validation	Report		Validation	Report		Validation	Arithmetic	Std. Dev. (SD) of	Std. Dev. (SD) of	Coef. of Variation	Std. Error of	Dispersion	Dispersion	High Dispersion			
Parameter Name	Health Based	Based	Background	for Surface Soil	Units	Result	Detected	Qualifier	Result	Detected	Qualifier	Result	Detected	Qualifier	Mean	Replicates	Increments	(CV) of DU	DU	(Error)	(Error)	(Error)	RPD-A/B	RPD-B/C	95% UCL
Trichlorofluoromethane	160,000	680,000	--	--	UG/KG	200	Y	J	210	Y	J	100	Y	J	170.0	60.8	291.7	1.7	35.1	Medium	272.5	323.1	-4.9	71.0	323.1
2-Methylnaphthalene	46,000	370,000	--	--	UG/KG	41	Y		52	Y		52	Y		48.3	6.4	30.5	0.6	3.7	Low	59.0	64.3	-23.7	0.0	59.0
Acenaphthene	680,000	6,600,000	--	--	UG/KG	200	Y		260	Y		310	Y		256.7	55.1	264.1	1.0	31.8	Low	349.5	395.3	-26.1	-17.5	349.5
Acenaphthylene	NA	NA	--	--	UG/KG	110	Y		230	Y		71	Y		137.0	82.9	397.4	2.9	47.8	Medium	276.7	345.5	-70.6	105.6	345.5
Anthracene	3,400,000	34,000,000	--	--	UG/KG	540	Y		870	Y		740	Y		716.7	166.2	797.2	1.1	96.0	Low	996.9	1135.0	-46.8	16.1	996.9
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	2100	Y		2700	Y		2000	Y		2266.7	378.6	1815.7	0.8	218.6	Low	2904.9	3219.4	-25.0	29.8	2,904.9
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	2400	Y		3400	Y		2500	Y		2766.7	550.8	2641.3	1.0	318.0	Low	3695.2	4152.7	-34.5	30.5	3,695.2
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	1200	Y		1600	Y		920	Y		1240.0	341.8	1639.0	1.3	197.3	Low	1816.2	2100.1	-28.6	54.0	1,816.2
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	900	Y		1300	Y		790	Y		996.7	268.4	1287.2	1.3	155.0	Low	1449.1	1672.1	-36.4	48.8	1,449.1
Benzo[A]Pyrene	15	210	--	--	UG/KG	1800	Y		2500	Y		1700	Y		2000.0	435.9	2090.5	1.0	251.7	Low	2734.8	3097.0	-32.6	38.1	2,734.8
Biphenyl	10,000	42,000	--	299,000	UG/KG	26	Y	J	81	Y		29	Y	J	45.3	30.9	148.3	3.3	17.9	High	97.5	123.2	-102.8	94.5	123.2
Bis(2-Ethylhexyl)Phthalate	35,000	120,000	--	--	UG/KG	170	Y	J	180	Y	J	110	Y	J	153.3	37.9	181.6	1.2	21.9	Low	217.2	248.6	-5.7	48.3	217.2
Chrysene	15,000	210,000	--	--	UG/KG	1800	Y		2600	Y		1900	Y		2100.0	435.9	2090.5	1.0	251.7	Low	2834.8	3197.0	-36.4	31.1	2,834.8
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	270	Y		390	Y		290	Y		316.7	64.3	308.3	1.0	37.1	Low	425.1	478.5	-36.4	29.4	425.1
Dibenzofuran	16,000	170,000	--	--	UG/KG	91	Y		140	Y		160	Y		130.3	35.5	170.3	1.3	20.5	Low	190.2	219.7	-42.4	-13.3	190.2
Diphenyl Ether	--	--	--	--	UG/KG	60	Y		180	Y		40	Y		93.3	75.7	363.1	3.9	43.7	High	221.0	283.9	-100.0	127.3	283.9
Fluoranthene	460,000	4,400,000	--	--	UG/KG	3700	Y		5300	Y		4100	Y		4366.7	832.7	3993.3	0.9	480.7	Low	5770.4	6462.2	-35.6	25.5	5,770.4
Fluorene	460,000	4,400,000	--	--	UG/KG	210	Y		390	Y		350	Y		316.7	94.5	453.3	1.4	54.6	Low	476.0	554.5	-60.0	10.8	476.0
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	1000	Y		1500	Y		1000	Y		1166.7	288.7	1384.4	1.2	166.7	Low	1653.3	1893.1	-40.0	40.0	1,653.3
Naphthalene	3,600	18,000	--	873,000	UG/KG	120	Y		120	Y		120	Y		120.0	0.0	0.0	0.0	0.0	Low	120.0	120.0	0.0	0.0	120.0
Phenanthrene	--	--	--	--	UG/KG	1900	Y		3200	Y		2800	Y		2633.3	665.8	3193.2	1.2	384.4	Low	3755.8	4309.0	-51.0	13.3	3,755.8
Pyrene	3,600,000	36,000,000	--	--	UG/KG	3100	Y		4200	Y		3200	Y		3500.0	608.3	2917.2	0.8	351.2	Low	4525.5	5030.8	-30.1	27.0	4,525.5
PCB 1254	1,000	1,000	--	--	UG/KG	160	Y		190	Y		66	Y		138.7	64.7	310.3	2.2	37.4	Medium	247.7	301.5	-17.1	96.9	301.5
Antimony	6.2	82	DL	406	MG/KG	0.465	Y	J	0.812	Y	J	0.379	Y	J	0.6	0.2	1.1	2.0	0.1	Medium	0.9	1.1	-54.3	72.7	1.1
Arsenic	0.61	2.4	4.81	--	MG/KG	2.81	Y		2.33	Y		2.1	Y		2.4	0.4	1.7	0.7	0.2	Low	3.0	3.3	18.7	10.4	3.0
Barium	3,000	38,000	133	--	MG/KG	60.9	Y	J	54.5	Y	J	68.3	Y	J	61.2	6.9	33.1	0.5	4.0	Low	72.9	78.6	11.1	-22.5	72.9
Beryllium	32	400	2.7	--	MG/KG	1.25	Y		1.12	Y	J	0.922	Y	J	1.1	0.2	0.8	0.7	0.1	Low	1.4	1.5	11.0	19.4	1.4
Cadmium	14	160	DL	--	MG/KG	0.405	Y	J	0.4	Y	J	0.337	Y	J	0.4	0.0	0.2	0.5	0.0	Low	0.4	0.5	1.2	17.1	0.4
Chromium	24,000	100,000	5.16	--	MG/KG	9.54	Y	J	10.7	Y	J	9.93	Y	J	10.1	0.6	2.8	0.3	0.3	Low	11.1	11.5	-11.5	7.5	11.1
Cobalt	4.6	60	14.7	304	MG/KG	3.2	Y		3.27	Y		3.64	Y		3.4	0.2	1.1	0.3	0.1	Low	3.8	4.0	-2.2	-10.7	3.8
Copper	620	8,200	3.72	--	MG/KG	10	Y		13.4	Y		13	Y		12.1	1.9	8.9	0.7	1.1	Low	15.3	16.8	-29.1	3.0	15.3
Lead	400	800	20.5	--	MG/KG	22.2	Y		23.4	Y		18.2	Y		21.3	2.7	13.1	0.6	1.6	Low	25.9	28.1	-5.3	25.0	25.9
Mercury	2	3.1	0.0215	--	MG/KG	0.265	Y	J	0.0517	Y	J	0.106	Y	J	0.1	0.1	0.5	3.8	0.1	High	0.3	0.4	134.7	-68.9	0.4
Nickel	300	4,000	5.54	--	MG/KG	34.2	Y	J	21.9	Y	J	14.9	Y	J	23.7	9.8	46.9	2.0	5.6	Medium	40.1	48.3	43.9	38.0	48.3
Selenium	78	1,000	--	--	MG/KG	0.228	Y	J	0.21	Y	J	0.29	Y	J	0.2	0.0	0.2	0.8	0.0	Low	0.3	0.3	8.2	-32.0	0.313
Silver	78	1,000	DL	5,070	MG/KG	18.3	Y	J	10.9	Y	J	132	Y	J	53.7	67.9	325.5	6.1	39.2	High	168.2	224.6	50.7	-169.5	224.6
Thallium	0.16	2	DL	10.1	MG/KG	0.325	Y		0.281	Y		0.275	Y		0.294	0.027	0.131	0.446	0.016	Low	0.340	0.362	14.5	2.2	0.3
Tin	9,400	100,000	DL	--	MG/KG	2.85	Y	B	2.83	Y	B	2.58	Y	B	2.8	0.2	0.7	0.3	0.1	Low	3.0	3.1	0.7	9.2	3.0
Vanadium	78	1,000	22.8	507	MG/KG	23.4	Y		22.4	Y		24.9	Y		23.6	1.3	6.0	0.3	0.7	Low	25.7	26.7	4.4	-10.6	25.7
Zinc	4,600	62,000	49	--	MG/KG	85.6	Y	J	136	Y	J	135	Y	J	118.9	28.8	138.2	1.2	16.6	Low	167.4	191.4	-45.5	0.7	167.4

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-4A			DU-4B			DU-4C			DU-4										
					Date Sampled	11/21/2014			12/04/2014			12/04/2014									95% UCL				
					Number of Increments	47			47			47									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																				Low	Medium to			
	Residential	Industrial Health	Site Specic	Site Specific RL		Report		Validation	Report		Validation	Report		Validation	Arithmetic	Std. Dev.	Std. Dev.	Coef. of	Std. Error of	Dispersion	Dispersion	High			
Parameter Name	Health Based	Based	Background	for Surface Soil	Units	Result	Detected	Qualifier	Result	Detected	Qualifier	Result	Detected	Qualifier	Mean	(SD) of Replicates	(SD) of Increments	Variation (CV) of DU	DU	(Error)	(Error)	Dispersion	RPD-A/B	RPD-B/C	95% UCL
1,1-Dichloroethene	48,000	220,000	--	--	UG/KG	27.5	N		30	N		70	Y	J	42.5	23.8	163.5	3.8	13.8	High	82.7	102.5	-8.7	-80.0	102.5
Trichlorofluoromethane	160,000	680,000	--	--	UG/KG	480	Y		670	Y		680	Y		610.0	112.7	772.6	1.3	65.1	Low	800.0	893.6	-33.0	-1.5	800.0
2-Methylnaphthalene	46,000	370,000	--	--	UG/KG	21	Y		47	Y		19	Y		29.0	15.6	107.1	3.7	9.0	High	55.3	68.3	-76.5	84.8	68.3
Acenaphthene	680,000	6,600,000	--	--	UG/KG	60	Y		200	Y		80	Y		113.3	75.7	519.1	4.6	43.7	High	241.0	303.9	-107.7	85.7	303.9
Acenaphthylene	NA	NA	--	--	UG/KG	62	Y		72	Y		58	Y		64.0	7.2	49.4	0.8	4.2	Low	76.2	82.1	-14.9	21.5	76.2
Acetophenone	1,600,000	2,500,000	--	--	UG/KG	27	Y	J	20	Y	J	21	Y	J	22.7	3.8	26.0	1.1	2.2	Low	29.0	32.2	29.8	-4.9	29.0
Anthracene	3,400,000	34,000,000	--	--	UG/KG	230	Y		610	Y		280	Y		373.3	206.5	1415.5	3.8	119.2	High	721.4	893.0	-90.5	74.2	893.0
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	730	Y		1600	Y		770	Y		1033.3	491.2	3367.2	3.3	283.6	High	1861.3	2269.4	-74.7	70.0	2,269.4
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	860	Y		1800	Y		950	Y		1203.3	518.7	3555.9	3.0	299.5	Medium	2077.8	2508.7	-70.7	61.8	2,508.7
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	430	Y		950	Y		500	Y		626.7	282.2	1934.6	3.1	162.9	High	1102.4	1336.8	-75.4	62.1	1,336.8
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	290	Y		890	Y		370	Y		516.7	325.8	2233.4	4.3	188.1	High	1065.9	1336.5	-101.7	82.5	1,336.5
Benzo[A]Pyrene	15	210	--	--	UG/KG	640	Y		1400	Y		720	Y		920.0	417.6	2863.0	3.1	241.1	High	1624.0	1971.0	-74.5	64.2	1,971.0
Biphenyl	10,000	42,000	--	299,000	UG/KG	9.5	N		32	Y	J	9.5	N		17.0	13.0	89.1	5.2	7.5	High	38.9	49.7	-108.4	108.4	49.7
Bis(2-Ethylhexyl)Phthalate	35,000	120,000	--	--	UG/KG	38.5	N		78	Y	J	37.5	N		51.3	23.1	158.4	3.1	13.3	High	90.3	109.5	-67.8	70.1	109.5
Chrysene	15,000	210,000	--	--	UG/KG	700	Y		1300	Y		700	Y		900.0	346.4	2374.9	2.6	200.0	Medium	1484.0	1771.8	-60.0	60.0	1,771.8
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	98	Y		210	Y		110	Y		139.3	61.5	421.6	3.0	35.5	High	243.0	294.1	-72.7	62.5	294.1
Dibenzofuran	16,000	170,000	--	--	UG/KG	40	Y		110	Y		51	Y		67.0	37.6	258.1	3.9	21.7	High	130.5	161.7	-93.3	73.3	161.7
Dimethyl Phthalate	--	--	--	--	UG/KG	38.5	N		600	Y		99	Y	J	245.8	308.2	2112.9	8.6	177.9	High	765.4	1021.5	-175.9	143.3	1,021.5
Diphenyl Ether	--	--	--	--	UG/KG	21	Y	J	67	Y		9.5	N		32.5	30.4	208.6	6.4	17.6	High	83.8	109.1	-104.5	150.3	109.1
Fluoranthene	460,000	4,400,000	--	--	UG/KG	1600	Y		3100	Y		1600	Y		2100.0	866.0	5937.2	2.8	500.0	Medium	3560.0	4279.4	-63.8	63.8	4,279.4
Fluorene	460,000	4,400,000	--	--	UG/KG	100	Y		280	Y		130	Y		170.0	96.4	661.1	3.9	55.7	High	332.6	412.7	-94.7	73.2	412.7
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	390	Y		830	Y		470	Y		563.3	234.4	1606.8	2.9	135.3	Medium	958.5	1153.2	-72.1	55.4	1,153.2
Naphthalene	3,600	18,000	--	873,000	UG/KG	51	Y		110	Y		41	Y		67.3	37.3	255.6	3.8	21.5	High	130.2	161.2	-73.3	91.4	161.2
Phenanthrene	--	--	--	--	UG/KG	880	Y		2100	Y		1000	Y		1326.7	672.4	4609.8	3.5	388.2	High	2460.2	3018.9	-81.9	71.0	3,018.9
Pyrene	340,000	3,400,000	--	--	UG/KG	1100	Y		2500	Y		1200	Y		1600.0	781.0	5354.4	3.3	450.9	High	2916.7	3565.5	-77.8	70.3	3,565.5
PCB 1254	1,000	1,000	--	--	UG/KG	29	Y		34	Y		22	Y		28.3	6.0	41.3	1.5	3.5	Low	38.5	43.5	-15.9	42.9	38.5
PCB 1260	1,000	1,000	--	--	UG/KG	2.75	N		2.75	N		12	Y	J	5.8	5.3	36.6	6.3	3.1	High	14.8	19.3	0.0	-125.4	19.3
Antimony	6.2	82	DL	406	MG/KG	0.281	Y	J	0.618	Y		0.413	Y	J	0.44	0.17	1.16	2.7	0.10	Medium	0.72	0.86	-75.0	39.8	0.86
Arsenic	0.61	2.4	4.81	--	MG/KG	1.8	Y		2.74	Y	J	2.59	Y	J	2.4	0.5	3.5	1.5	0.3	Low	3.2	3.6	-41.4	5.6	3.2
Barium	3,000	38,000	133	--	MG/KG	78.5	Y	J	93.2	Y		96.1	Y		89.3	9.4	64.7	0.7	5.4	Low	105.2	113.0	-17.1	-3.1	105.2
Beryllium	32	400	2.7	--	MG/KG	0.836	Y	J	0.963	Y	J	0.881	Y	J	0.9	0.1	0.4	0.5	0.0	Low	1.0	1.1	-14.1	8.9	1.0
Cadmium	14	160	DL	--	MG/KG	0.297	Y	J	0.01875	N		0.0682	Y	J	0.128	0.148	1.018	8.0	0.086	High	0.4	0.5	176.2	-113.7	0.502
Chromium	24,000	100,000	5.16	--	MG/KG	8.5	Y	J	10	Y	J	7.16	Y	J	8.6	1.4	9.7	1.1	0.8	Low	10.9	12.1	-16.2	33.1	10.9
Cobalt	4.6	60	14.7	304	MG/KG	3.56	Y		3.87	Y		3.71	Y		3.7	0.2	1.1	0.3	0.1	Low	4.0	4.1	-8.3	4.2	4.0
Copper	620	8,200	3.72	--	MG/KG	8.81	Y		7.81	Y	J	8.57	Y	J	8.4	0.5	3.6	0.4	0.3	Low	9.3	9.7	12.0	-9.3	9.3
Lead	400	800	20.5	--	MG/KG	15.1	Y		21.5	Y	J	16.6	Y	J	17.7	3.3	22.9	1.3	1.9	Low	23.4	26.2	-35.0	25.7	23.4
Mercury	2	3.1	0.0215	--	MG/KG	0.0261	Y	J	0.0308	Y	J	0.027	Y	J	0.028	0.002	0.017	0.6	0.001	Low	0.032	0.034	-16.5	13.1	0.032
Nickel	300	4,000	5.54	--	MG/KG	29.3	Y	J	28.8	Y		17.2	Y		25.1	6.8	46.9	1.9	4.0	Medium	36.6	42.3	1.7	50.4	42.3
Selenium	78	1,000	--	--	MG/KG	0.223	Y	J	0.643	Y	J	0.637	Y	J	0.5	0.2	1.7	3.3	0.1	High	0.9	1.1	-97.0	0.9	1.1
Silver	78	1,000	DL	5,070	MG/KG	40.1	Y	J	26.4	Y		34.3	Y		33.6	6.9	47.1	1.4	4.0	Low	45.2	50.9	41.2	-26.0	45.2
Thallium	0.16	2	DL	10.1	MG/KG	0.314	Y		0.4	Y	J	0.447	Y	J	0.387	0.067	0.462	1.2	0.039	Low	0.501	0.557	-24.1	-11.1	0.501
Tin	9,400	100,000	DL	--	MG/KG	2.61	Y	B	3.49	Y	B	3.14	Y	B	3.1	0.4	3.0	1.0	0.3	Low	3.8	4.2	-28.9	10.6	3.8
Vanadium	78	1,000	22.8	507	MG/KG	22.2	Y		23.8	Y		20.4	Y		22.1	1.7	11.7	0.5	1.0	Low	25.0	26.4	-7.0	15.4	25.0
Zinc	4,600	62,000	49	--	MG/KG	239	Y	J	78.2	Y	J	79.1	Y	J	132.1	92.6	634.7	4.8	53.5	High	288.2	365.1	101.4	-1.1	365.1

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-5A			DU-5B			DU-5C			DU-5										
					Date Sampled	12/09/2014			12/09/2014			12/09/2014									95% UCL				
					Number of Increments	41			41			41									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																				Low	Medium to			
	Residential	Industrial Health	Site Specic	Site Specific RL		Report		Validation	Report		Validation	Report		Validation	Arithmetic	Std. Dev.	Std. Dev.	Coef. of			Dispersion	High			
Parameter Name	Health Based	Based	Background	for Surface Soil	Units	Result	Detected	Qualifier	Result	Detected	Qualifier	Result	Detected	Qualifier	Mean	(SD) of Replicates	(SD) of Increments	Variation (CV) of DU	Std. Error of DU	Dispersion (Error)	(Error)	Dispersion	RPD-A/B	RPD-B/C	95% UCL
2-Methylnaphthalene	46,000	370,000	--	--	UG/KG	12	Y	J	2	N		21	Y		11.7	9.5	60.9	5.2	5.5	High	27.7	35.6	142.9	-165.2	35.6
Acenaphthene	680,000	6,600,000	--	--	UG/KG	30	Y		9	Y	J	66	Y		35.0	28.8	184.6	5.3	16.6	High	83.6	107.5	107.7	-152.0	107.5
Acenaphthylene	NA	NA	--	--	UG/KG	10	Y	J	4	Y	J	41	Y		18.3	19.9	127.2	6.9	11.5	High	51.8	68.3	85.7	-164.4	68.3
Anthracene	3,400,000	34,000,000	--	--	UG/KG	82	Y		27	Y		190	Y		99.7	82.9	531.0	5.3	47.9	High	239.5	308.4	100.9	-150.2	308.4
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	240	Y		100	Y		560	Y		300.0	235.8	1509.8	5.0	136.1	High	697.5	893.4	82.4	-139.4	893.4
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	280	Y		120	Y		680	Y		360.0	288.4	1846.9	5.1	166.5	High	846.3	1085.9	80.0	-140.0	1,085.9
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	140	Y		68	Y		320	Y		176.0	129.8	831.1	4.7	74.9	High	394.8	502.7	69.2	-129.9	502.7
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	130	Y		58	Y		250	Y		146.0	97.0	621.1	4.3	56.0	High	309.5	390.1	76.6	-124.7	390.1
Benzo[A]Pyrene	15	210	--	--	UG/KG	220	Y		98	Y		510	Y		276.0	211.6	1355.1	4.9	122.2	High	632.8	808.6	76.7	-135.5	808.6
Benzyl Alcohol	1,200,000	12,000,000	--	--	UG/KG	95	N		95	N		240	Y	J	143.3	83.7	536.0	3.7	48.3	High	284.5	354.0	0.0	-86.6	354.0
Chrysene	15,000	210,000	--	--	UG/KG	210	Y		90	Y		500	Y		266.7	210.8	1349.7	5.1	121.7	High	622.0	797.1	80.0	-139.0	797.1
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	40	Y		17	Y	J	90	Y		49.0	37.3	239.0	4.9	21.5	High	111.9	142.9	80.7	-136.4	142.9
Dibenzofuran	16,000	170,000	--	--	UG/KG	20	Y	J	9.5	N		43	Y		24.2	17.1	109.7	4.5	9.9	High	53.1	67.3	71.2	-127.6	67.3
Fluoranthene	460,000	4,400,000	--	--	UG/KG	460	Y		190	Y		1100	Y		583.3	467.4	2992.6	5.1	269.8	High	1371.2	1759.5	83.1	-141.1	1,759.5
Fluorene	460,000	4,400,000	--	--	UG/KG	43	Y		9	Y	J	99	Y		50.3	45.4	291.0	5.8	26.2	High	126.9	164.7	130.8	-166.7	164.7
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	130	Y		61	Y		310	Y		167.0	128.6	823.2	4.9	74.2	High	383.7	490.5	72.3	-134.2	490.5
Naphthalene	3,600	18,000	--	873,000	UG/KG	25	Y		2	N		57	Y		28.0	27.6	176.9	6.3	15.9	High	74.6	97.5	170.4	-186.4	97.5
Phenanthrene	--	--	--	--	UG/KG	310	Y		100	Y		690	Y		366.7	299.1	1914.9	5.2	172.7	High	870.8	1119.3	102.4	-149.4	1,119.3
Pyrene	340,000	3,400,000	--	--	UG/KG	350	Y		150	Y		800	Y		433.3	332.9	2131.7	4.9	192.2	High	994.6	1271.2	80.0	-136.8	1,271.2
PCB 1254	1,000	1,000	--	--	UG/KG	1.85	N		31	Y		28	Y		20.3	16.0	102.7	5.1	9.3	High	47.3	60.6	-177.5	10.2	60.6
PCB 1260	1,000	1,000	--	--	UG/KG	18	Y	J	2.75	N		130	Y		50.3	69.5	444.9	8.9	40.1	High	167.4	225.1	147.0	-191.7	225.1
Antimony	6.2	82	DL	406	MG/KG	0.205	Y	J	0.123	Y	J	0.116	Y	J	0.148	0.049	0.317	2.1	0.029	Medium	0.231	0.273	50.0	5.9	0.273
Arsenic	0.61	2.4	4.81	--	MG/KG	1.52	Y		1.52	Y		1.48	Y		1.5	0.0	0.1	0.1	0.0	Low	1.5	1.6	0.0	2.7	1.5
Barium	3,000	38,000	133	--	MG/KG	70.8	Y		70.8	Y		65.5	Y		69.0	3.1	19.6	0.3	1.8	Low	74.2	76.7	0.0	7.8	74.2
Beryllium	32	400	2.7	--	MG/KG	1.2	Y		1.22	Y		1.24	Y		1.2	0.0	0.1	0.1	0.0	Low	1.3	1.3	-1.7	-1.6	1.3
Cadmium	14	160	DL	--	MG/KG	0.185	Y	J	0.185	Y	J	0.184	Y	J	0.185	0.001	0.004	0.0	0.000	Low	0.186	0.186	0.0	0.5	0.186
Chromium	24,000	100,000	5.16	--	MG/KG	8.99	Y		6.37	Y		6.5	Y		7.3	1.5	9.5	1.3	0.9	Low	9.8	11.0	34.1	-2.0	9.8
Cobalt	4.6	60	14.7	304	MG/KG	3.79	Y		3.64	Y		3.81	Y		3.7	0.1	0.6	0.2	0.1	Low	3.9	4.0	4.0	-4.6	3.9
Copper	620	8,200	3.72	--	MG/KG	8.43	Y		5.88	Y		10.3	Y		8.2	2.2	14.2	1.7	1.3	Medium	11.9	13.8	35.6	-54.6	13.8
Lead	400	800	20.5	--	MG/KG	17.3	Y	J	16.2	Y	J	16.5	Y	J	16.7	0.6	3.6	0.2	0.3	Low	17.6	18.1	6.6	-1.8	17.6
Mercury	2	3.1	0.0215	--	MG/KG	0.0235	Y	J	0.0228	Y	J	0.0248	Y	J	0.024	0.001	0.006	0.3	0.001	Low	0.025	0.026	3.0	-8.4	0.025
Nickel	300	4,000	5.54	--	MG/KG	19.7	Y		19.2	Y		27.2	Y		22.0	4.5	28.7	1.3	2.6	Low	29.6	33.3	2.6	-34.5	29.6
Selenium	78	1,000	--	--	MG/KG	0.255	Y	J	0.288	Y	J	0.273	Y	J	0.272	0.017	0.106	0.4	0.010	Low	0.300	0.314	-12.2	5.3	0.300
Silver	78	1,000	DL	5,070	MG/KG	1.91	Y		1.83	Y		4.68	Y		2.8	1.6	10.4	3.7	0.9	High	5.5	6.9	4.3	-87.6	6.9
Thallium	0.16	2	DL	10.1	MG/KG	0.285	Y		0.321	Y		0.345	Y		0.317	0.030	0.193	0.6	0.017	Low	0.368	0.393	-11.9	-7.2	0.368
Tin	9,400	100,000	DL	--	MG/KG	3.36	Y	B	3.28	Y	B	3.38	Y	B	3.3	0.1	0.3	0.1	0.0	Low	3.4	3.5	2.4	-3.0	3.4
Vanadium	78	1,000	22.8	507	MG/KG	22.8	Y		18.5	Y		17.9	Y		19.7	2.7	17.1	0.9	1.5	Low	24.2	26.5	20.8	3.3	24.2
Zinc	4,600	62,000	49	--	MG/KG	58	Y		49.2	Y		71.1	Y		59.4	11.0	70.6	1.2	6.4	Low	78.0	87.2	16.4	-36.4	78.0

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-6A			DU-6B			DU-6C			DU-6										
					Date Sampled	12/11/2014			12/11/2014			12/11/2014									95% UCL				
					Number of Increments	48			48			48									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																				Low	Medium to			
	Residential	Industrial Health	Site Specic	Site Specific RL		Report		Validation	Report		Validation	Report		Validation	Arithmetic	Std. Dev.	Std. Dev.	Coef. of	Std. Error of	Dispersion	Dispersion	High			
Parameter Name	Health Based	Based	Background	for Surface Soil	Units	Result	Detected	Qualifier	Result	Detected	Qualifier	Result	Detected	Qualifier	Mean	(SD) of Replicates	(SD) of Increments	Variation (CV) of DU	DU	(Error)	(Error)	Dispersion	RPD-A/B	RPD-B/C	95% UCL
Trichlorofluoromethane	160,000	680,000	--	--	UG/KG	290	Y	J	380	Y		350	Y		340.0	45.8	317.5	0.9	26.5	Low	417.3	455.3	-26.9	8.2	417.3
Xylenes	130,000	260,000	--	--	UG/KG	32	N		29.5	N		63	Y	J	41.5	18.7	129.3	3.1	10.8	High	73.0	88.5	8.1	-72.4	88.5
2,4-Dimethylphenol	240,000	2,400,000	--	--	UG/KG	110	Y		9.5	N		9.5	N		43.0	58.0	402.0	9.3	33.5	High	140.8	189.0	168.2	0.0	189.0
2-Methylnaphthalene	46,000	370,000	--	--	UG/KG	2400	Y		70	Y		150	Y		873.3	1322.7	9164.2	10.5	763.7	High	3103.3	4202.1	188.7	-72.7	4,202.1
2-Methylphenol (O-Cresol)	620,000	12,000,000	--	--	UG/KG	96	Y		9.5	N		9.5	N		38.3	49.9	346.0	9.0	28.8	High	122.5	164.0	164.0	0.0	164.0
3-Methylcholanthrene	5.2	78	--	--	UG/KG	150	Y		9.5	N		9.5	N		56.3	81.1	562.0	10.0	46.8	High	193.1	260.5	176.2	0.0	260.5
4-Methylphenol (P-Cresol)	1,200,000	12,000,000	--	--	UG/KG	240	Y		9.5	N		9.5	N		86.3	133.1	922.0	10.7	76.8	High	310.7	421.2	184.8	0.0	421.2
Acenaphthene	680,000	6,600,000	--	--	UG/KG	4100	Y		430	Y		530	Y		1686.7	2090.6	14484.1	8.6	1207.0	High	5211.1	6947.9	162.0	-20.8	6,947.9
Acenaphthylene	NA	NA	--	--	UG/KG	750	Y		150	Y		170	Y		356.7	340.8	2361.0	6.6	196.8	High	931.2	1214.3	133.3	-12.5	1,214.3
Acetophenone	1,600,000	2,500,000	--	--	UG/KG	9.5	N		27	Y	J	9.5	N		15.3	10.1	70.0	4.6	5.8	High	32.4	40.8	-95.9	95.9	40.8
Anthracene	3,400,000	34,000,000	--	--	UG/KG	9600	Y		1300	Y		1300	Y		4066.7	4792.0	33200.0	8.2	2766.7	High	12145.3	16126.3	152.3	0.0	16,126.3
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	16000	Y		4300	Y		3500	Y		7933.3	6997.4	48479.3	6.1	4039.9	High	19729.9	25543.0	115.3	20.5	25,543.0
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	18000	Y		4500	Y		3700	Y		8733.3	8035.1	55669.0	6.4	4639.1	High	22279.4	28954.6	120.0	19.5	28,954.6
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	8100	Y		2300	Y		1700	Y		4033.3	3534.6	24488.4	6.1	2040.7	High	9992.1	12928.5	111.5	30.0	12,928.5
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	6700	Y		1800	Y		1300	Y		3266.7	2983.8	20672.7	6.3	1722.7	High	8297.0	10775.8	115.3	32.3	10,775.8
Benzo[A]Pyrene	15	210	--	--	UG/KG	13000	Y		3500	Y		2600	Y		6366.7	5762.2	39921.9	6.3	3326.8	High	16081.0	20868.0	115.2	29.5	20,868.0
Biphenyl	10,000	42,000	--	299,000	UG/KG	890	Y		110	Y		72	Y		357.3	461.7	3198.7	9.0	266.6	High	1135.7	1519.2	156.0	41.8	1,519.2
Bis(2-Ethylhexyl)Phthalate	35,000	120,000	--	--	UG/KG	160	Y	J	330	Y		200	Y		230.0	88.9	615.8	2.7	51.3	Medium	379.8	453.7	-69.4	49.1	453.7
Butyl Benzyl Phthalate	260,000	910,000	--	--	UG/KG	38	N		83	Y	J	110	Y	J	77.0	36.4	252.0	3.3	21.0	High	138.3	168.5	-74.4	-28.0	168.5
Chrysene	15,000	210,000	--	--	UG/KG	14000	Y		3800	Y		2900	Y		6900.0	6165.2	42713.9	6.2	3559.5	High	17293.7	22415.5	114.6	26.9	22,415.5
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	2000	Y		650	Y		410	Y		1020.0	857.1	5938.5	5.8	494.9	High	2465.0	3177.1	101.9	45.3	3,177.1
Dibenzofuran	16,000	170,000	--	--	UG/KG	3200	Y		210	Y		320	Y		1243.3	1695.4	11746.2	9.4	978.8	High	4101.6	5510.0	175.4	-41.5	5,510.0
Dimethyl Phthalate	--	--	--	--	UG/KG	38	N		110	Y	J	38	N		62.0	41.6	288.0	4.6	24.0	High	132.1	166.6	-97.3	97.3	166.6
Diphenyl Ether	--	--	--	--	UG/KG	180	Y		330	Y		86	Y		198.7	123.1	852.6	4.3	71.1	High	406.1	508.4	-58.8	117.3	508.4
Fluoranthene	460,000	4,400,000	--	--	UG/KG	36000	Y		7000	Y		6900	Y		16633.3	16772.1	116200.5	7.0	9683.4	High	44908.7	58842.2	134.9	1.4	58,842.2
Fluorene	460,000	4,400,000	--	--	UG/KG	6600	Y		490	Y		700	Y		2596.7	3468.6	24031.0	9.3	2002.6	High	8444.2	11325.7	172.4	-35.3	11,325.7
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	7900	Y		2200	Y		1600	Y		3900.0	3477.1	24089.8	6.2	2007.5	High	9761.8	12650.4	112.9	31.6	12,650.4
Naphthalene	3,600	18,000	--	873,000	UG/KG	5600	Y		170	Y		370	Y		2046.7	3078.9	21331.3	10.4	1777.6	High	7237.2	9795.1	188.2	-74.1	9,795.1
N-Nitrosodiphenylamine	99,000	350,000	--	--	UG/KG	78	Y		9.5	N		9.5	N		32.3	39.5	274.0	8.5	22.8	High	99.0	131.9	156.6	0.0	131.9
Phenanthrene	--	--	--	--	UG/KG	33000	Y		4400	Y		4200	Y		13866.7	16570.3	114802.1	8.3	9566.8	High	41801.7	55567.6	152.9	4.7	55,567.6
Phenol	3,600,000	36,000,000	--	--	UG/KG	210	Y		28	Y	J	19	Y	J	85.7	107.8	746.7	8.7	62.2	High	267.4	356.9	152.9	38.3	356.9
Pyrene	340,000	3,400,000	--	--	UG/KG	27000	Y		5500	Y		5100	Y		12533.3	12530.1	86811.1	6.9	7234.3	High	33657.3	44066.7	132.3	7.5	44,066.7
PCB 1242	1,000	1,000	--	--	UG/KG	2900	Y		1.9	N		1.9	N		967.9	1673.2	11592.4	12.0	966.0	High	3788.7	5178.8	199.7	0.0	5,178.8
PCB 1254	1,000	1,000	--	--	UG/KG	19	N		92	Y		110	Y		73.7	48.2	333.9	4.5	27.8	High	154.9	194.9	-131.5	-17.8	194.9
Antimony	6.2	82	DL	406	MG/KG	0.463	Y	J	0.918	Y	J	0.484	Y	J	0.6	0.3	1.8	2.9	0.1	Medium	1.1	1.3	-65.9	61.9	1.3
Arsenic	0.61	2.4	4.81	--	MG/KG	1.92	Y		1.86	Y		1.83	Y		1.9	0.0	0.3	0.2	0.0	Low	1.9	2.0	3.2	1.6	1.9
Barium	3,000	38,000	133	--	MG/KG	69.9	Y		66.1	Y		62.9	Y		66.3	3.5	24.3	0.4	2.0	Low	72.2	75.1	5.6	5.0	72.2
Beryllium	32	400	2.7	--	MG/KG	1.4	Y		1.18	Y		1.36	Y		1.3	0.1	0.8	0.6	0.1	Low	1.5	1.6	17.1	-14.2	1.5
Cadmium	14	160	DL	--	MG/KG	0.293	Y	J	0.367	Y	J	0.251	Y	J	0.304	0.059	0.407	1.3	0.034	Low	0.403	0.451	-22.4	37.5	0.403
Chromium	24,000	100,000	5.16	--	MG/KG	10.6	Y		9.28	Y		7.13	Y		9.0	1.8	12.1	1.3	1.0	Low	12.0	13.4	13.3	26.2	12.0
Cobalt	4.6	60	14.7	304	MG/KG	3.57	Y		3.16	Y		3.12	Y		3.3	0.2	1.7	0.5	0.1	Low	3.7	3.9	12.2	1.3	3.7
Copper	620	8,200	3.72	--	MG/KG	9.45	Y		9.64	Y		8.69	Y		9.3	0.5	3.5	0.4	0.3	Low	10.1	10.5	-2.0	10.4	10.1
Lead	400	800	20.5	--	MG/KG	19.4	Y	J	18.8	Y	J	19.7	Y	J	19.3	0.5	3.2	0.2	0.3	Low	20.1	20.5	3.1	-4.7	20.1
Mercury	2	3.1	0.0215	--	MG/KG	1.81	Y		0.331	Y		0.0505	Y	J	0.73	0.95	6.55	9.0	0.55	High	2.3	3.1	138.2	147.1	3.1
Nickel	300	4,000	5.54	--	MG/KG	16.3	Y		20.1	Y		15.6	Y		17.3	2.4	16.8	1.0	1.4	Low	21.4	23.4	-20.9	25.2	21.4
Selenium	78	1,000	--	--	MG/KG	0.308	Y	J	0.274	Y	J	0.317	Y	J	0.300	0.023	0.157	0.5	0.013	Low	0.338	0.357	11.7	-14.6	0.338
Silver	78	1,000	DL	5,070	MG/KG	3.98	Y		11.6	Y		12.6	Y		9.4	4.7	32.7	3.5	2.7	High	17.3	21.3	-97.8	-8.3	21.3
Thallium	0.16	2	DL	10.1	MG/KG	0.266	Y		0.241	Y		0.278	Y		0.262	0.019	0.131	0.5	0.011	Low	0.293	0.309	9.9	-14.3	0.293
Tin	9,400	100,000	DL	--	MG/KG	3.63	Y	B	3.67	Y	B	3.5	Y	B	3.6	0.1	0.6	0.2	0.1	Low	3.7	3.8	-1.1	4.7	3.7
Vanadium	78	1,000	22.8	507	MG/KG	29.2	Y		22.2	Y		19.2	Y		23.5	5.1	35.6	1.5	3.0	Medium	32.2	36.4	27.2	14.5	36.4
Zinc	4,600	62,000	49	--	MG/KG	88.3	Y		97.7	Y		85.4	Y		90.5	6.4	44.5	0.5	3.7	Low	101.3	106.6	-10.1	13.4	101.3

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-7A			DU-7B			DU-7C			DU-7										
					Date Sampled	12/15/2014			12/15/2014			12/15/2014									95% UCL				
					Number of Increments	35			35			35									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																								
Parameter Name	Residential Health Based	Industrial Health Based	Site Specic Background	Site Specific RL for Surface Soil	Units	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Arithmetic Mean	Std. Dev. (SD) of Replicates	Std. Dev. (SD) of Increments	Coef. of Variation (CV) of DU	Std. Error of DU	Dispersion (Error)	Low Dispersion (Error)	Medium to High Dispersion	RPD-A/B	RPD-B/C	95% UCL
Trichlorofluoromethane	160,000	680,000	--	--	UG/KG	170	Y	J	400	Y		230	Y	J	266.7	119.3	705.8	2.6	68.9	Medium	467.8	566.9	-80.7	54.0	566.9
2-Methylnaphthalene	46,000	370,000	--	--	UG/KG	52	Y		33	Y		18	Y	J	34.3	17.0	100.8	2.9	9.8	Medium	63.1	77.2	44.7	58.8	77.2
Acenaphthene	680,000	6,600,000	--	--	UG/KG	220	Y		190	Y		93	Y		167.7	66.4	392.7	2.3	38.3	Medium	279.6	334.7	14.6	68.6	334.7
Acenaphthylene	NA	NA	--	--	UG/KG	130	Y		100	Y		46	Y		92.0	42.6	251.8	2.7	24.6	Medium	163.8	199.1	26.1	74.0	199.1
Acetophenone	1,600,000	2,500,000	--	--	UG/KG	24	Y	J	9.5	N		9.5	N		14.3	8.4	49.5	3.5	4.8	High	28.4	35.4	86.6	0.0	35.4
Anthracene	3,400,000	34,000,000	--	--	UG/KG	660	Y		670	Y		270	Y		533.3	228.1	1349.5	2.5	131.7	Medium	917.9	1107.4	-1.5	85.1	1,107.4
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	1900	Y		2000	Y		870	Y		1590.0	625.5	3700.7	2.3	361.2	Medium	2644.6	3164.2	-5.1	78.7	3,164.2
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	2100	Y		2100	Y		1100	Y		1766.7	577.4	3415.7	1.9	333.3	Medium	2740.0	3219.6	0.0	62.5	3,219.6
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	1100	Y		1100	Y		570	Y		923.3	306.0	1810.3	2.0	176.7	Medium	1439.2	1693.4	0.0	63.5	1,693.4
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	820	Y		940	Y		390	Y		716.7	289.2	1710.9	2.4	167.0	Medium	1204.2	1444.5	-13.6	82.7	1,444.5
Benzo[A]Pyrene	15	210	--	--	UG/KG	1600	Y		1600	Y		820	Y		1340.0	450.3	2664.2	2.0	260.0	Medium	2099.2	2473.3	0.0	64.5	2,473.3
Biphenyl	10,000	42,000	--	299,000	UG/KG	30	Y	J	22	Y	J	26	Y	J	26.0	4.0	23.7	0.9	2.3	Low	32.7	36.1	30.8	-16.7	32.7
Bis(2-Ethylhexyl)Phthalate	35,000	120,000	--	--	UG/KG	95	Y	J	88	Y	J	38	N		73.7	31.1	183.9	2.5	17.9	Medium	126.1	151.9	7.7	79.4	151.9
Chrysene	15,000	210,000	--	--	UG/KG	1800	Y		1700	Y		820	Y		1440.0	539.3	3190.3	2.2	311.3	Medium	2349.1	2797.1	5.7	69.8	2,797.1
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	350	Y		330	Y		180	Y		286.7	92.9	549.7	1.9	53.6	Medium	443.3	520.5	5.9	58.8	520.5
Dibenzofuran	16,000	170,000	--	--	UG/KG	130	Y		96	Y		43	Y		89.7	43.8	259.4	2.9	25.3	Medium	163.6	200.0	30.1	76.3	200.0
Diphenyl Ether	--	--	--	--	UG/KG	62	Y		35	Y	J	67	Y		54.7	17.2	101.8	1.9	9.9	Medium	83.7	98.0	55.7	-62.7	98.0
Fluoranthene	460,000	4,400,000	--	--	UG/KG	3400	Y		3500	Y		1600	Y		2833.3	1069.3	6325.9	2.2	617.3	Medium	4636.0	5524.3	-2.9	74.5	5,524.3
Fluorene	460,000	4,400,000	--	--	UG/KG	300	Y		250	Y		100	Y		216.7	104.1	615.8	2.8	60.1	Medium	392.1	478.6	18.2	85.7	478.6
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	1000	Y		1000	Y		530	Y		843.3	271.4	1605.4	1.9	156.7	Medium	1300.8	1526.2	0.0	61.4	1,526.2
Naphthalene	3,600	18,000	--	873,000	UG/KG	110	Y		68	Y		36	Y		71.3	37.1	219.6	3.1	21.4	High	133.9	164.7	47.2	61.5	164.7
Phenanthrene	--	--	--	--	UG/KG	2300	Y		2200	Y		990	Y		1830.0	729.2	4313.9	2.4	421.0	Medium	3059.3	3665.1	4.4	75.9	3,665.1
Pyrene	340,000	3,400,000	--	--	UG/KG	2700	Y		2700	Y		1200	Y		2200.0	866.0	5123.5	2.3	500.0	Medium	3660.0	4379.4	0.0	76.9	4,379.4
PCB 1254	1,000	1,000	--	--	UG/KG	63	Y		42	Y		26	Y		43.7	18.6	109.8	2.5	10.7	Medium	74.9	90.4	40.0	47.1	90.4
PCB 1260	1,000	1,000	--	--	UG/KG	2.75	N		2.8	N		26	Y		10.5	13.4	79.3	7.5	7.7	High	33.1	44.3	-1.8	-161.1	44.3
Antimony	6.2	82	DL	406	MG/KG	0.353	Y	J	1.12	Y	J	0.261	Y	J	0.6	0.5	2.8	4.8	0.3	High	1.4	1.8	-104.1	124.4	1.8
Arsenic	0.61	2.4	4.81	--	MG/KG	3.99	Y		3.33	Y		2.43	Y		3.3	0.8	4.6	1.4	0.5	Low	4.6	5.2	18.0	31.3	4.6
Barium	3,000	38,000	133	--	MG/KG	62.7	Y		63.1	Y		56.2	Y		60.7	3.9	22.9	0.4	2.2	Low	67.2	70.4	-0.6	11.6	67.2
Beryllium	32	400	2.7	--	MG/KG	1.16	Y		1.23	Y		1.27	Y		1.2	0.1	0.3	0.3	0.0	Low	1.3	1.4	-5.9	-3.2	1.3
Cadmium	14	160	DL	--	MG/KG	0.183	Y	J	0.21	Y	J	0.23	Y	J	0.208	0.024	0.140	0.7	0.014	Low	0.247	0.267	-13.7	-9.1	0.247
Chromium	24,000	100,000	5.16	--	MG/KG	8.22	Y		7.83	Y		5.98	Y		7.3	1.2	7.1	1.0	0.7	Low	9.4	10.4	4.9	26.8	9.4
Cobalt	4.6	60	14.7	304	MG/KG	3.19	Y		4.44	Y		3.65	Y		3.8	0.6	3.7	1.0	0.4	Low	4.8	5.4	-32.8	19.5	4.8
Copper	620	8,200	3.72	--	MG/KG	9.95	Y		10	Y		9.64	Y		9.9	0.2	1.2	0.1	0.1	Low	10.2	10.4	-0.5	3.7	10.2
Lead	400	800	20.5	--	MG/KG	16.5	Y		21.4	Y		19.1	Y		19.0	2.5	14.5	0.8	1.4	Low	23.1	25.2	-25.9	11.4	23.1
Mercury	2	3.1	0.0215	--	MG/KG	0.0275	Y	J	0.0332	Y	J	0.023	Y	J	0.028	0.005	0.030	1.1	0.003	Low	0.037	0.041	-18.8	36.3	0.037
Nickel	300	4,000	5.54	--	MG/KG	12.6	Y		11.8	Y		12.7	Y		12.4	0.5	2.9	0.2	0.3	Low	13.2	13.6	6.6	-7.3	13.2
Selenium	78	1,000	--	--	MG/KG	0.529	Y	J	0.524	Y	J	0.488	Y	J	0.514	0.022	0.132	0.3	0.013	Low	0.551	0.570	0.9	7.1	0.551
Silver	78	1,000	DL	5,070	MG/KG	18.1	Y		15	Y		3.83	Y		12.3	7.5	44.4	3.6	4.3	High	25.0	31.2	18.7	118.6	31.2
Thallium	0.16	2	DL	10.1	MG/KG	0.408	Y	J	0.437	Y	J	0.359	Y	J	0.401	0.039	0.233	0.6	0.023	Low	0.468	0.501	-6.9	19.6	0.468
Tin	9,400	100,000	DL	--	MG/KG	2.57	Y	B	2.87	Y	B	2.38	Y	B	2.6	0.2	1.5	0.6	0.1	Low	3.0	3.2	-11.0	18.7	3.0
Vanadium	78	1,000	22.8	507	MG/KG	17.3	Y		18.2	Y		16.4	Y		17.3	0.9	5.3	0.3	0.5	Low	18.8	19.6	-5.1	10.4	18.8
Zinc	4,600	62,000	49	--	MG/KG	97	Y		100	Y		98.1	Y		98.4	1.5	9.0	0.1	0.9	Low	100.9	102.2	-3.0	1.9	100.9

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-8A			DU-8B			DU-8C			DU-8										
					Date Sampled	12/17/2014			12/17/2014			12/17/2014									95% UCL				
					Number of Increments	51			51			51									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																				Low	Medium to			
	Residential	Industrial Health	Site Specic	Site Specific RL		Report		Validation	Report		Validation	Report		Validation	Arithmetic	Std. Dev.	Std. Dev.	Coef. of	Std. Error of	Dispersion	Dispersion	High			
Parameter Name	Health Based	Based	Background	for Surface Soil	Units	Result	Detected	Qualifier	Result	Detected	Qualifier	Result	Detected	Qualifier	Mean	(SD) of Replicates	(SD) of Increments	Variation (CV) of DU	DU	(Error)	(Error)	Dispersion	RPD-A/B	RPD-B/C	95% UCL
2-Methylnaphthalene	46,000	370,000	--	--	UG/KG	7	Y	J	15	Y	J	84	Y		35.3	42.3	302.3	8.6	24.4	High	106.7	141.9	-72.7	-139.4	141.9
3-Methylcholanthrene	5.2	78	--	--	UG/KG	9.5	N		9.5	N		68	Y		29.0	33.8	241.2	8.3	19.5	High	85.9	114.0	0.0	-151.0	114.0
Acenaphthene	680,000	6,600,000	--	--	UG/KG	54	Y		81	Y		500	Y		211.7	250.1	1785.8	8.4	144.4	High	633.2	841.0	-40.0	-144.2	841.0
Acenaphthylene	NA	NA	--	--	UG/KG	8	Y	J	6	Y	J	11	Y	J	8.3	2.5	18.0	2.2	1.5	Medium	12.6	14.7	28.6	-58.8	14.7
Anthracene	3,400,000	34,000,000	--	--	UG/KG	160	Y		190	Y		1400	Y		583.3	707.4	5051.9	8.7	408.4	High	1775.9	2363.6	-17.1	-152.2	2,363.6
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	380	Y		510	Y		3600	Y		1496.7	1822.7	13016.7	8.7	1052.3	High	4569.5	6083.7	-29.2	-150.4	6,083.7
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	500	Y		640	Y		3900	Y		1680.0	1923.9	13739.0	8.2	1110.7	High	4923.3	6521.6	-24.6	-143.6	6,521.6
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	240	Y		320	Y		1700	Y		753.3	820.8	5861.8	7.8	473.9	High	2137.1	2819.0	-28.6	-136.6	2,819.0
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	180	Y		290	Y		1300	Y		590.0	617.3	4408.6	7.5	356.4	High	1630.7	2143.6	-46.8	-127.0	2,143.6
Benzo[A]Pyrene	15	210	--	--	UG/KG	360	Y		490	Y		2800	Y		1216.7	1372.7	9803.4	8.1	792.6	High	3530.9	4671.3	-30.6	-140.4	4,671.3
Biphenyl	10,000	42,000	--	299,000	UG/KG	9.5	N		9.5	N		43	Y		20.7	19.3	138.1	6.7	11.2	High	53.3	69.3	0.0	-127.6	69.3
Chrysene	15,000	210,000	--	--	UG/KG	360	Y		490	Y		3200	Y		1350.0	1603.5	11451.0	8.5	925.8	High	4053.2	5385.3	-30.6	-146.9	5,385.3
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	66	Y		96	Y		560	Y		240.7	277.0	1977.9	8.2	159.9	High	707.6	937.7	-37.0	-141.5	937.7
Dibenzofuran	16,000	170,000	--	--	UG/KG	22	Y	J	41	Y		270	Y		111.0	138.0	985.7	8.9	79.7	High	343.7	458.4	-60.3	-147.3	458.4
Diphenyl Ether	--	--	--	--	UG/KG	37	Y	J	56	Y		48	Y		47.0	9.5	68.1	1.4	5.5	Low	63.1	71.0	-40.9	15.4	63.1
Fluoranthene	460,000	4,400,000	--	--	UG/KG	880	Y		1000	Y		6600	Y		2826.7	3268.4	23340.7	8.3	1887.0	High	8336.6	11051.8	-12.8	-147.4	11,051.8
Fluorene	460,000	4,400,000	--	--	UG/KG	60	Y		78	Y		610	Y		249.3	312.5	2231.5	8.9	180.4	High	776.1	1035.7	-26.1	-154.7	1,035.7
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	220	Y		300	Y		1600	Y		706.7	774.7	5532.3	7.8	447.3	High	2012.7	2656.2	-30.8	-136.8	2,656.2
Naphthalene	3,600	18,000	--	873,000	UG/KG	15	Y	J	31	Y		200	Y		82.0	102.5	732.0	8.9	59.2	High	254.8	340.0	-69.6	-146.3	340.0
Phenanthrene	--	--	--	--	UG/KG	600	Y		730	Y		4300	Y		1876.7	2099.7	14994.7	8.0	1212.2	High	5416.4	7160.7	-19.5	-141.9	7,160.7
Pyrene	340,000	3,400,000	--	--	UG/KG	640	Y		830	Y		5100	Y		2190.0	2521.9	18010.1	8.2	1456.0	High	6441.6	8536.7	-25.9	-144.0	8,536.7
PCB 1254	1,000	1,000	--	--	UG/KG	26	Y		1.9	N		72	Y		33.3	35.6	254.3	7.6	20.6	High	93.3	122.9	172.8	-189.7	122.9
PCB 1260	1,000	1,000	--	--	UG/KG	2.8	N		80	Y		2.9	N		28.6	44.5	318.1	11.1	25.7	High	103.7	140.7	-186.5	186.0	140.7
Antimony	6.2	82	DL	406	MG/KG	0.505	Y	J	0.577	Y	J	0.657	Y	J	0.580	0.076	0.543	0.9	0.044	Low	0.708	0.771	-13.3	-13.0	0.708
Arsenic	0.61	2.4	4.81	--	MG/KG	2.49	Y		2.5	Y		2.69	Y		2.6	0.1	0.8	0.3	0.1	Low	2.7	2.8	-0.4	-7.3	2.7
Barium	3,000	38,000	133	--	MG/KG	55.3	Y		64.9	Y		56.5	Y		58.9	5.2	37.4	0.6	3.0	Low	67.7	72.1	-16.0	13.8	67.7
Beryllium	32	400	2.7	--	MG/KG	1.31	Y		1.26	Y		1.45	Y		1.3	0.1	0.7	0.5	0.1	Low	1.5	1.6	3.9	-14.0	1.5
Cadmium	14	160	DL	--	MG/KG	0.118	Y	J	0.211	Y	J	0.182	Y	J	0.170	0.048	0.340	2.0	0.027	Medium	0.251	0.290	-56.5	14.8	0.290
Chromium	24,000	100,000	5.16	--	MG/KG	10.4	Y		12.5	Y		10.9	Y		11.3	1.1	7.8	0.7	0.6	Low	13.1	14.0	-18.3	13.7	13.1
Cobalt	4.6	60	14.7	304	MG/KG	2.76	Y		3.02	Y		3.18	Y		3.0	0.2	1.5	0.5	0.1	Low	3.3	3.5	-9.0	-5.2	3.3
Copper	620	8,200	3.72	--	MG/KG	8.88	Y		11.1	Y		16	Y		12.0	3.6	26.0	2.2	2.1	Medium	18.1	21.2	-22.2	-36.2	21.2
Lead	400	800	20.5	--	MG/KG	20.4	Y		18.8	Y		21.2	Y		20.1	1.2	8.7	0.4	0.7	Low	22.2	23.2	8.2	-12.0	22.2
Mercury	2	3.1	0.0215	--	MG/KG	0.0239	Y	J	0.0287	Y	J	0.0345	Y	J	0.029	0.005	0.038	1.3	0.003	Low	0.038	0.042	-18.3	-18.4	0.038
Nickel	300	4,000	5.54	--	MG/KG	9.2	Y		11.2	Y		12.9	Y		11.1	1.9	13.2	1.2	1.1	Low	14.2	15.8	-19.6	-14.1	14.2
Selenium	78	1,000	DL	5,070	MG/KG	0.322	Y	J	0.347	Y	J	0.331	Y	J	0.333	0.013	0.090	0.3	0.007	Low	0.355	0.365	-7.5	4.7	0.355
Thallium	0.16	2	DL	10.1	MG/KG	0.323	Y	J	0.306	Y	J	0.287	Y	J	0.305	0.018	0.129	0.4	0.010	Low	0.336	0.351	5.4	6.4	0.336
Tin	9,400	100,000	DL	--	MG/KG	3.76	Y	B	3.88	Y	B	4.59	Y	B	4.1	0.4	3.2	0.8	0.3	Low	4.8	5.2	-3.1	-16.8	4.8
Vanadium	78	1,000	22.8	507	MG/KG	15.2	Y		20.5	Y		18.4	Y		18.0	2.7	19.1	1.1	1.5	Low	22.5	24.8	-29.7	10.8	22.5
Zinc	4,600	62,000	49	--	MG/KG	70.9	Y		78.8	Y		80.1	Y		76.6	5.0	35.6	0.5	2.9	Low	85.0	89.1	-10.6	-1.6	85.0

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-9A			DU-9B			DU-9C			DU-9										
					Date Sampled	12/18/2014			12/18/2014			12/18/2014									95% UCL				
					Number of Increments	64			64			64									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																								
Parameter Name	Residential Health Based	Industrial Health Based	Site Specic Background	Site Specific RL for Surface Soil	Units	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Arithmetic Mean	Std. Dev. (SD) of Replicates	Std. Dev. (SD) of Increments	Coef. of Variation (CV) of DU	Std. Error of DU	Dispersion (Error)	Low Dispersion (Error)	Medium to High Dispersion	RPD-A/B	RPD-B/C	95% UCL
Acenaphthene	680,000	6,600,000	--	--	UG/KG	6	Y	J	2	N		2	N		3.3	2.3	18.5	5.5	1.3	High	7.2	9.1	100.0	0.0	9.1
Acenaphthylene	NA	NA	--	--	UG/KG	6	Y	J	2	N		2	N		3.3	2.3	18.5	5.5	1.3	High	7.2	9.1	100.0	0.0	9.1
Anthracene	3,400,000	34,000,000	--	--	UG/KG	17	Y	J	2	N		2	N		7.0	8.7	69.3	9.9	5.0	High	21.6	28.8	157.9	0.0	28.8
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	57	Y		13	Y	J	11	Y	J	27.0	26.0	208.0	7.7	15.0	High	70.8	92.4	125.7	16.7	92.4
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	62	Y		18	Y	J	18	Y	J	32.7	25.4	203.2	6.2	14.7	High	75.5	96.6	110.0	0.0	96.6
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	26	Y		10	Y	J	12	Y	J	16.0	8.7	69.7	4.4	5.0	High	30.7	37.9	88.9	-18.2	37.9
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	24	Y		9	Y	J	9	Y	J	14.0	8.7	69.3	4.9	5.0	High	28.6	35.8	90.9	0.0	35.8
Benzo[A]Pyrene	15	210	--	--	UG/KG	41	Y		12	Y	J	12	Y	J	21.7	16.7	133.9	6.2	9.7	High	49.9	63.8	109.4	0.0	63.8
Chrysene	15,000	210,000	--	--	UG/KG	49	Y		14	Y	J	12	Y	J	25.0	20.8	166.5	6.7	12.0	High	60.1	77.4	111.1	15.4	77.4
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	10	Y	J	6	Y	J	5	Y	J	7.0	2.6	21.2	3.0	1.5	High	11.5	13.7	50.0	18.2	13.7
Fluoranthene	460,000	4,400,000	--	--	UG/KG	76	Y		18	Y	J	14	Y	J	36.0	34.7	277.6	7.7	20.0	High	94.5	123.3	123.4	25.0	123.3
Fluorene	460,000	4,400,000	--	--	UG/KG	7	Y	J	2	N		2	N		3.7	2.9	23.1	6.3	1.7	High	8.5	10.9	111.1	0.0	10.9
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	24	Y		10	Y	J	11	Y	J	15.0	7.8	62.5	4.2	4.5	High	28.2	34.7	82.4	-9.5	34.7
Phenanthrene	--	--	--	--	UG/KG	42	Y		9	Y	J	6	Y	J	19.0	20.0	159.8	8.4	11.5	High	52.7	69.3	129.4	40.0	69.3
Pyrene	340,000	3,400,000	--	--	UG/KG	86	Y		2	N		2	N		30.0	48.5	388.0	12.9	28.0	High	111.8	152.0	190.9	0.0	152.0
PCB 1248	1,000	1,000	--	--	UG/KG	1.8	N		1.85	N		120	Y		41.2	68.2	545.8	13.2	39.4	High	156.2	212.9	-2.7	-193.9	212.9
PCB 1254	1,000	1,000	--	--	UG/KG	6.6	Y	J	8	Y	J	1.85	N		5.5	3.2	25.8	4.7	1.9	High	10.9	13.6	-19.2	124.9	13.6
Antimony	6.2	82	DL	406	MG/KG	13.2	Y	J	3.9	Y	J	2.45	Y	J	6.5	5.8	46.7	7.2	3.4	High	16.4	21.2	108.8	45.7	21.2
Arsenic	0.61	2.4	4.81	--	MG/KG	2	Y		1.87	Y		2.16	Y		2.0	0.1	1.2	0.6	0.1	Low	2.3	2.4	6.7	-14.4	2.3
Barium	3,000	38,000	133	--	MG/KG	65.7	Y		65.5	Y		62.7	Y		64.6	1.7	13.4	0.2	1.0	Low	67.5	68.9	0.3	4.4	67.5
Beryllium	32	400	2.7	--	MG/KG	1.53	Y		1.65	Y		1.51	Y		1.6	0.1	0.6	0.4	0.0	Low	1.7	1.8	-7.5	8.9	1.7
Cadmium	14	160	DL	--	MG/KG	0.0806	Y	J	0.261	Y	J	0.12	Y	J	0.154	0.095	0.759	4.9	0.055	High	0.314	0.393	-105.6	74.0	0.393
Chromium	24,000	100,000	5.16	--	MG/KG	4.6	Y		4.23	Y		5.28	Y		4.7	0.5	4.3	0.9	0.3	Low	5.6	6.0	8.4	-22.1	5.6
Cobalt	4.6	60	14.7	304	MG/KG	3.28	Y		3.59	Y		2.9	Y		3.3	0.3	2.8	0.8	0.2	Low	3.8	4.1	-9.0	21.3	3.8
Copper	620	8,200	3.72	--	MG/KG	4.86	Y		4.9	Y		5.61	Y		5.1	0.4	3.4	0.7	0.2	Low	5.8	6.2	-0.8	-13.5	5.8
Lead	400	800	20.5	--	MG/KG	14	Y		17.7	Y		17.2	Y		16.3	2.0	16.1	1.0	1.2	Low	19.7	21.4	-23.3	2.9	19.7
Mercury	2	3.1	0.0215	--	MG/KG	0.0183	Y	J	0.0164	Y	J	0.0184	Y	J	0.018	0.001	0.009	0.5	0.001	Low	0.020	0.021	11.0	-11.5	0.020
Nickel	300	4,000	5.54	--	MG/KG	8.09	Y		5.57	Y		9.25	Y		7.6	1.9	15.1	2.0	1.1	Medium	10.8	12.4	36.9	-49.7	12.4
Selenium	78	1,000	--	--	MG/KG	0.412	Y	J	0.373	Y	J	0.404	Y	J	0.396	0.021	0.165	0.4	0.012	Low	0.431	0.448	9.9	-8.0	0.431
Silver	78	1,000	DL	5,070	MG/KG	0.741	Y	J	0.103	N		0.107	N		0.3	0.4	2.9	9.3	0.2	High	0.9	1.2	151.2	-3.8	1.2
Thallium	0.16	2	DL	10.1	MG/KG	0.38	Y	J	0.901	Y	J	0.512	Y	J	0.6	0.3	2.2	3.6	0.2	High	1.1	1.3	-81.3	55.1	1.3
Tin	9,400	100,000	DL	--	MG/KG	2.83	Y	B	3.17	Y	B	3.27	Y	B	3.1	0.2	1.8	0.6	0.1	Low	3.5	3.7	-11.3	-3.1	3.5
Vanadium	78	1,000	22.8	507	MG/KG	19.2	Y		16.9	Y		18.5	Y		18.2	1.2	9.4	0.5	0.7	Low	20.2	21.2	12.7	-9.0	20.2
Zinc	4,600	62,000	49	--	MG/KG	40.1	Y		38.7	Y		43.5	Y		40.8	2.5	19.7	0.5	1.4	Low	44.9	47.0	3.6	-11.7	44.9

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

					Location ID	DU-10A			DU-10B			DU-10C			DU-10										
					Date Sampled	12/01/2011			12/02/2014			12/02/2014									95% UCL				
					Number of Increments	36			36			36									Student's T	Chebyshev			
	PreliminarySoil Remediation Goal (PSRG)																				Low	Medium to			
Parameter Name	Residential Health Based	Industrial Health Based	Site Specic Background	Site Specific RL for Surface Soil	Units	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Report Result	Detected	Validation Qualifier	Arithmetic Mean	Std. Dev. (SD) of Replicates	Std. Dev. (SD) of Increments	Coef. of Variation (CV) of DU	Std. Error of DU	Dispersion (Error)	Dispersion (Error)	High Dispersion	RPD-A/B	RPD-B/C	95% UCL
Acenaphthene	680,000	6,600,000	--	--	UG/KG	8	Y	J	2	N		2	N		4.0	3.5	20.8	5.2	2.0	High	9.8	12.7	120.0	0.0	12.7
Anthracene	3,400,000	34,000,000	--	--	UG/KG	17	Y	J	4	Y	J	8	Y	J	9.7	6.7	39.9	4.1	3.8	High	20.9	26.4	123.8	-66.7	26.4
Benzo(A)Anthracene	150	2,100	--	--	UG/KG	38	Y		22	Y		24	Y		28.0	8.7	52.3	1.9	5.0	Medium	42.7	49.9	53.3	-8.7	49.9
Benzo(B)Fluoranthene	150	2,100	--	--	UG/KG	44	Y		31	Y		33	Y		36.0	7.0	42.0	1.2	4.0	Low	47.8	53.6	34.7	-6.3	47.8
Benzo(G,H,I)Perylene	--	--	--	--	UG/KG	22	Y		17	Y	J	17	Y	J	18.7	2.9	17.3	0.9	1.7	Low	23.5	25.9	25.6	0.0	23.5
Benzo(K)Fluoranthene	1,500	21,000	--	--	UG/KG	23	Y		15	Y	J	15	Y	J	17.7	4.6	27.7	1.6	2.7	Medium	25.5	29.3	42.1	0.0	29.3
Benzo[A]Pyrene	15	210	--	--	UG/KG	33	Y		22	Y		25	Y		26.7	5.7	34.1	1.3	3.3	Low	36.3	41.0	40.0	-12.8	36.3
Chrysene	15,000	210,000	--	--	UG/KG	38	Y		20	Y		21	Y		26.3	10.1	60.7	2.3	5.8	Medium	43.4	51.8	62.1	-4.9	51.8
Dibenz(A,H)Anthracene	15	210	--	--	UG/KG	8	Y	J	6	Y	J	5	Y	J	6.3	1.5	9.2	1.4	0.9	Low	8.9	10.2	28.6	18.2	8.9
Fluoranthene	460,000	4,400,000	--	--	UG/KG	77	Y		34	Y		44	Y		51.7	22.5	135.0	2.6	13.0	Medium	89.6	108.3	77.5	-25.6	108.3
Fluorene	460,000	4,400,000	--	--	UG/KG	10	Y	J	2	N		4	Y	J	5.3	4.2	25.0	4.7	2.4	High	12.4	15.8	133.3	-66.7	15.8
Indeno (1,2,3-CD) Pyrene	150	2,100	--	--	UG/KG	19	Y	J	18	Y	J	15	Y	J	17.3	2.1	12.5	0.7	1.2	Low	20.8	22.6	5.4	18.2	20.8
Naphthalene	3,600	18,000	--	873,000	UG/KG	9	Y	J	2	N		2	N		4.3	4.0	24.2	5.6	2.3	High	11.1	14.5	127.3	0.0	14.5
Phenanthrene	--	--	--	--	UG/KG	64	Y		17	Y	J	30	Y		37.0	24.3	145.6	3.9	14.0	High	77.9	98.1	116.0	-55.3	98.1
Pyrene	340,000	3,400,000	--	--	UG/KG	58	Y		31	Y		37	Y		42.0	14.2	85.1	2.0	8.2	Medium	65.9	77.7	60.7	-17.6	77.7
PCB 1254	1,000	1,000	--	--	UG/KG	2	N		7.4	Y	J	6.4	Y	J	5.3	2.9	17.2	3.3	1.7	High	10.1	12.5	-114.9	14.5	12.5
Antimony	6.2	82	DL	406	MG/KG	0.155	Y	J	0.203	Y	J	0.587	Y		0.3	0.2	1.4	4.5	0.1	High	0.7	0.9	-26.8	-97.2	0.9
Arsenic	0.61	2.4	4.81	--	MG/KG	2.2	Y	J	2.49	Y	J	2.53	Y	J	2.4	0.2	1.1	0.4	0.1	Low	2.7	2.9	-12.4	-1.6	2.7
Barium	3,000	38,000	133	--	MG/KG	53.5	Y		63.4	Y		63	Y		60.0	5.6	33.6	0.6	3.2	Low	69.4	74.1	-16.9	0.6	69.4
Beryllium	32	400	2.7	--	MG/KG	1.36	Y		1.37	Y		1.24	Y		1.3	0.1	0.4	0.3	0.0	Low	1.4	1.5	-0.7	10.0	1.4
Chromium	24,000	100,000	5.16	--	MG/KG	8.07	Y	J	16.2	Y	J	12.2	Y	J	12.2	4.1	24.4	2.0	2.3	Medium	19.0	22.4	-67.0	28.2	22.4
Cobalt	4.6	60	14.7	304	MG/KG	3.28	Y		3.85	Y		4.93	Y		4.0	0.8	5.0	1.3	0.5	Low	5.4	6.1	-16.0	-24.6	5.4
Copper	620	8,200	3.72	--	MG/KG	6.45	Y	J	8.35	Y	J	8.67	Y	J	7.8	1.2	7.2	0.9	0.7	Low	9.8	10.8	-25.7	-3.8	9.8
Lead	400	800	20.5	--	MG/KG	17.6	Y	J	16.3	Y	J	20.8	Y	J	18.2	2.3	13.9	0.8	1.3	Low	22.1	24.1	7.7	-24.3	22.1
Mercury	2	3.1	0.0215	--	MG/KG	0.0323	Y	J	0.0335	Y	J	0.0423	Y	J	0.036	0.005	0.033	0.9	0.003	Low	0.045	0.050	-3.6	-23.2	0.045
Nickel	300	4,000	5.54	--	MG/KG	35.3	Y		58.3	Y		38.6	Y		44.1	12.4	74.6	1.7	7.2	Medium	65.0	75.4	-49.1	40.7	75.4
Selenium	78	1,000	DL	--	MG/KG	0.566	Y	J	0.496	Y	J	0.589	Y	J	0.550	0.048	0.291	0.5	0.028	Low	0.632	0.672	13.2	-17.1	0.632
Thallium	0.16	2	DL	10.1	MG/KG	0.349	Y	J	0.379	Y	J	0.369	Y	J	0.366	0.015	0.092	0.3	0.009	Low	0.391	0.404	-8.2	2.7	0.391
Tin	9,400	100,000	DL	--	MG/KG	3.57	Y	B	3.52	Y	B	3.54	Y	B	3.5	0.0	0.2	0.0	0.0	Low	3.6	3.6	1.4	-0.6	3.6
Vanadium	78	1,000	22.8	507	MG/KG	20.8	Y		22.9	Y		26.8	Y		23.5	3.0	18.3	0.8	1.8	Low	28.6	31.2	-9.6	-15.7	28.6
Zinc	4,600	62,000	49	--	MG/KG	44.1	Y	J	44	Y	J	47.1	Y	J	45.1	1.8	10.6	0.2	1.0	Low	48.0	49.5	0.2	-6.8	48.0

Exceeds Residential PSRG
Exceeds Industrial PSRG
Exceeds Background
Exceeds Residentail PSRG & Background
Not Detected (1/2 the detection limit is reported)

APPENDIX E
CAMU 2H14 SAMPLING RESULTS

Table 1
2H2014 CAMU Groundwater Monitoring Data
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte	CAS No.	Units	Screening Level			*Upgradient*		*Downgradient*							
			NC 2L	NC IMAC	Location ID	MW-216A	MW-216B	MW-106A	MW-107A	MW-107B	MW-213	R87-S10	R87-S10	R87-S8	R87-S9
					Field Sample ID	GW2H14-MW-216A	GW2H14-MW-216B	GW2H14-MW-106A	GW2H14-MW-107A	GW2H14-MW-107B	GW2H14-MW-213	GW2H14-R87-S10	GW2H14-R87-S10-D	GW2H14-R87-S8	GW2H14-R87-S9
					Date Sampled	11/10/2014	11/10/2014	11/10/2014	11/11/2014	11/11/2014	11/12/2014	11/11/2014	11/11/2014	11/12/2014	11/12/2014
					Sample Purpose	FS	FS	FS	FS	FS	FS	FS	DUP	FS	FS
Volatile Organic Compounds															
1,1-Dichloroethane	75-34-3	UG/L	6			<0.1	<0.1	**0.2 J**	**0.2 J**	**0.2 J**	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	75-35-4	UG/L	7			**0.3 J**	**0.3 J**	<0.1	<0.1	**0.2 J**	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	106-46-7	UG/L	6			<0.1	<0.1	**0.1 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene	71-43-2	UG/L	1			<0.1	<0.1	**0.3 J**	**0.5**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2 Dichloroethene	156-59-2	UG/L	70			<0.1	<0.1	**0.3 J**	**0.2 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethyl Chloride	75-00-3	UG/L	3000			<0.1	<0.1	**0.7**	**0.2 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	127-18-4	UG/L	0.7			**0.4 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	108-88-3	UG/L	600			<0.1	<0.1	<0.1	**0.2 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichlorofluoromethane	75-69-4	UG/L	2000			**3.7**	**0.6**	<0.1	<0.1	**0.2 J**	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl Chloride	75-01-4	UG/L	0.03			<0.010	**0.012 J**	**0.37**	**1.0**	<0.010	**0.16**	<0.010	<0.010	**0.16**	<0.010
Xylenes	1330-20-7	UG/L	500			<0.1	<0.1	<0.1	**0.5**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Semivolatile Organic Compounds															
1,4-Dioxane	123-91-1	UG/L	3			<1	**1 J**	**3 J**	**3 J**	<1	**3 J**	<1	<1	**2 J**	<1
2-Methylnaphthalene	91-57-6	UG/L	30			<0.011	**0.052**	<0.011	**0.071**	<0.011	<0.012	<0.010	<0.011	<0.011	<0.011
Acenaphthene	83-32-9	UG/L	80			<0.011	<0.010	<0.011	**0.072**	<0.011	<0.012	<0.010	<0.011	<0.011	<0.011
Dibenzofuran	132-64-9	UG/L		28		<0.6	**6**	<0.5	<0.6	<0.5	<0.6	<0.5	<0.6	<0.5	<0.5
Fluorene	86-73-7	UG/L	300			<0.011	**0.029 J**	<0.011	**0.012 J**	<0.011	<0.012	<0.010	<0.011	<0.011	<0.011
Naphthalene	91-20-3	UG/L	6			<0.033	**1.5**	<0.032	**2.1**	<0.032	<0.035	<0.030	<0.034	<0.032	<0.033
Phenanthrene	85-01-8	UG/L	200			<0.033	**0.033 J**	<0.032	<0.033	<0.032	<0.035	<0.030	<0.034	<0.032	<0.033
Phenol	108-95-2	UG/L	30			<0.6	<0.5	**0.7 J**	**2**	<0.5	<0.6	<0.5	<0.6	<0.5	<0.5
Dowtherm															
Biphenyl	92-52-4	UG/L	400			<0.6	**1100**	<0.5	**2**	<0.5	<0.6	<0.5	<0.6	<0.5	<0.5
Diphenyl Ether	101-84-8	UG/L		100		<0.6	**3100**	**32**	**52**	<0.5	**61**	<0.5	<0.6	**5**	<0.5
Inorganics															
Barium	7440-39-3	UG/L	700			**35.2**	**4.6 J**	**76.6**	**74.3**	**0.88 B**	**6.1 J**	**17.9**	**17.3**	**59.7**	**45.2**
Beryllium	7440-41-7	UG/L		4		**0.82 J**	<0.67	<0.67	<0.67	<0.67	**1.2 J**	<0.67	<0.67	<0.67	<0.67
Chromium	7440-47-3	UG/L	10			<1.3	<1.3	**1.6 J**	**1.5 J**	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Lead	7439-92-1	UG/L	15			**0.14 J**	<0.082	<0.082	<0.082	<0.082	<0.082	<0.082	<0.082	<0.082	**0.62 J**
Thallium	7440-28-0	UG/L		0.2		**0.16 J**	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15

Notes:
1 - Constituents detected in CAMU monitoring wells during 2H2014 monitoring event.
Field duplicates included in statistical summary.
2 - Sources of screening criteria:
NC 2L - North Carolina 2L Drinking Water Standard 15A NCAC 2L (April 2013)
NC IMAC - North Carolina Interim Maximum Allowable Concentration (April 2013)

Indicates exceedance of a screening level.

Table 2
Groundwater-to-Surface Water Evaluation, 2H2014
Former DuPont Brevard Facility
Cedar Mountain, NC

Analyte	No. of Samples	No. of Detects	Units	Perimeter Max Detect	Perimeter Avg Detect	15A NCAC 2B - FW Chronic[2]	Other	15A NCAC 2B - Organism Only[2]	NC 2L or IMAC	Screening Criteria[3]	Exceed Criteria?
Volatile Organic Compounds											
1,1-Dichloroethane	7	3	UG/L	2.00E-01	2.00E-01		4.7E+01 (Region III)	1.00E+02		4.70E+02	No
1,1-Dichloroethene	7	1	UG/L	2.00E-01	2.00E-01	1.50E+03		7.10E+03		1.50E+04	No
1,4-Dichlorobenzene	7	1	UG/L	1.00E-01	1.00E-01	1.00E+02		1.90E+02		1.00E+03	No
Benzene	7	2	UG/L	5.00E-01	4.00E-01		5.3E+01 (Region IV)	5.10E+01		5.10E+02	No
cis-1,2 Dichloroethene	7	1	UG/L	3.00E-01	2.50E-01		5.9E+02 (Region III)	7.20E+02		7.20E+03	No
Ethyl Chloride	7	2	UG/L	7.00E-01	4.50E-01				3.00E+03	3.00E+04	No
Toluene	7	1	UG/L	2.00E-01	2.00E-01	1.10E+01			6.00E+02	1.10E+02	No
Trichlorofluoromethane	7	1	UG/L	2.00E-01	2.00E-01			6.70E+04		6.70E+05	No
Vinyl Chloride	7	4	UG/L	1.00E+00	4.23E-01		9.30E+02 (Region III)	2.40E+00		2.40E+01	No
Xylenes	7	1	UG/L	5.00E-01	5.00E-01	6.70E+02			5.00E+02	5.00E+03	No
Semivolatile Organic Compounds											
1,4-Dioxane	7	4	UG/L	3.00E+00	2.75E+00			8.00E+01		8.00E+02	No
2-Methylnaphthalene	7	1	UG/L	7.10E-02	7.10E-02		4.7E+00 (Region III)	8.00E+01		4.70E+01	No
Acenaphthene	7	1	UG/L	7.20E-02	7.20E-02	6.00E+01			8.00E+01	6.00E+02	No
Fluorene	7	1	UG/L	1.20E-02	1.20E-02	3.00E+01		5.30E+03		3.00E+02	No
Naphthalene	7	1	UG/L	2.10E+00	2.10E+00	1.20E+01			6.00E+00	6.00E+01	No
Phenol	7	2	UG/L	2.00E+00	1.35E+00	3.00E+02			3.00E+01	3.00E+02	No
Dowtherm											
Biphenyl	7	1	UG/L	2.00E+00	2.00E+00	1.80E+01		8.60E+02		1.80E+02	No
Diphenyl Ether	7	4	UG/L	6.10E+01	3.75E+01				1.00E+02	1.00E+03	No
Inorganics											
Barium	7	7	UG/L	7.66E+01	4.01E+01	LD		2.00E+05		2.00E+06	No
Beryllium	7	1	UG/L	1.20E+00	1.20E+00	6.50E+00			4.00E+00	4.00E+01	No
Chromium	7	2	UG/L	1.60E+00	1.55E+00	5.00E+01			1.00E+01	1.00E+02	No
Lead	7	1	UG/L	6.20E-01	6.20E-01	2.50E+01			1.50E+01	1.50E+02	No

Notes:
1 - Constituents detected in CAMU monitoring wells during 2H2014 monitoring event.
Field duplicates included in statistical summary.
2 - Sources of screening criteria:
NC 2L - North Carolina 2L Drinking Water Standard 15A NCAC 2L (April 2013)
NC IMAC - North Carolina Interim Maximum Allowable Concentration (April 2013)

Indicates exceedance of a screening level.

Table 3
2H2014 CAMU Surface Water Monitoring Data
Former DuPont Brevard Facility
Cedar Mountain, NC

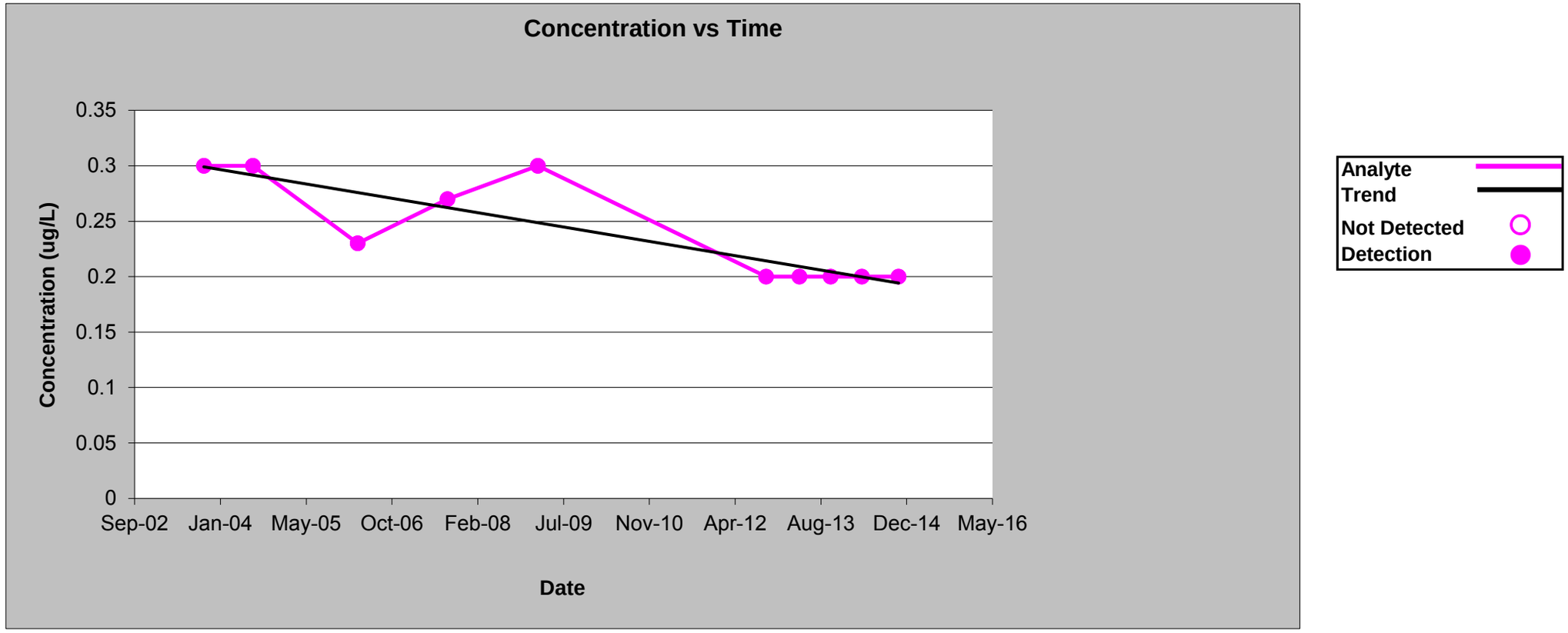
Analyte	CAS No.	Filtered	Units	15A NCAC 2B - FW Chronic	15A NCAC 2B - Organism Only	15A NCAC 2B - Trout Waters	Location ID	SW-5	SW-5	SW-6	SW-6	SW-6
							Field Sample ID	GW2H14-SW-5	GW2H14-SW-5-Z	GW2H14-SW-6	GW2H14-SW-6-D	GW2H14-SW-6-Z
							Date Sampled	10/30/2014	10/30/2014	10/30/2014	10/30/2014	10/30/2014
							Sample Purpose	FS	FS	FS	DUP	FS
Inorganics						No Value						
Barium	7440-39-3	N	UG/L		200000	No Value		**8.0 J**		**5.6 J**	**6.0 J**	
Barium	7440-39-3	Y	UG/L		200000	No Value			**5.5 J**			**5.3 J**
Calcium	7440-70-2	N	UG/L			No Value		**2670 B**		**1080 B**	**2060 B**	
Iron	7439-89-6	N	UG/L	1000		No Value		**653**		**299. J**	**310. J**	
Iron	7439-89-6	Y	UG/L	1000		No Value			**268. J**			**206. J**
Lead	7439-92-1	N	UG/L	25		No Value		**0.19 J**		<0.082	<0.082	
Lead	7439-92-1	Y	UG/L	25		No Value			<0.082			<0.082
Magnesium	7439-95-4	N	UG/L			No Value		**481**		**393**	**404**	
Manganese	7439-96-5	N	UG/L			No Value		**53.2**		**26.3**	**26.9**	
Manganese	7439-96-5	Y	UG/L			No Value			**33.9**			**17.8**
Zinc	7440-66-6	N	UG/L	50		No Value		**2.9 B**		**4.3 B**	**3.0 B**	
Zinc	7440-66-6	Y	UG/L	50		No Value			**4.4 B**			**4.0 B**
Total Hardness As CaCO3	471-34-1	N	UG/L					**8600 B**		**4300 B**	**6800 B**	
Total Suspended Solids	C009	N	UG/L					**37600**		<1000		

B - Not detected substantially above the level reported in the laboratory or fieldblanks.
J - Analyte present. Reported value may not be accurate or precise.
UJ - Not detected. Reporting limit may not be accurate or precise.

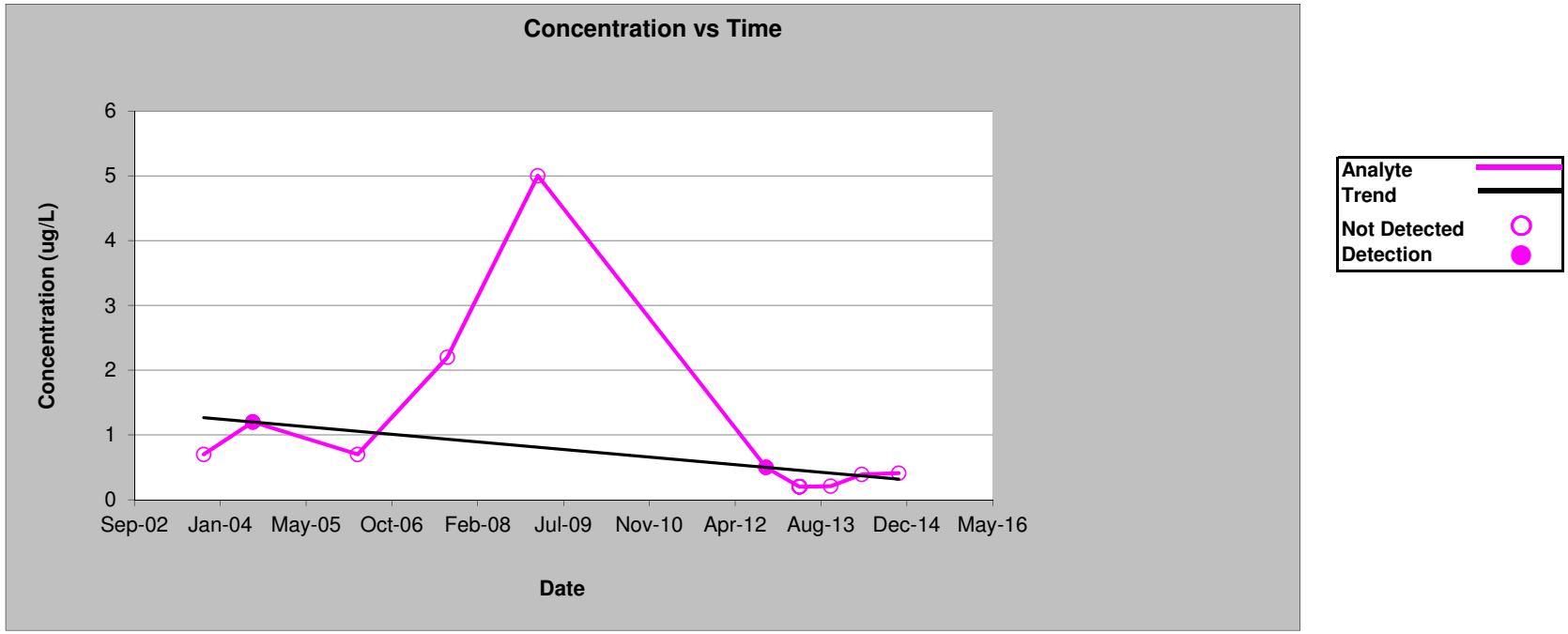
North Carolina Surface Water Standards found in 15A NCAC 02B.0208 for protection of human health (organism only) and aquatic life
Little River is a Class C water and is not used as a water supply.

Indicates exceedance of a screening level.

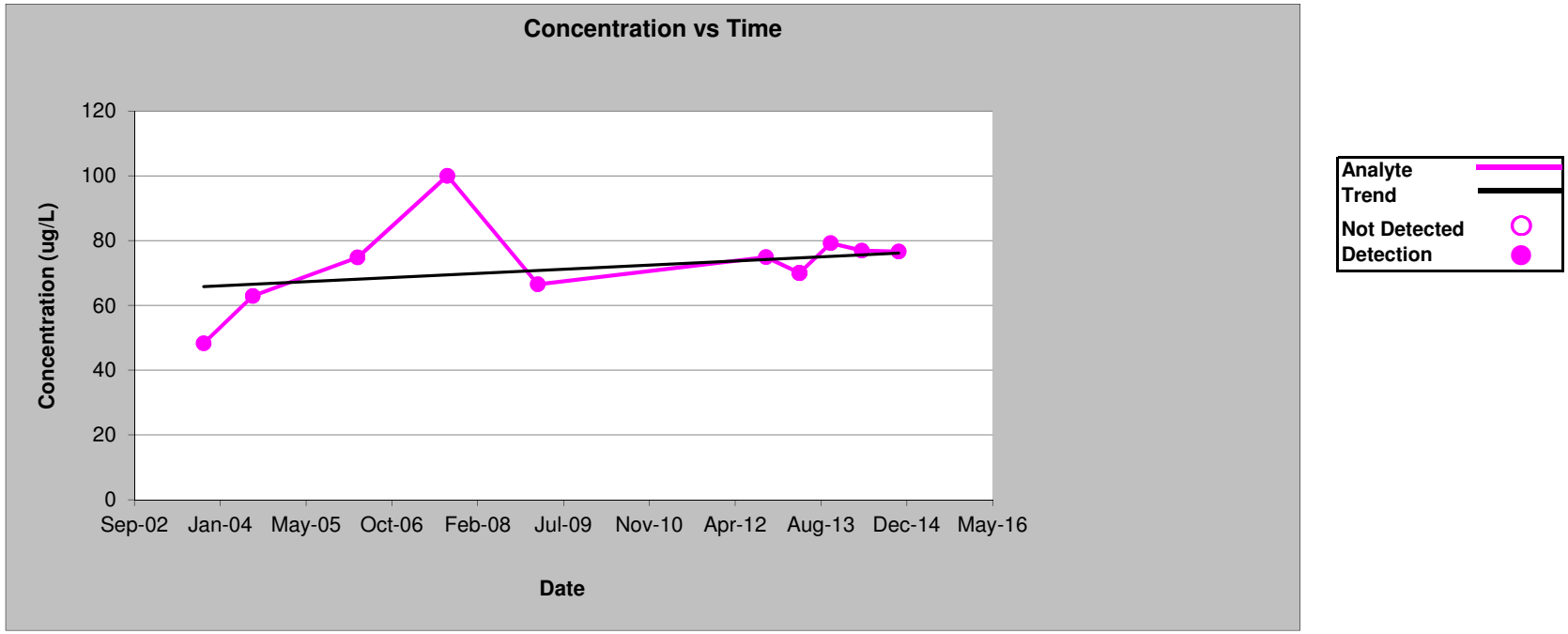
MW-106A
1,1 Dichloroethane
DuPont Brevard Site



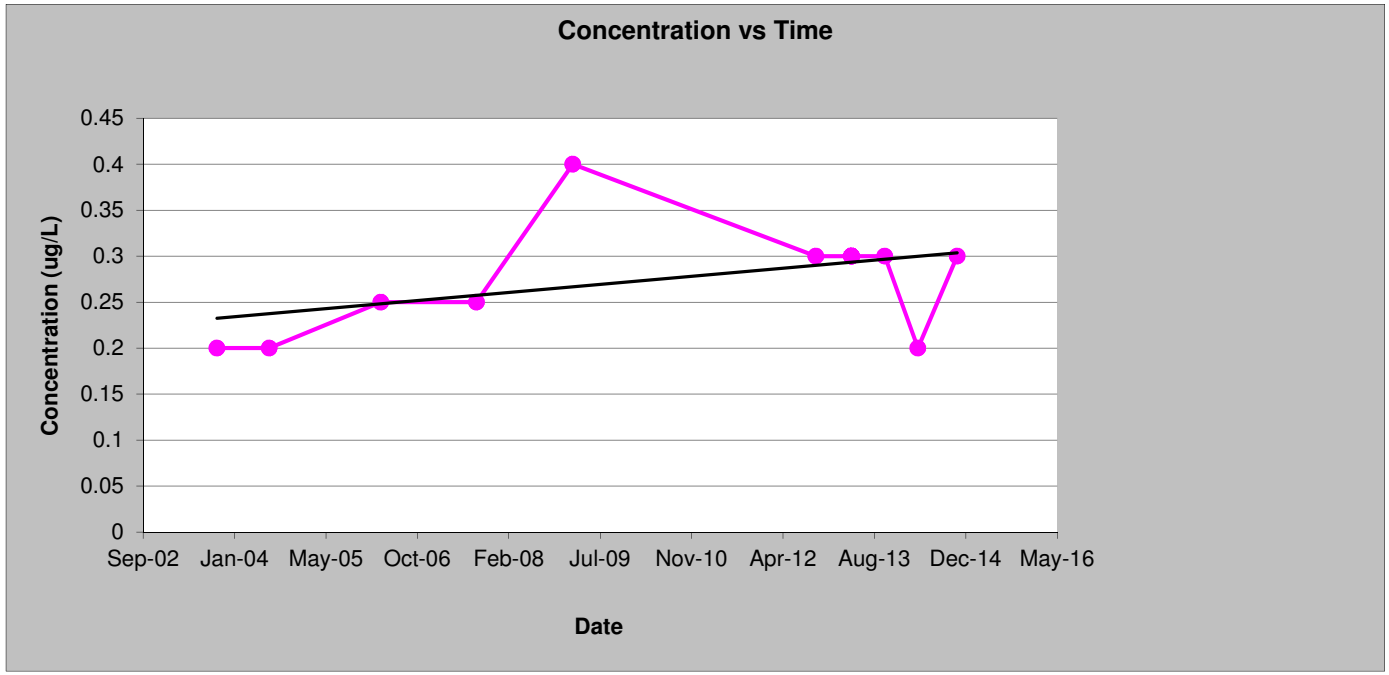
MW-106A
Arsenic
DuPont Brevard Site

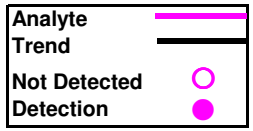


MW-106A
Barium
DuPont Brevard Site

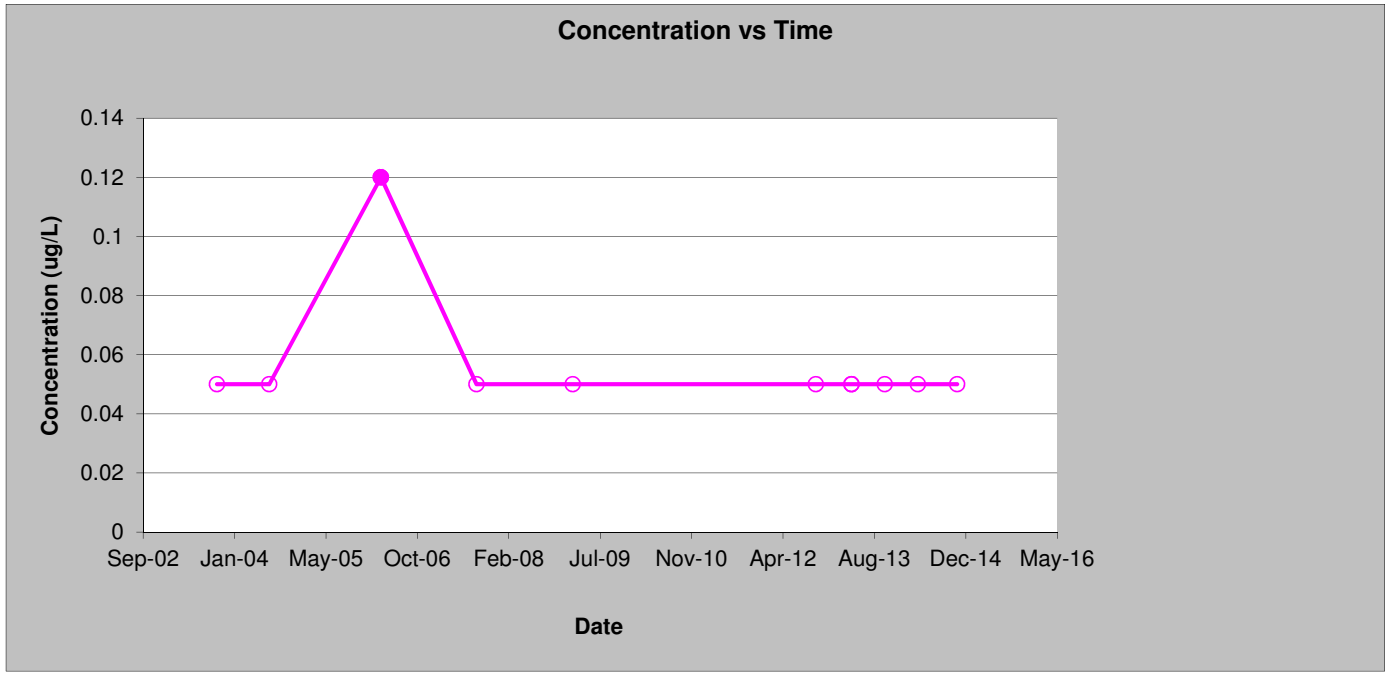


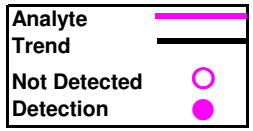
MW-106A
Benzene
DuPont Brevard Site



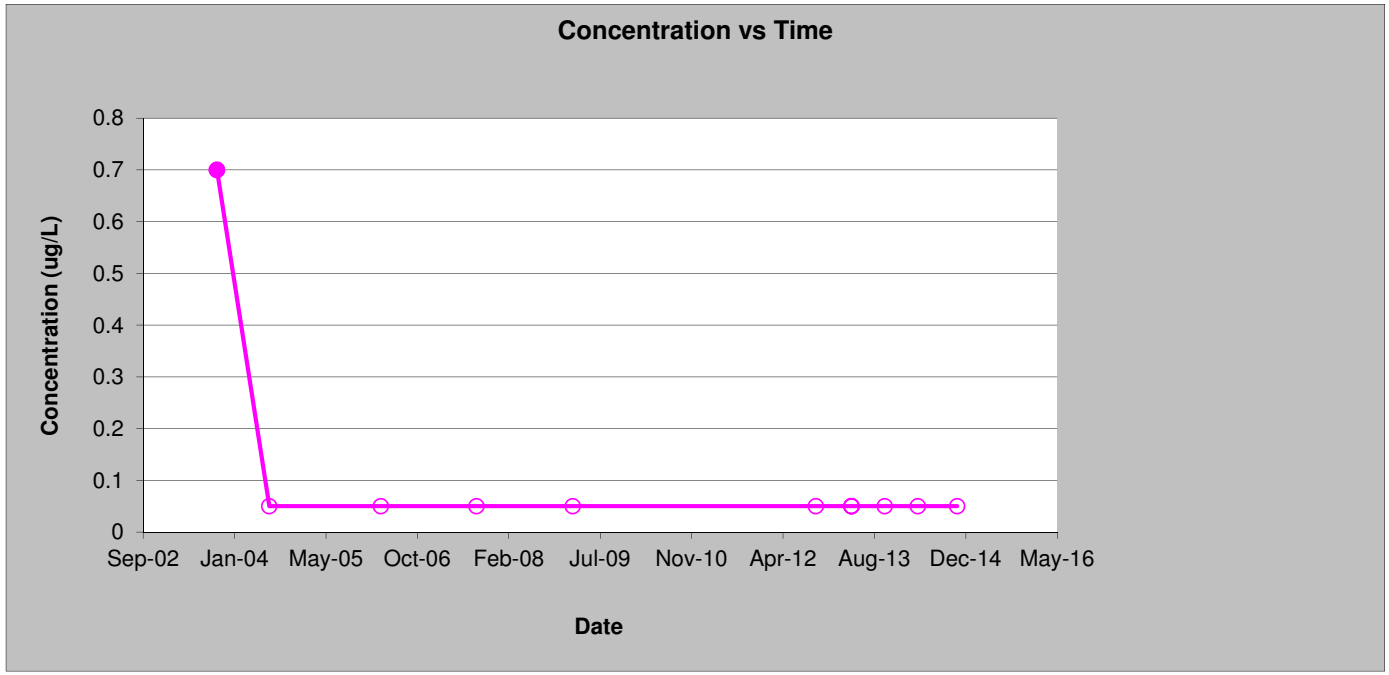


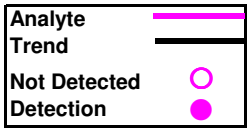
MW-106A
Bromoform
DuPont Brevard Site



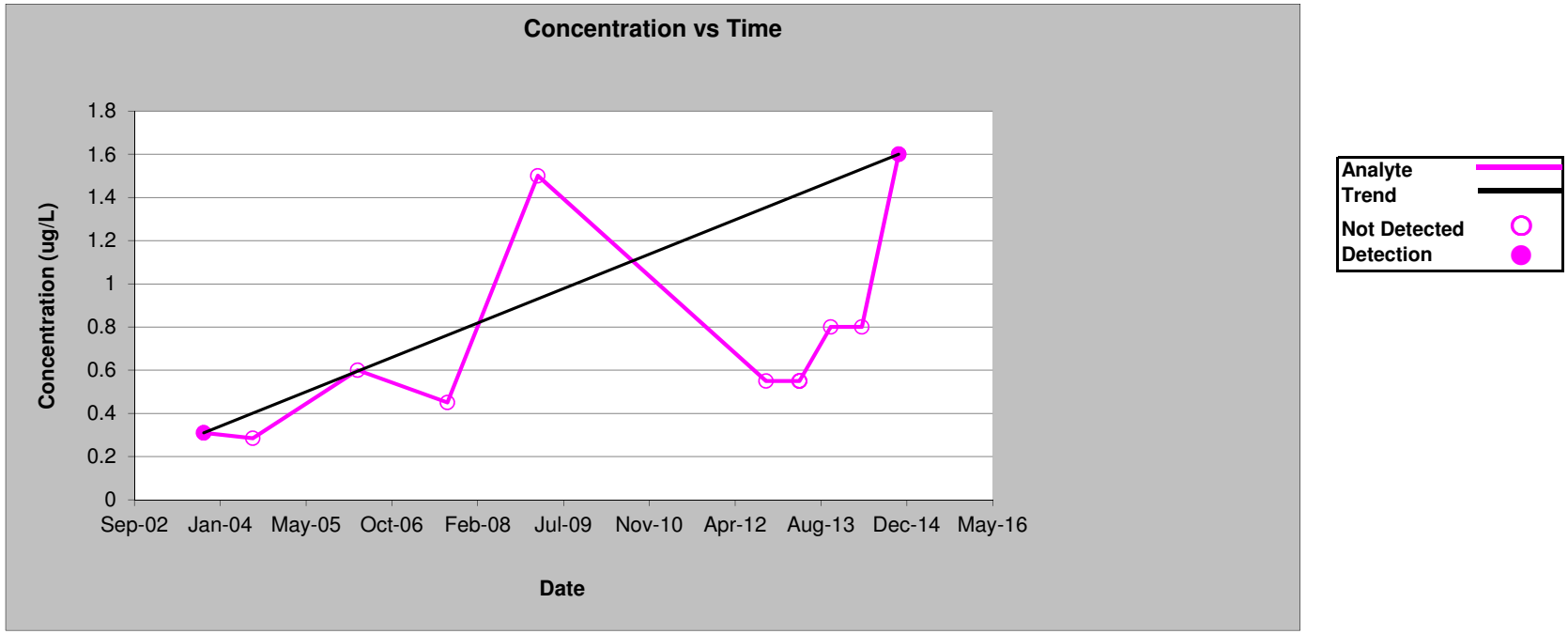


MW-106A
Chloroform
DuPont Brevard Site

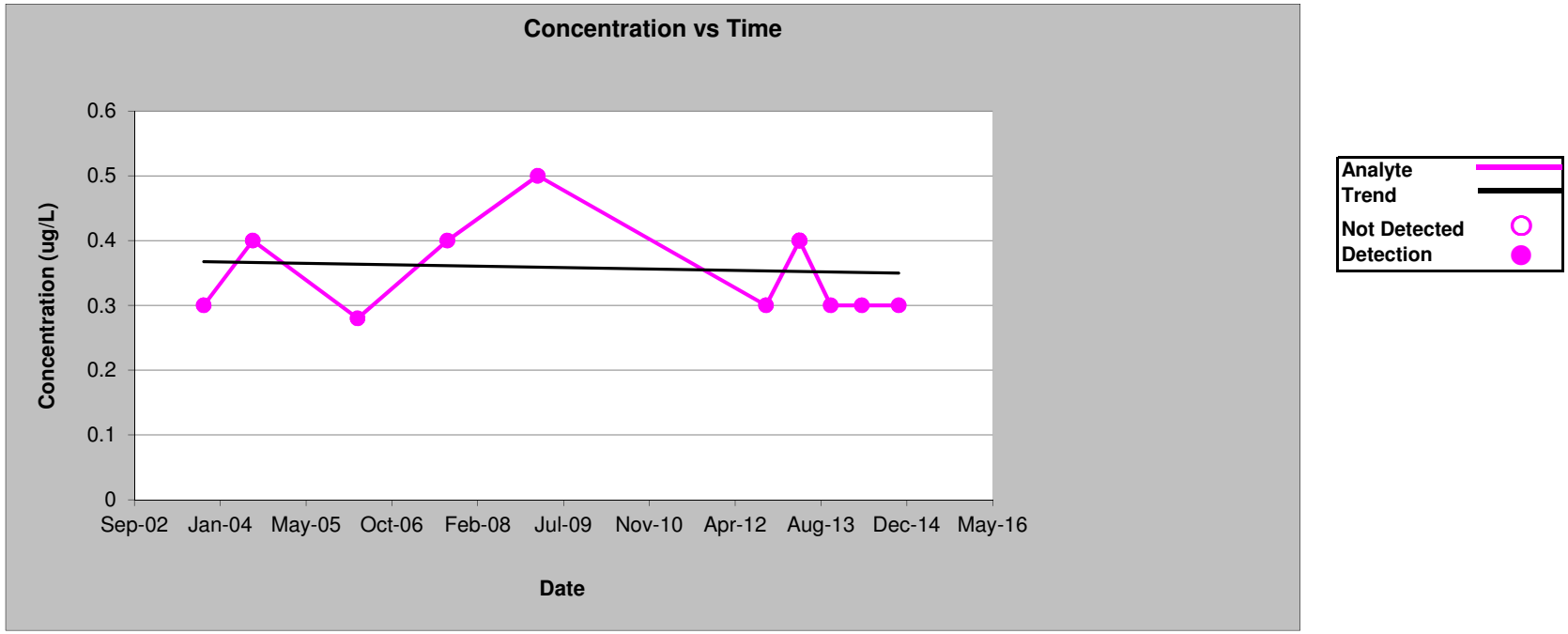




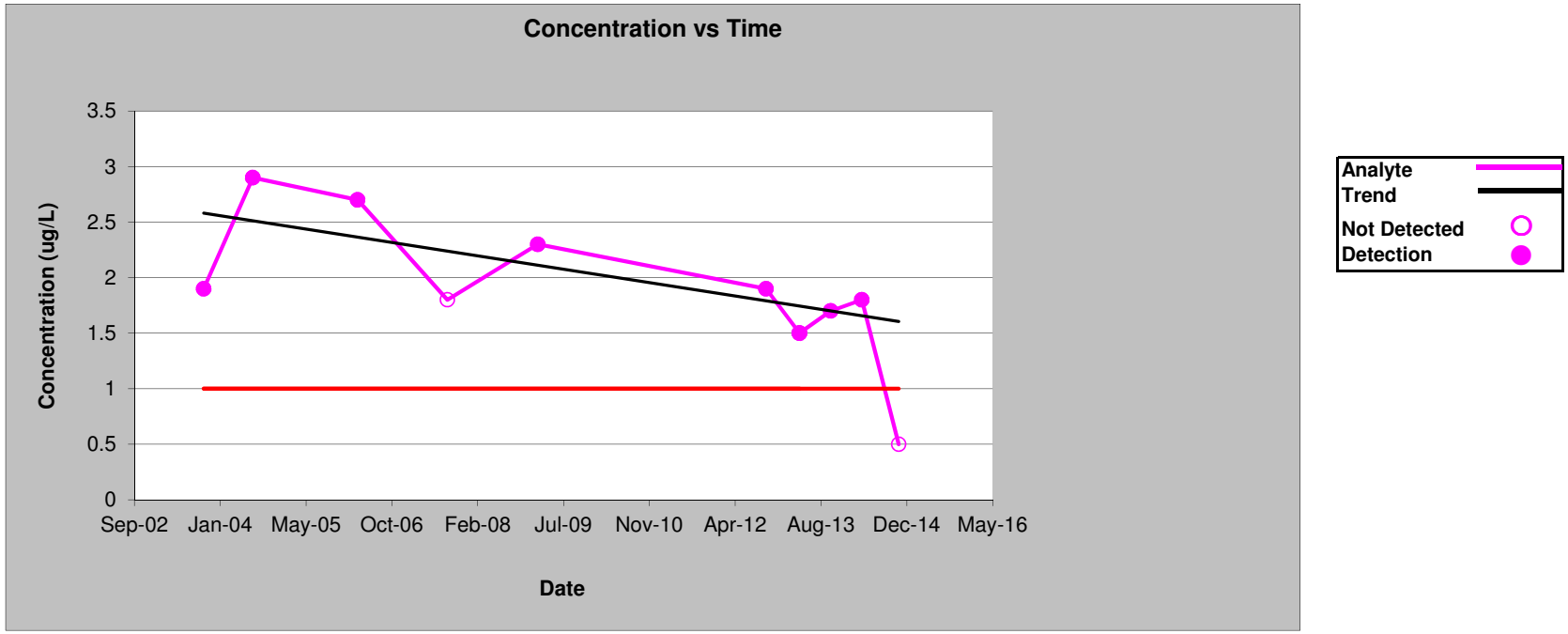
MW-106A
Chromium
DuPont Brevard Site



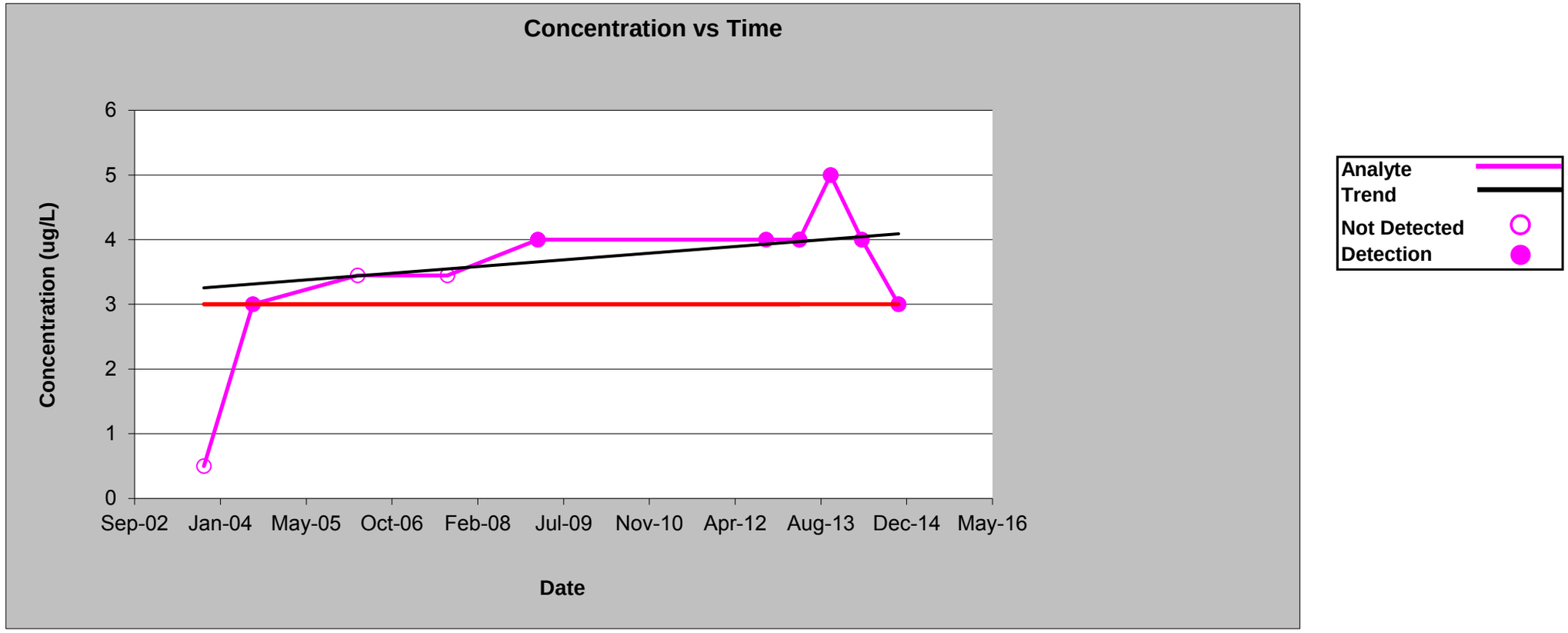
MW-106A
cis-1,2 Dichloroethene
DuPont Brevard Site



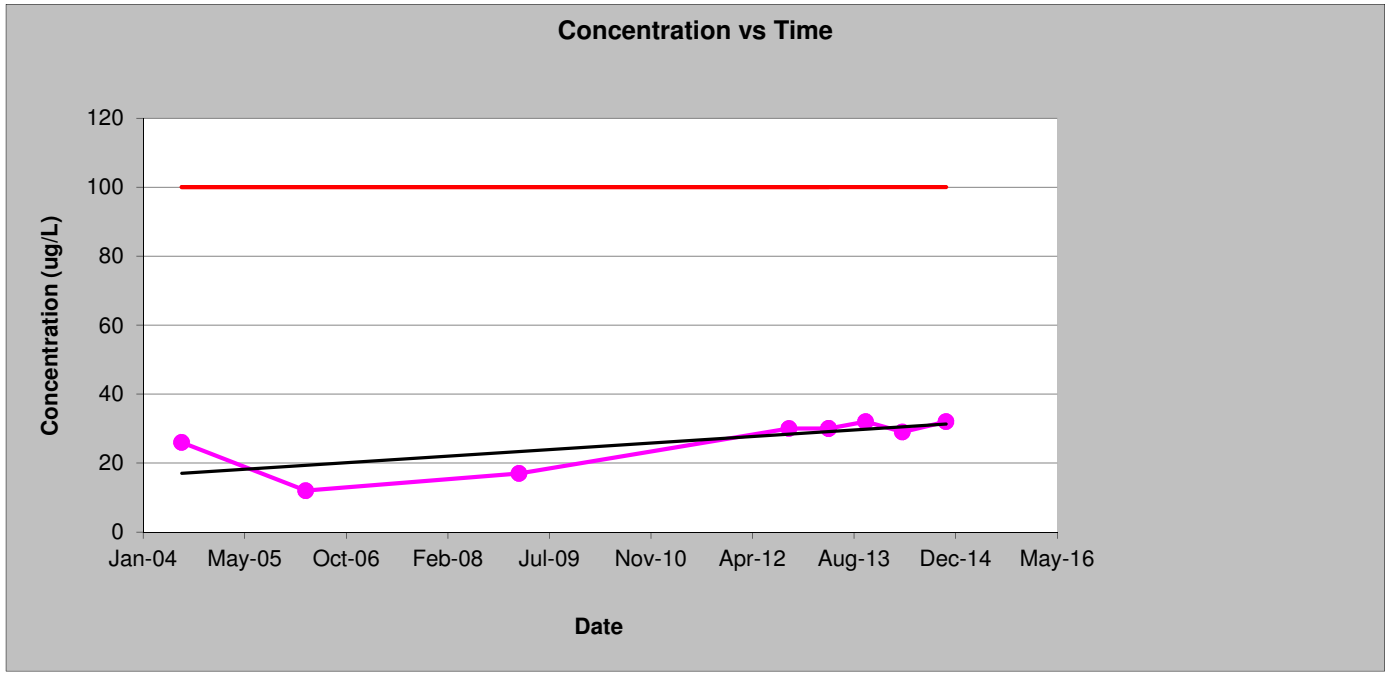
MW-106A
Cobalt
DuPont Brevard Site

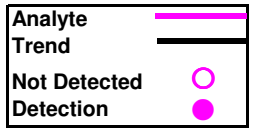


MW-106A
1,4-Dioxane
DuPont Brevard Site

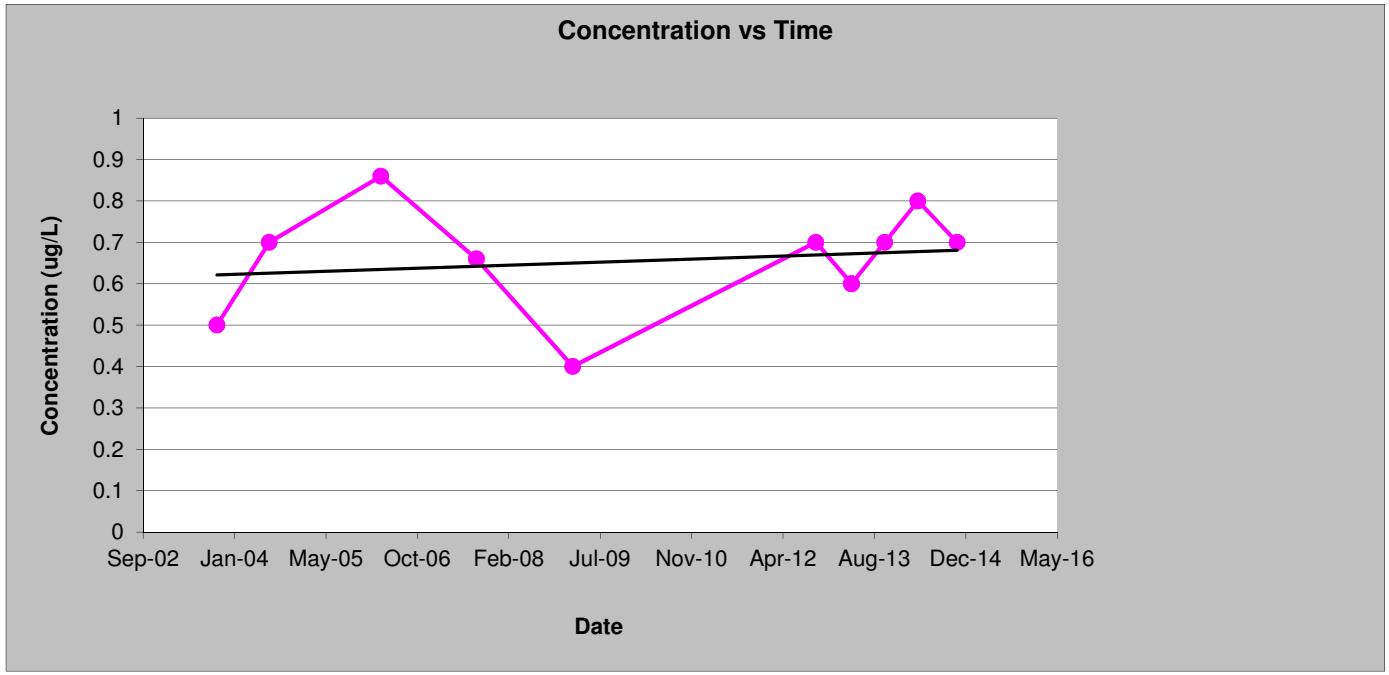


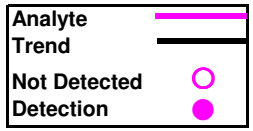
MW-106A
1,1'-Oxybisbenzene
DuPont Brevard Site



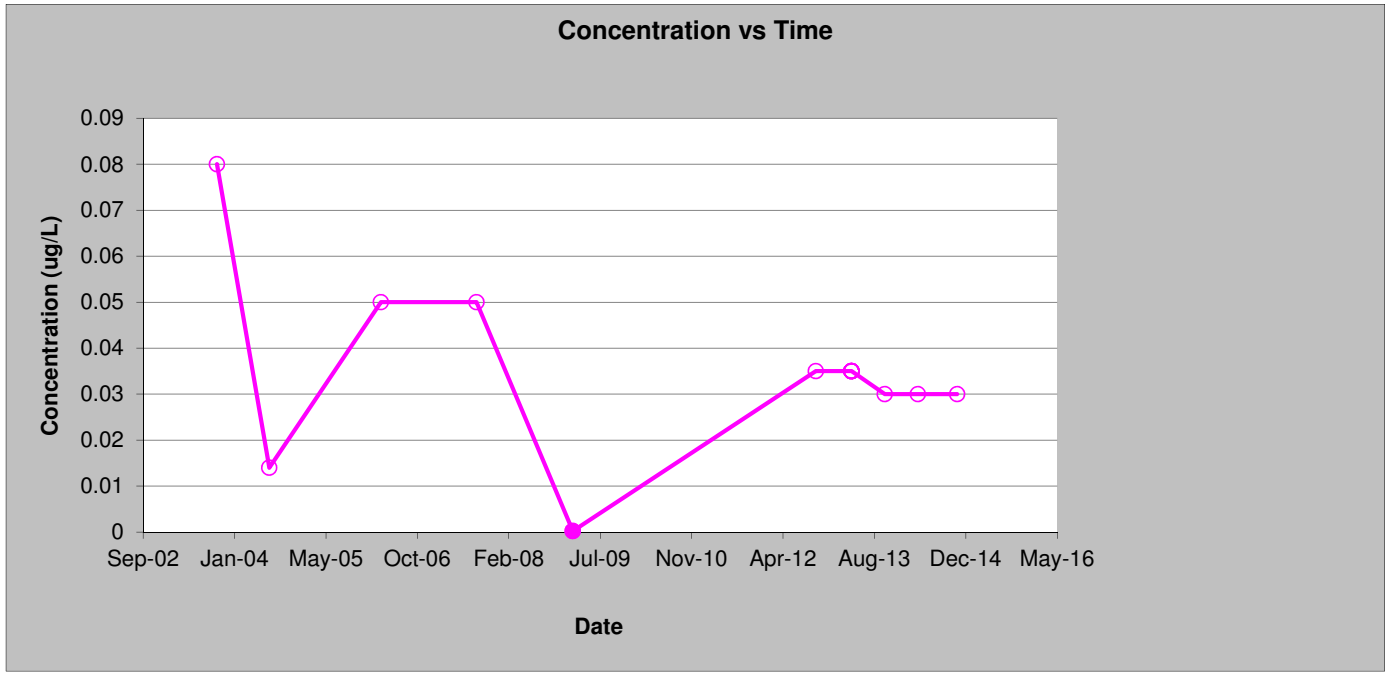


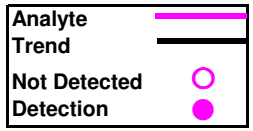
MW-106A
Ethyl Chloride
DuPont Brevard Site



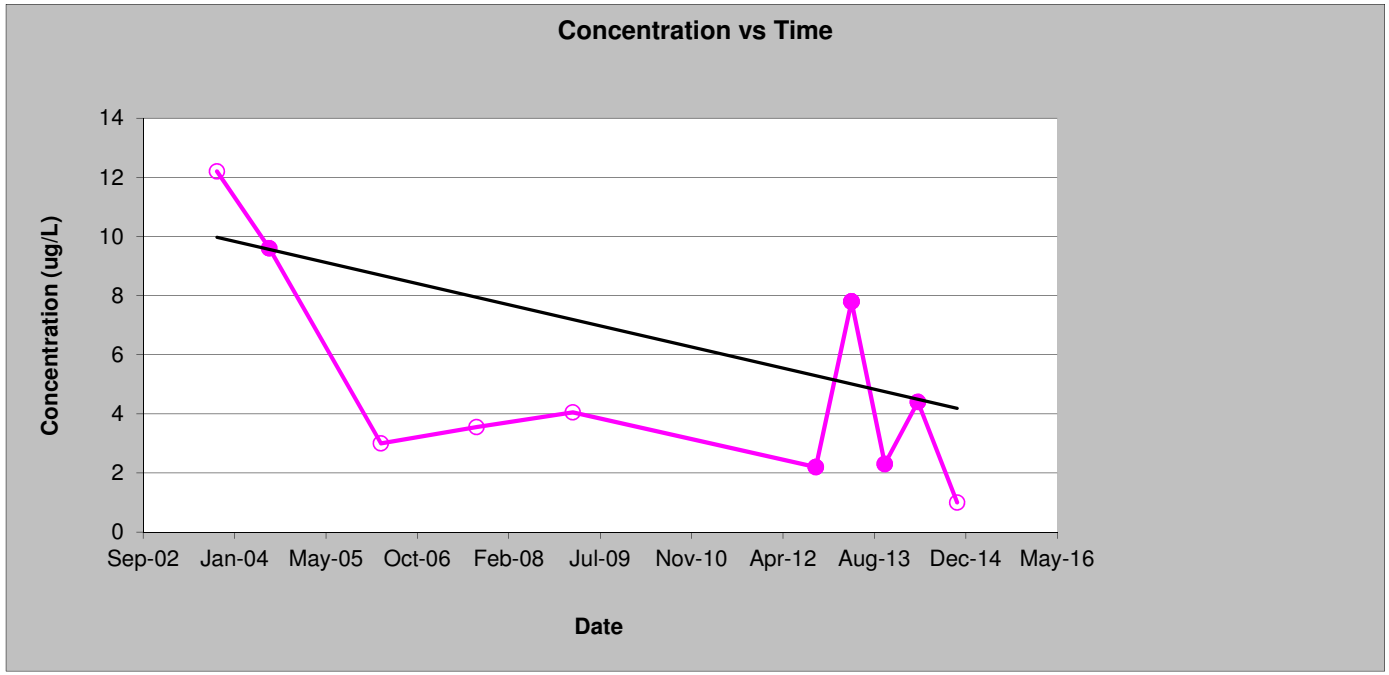


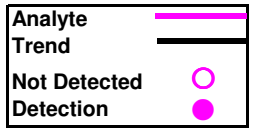
MW-106A
Mercury
DuPont Brevard Site



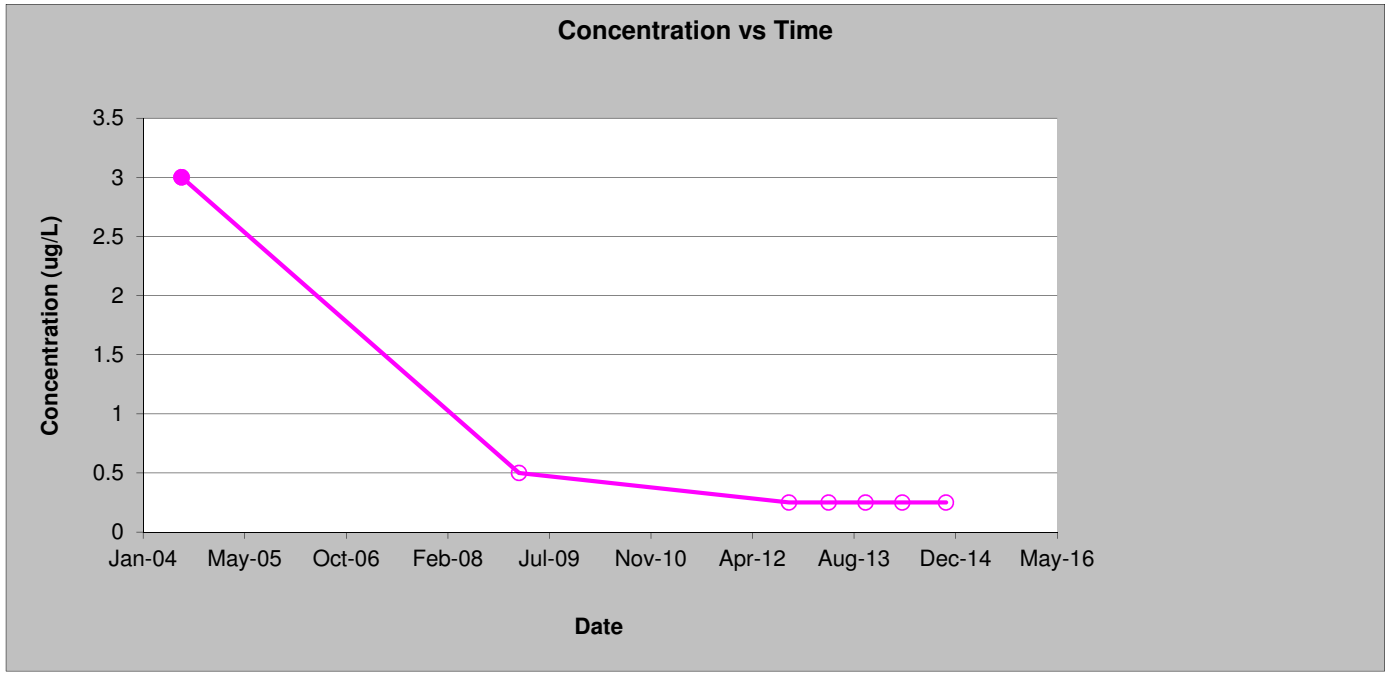


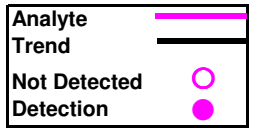
MW-106A
Zinc
DuPont Brevard Site



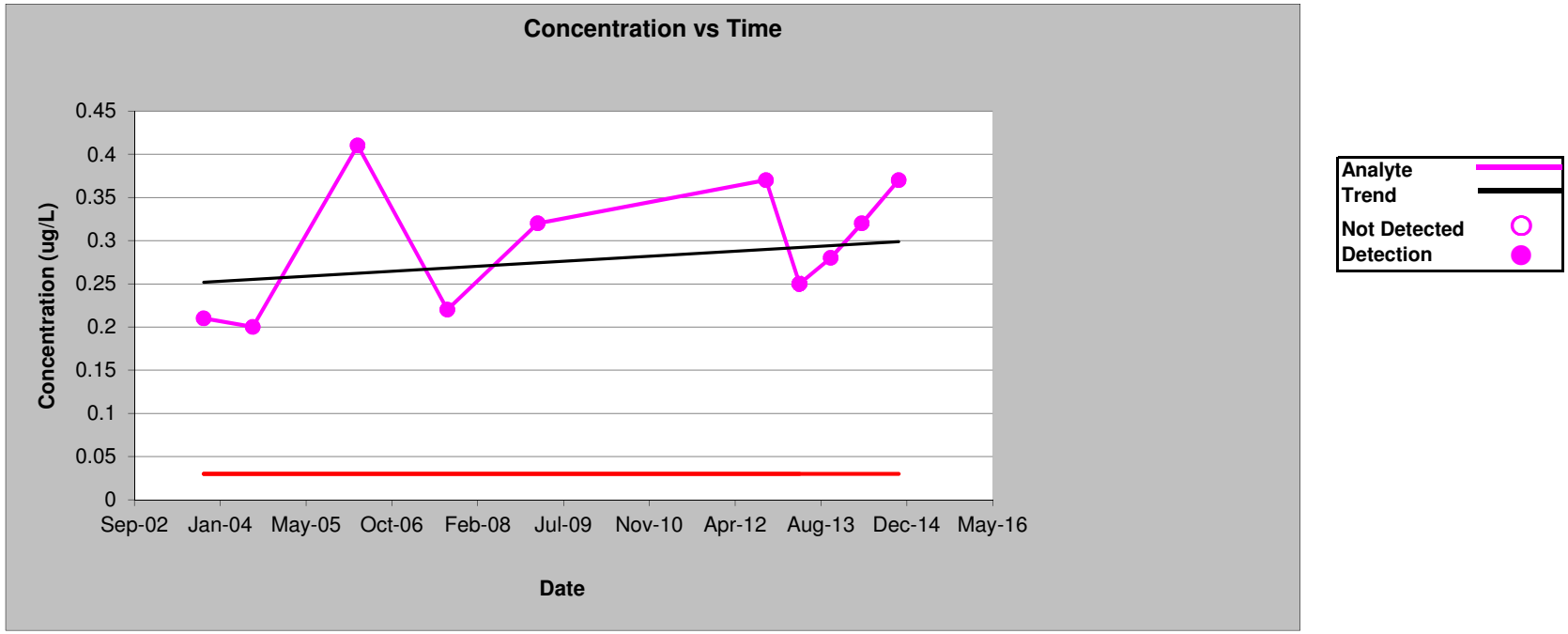


MW-106A
Biphenyl
DuPont Brevard Site

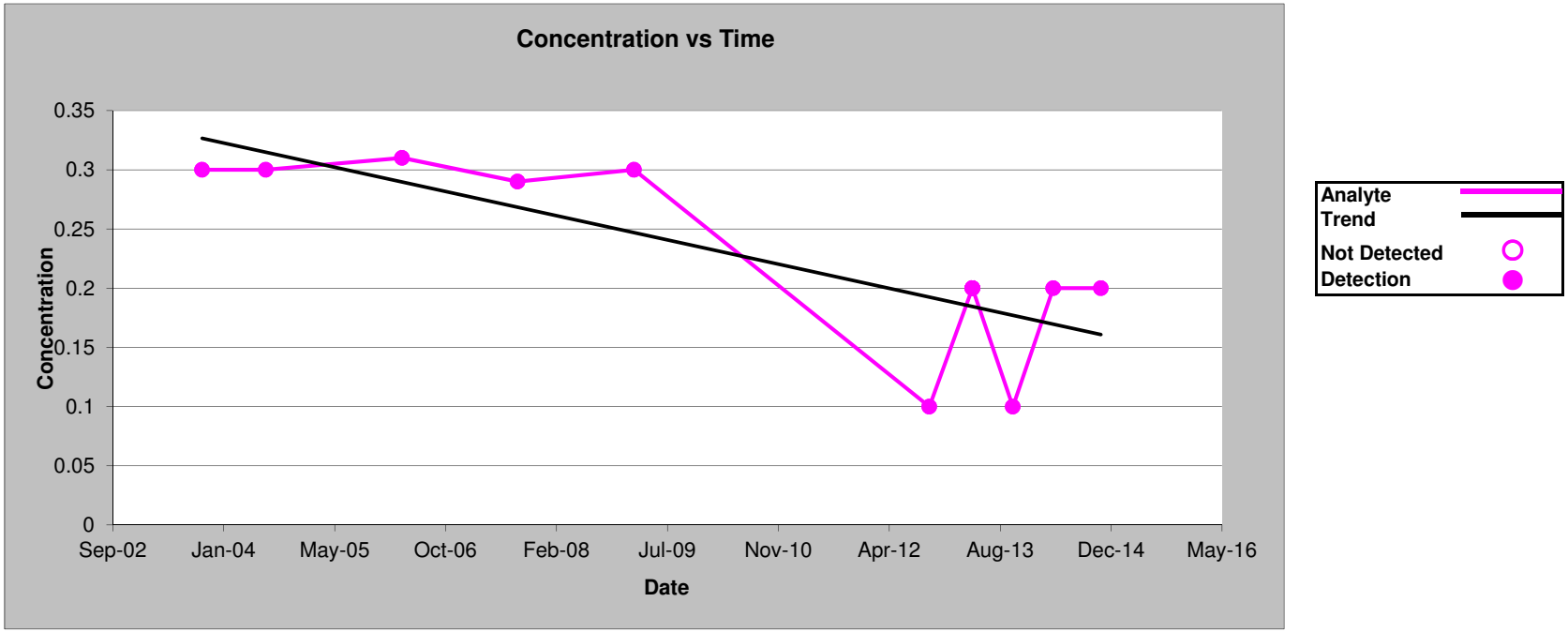




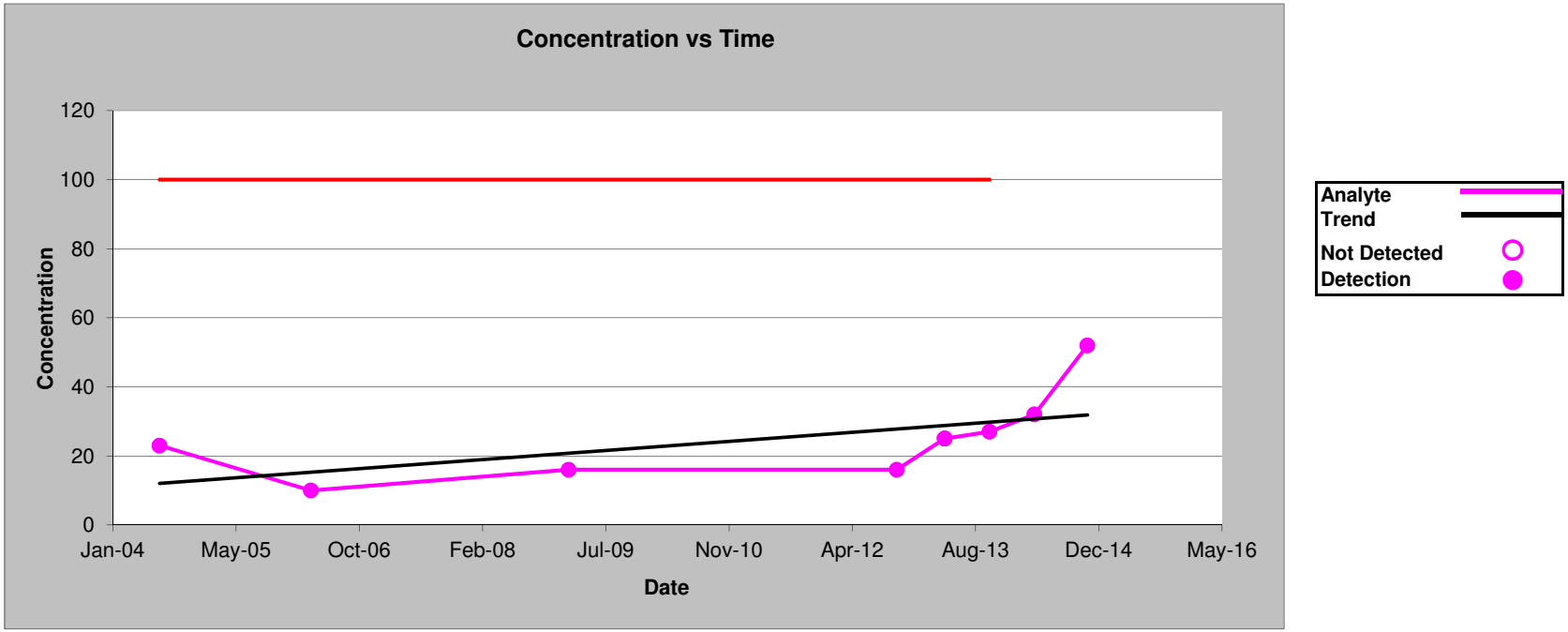
MW-106A
Vinyl Chloride
DuPont Brevard Site



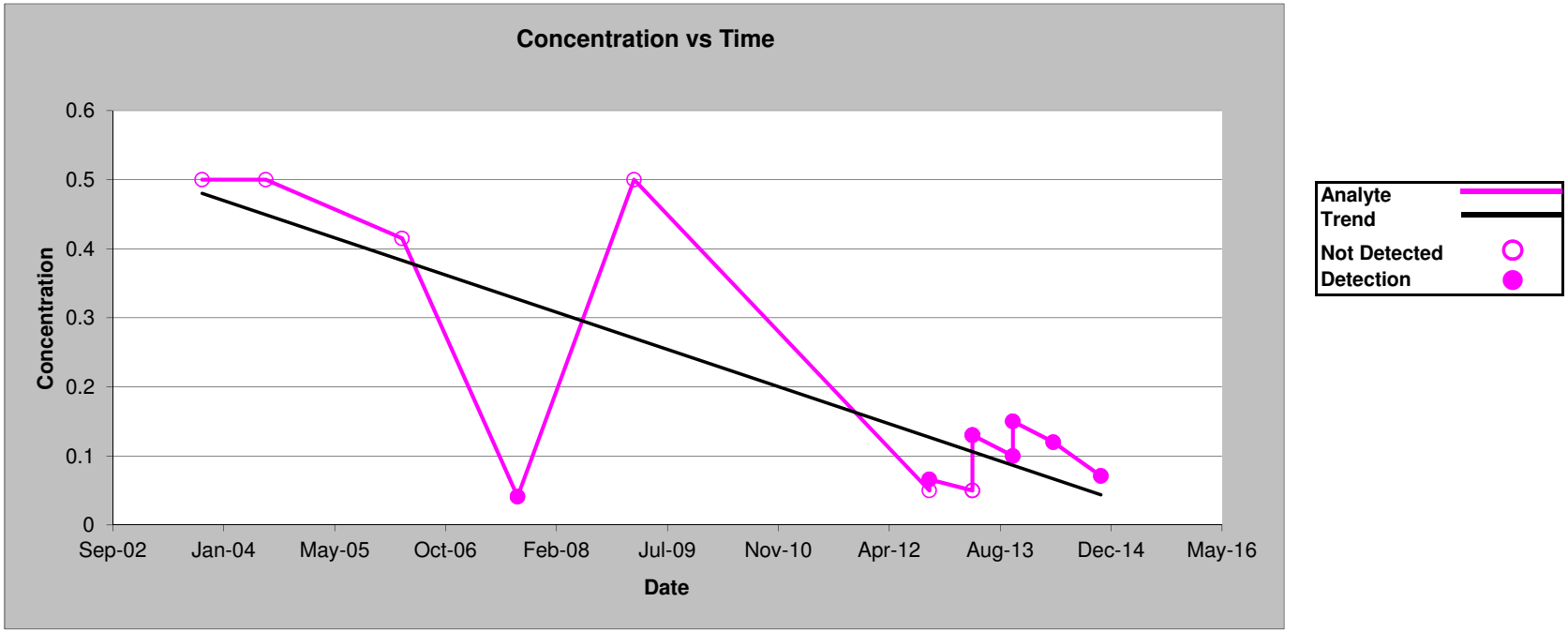
MW-107A
1,1-Dichloroethane
DuPont Brevard Site



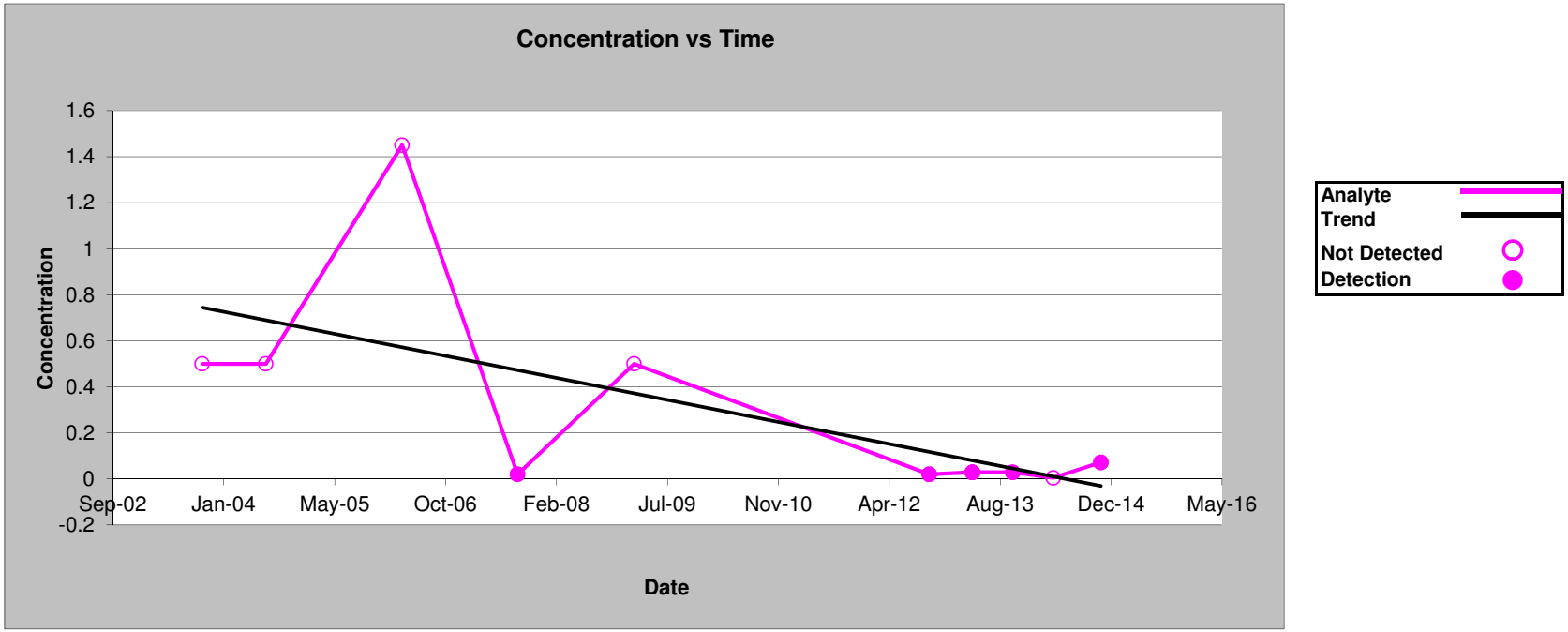
MW-107A
1,1'-Oxybisbenzene
DuPont Brevard Site



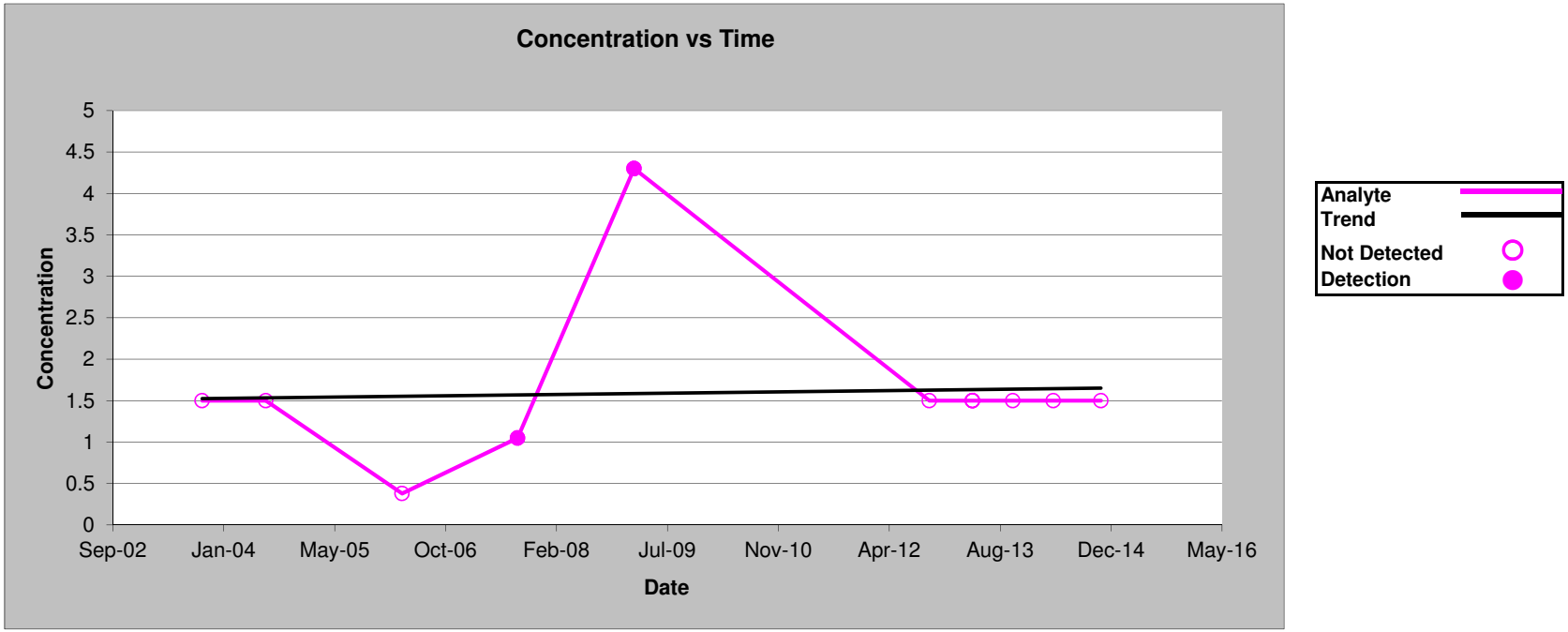
MW-107A
2-Methylnaphthalene
DuPont Brevard Site



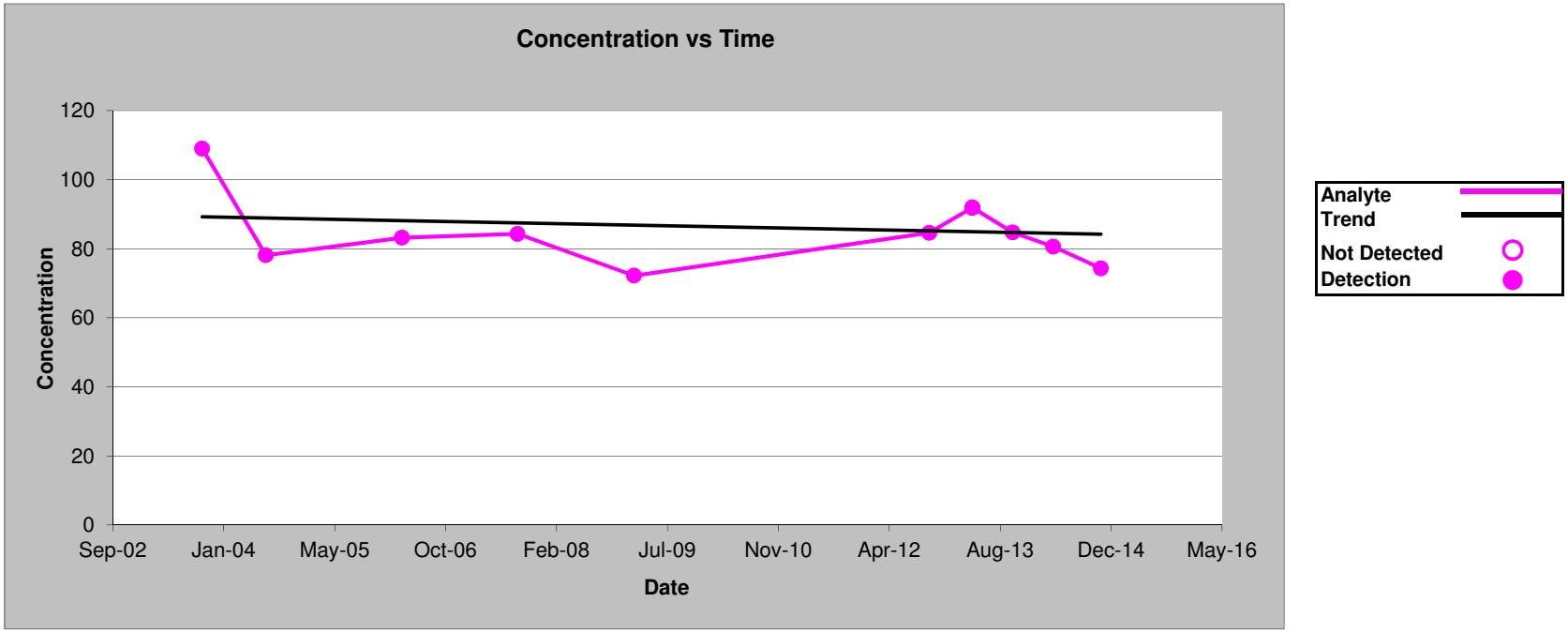
MW-107A
Acenaphthene
DuPont Brevard Site



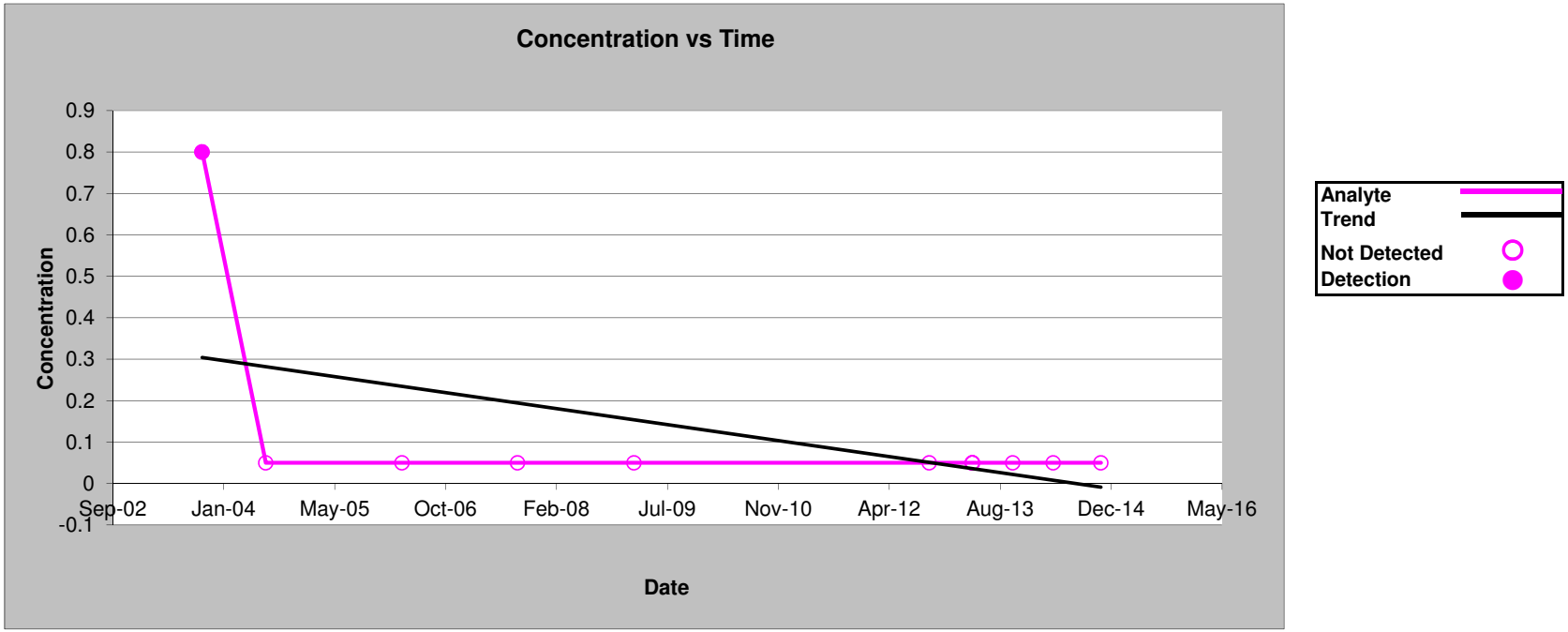
MW-107A
Acetone
DuPont Brevard Site



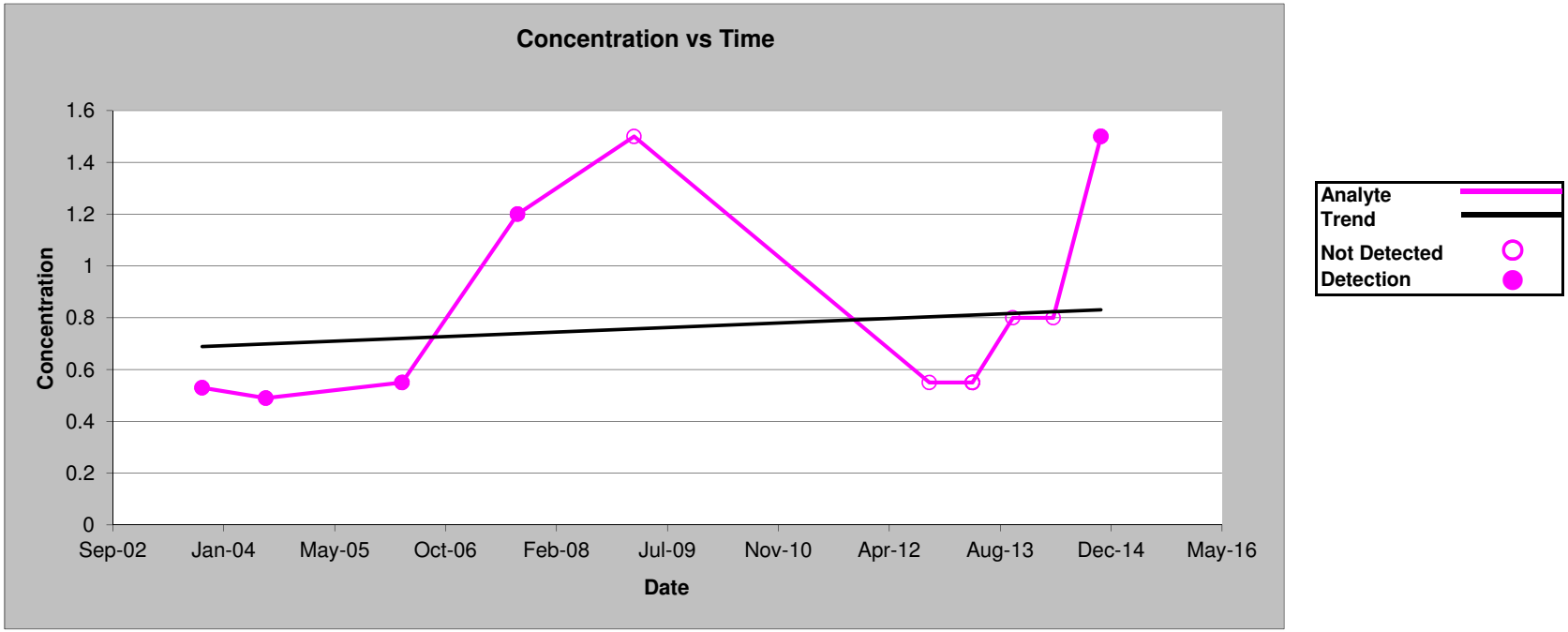
MW-107A
Barium
DuPont Brevard Site



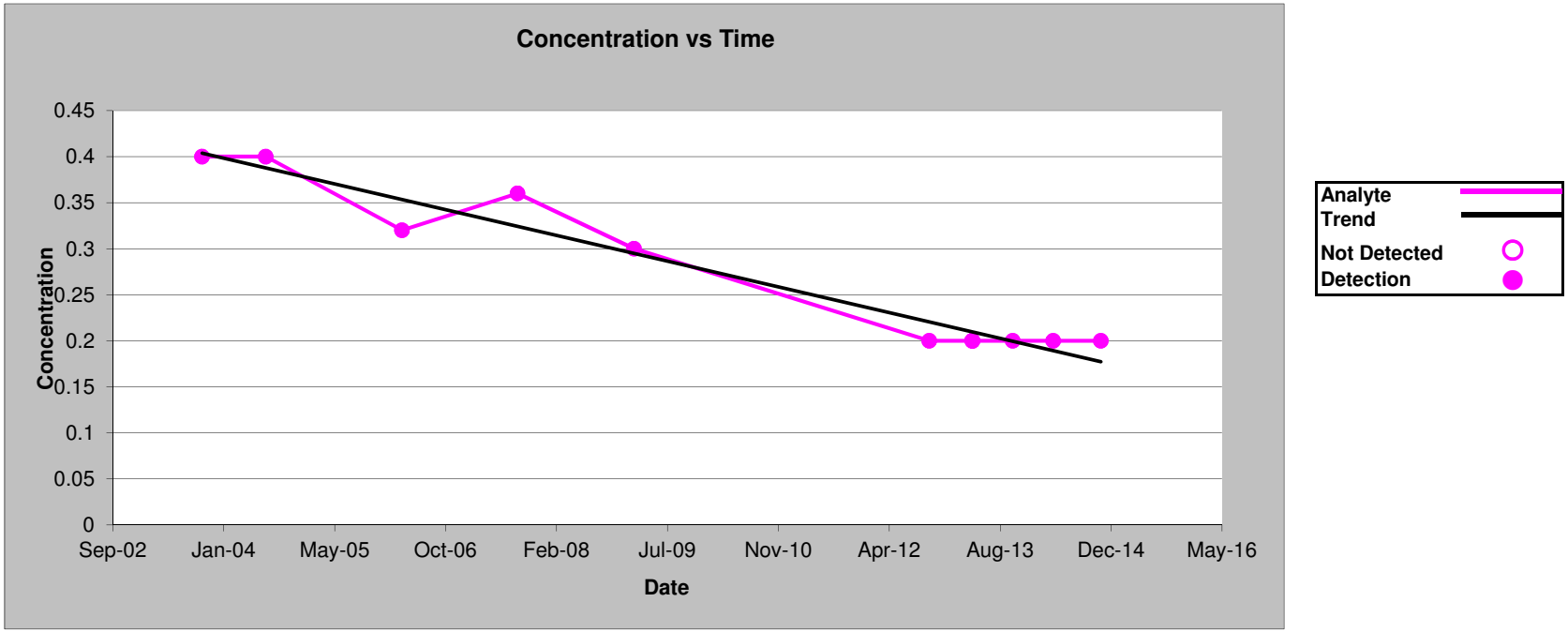
MW-107A
Chloroform
DuPont Brevard Site



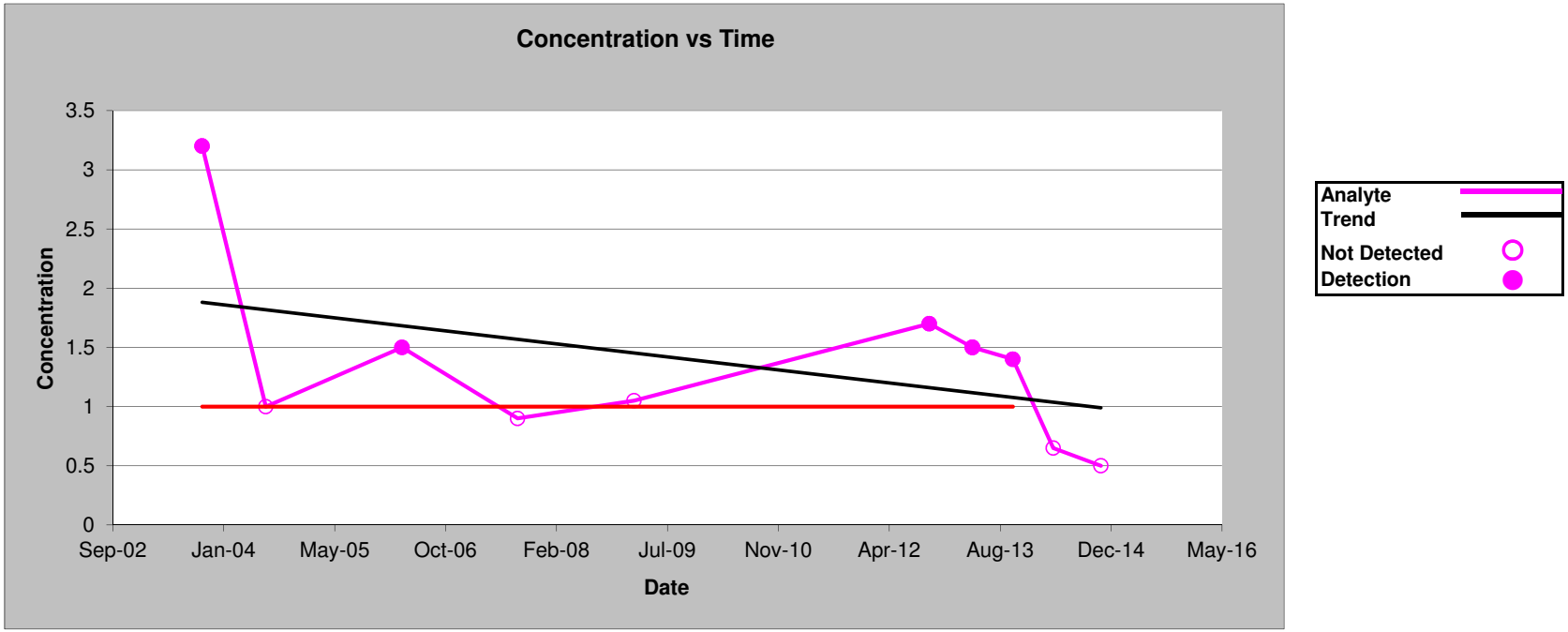
MW-107A
Chromium
DuPont Brevard Site



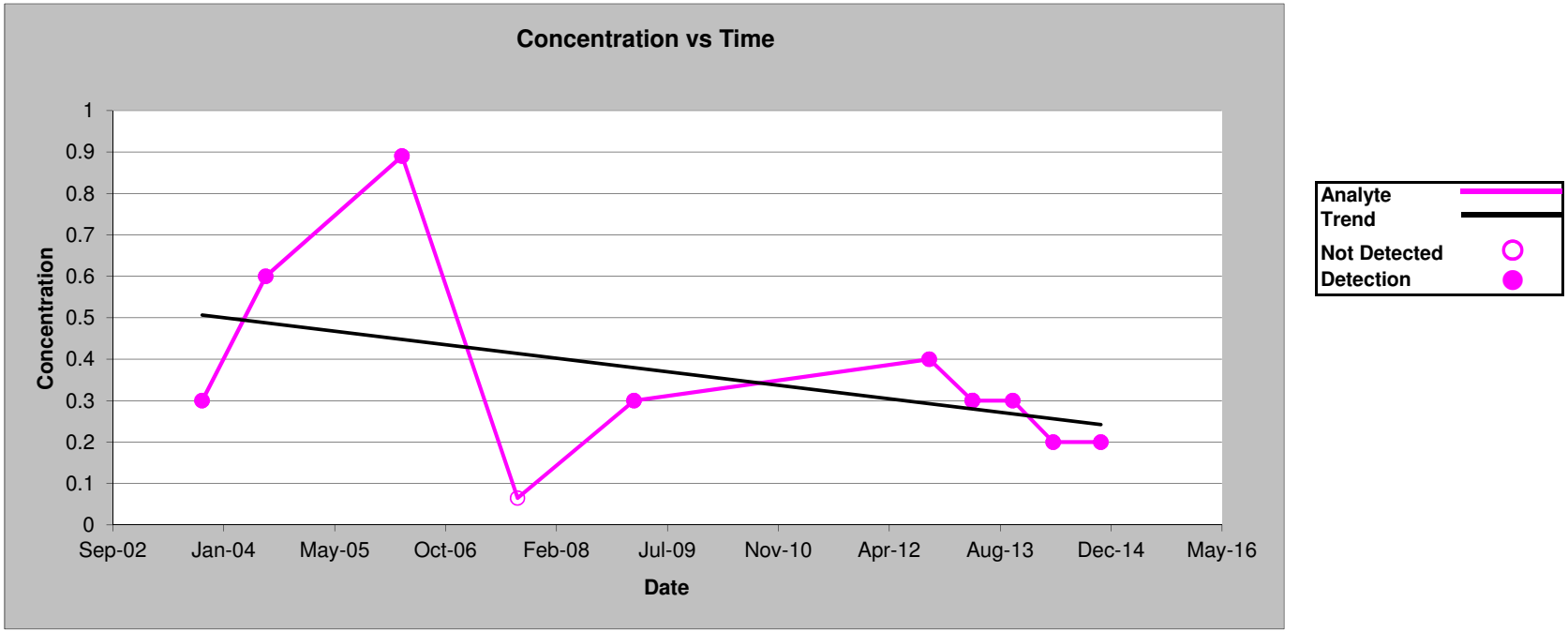
MW-107A
cis-1,2 Dichloroethene
DuPont Brevard Site



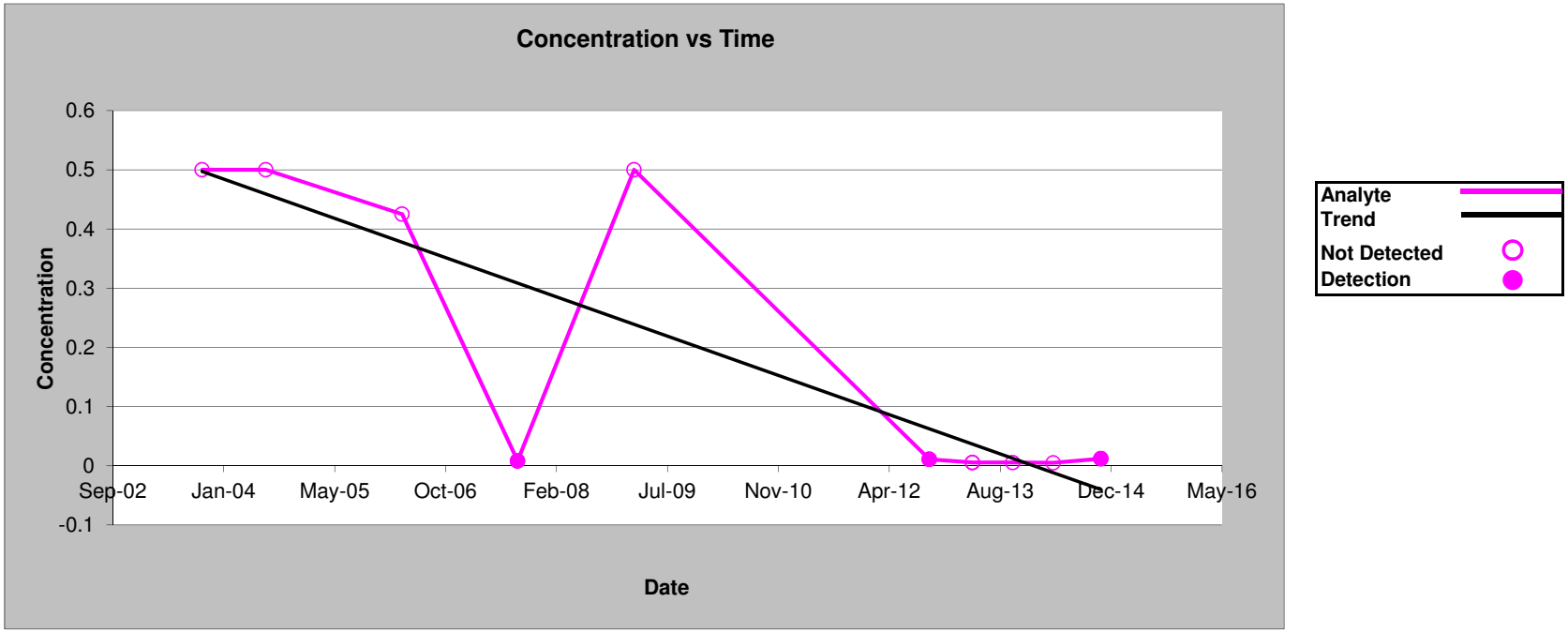
MW-107A
Cobalt
DuPont Brevard Site



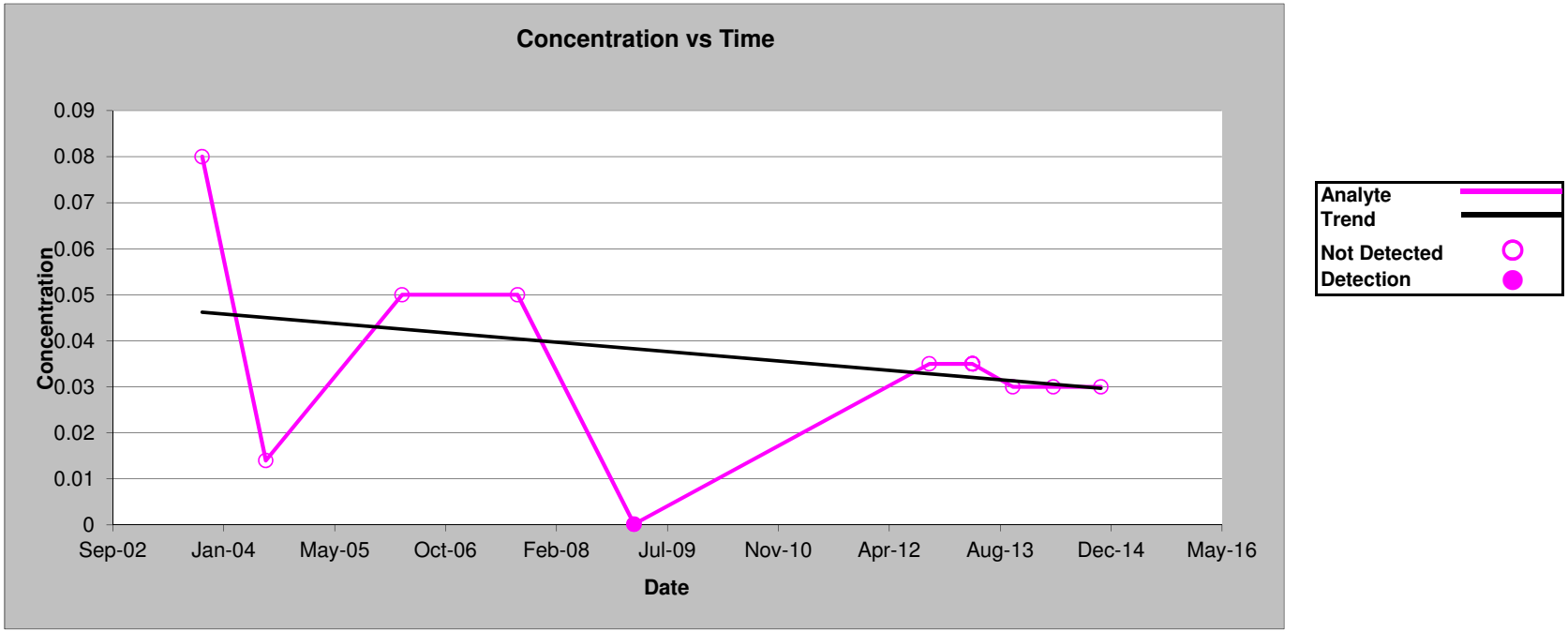
MW-107A
Ethyl Chloride
DuPont Brevard Site



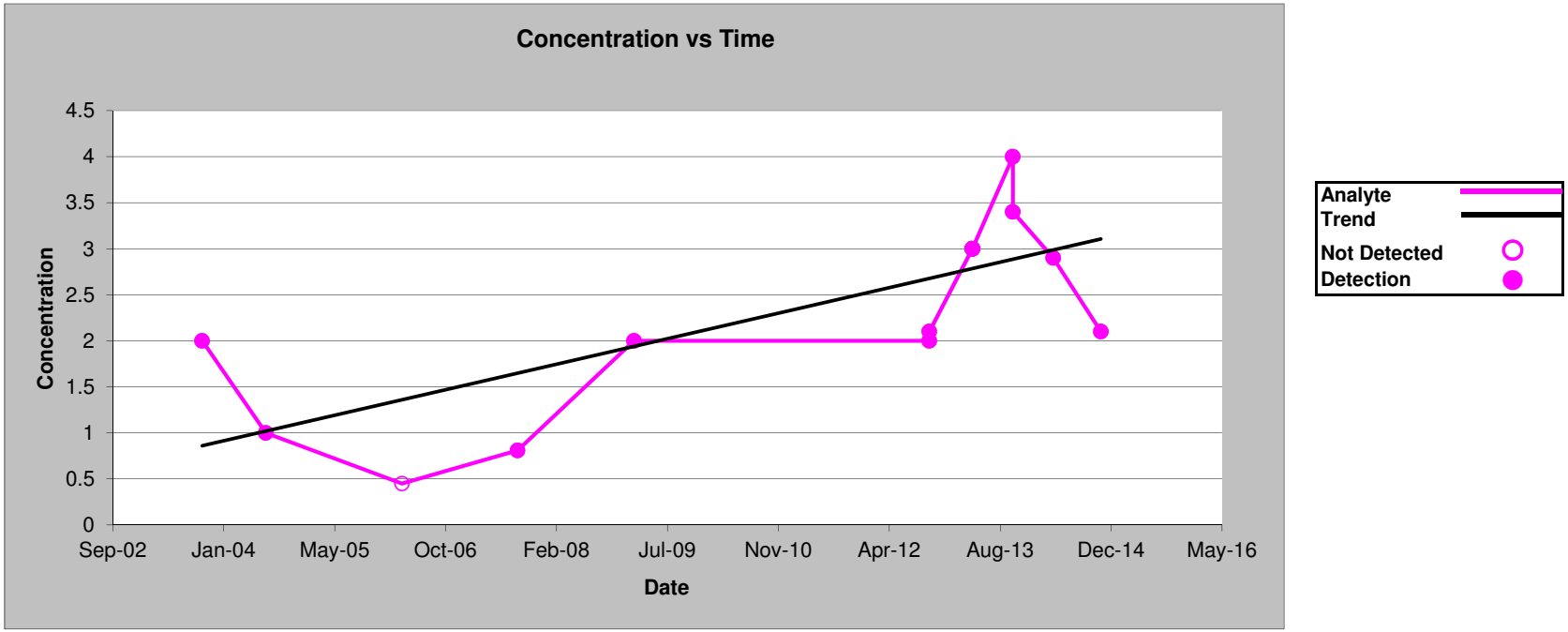
MW-107A
Fluorene
DuPont Brevard Site



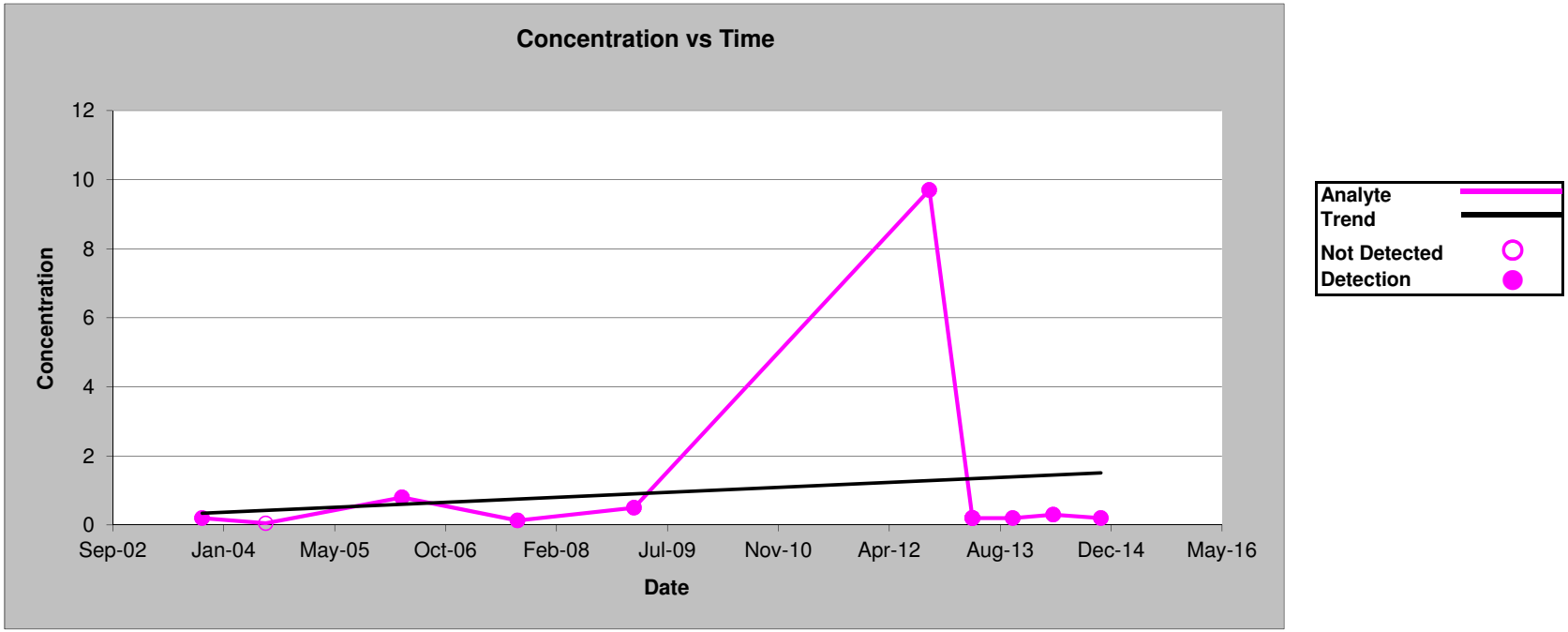
MW-107A
Mercury
DuPont Brevard Site



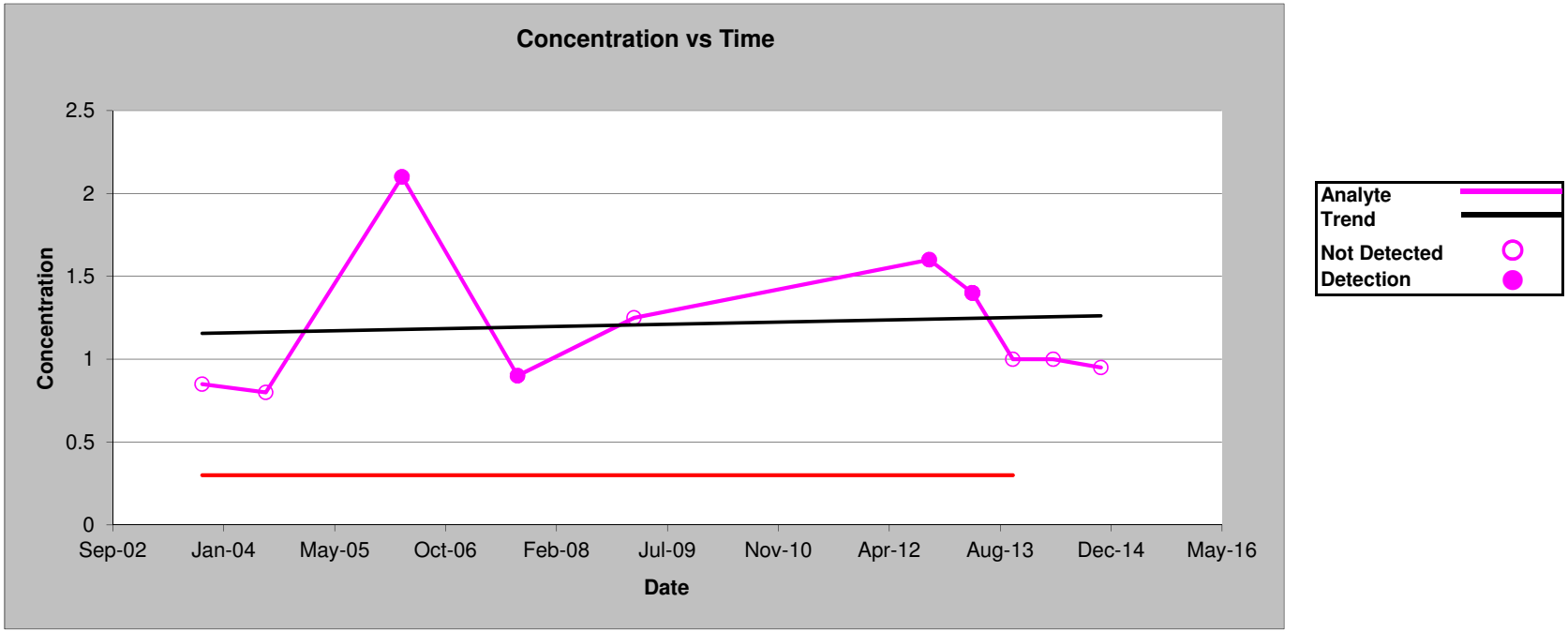
MW-107A
Naphthalene
DuPont Brevard Site



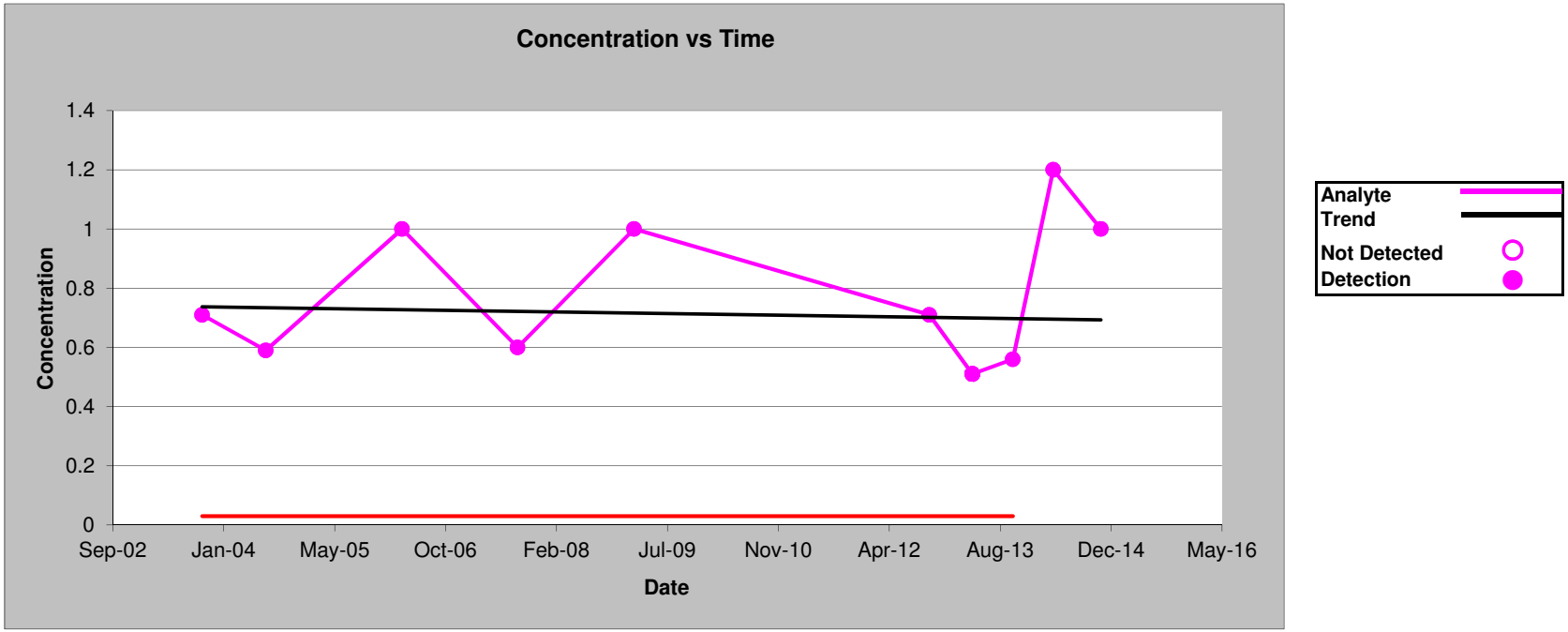
MW-107A
Toluene
DuPont Brevard Site



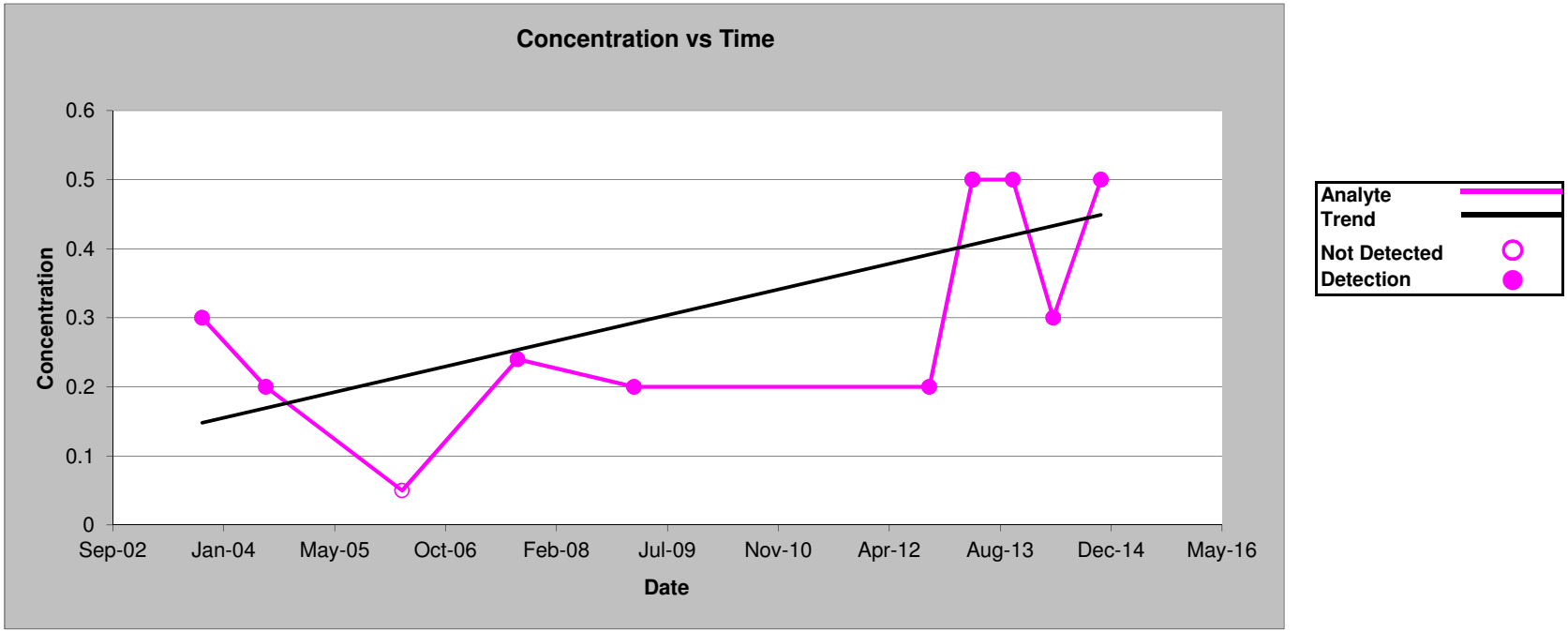
MW-107A
Vanadium
DuPont Brevard Site



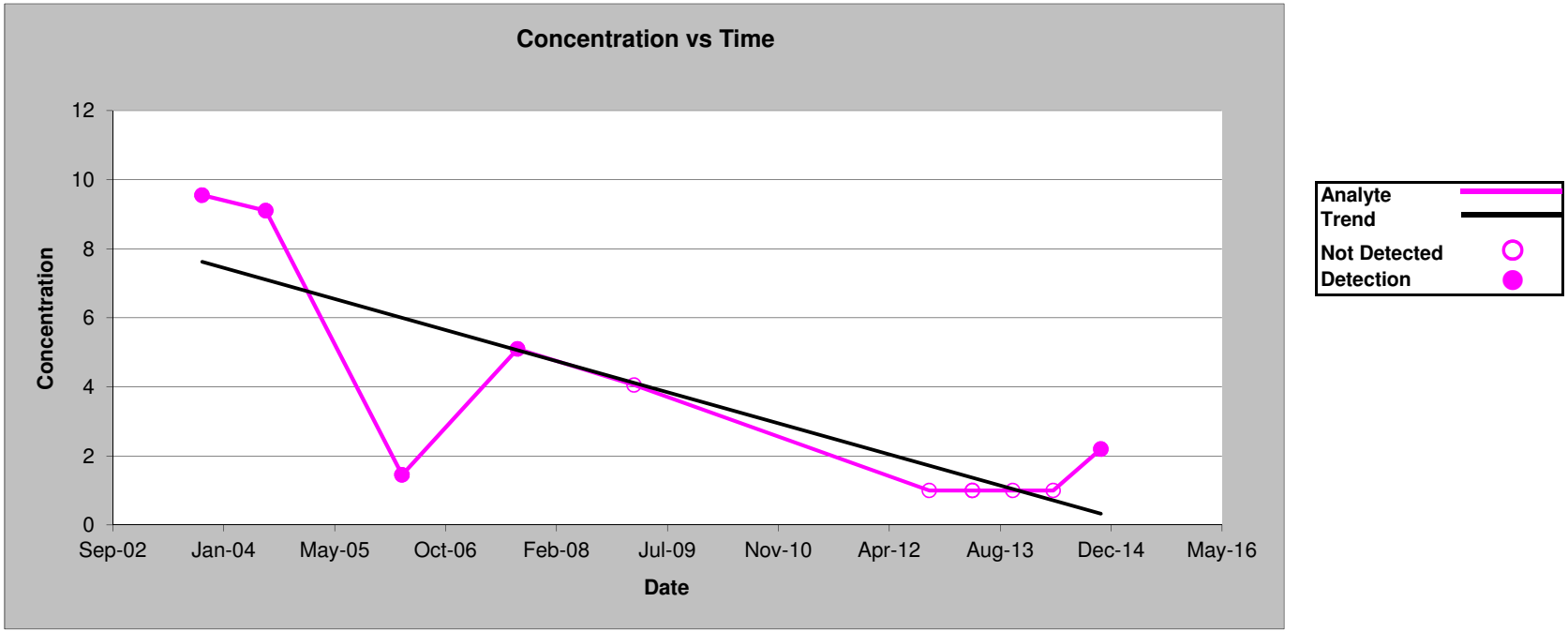
MW-107A
Vinyl Chloride
DuPont Brevard Site



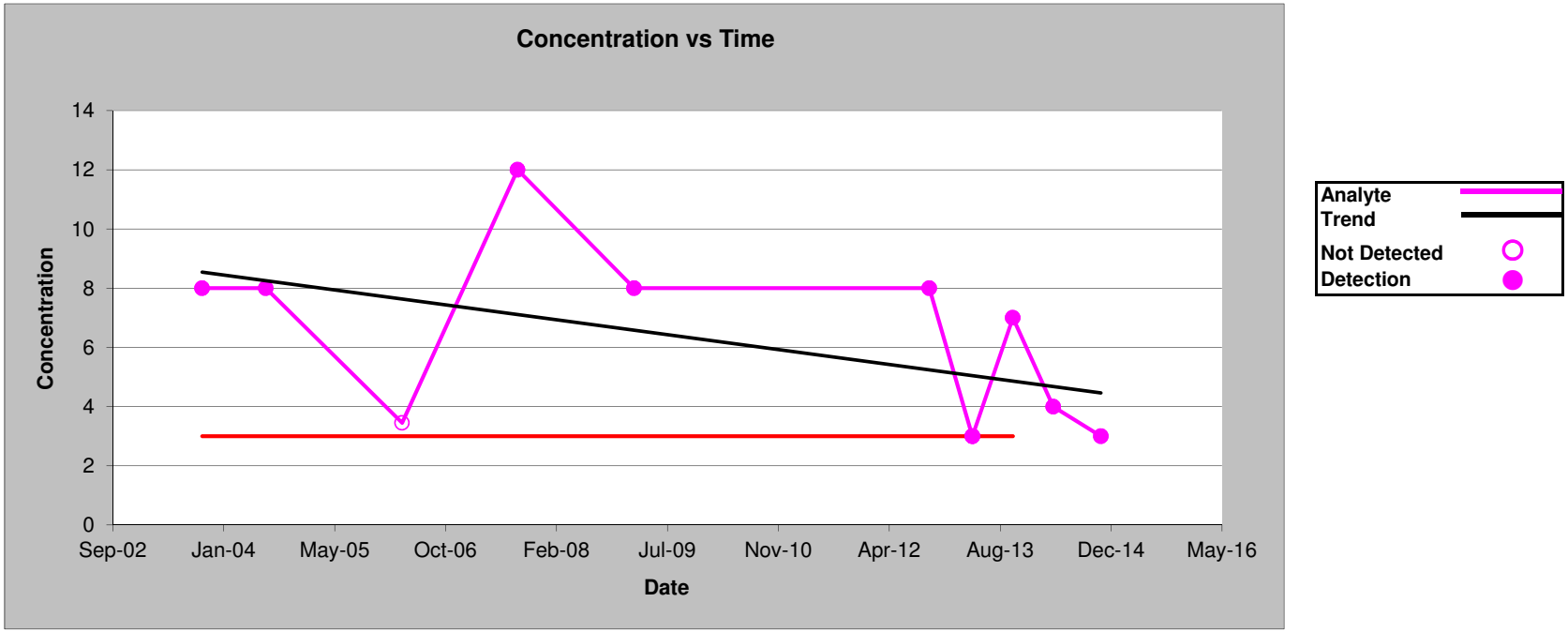
MW-107A
Xylenes
DuPont Brevard Site



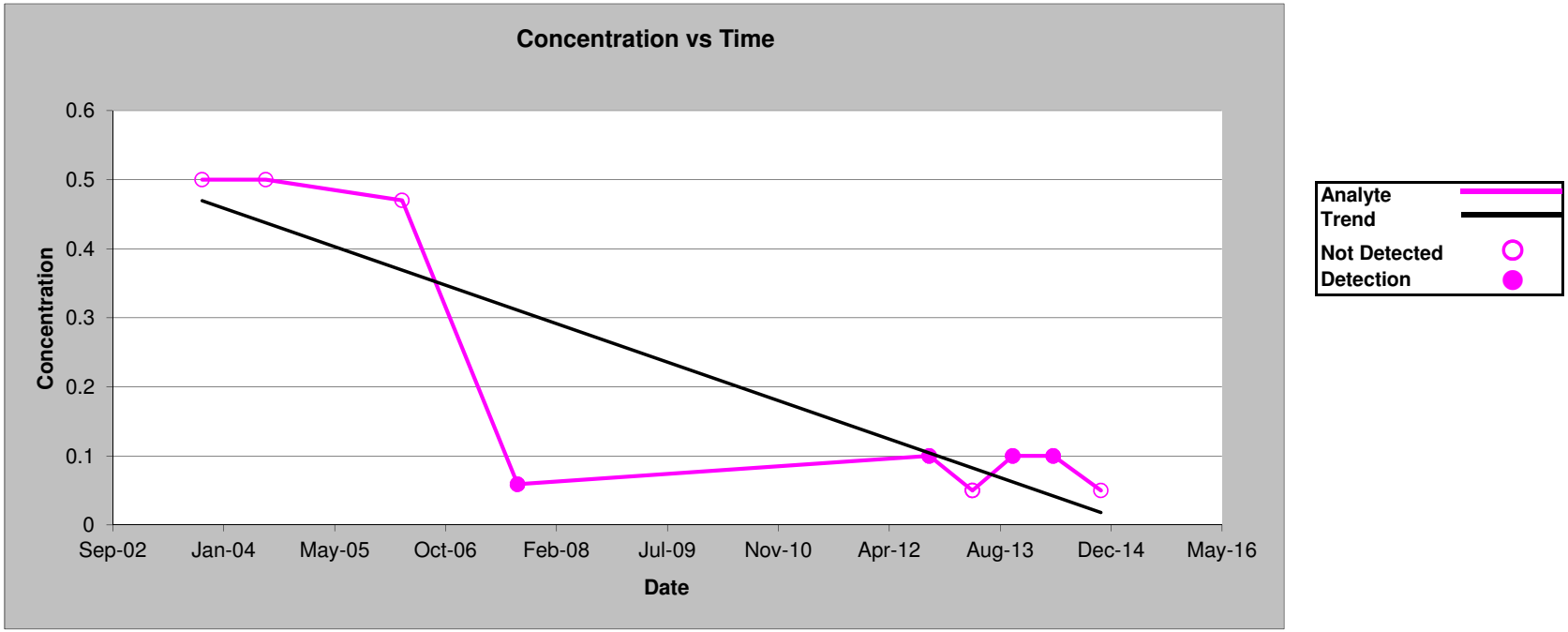
MW-107A
Zinc
DuPont Brevard Site



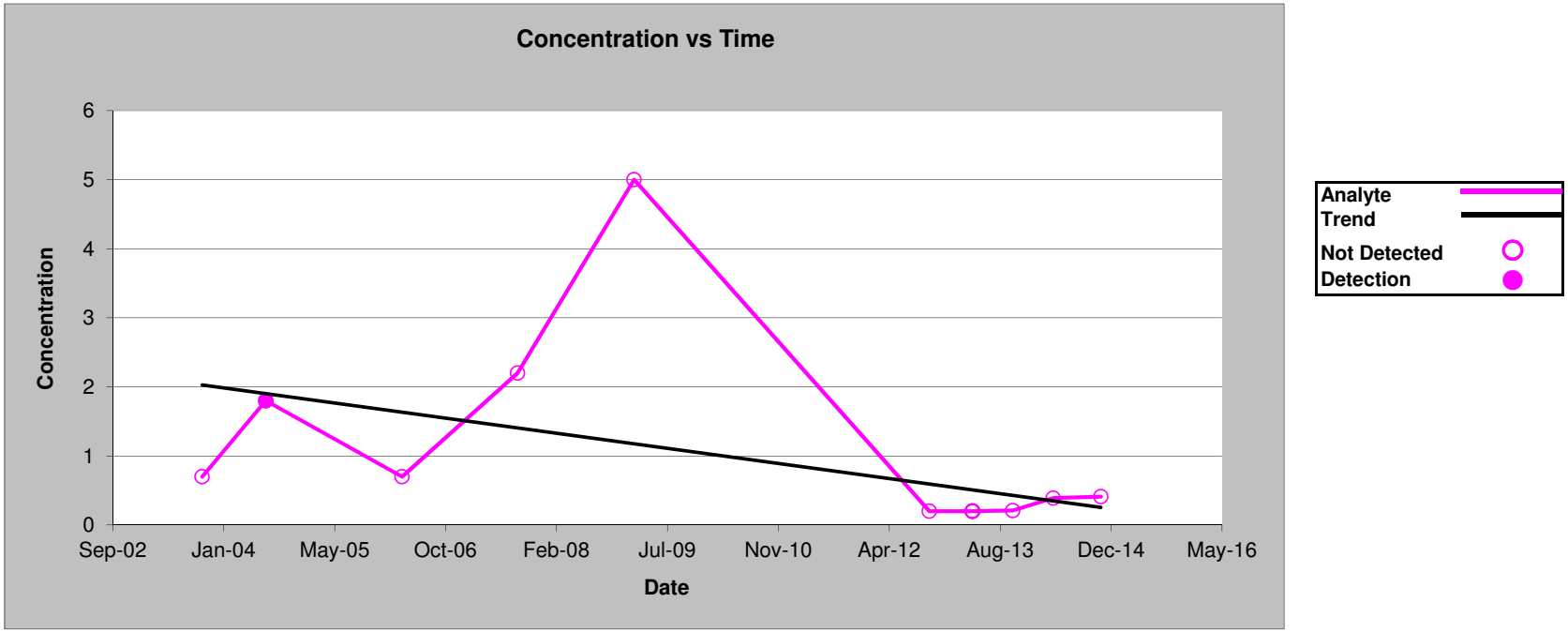
MW-107A
1,4-Dioxane
DuPont Brevard Site



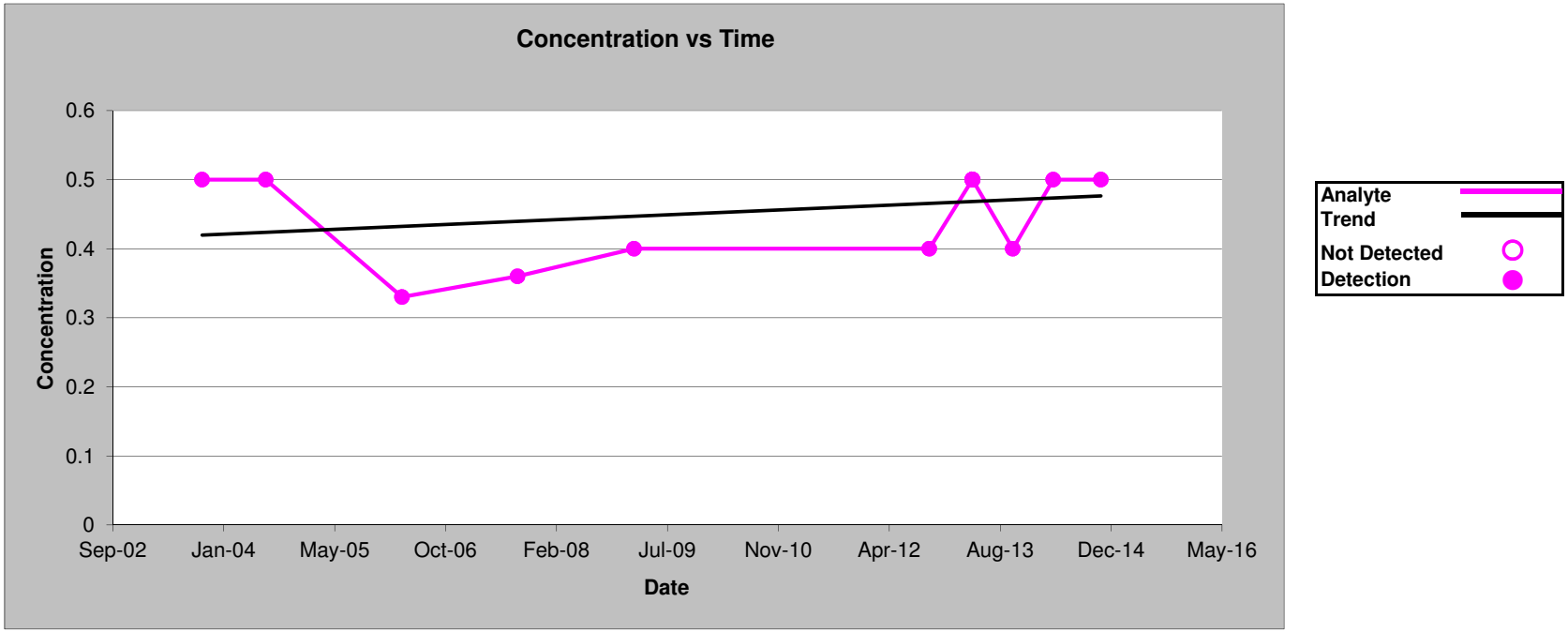
MW-107A
1-Methylnaphthalene
DuPont Brevard Site



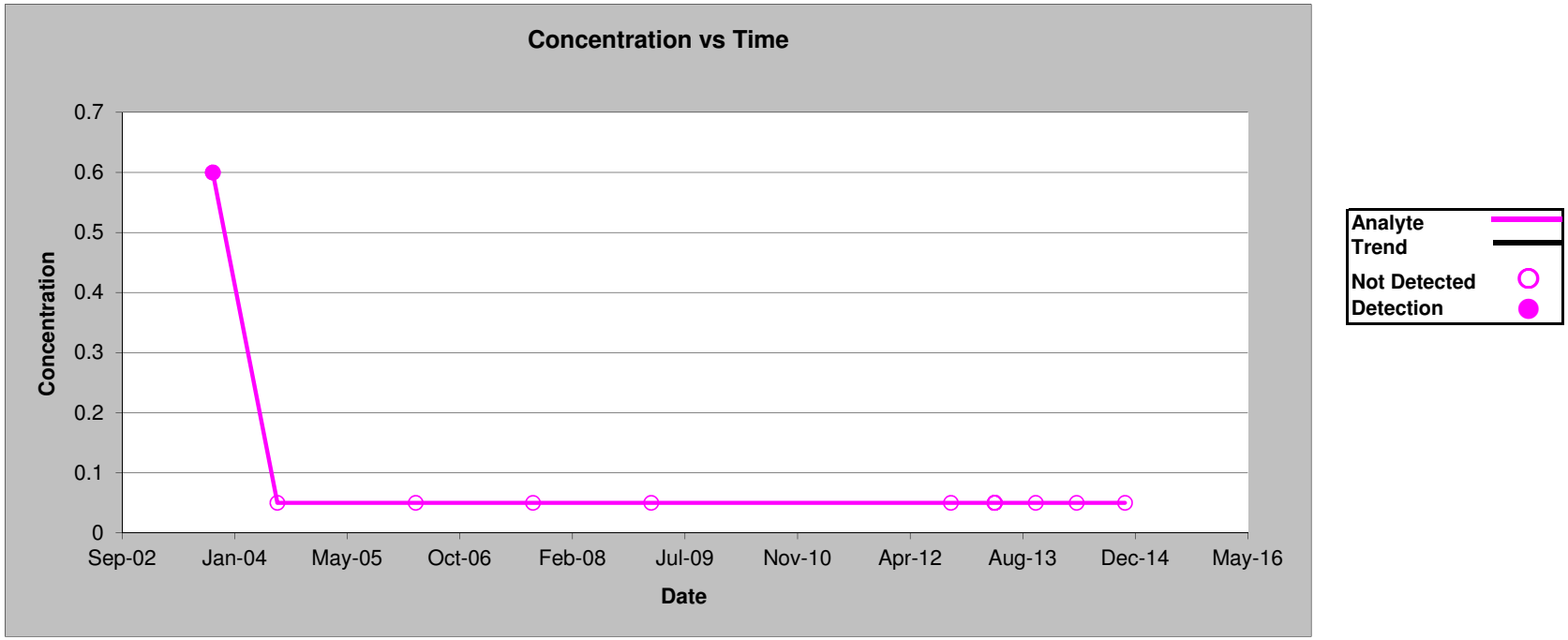
MW-107A
Arsenic
DuPont Brevard Site



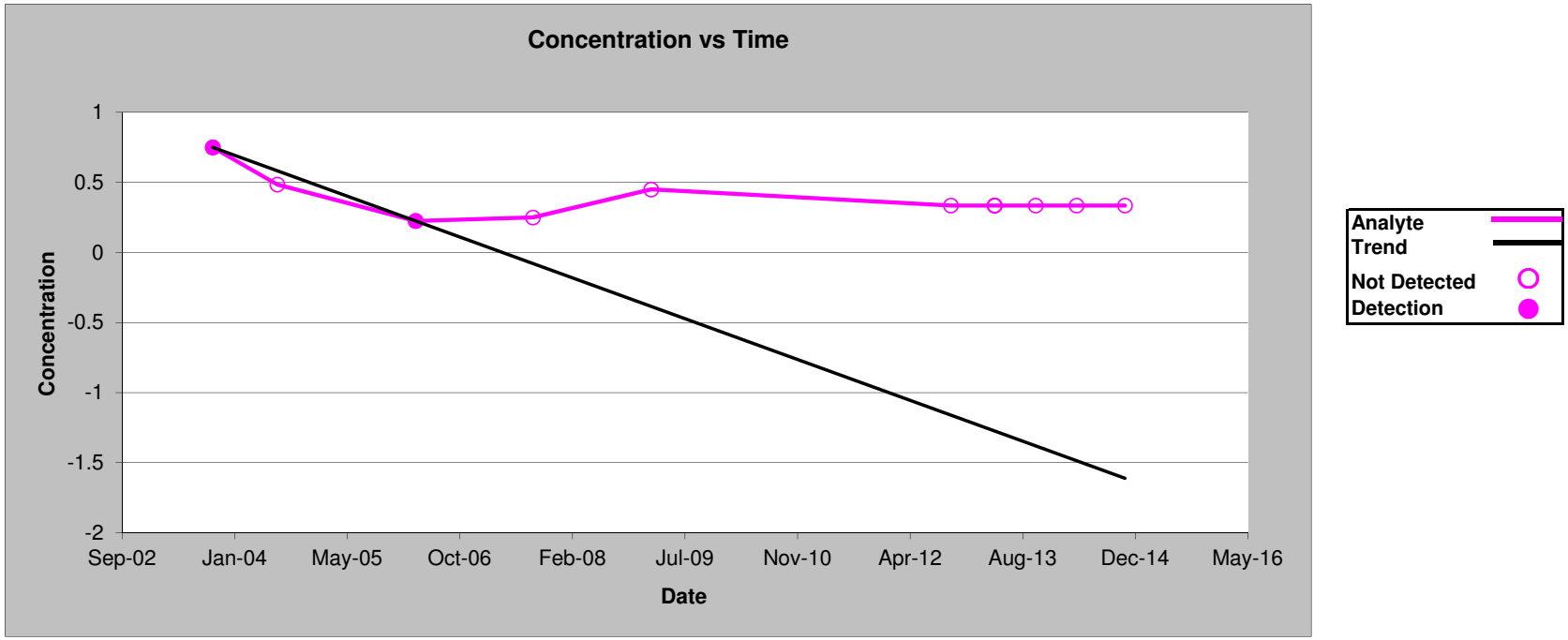
MW-107A
Benzene
DuPont Brevard Site



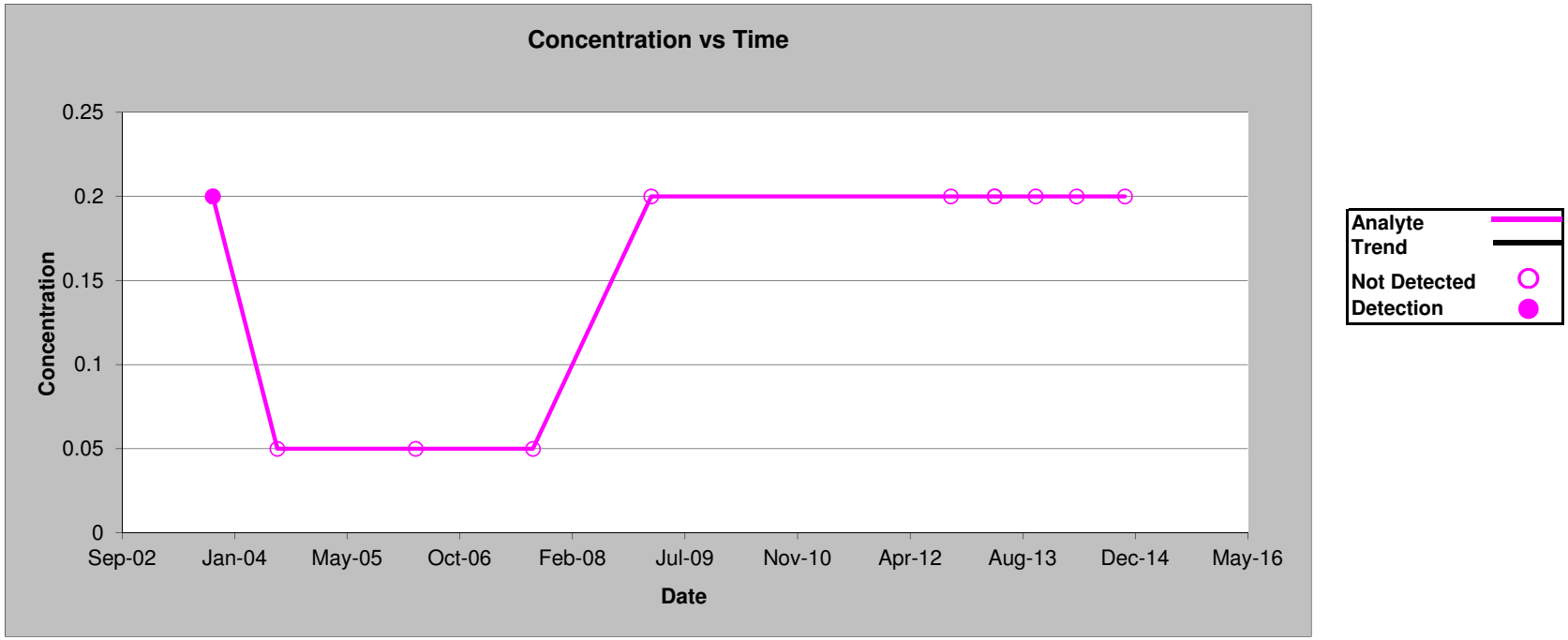
MW-107B
Benzene
DuPont Brevard Site



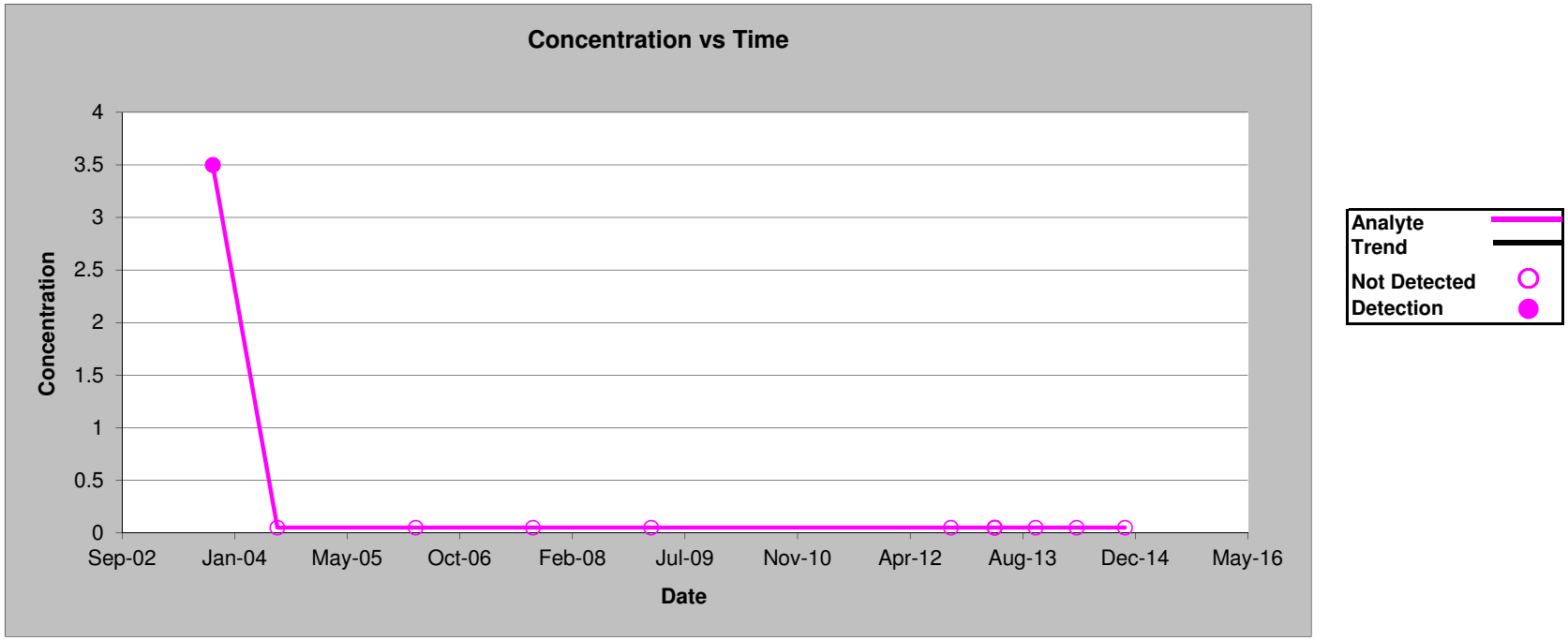
MW-107B
Beryllium
DuPont Brevard Site



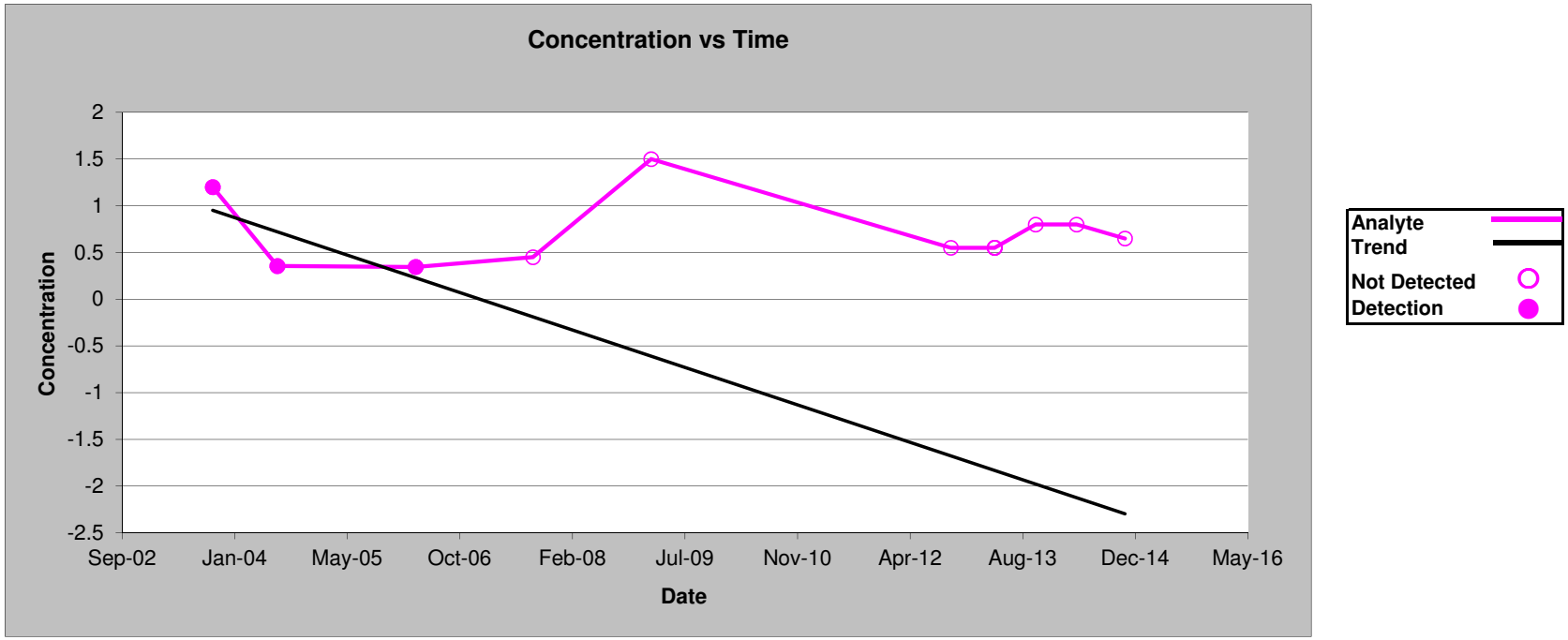
MW-107B
Carbon Disulfide
DuPont Brevard Site



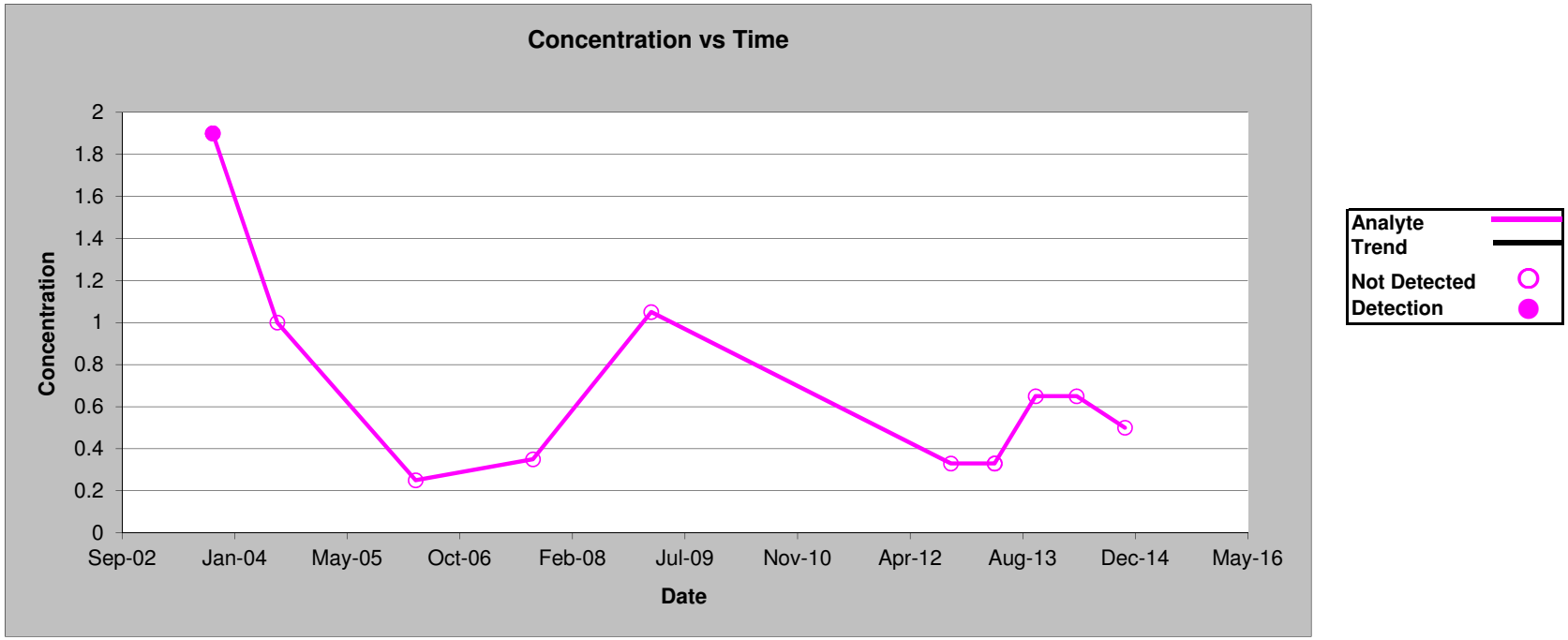
MW-107B
Chloroform
DuPont Brevard Site



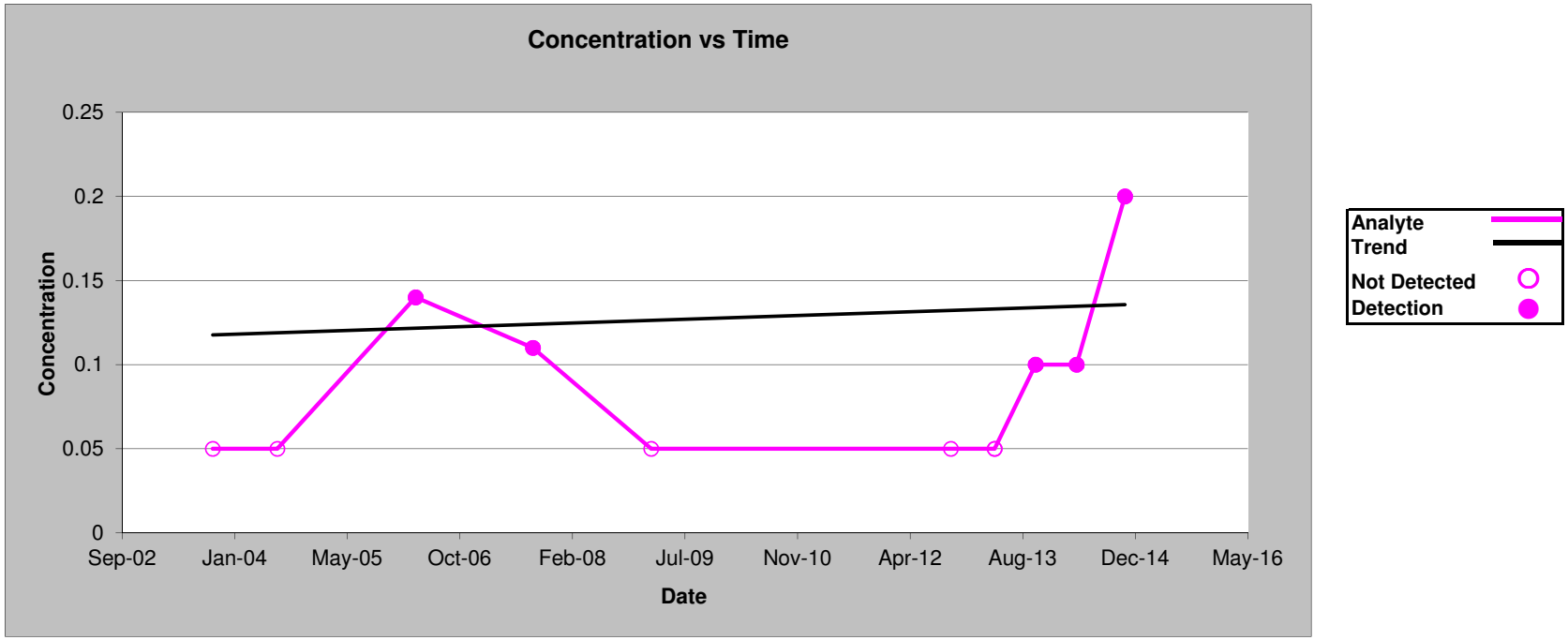
MW-107B
Chromium
DuPont Brevard Site



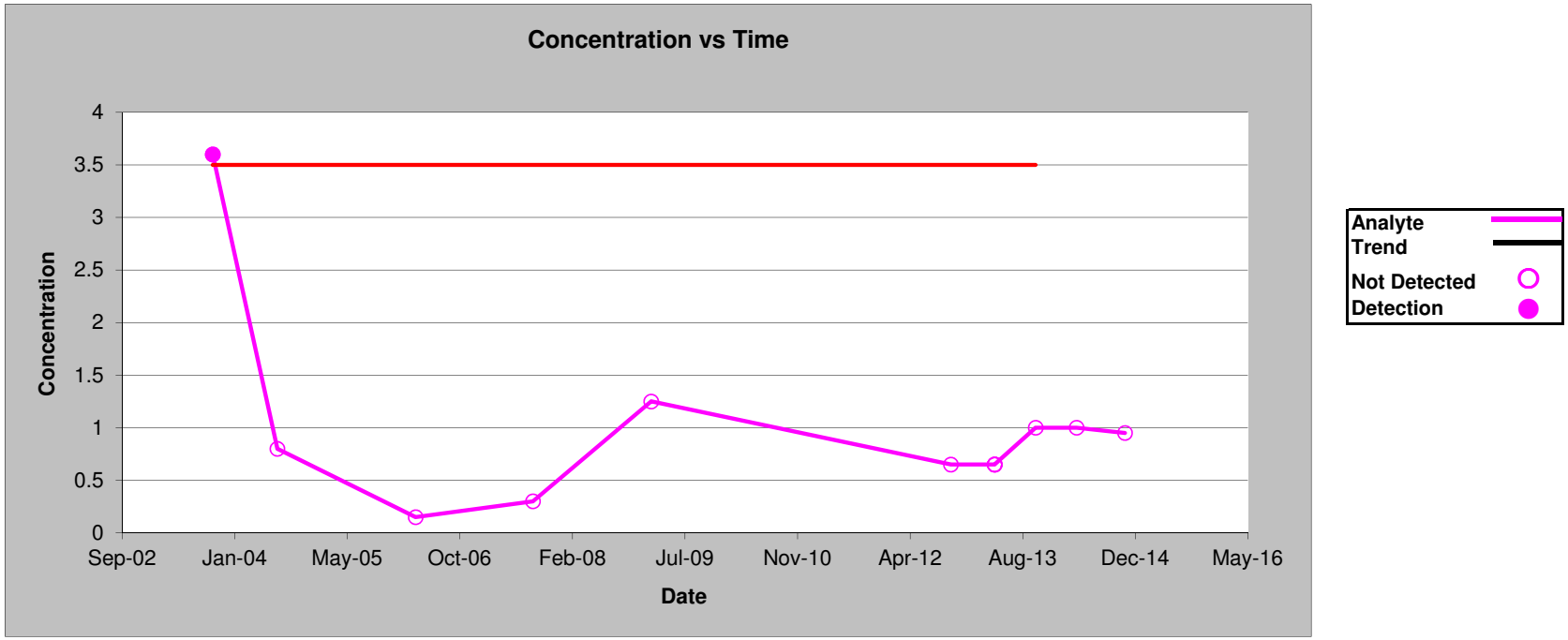
MW-107B
Cobalt
DuPont Brevard Site



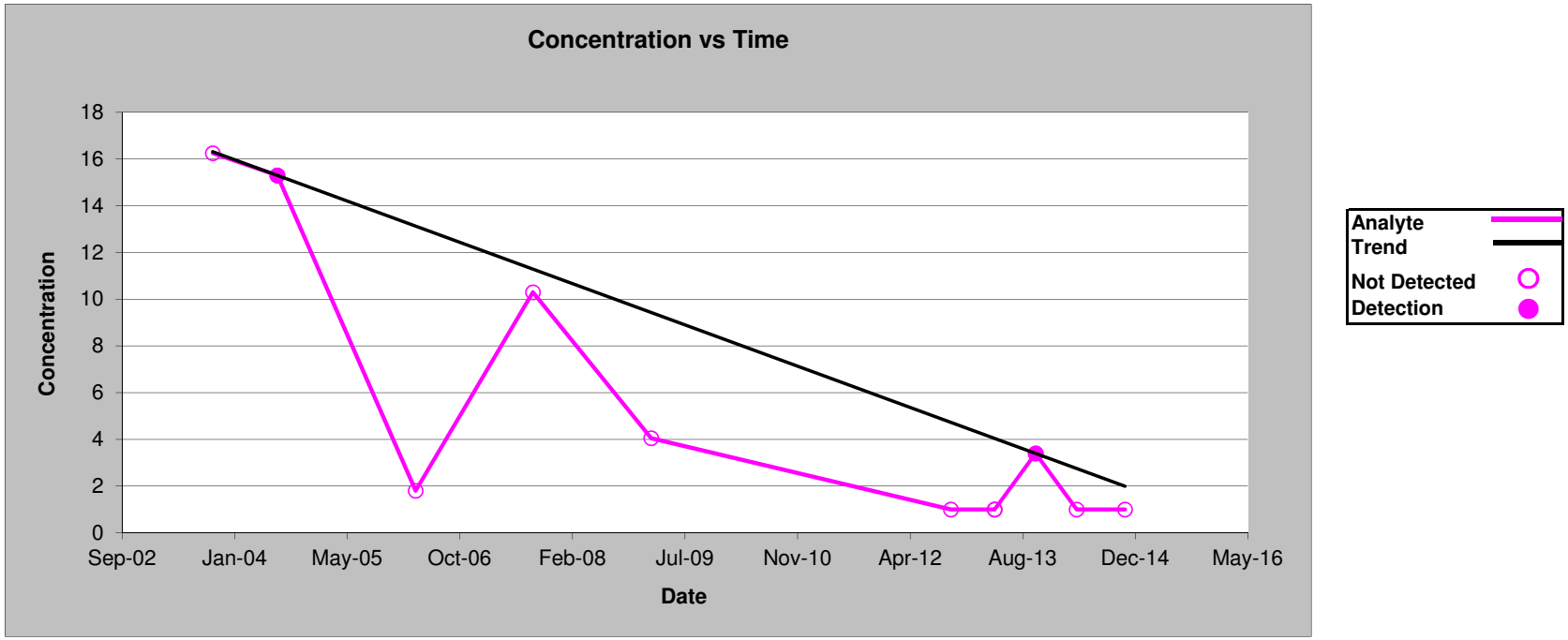
MW-107B
Trichlorofluoromethane
DuPont Brevard Site



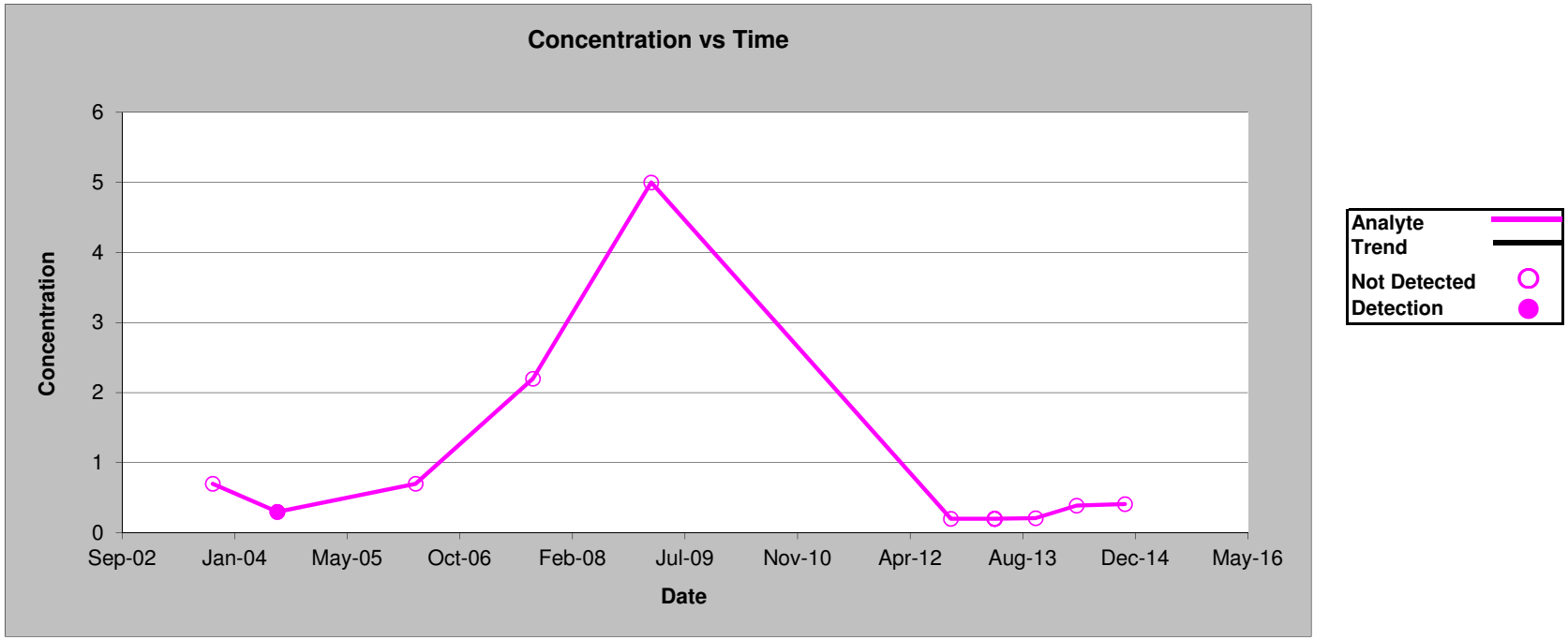
MW-107B
Vanadium
DuPont Brevard Site



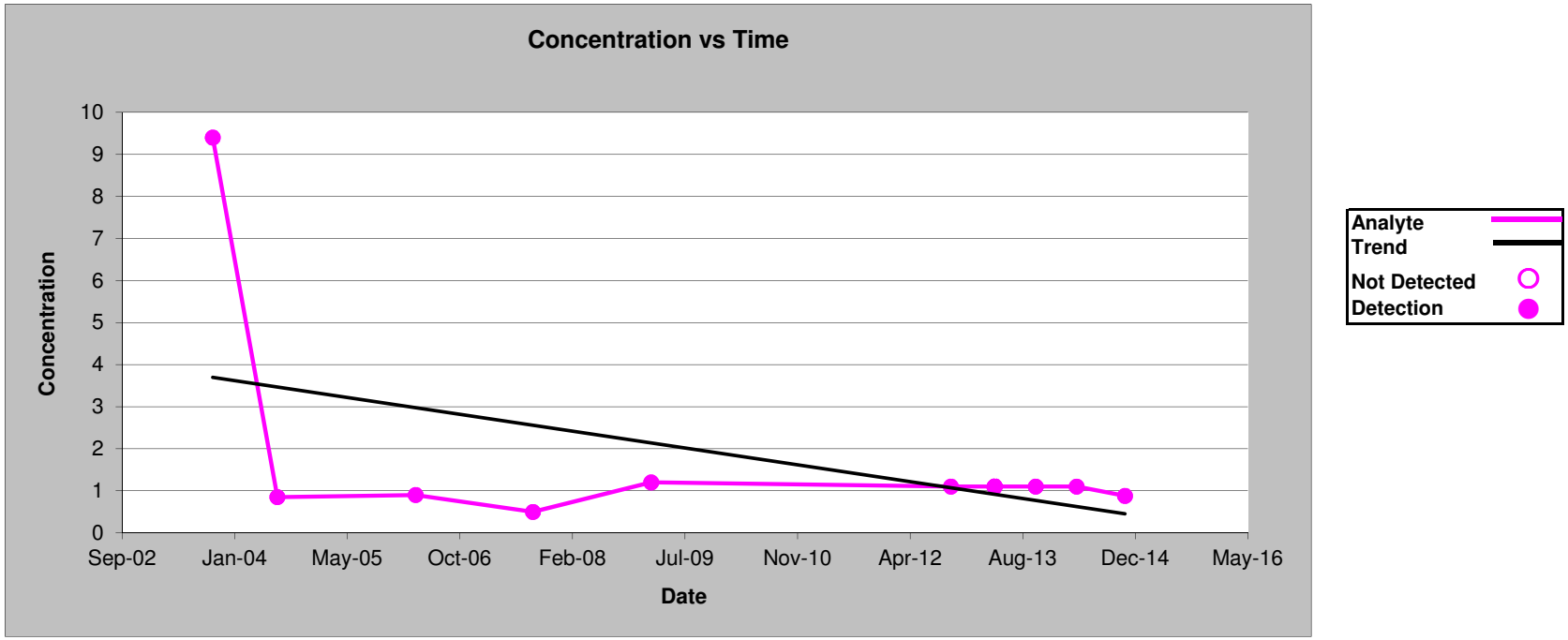
MW-107B
Zinc
DuPont Brevard Site



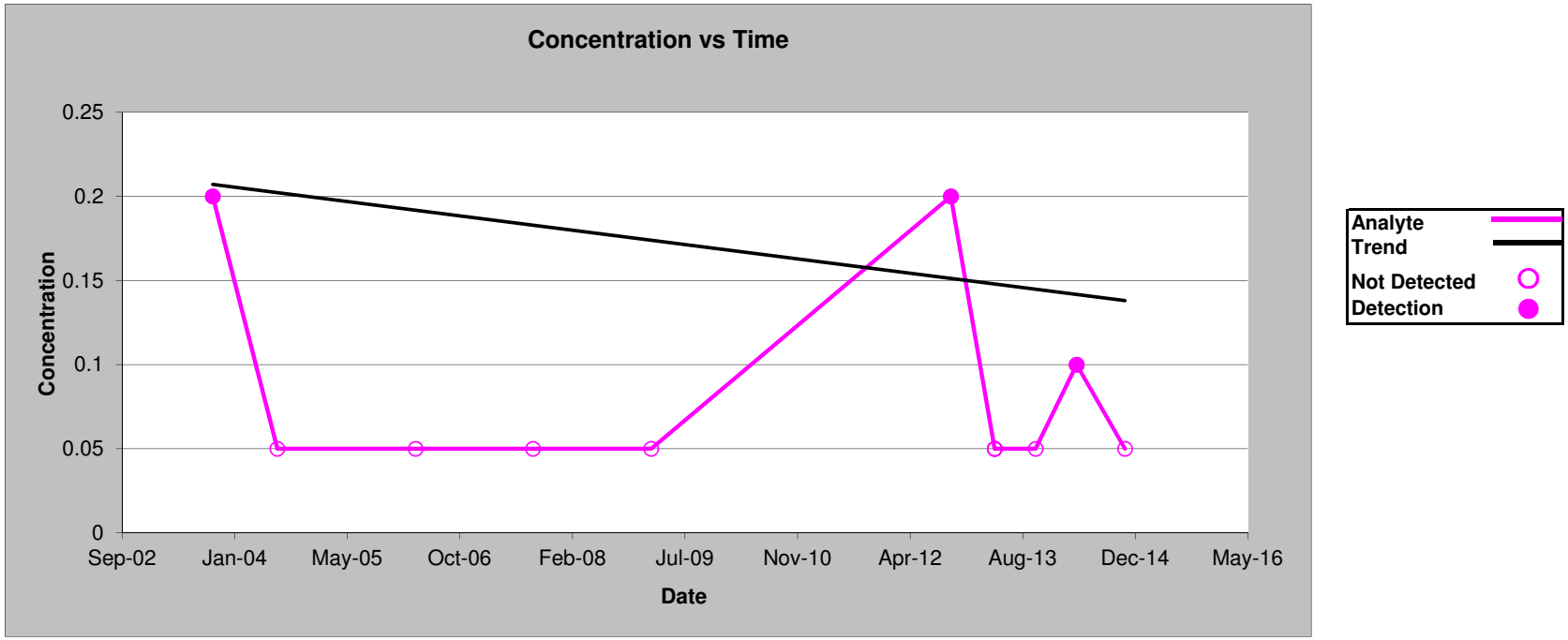
MW-107B
Arsenic
DuPont Brevard Site



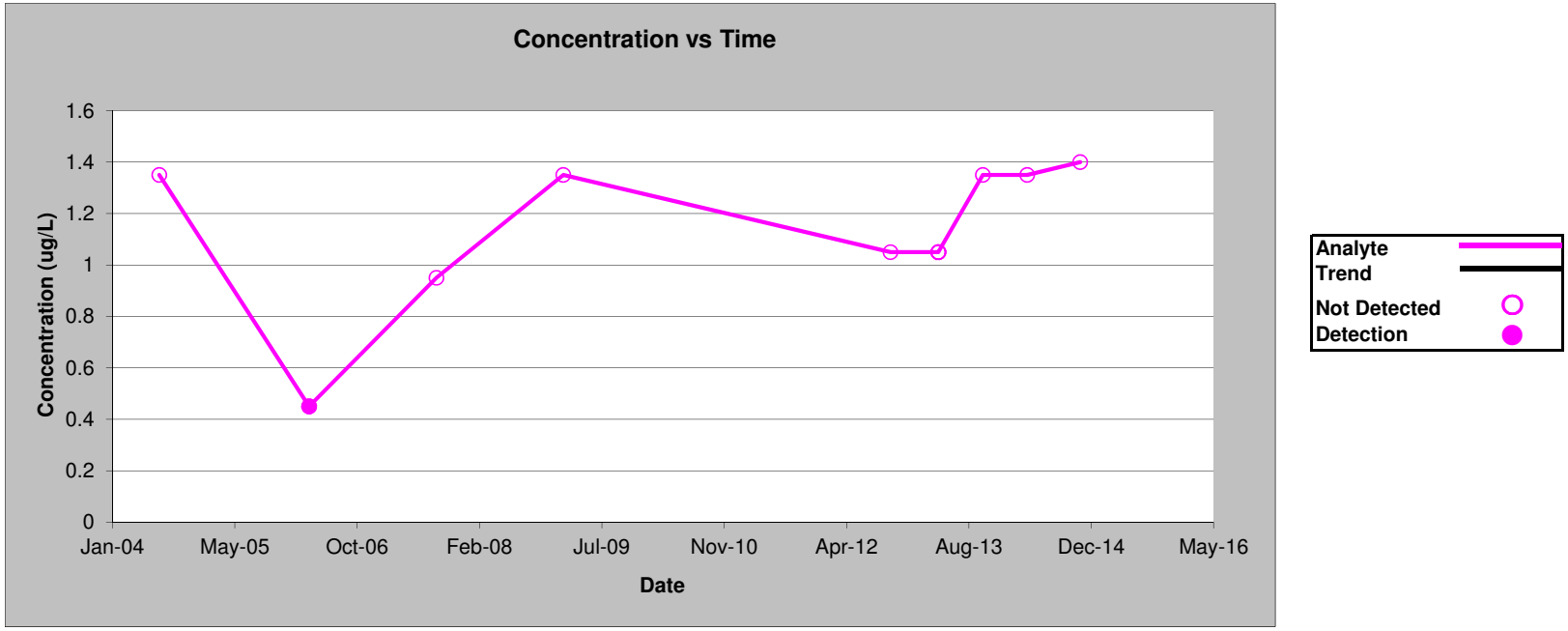
MW-107B
Barium
DuPont Brevard Site



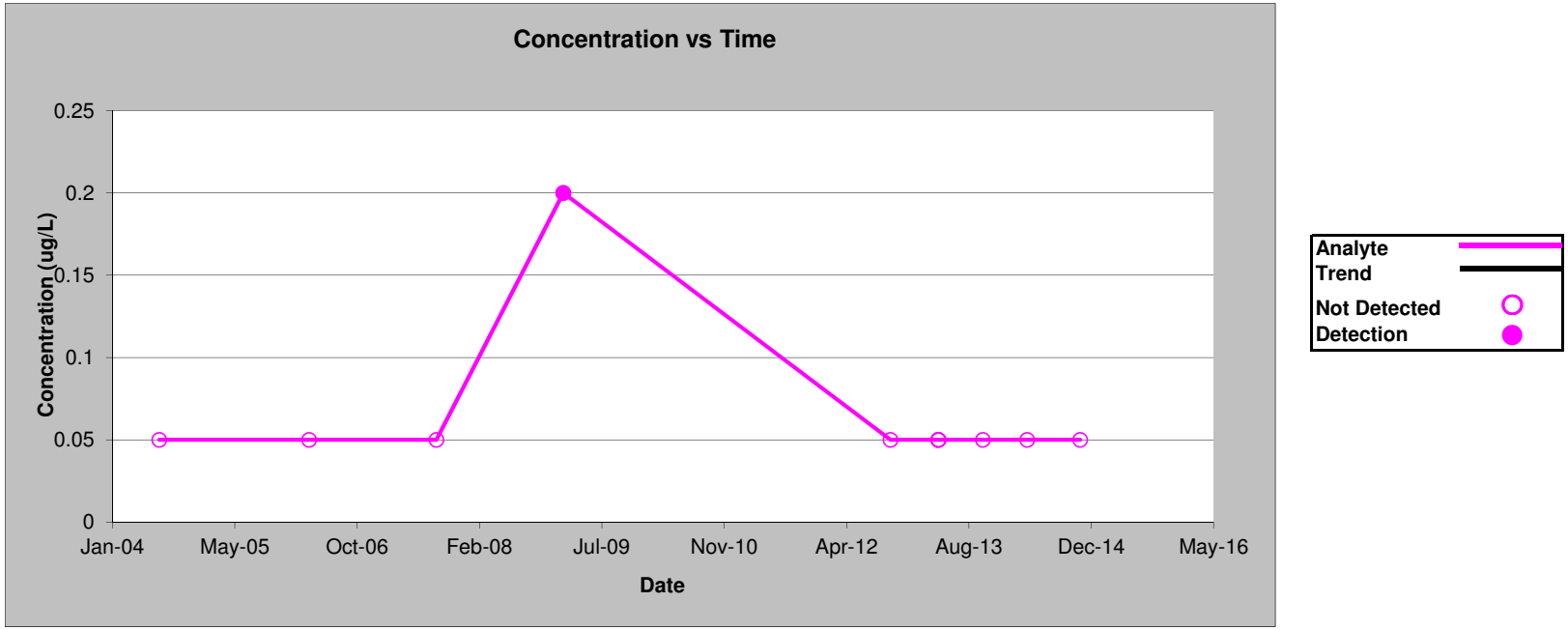
MW-107B
Toluene
DuPont Brevard Site



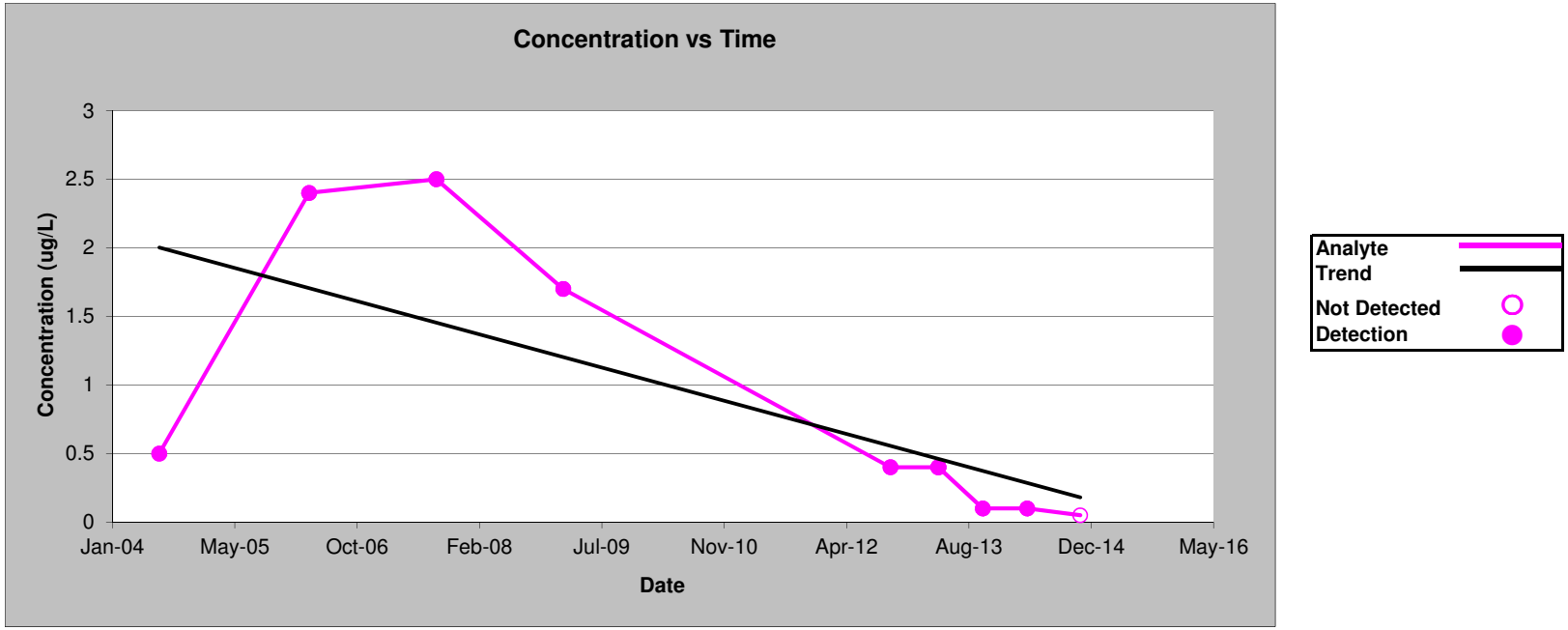
MW-213
Copper
DuPont Brevard Site



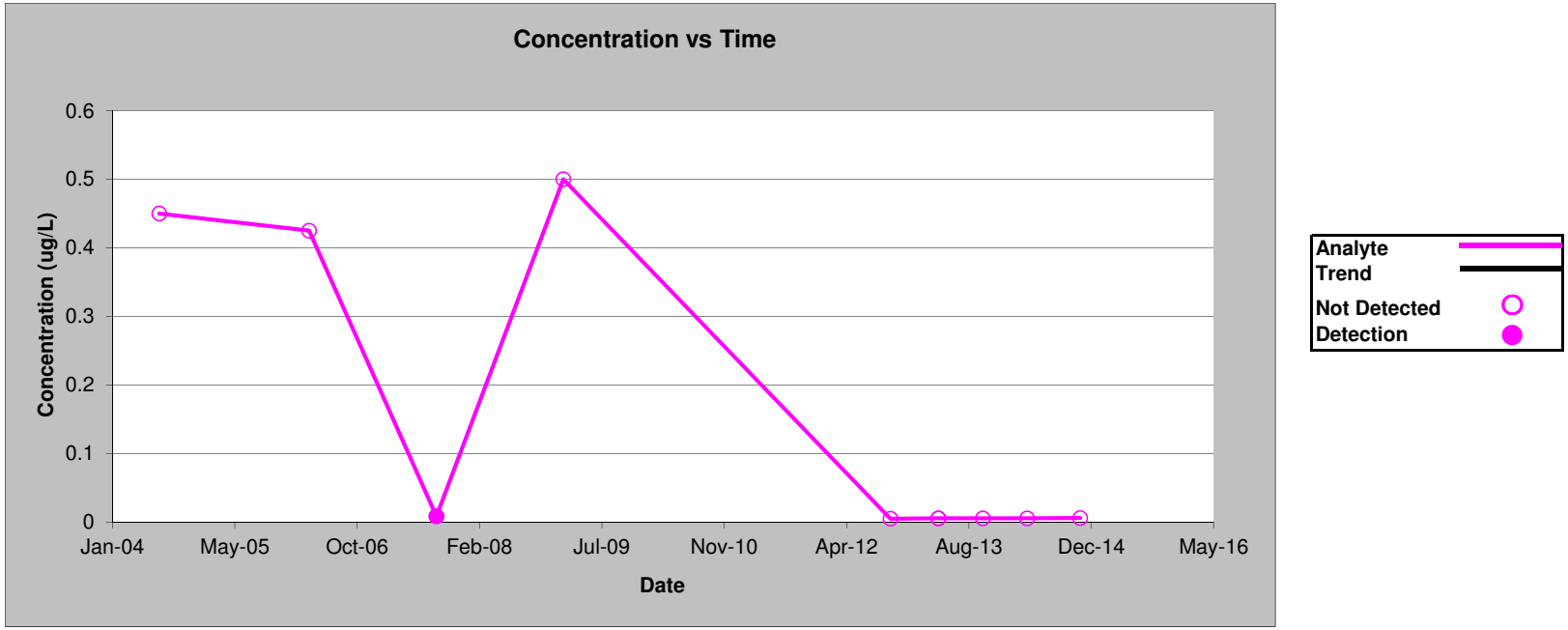
MW-213
Ethyl Benzene
DuPont Brevard Site



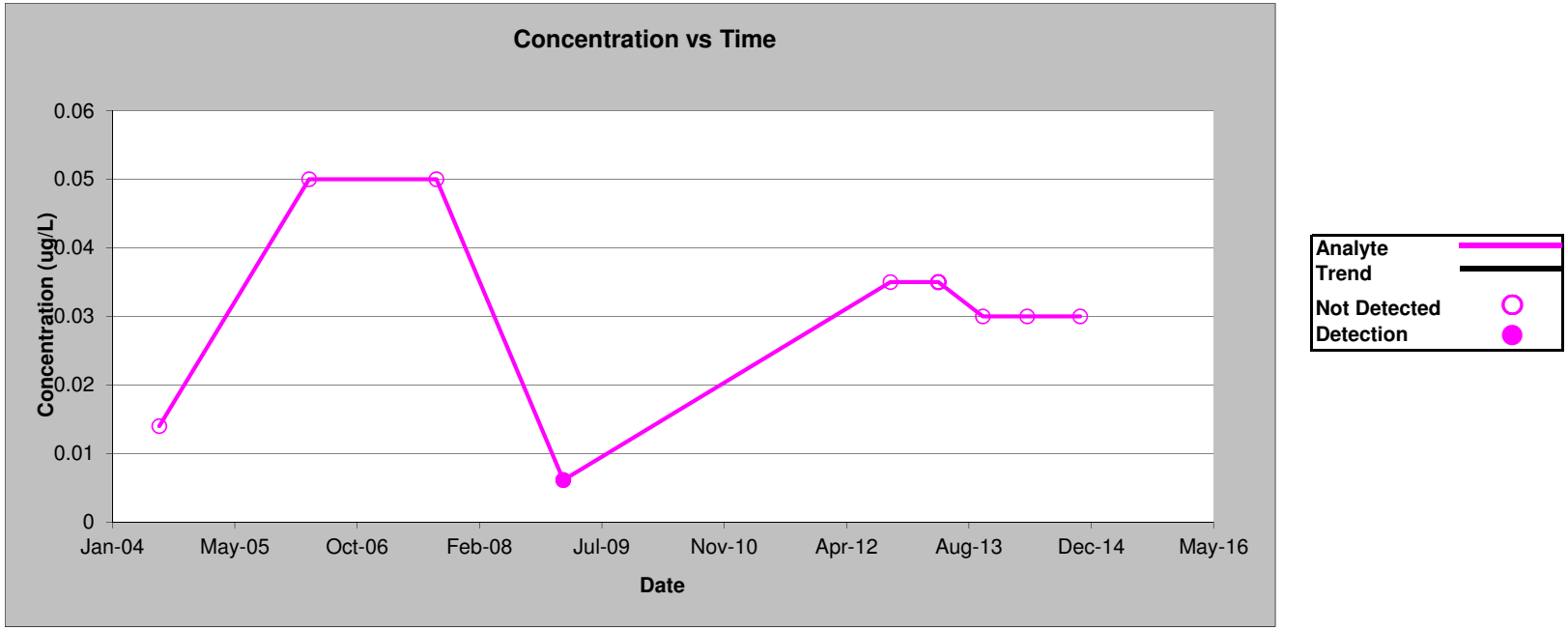
MW-213
Ethyl Chloride
DuPont Brevard Site



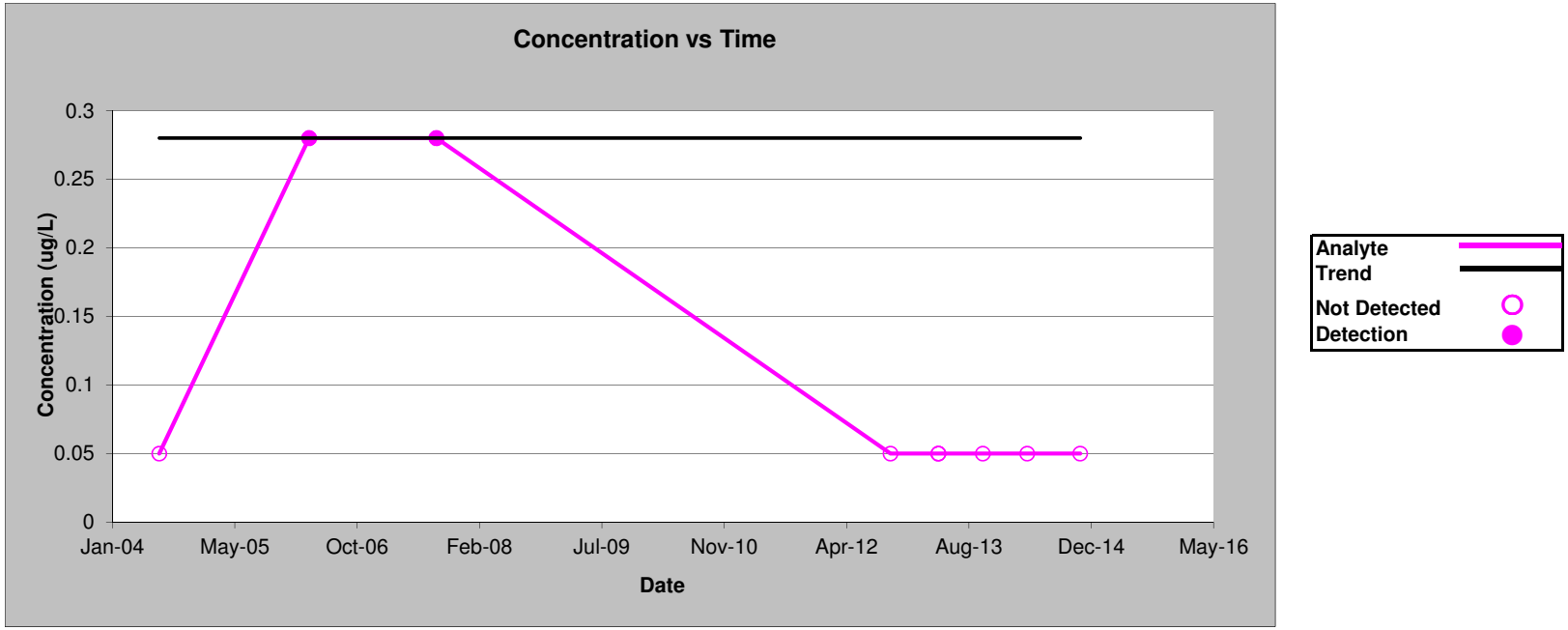
MW-213
Fluorene
DuPont Brevard Site



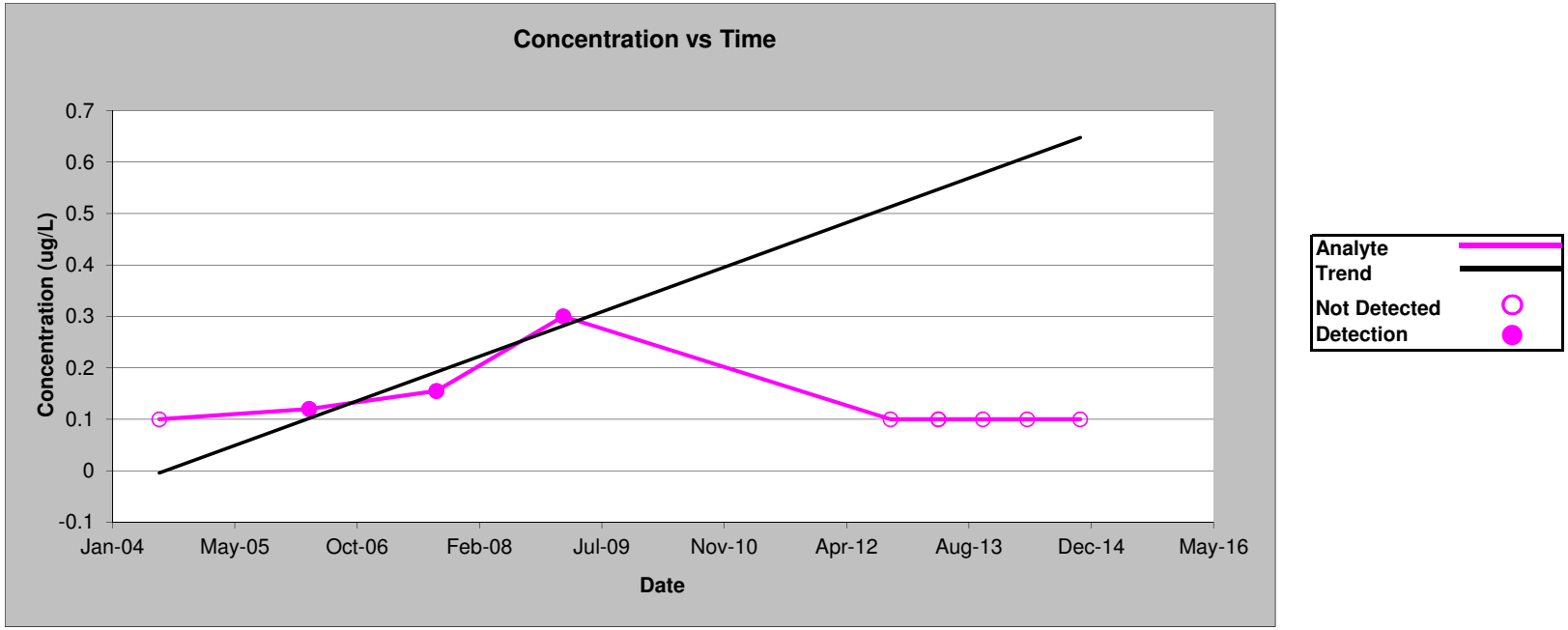
MW-213
Mercury
DuPont Brevard Site



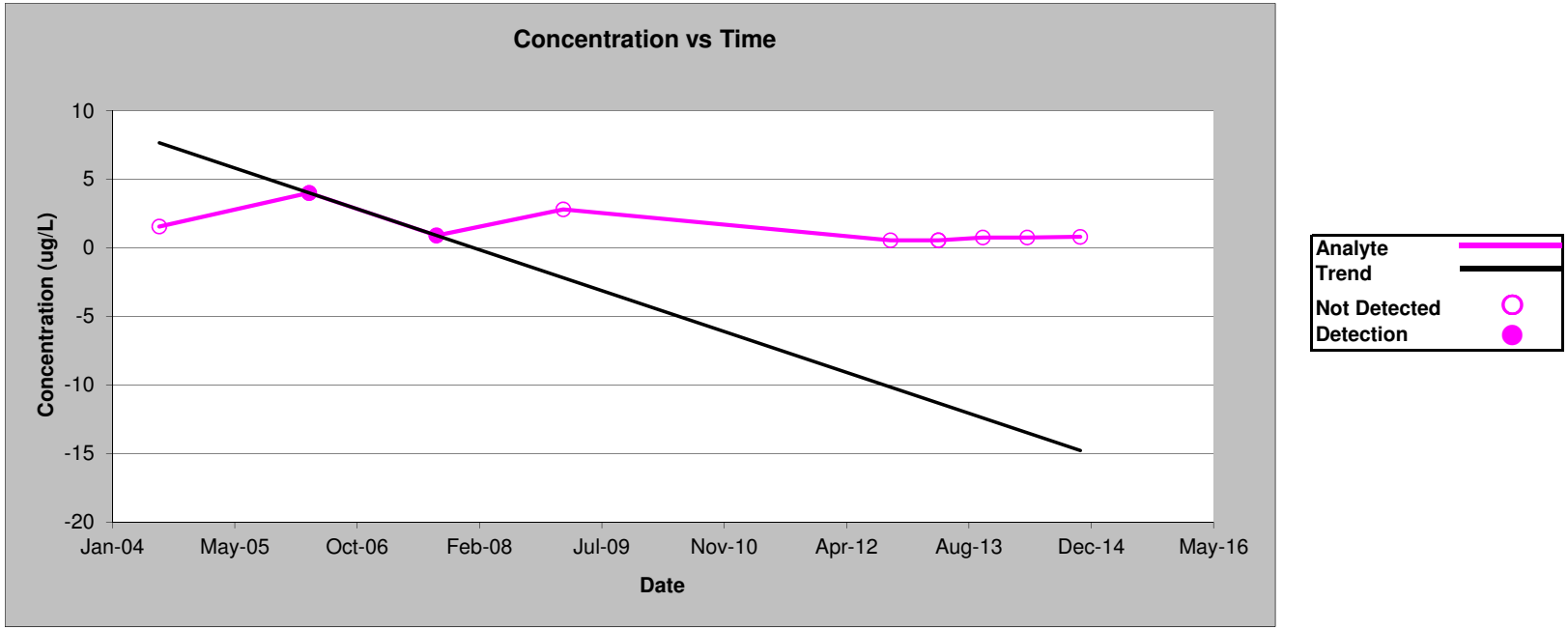
MW-213
Methylene Bromide
DuPont Brevard Site



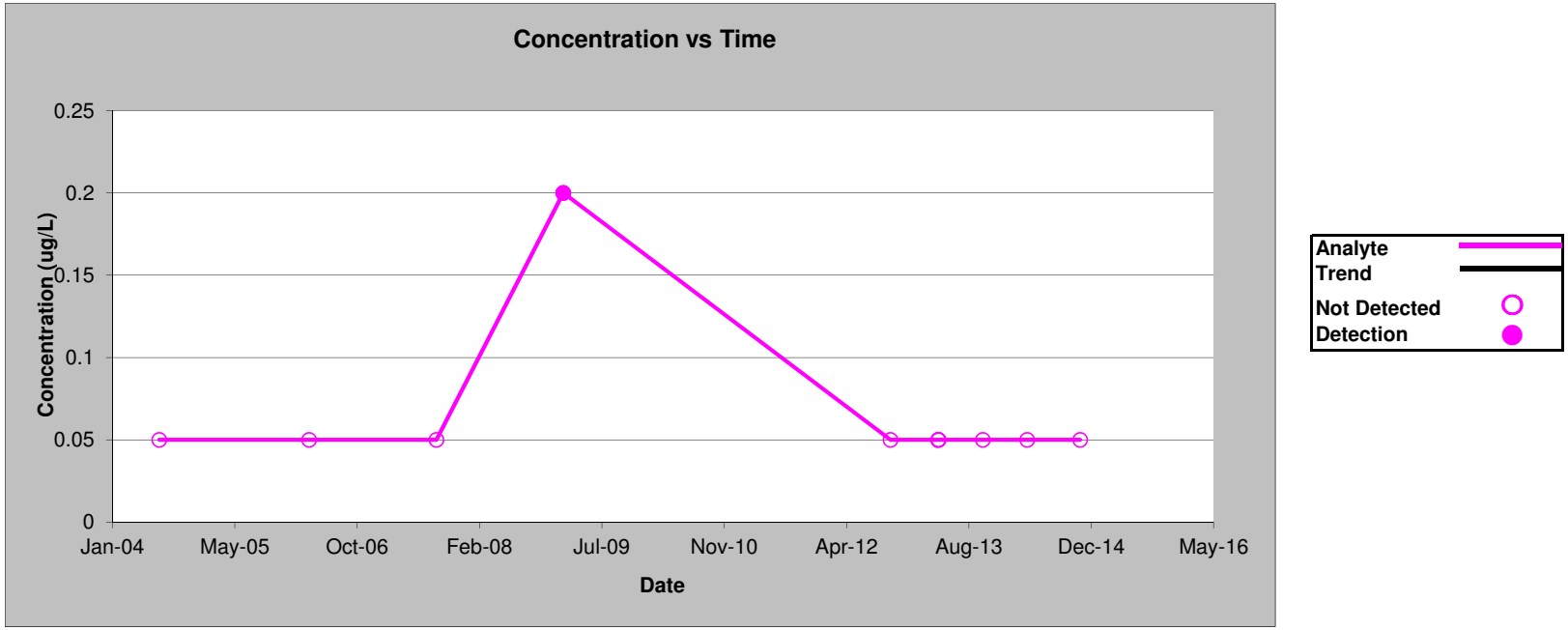
MW-213
Methylene Chloride
DuPont Brevard Site



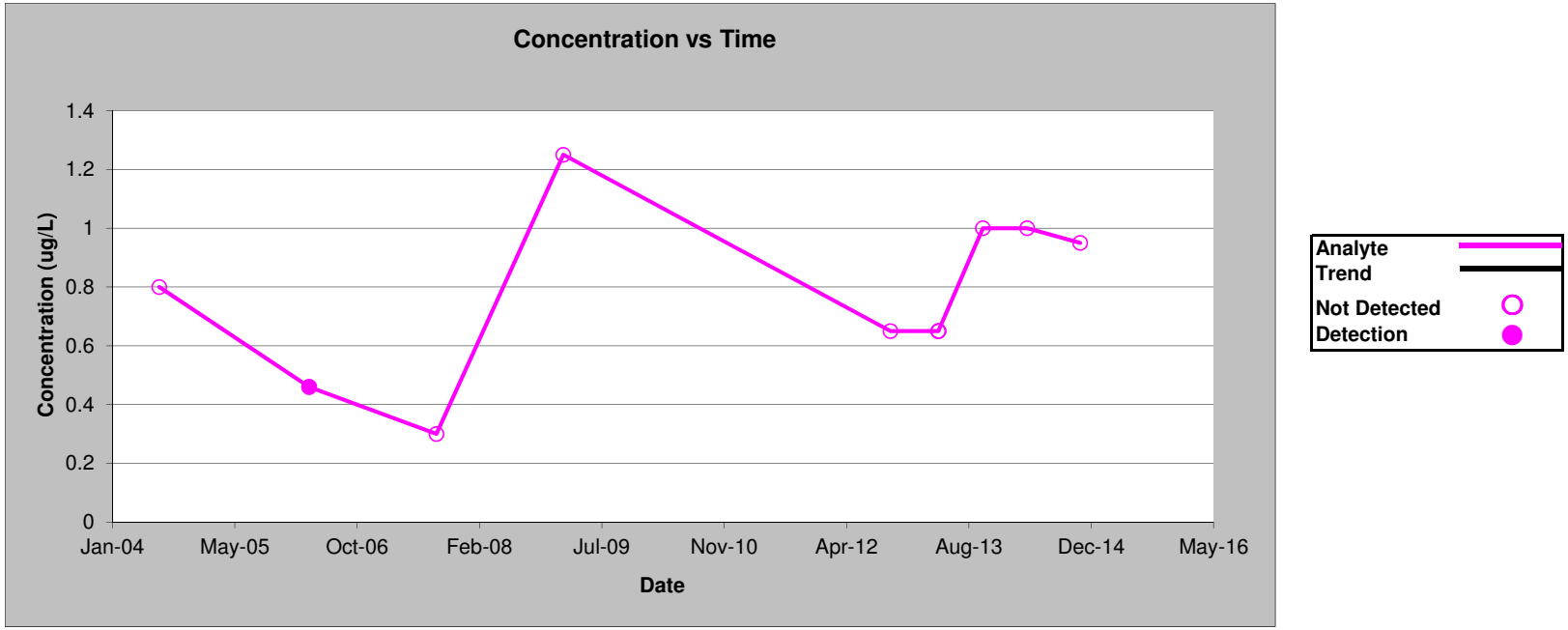
MW-213
Nickel
DuPont Brevard Site



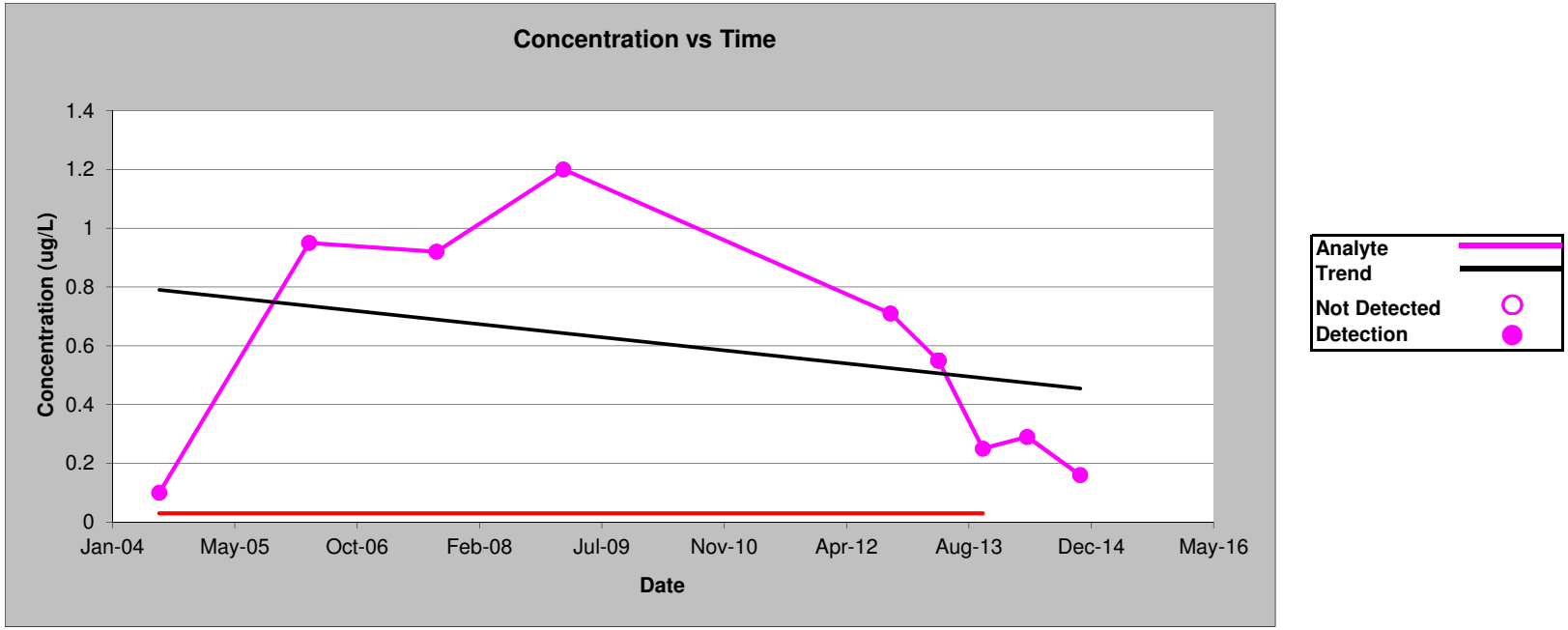
MW-213
trans-1,2 Dichloroethene
DuPont Brevard Site



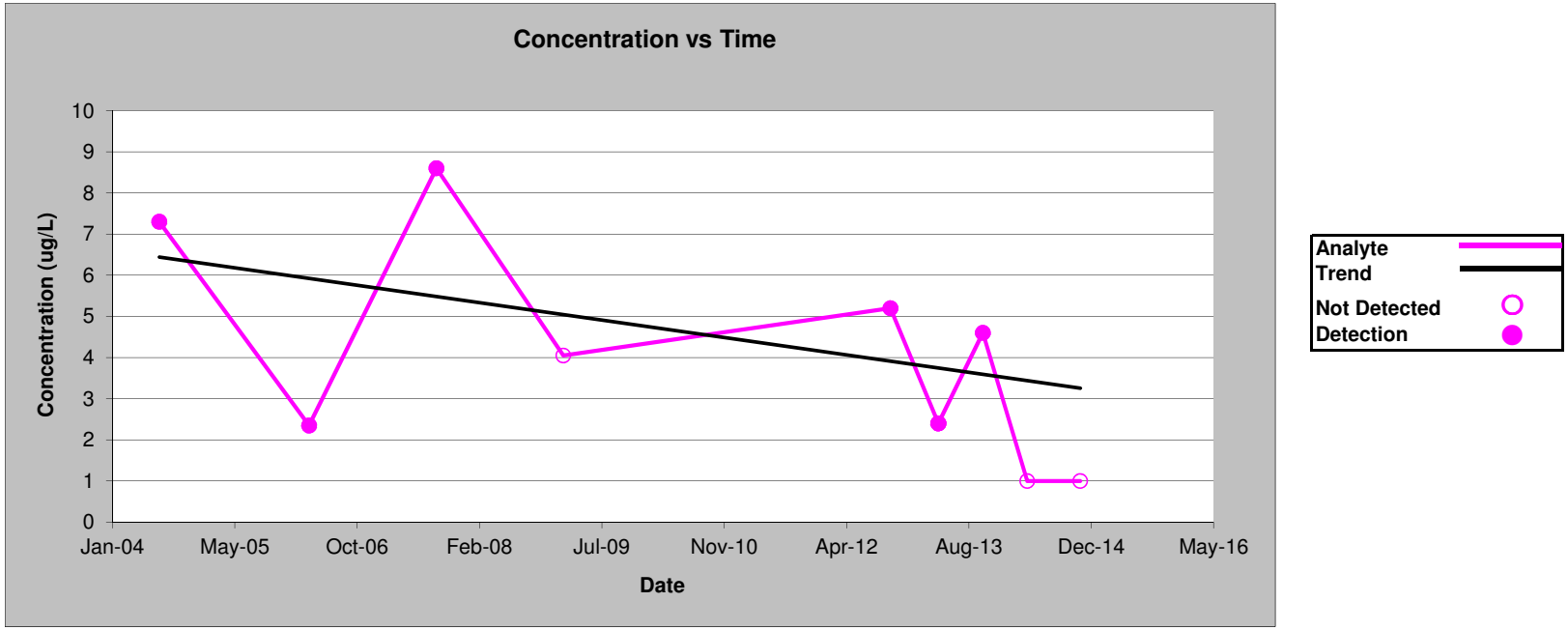
MW-213
Vanadium
DuPont Brevard Site



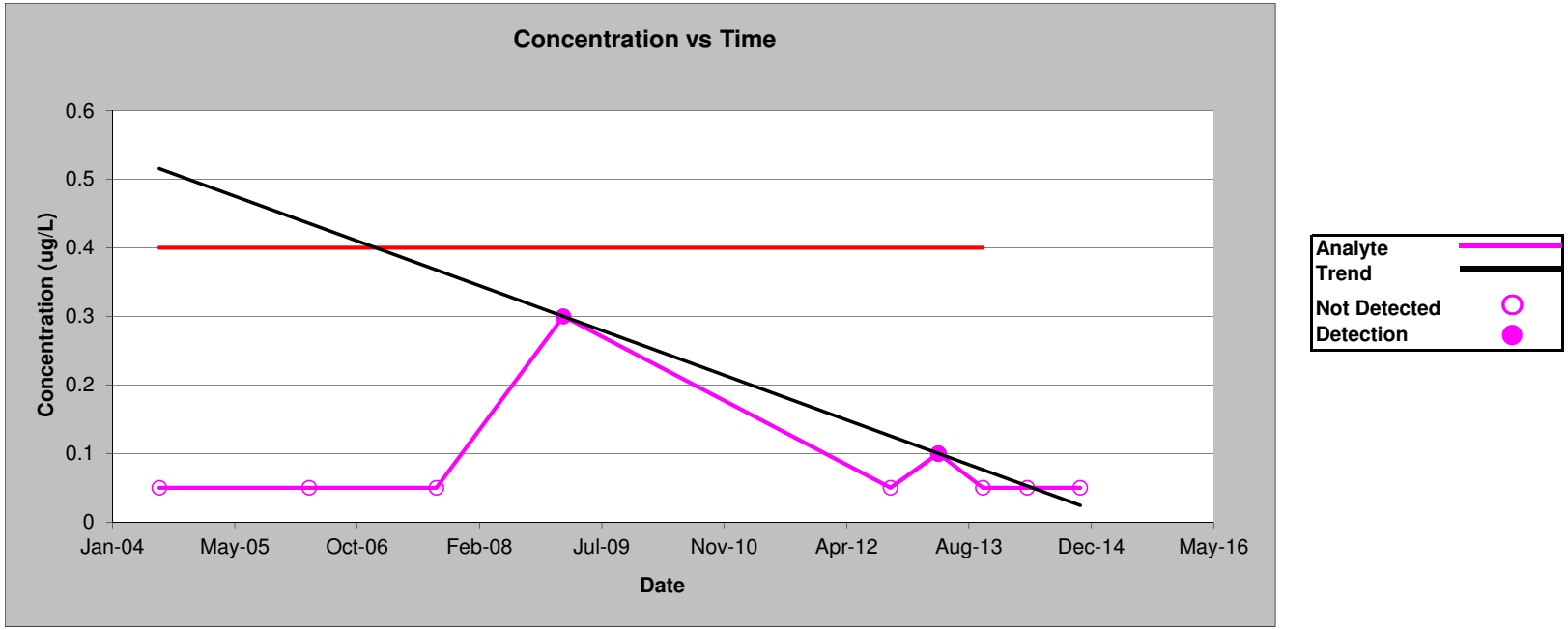
MW-213
Vinyl Chloride
DuPont Brevard Site



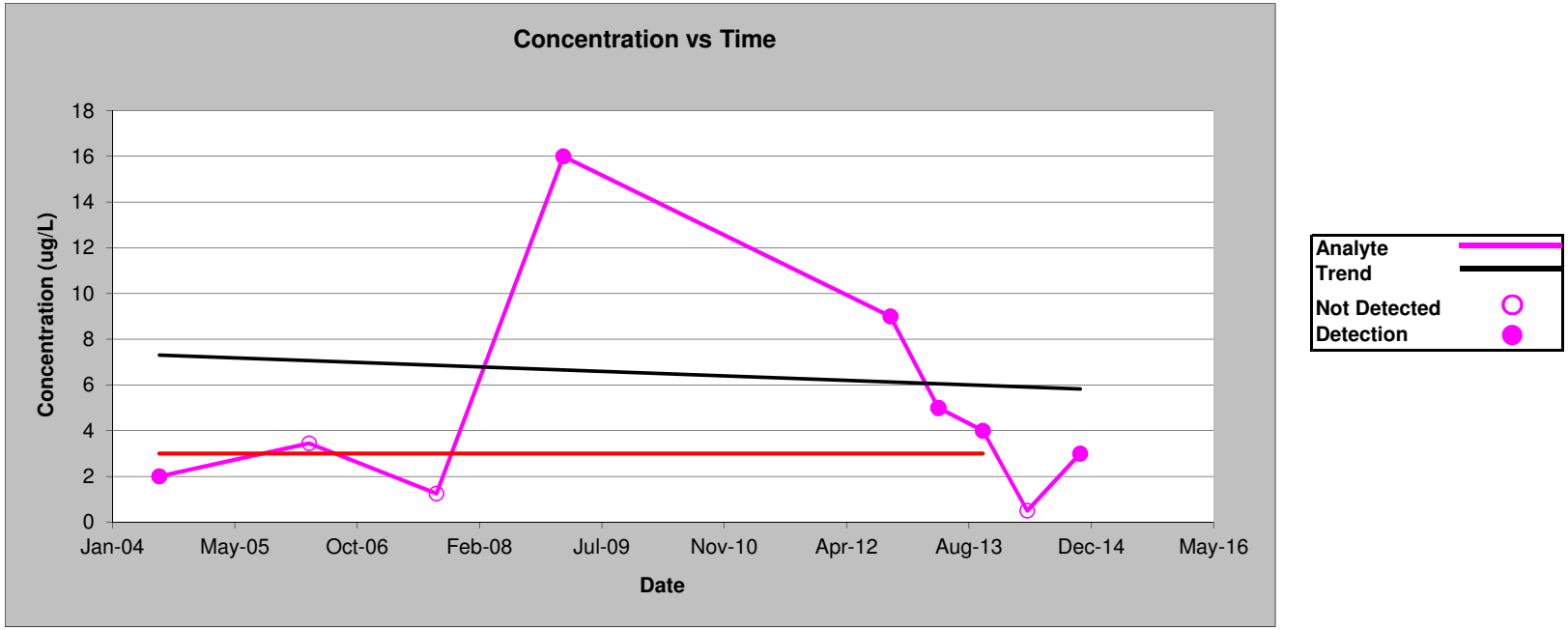
MW-213
Zinc
DuPont Brevard Site



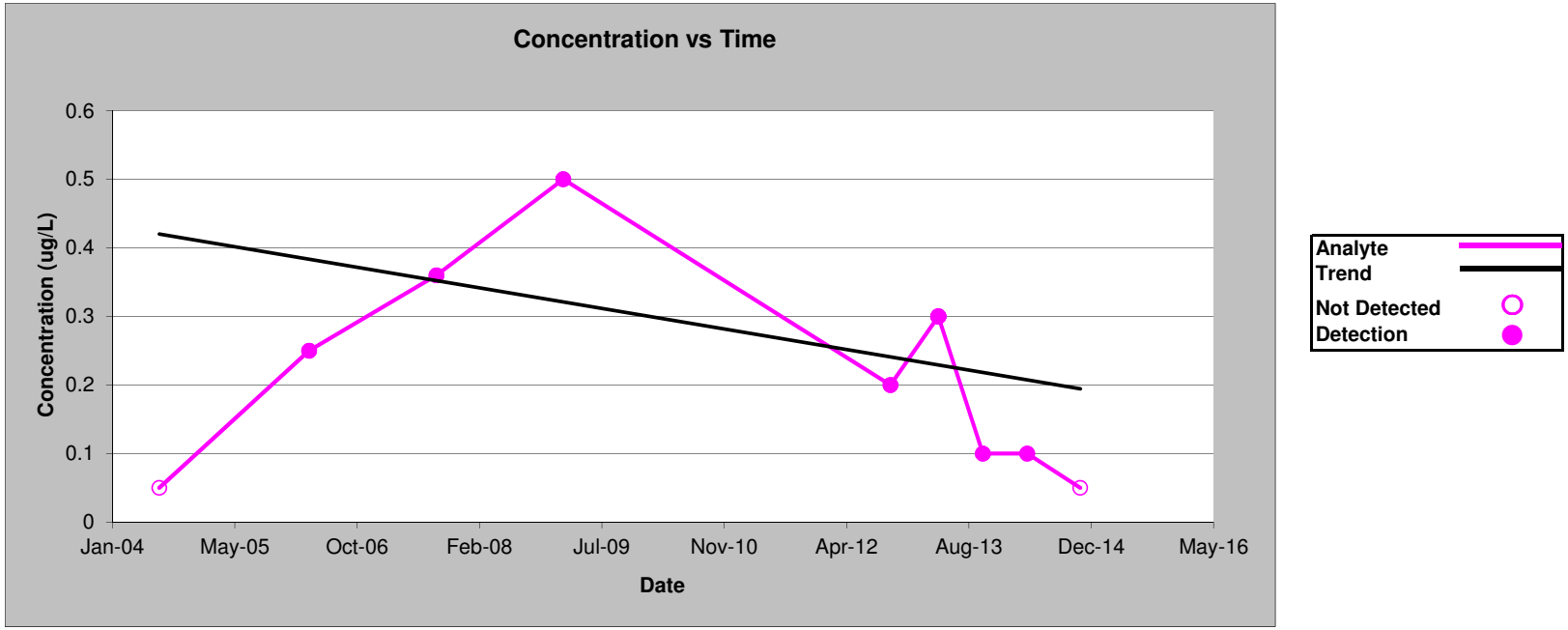
MW-213
1,2-Dichloroethane
DuPont Brevard Site



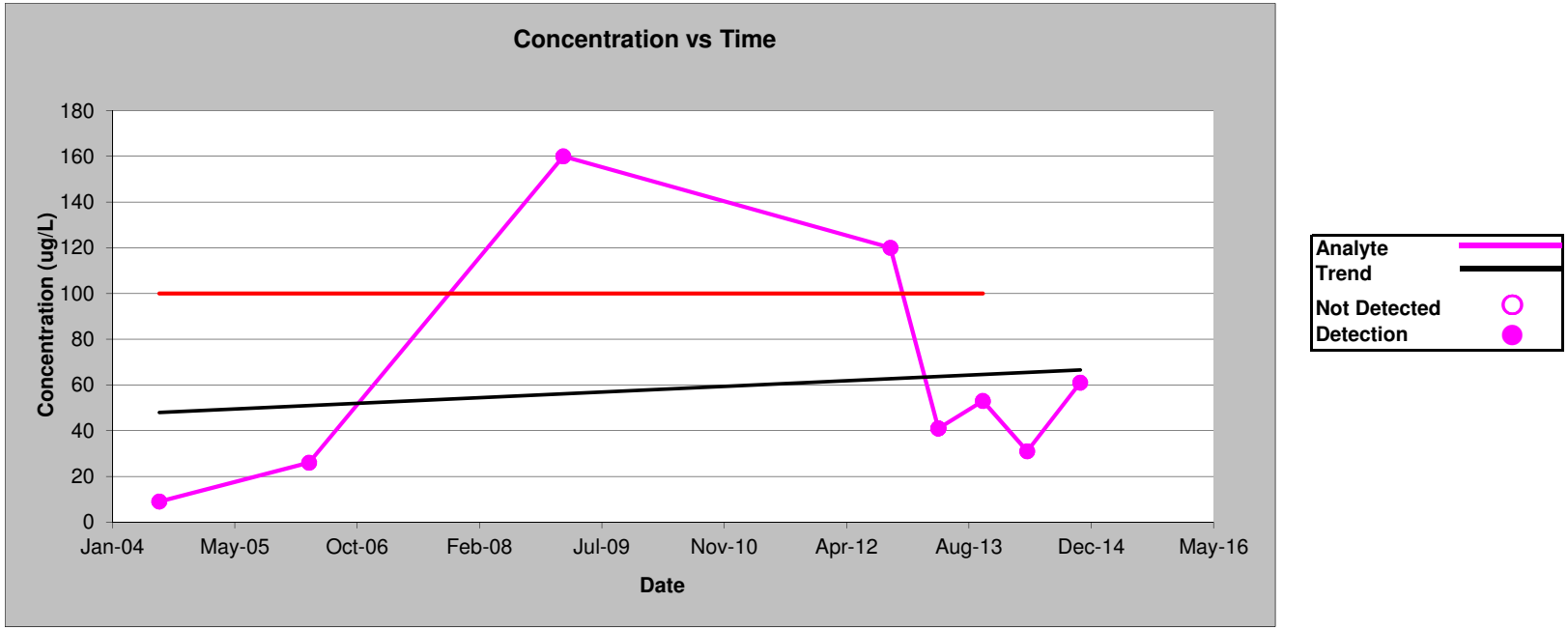
MW-213
1,4-Dioxane
DuPont Brevard Site



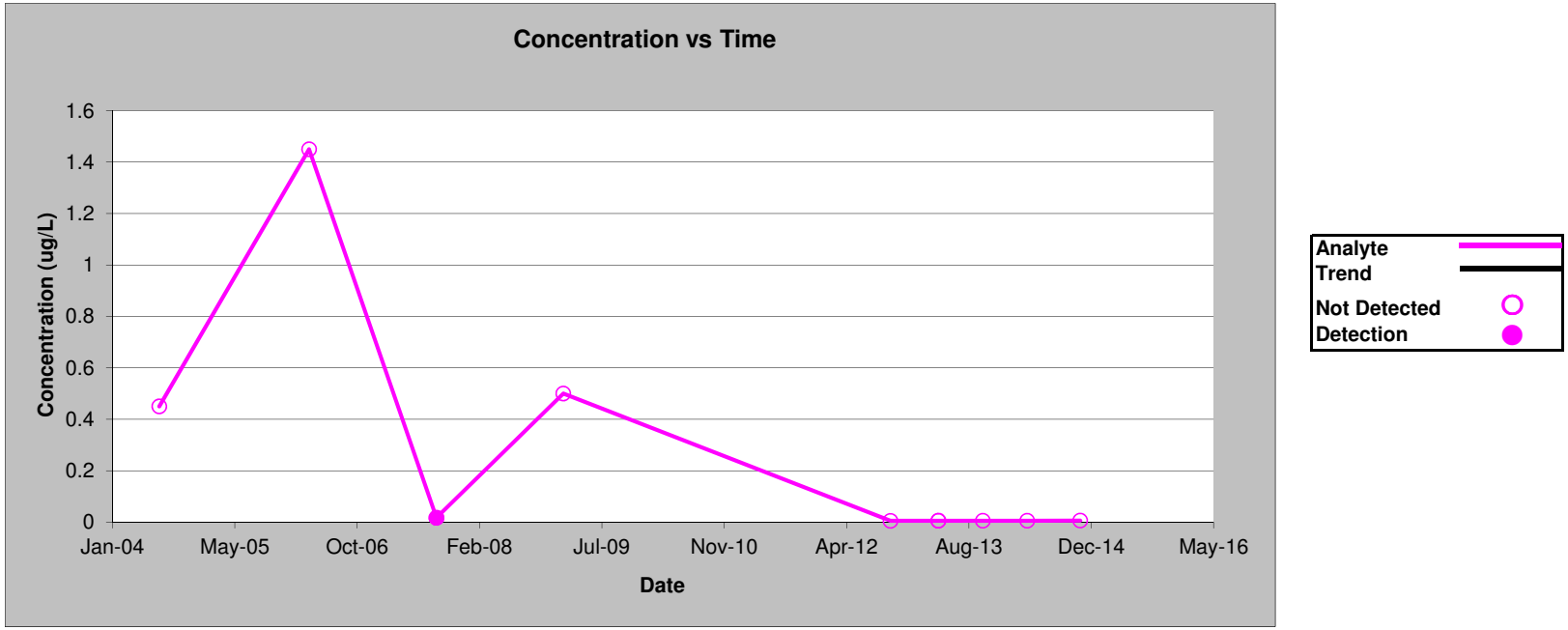
MW-213
1,1-Dichloroethane
DuPont Brevard Site



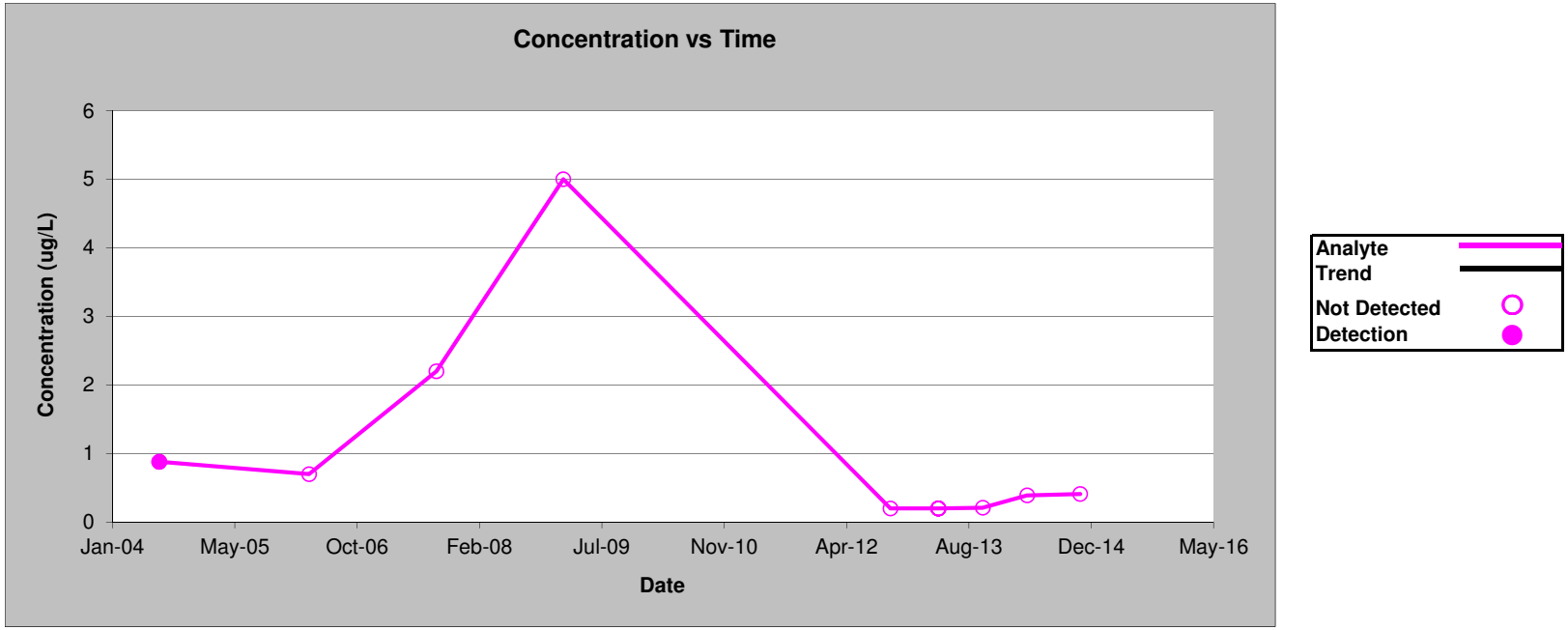
MW-213
1,1'-Oxybisbenzene
DuPont Brevard Site



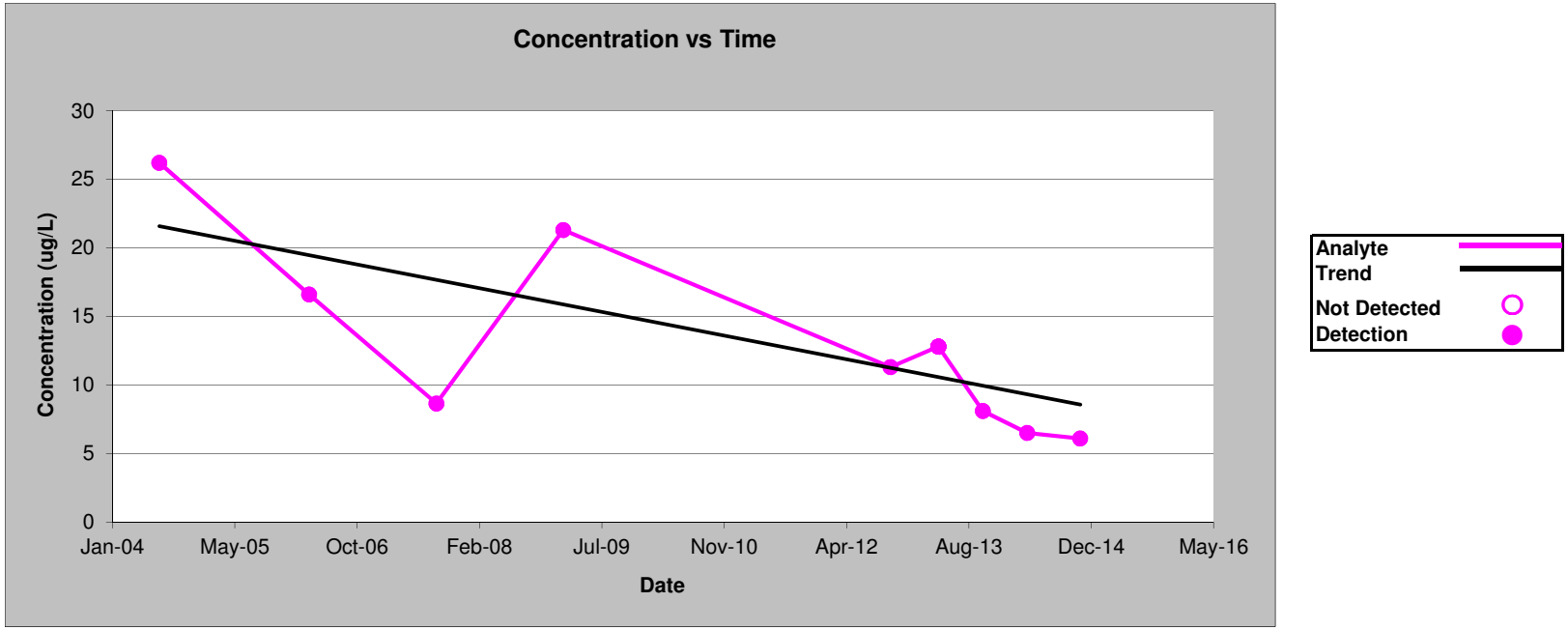
MW-213
Acenaphthene
DuPont Brevard Site



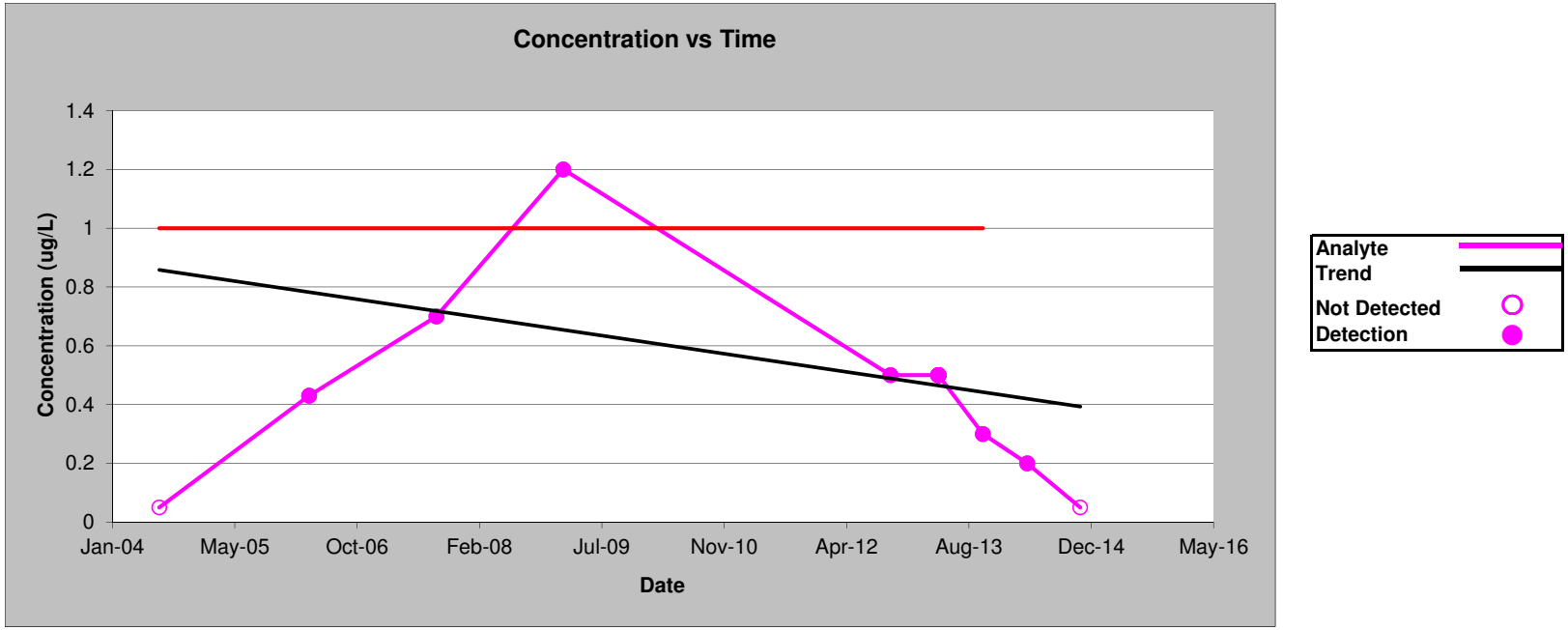
MW-213
Arsenic
DuPont Brevard Site



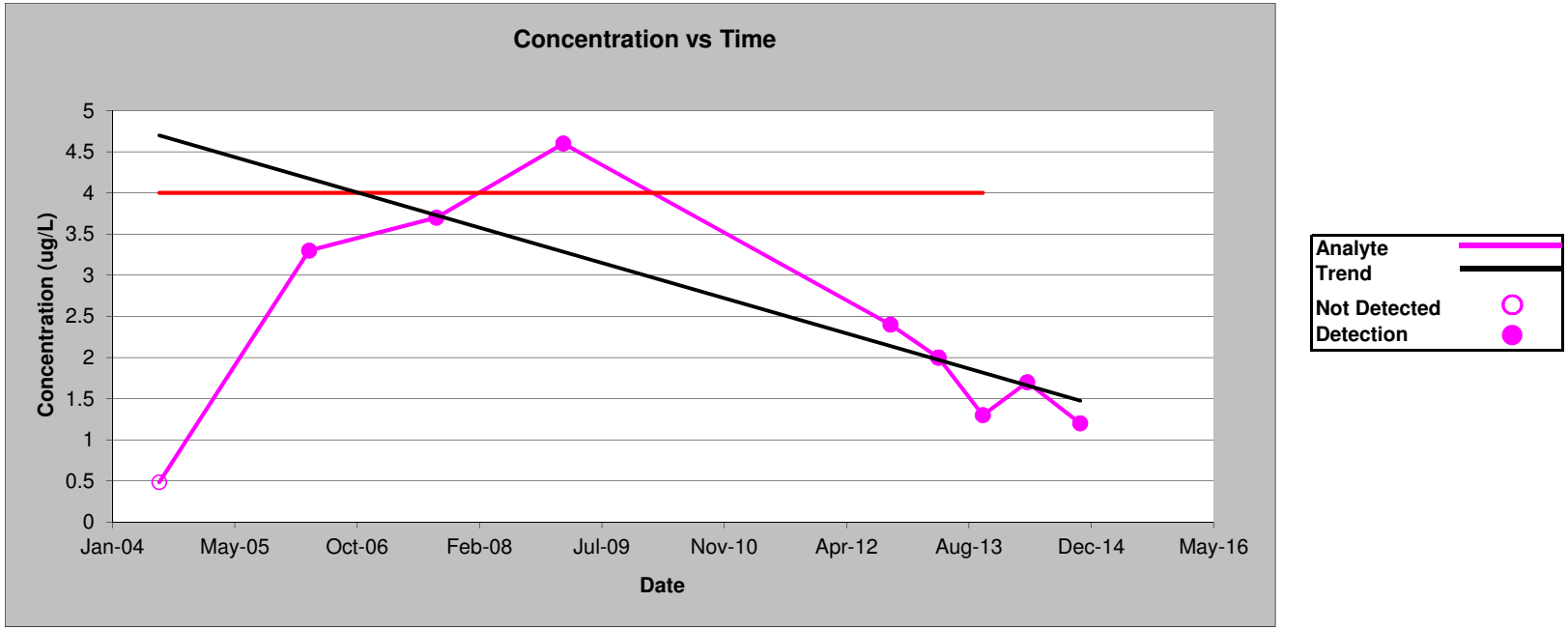
MW-213
Barium
DuPont Brevard Site



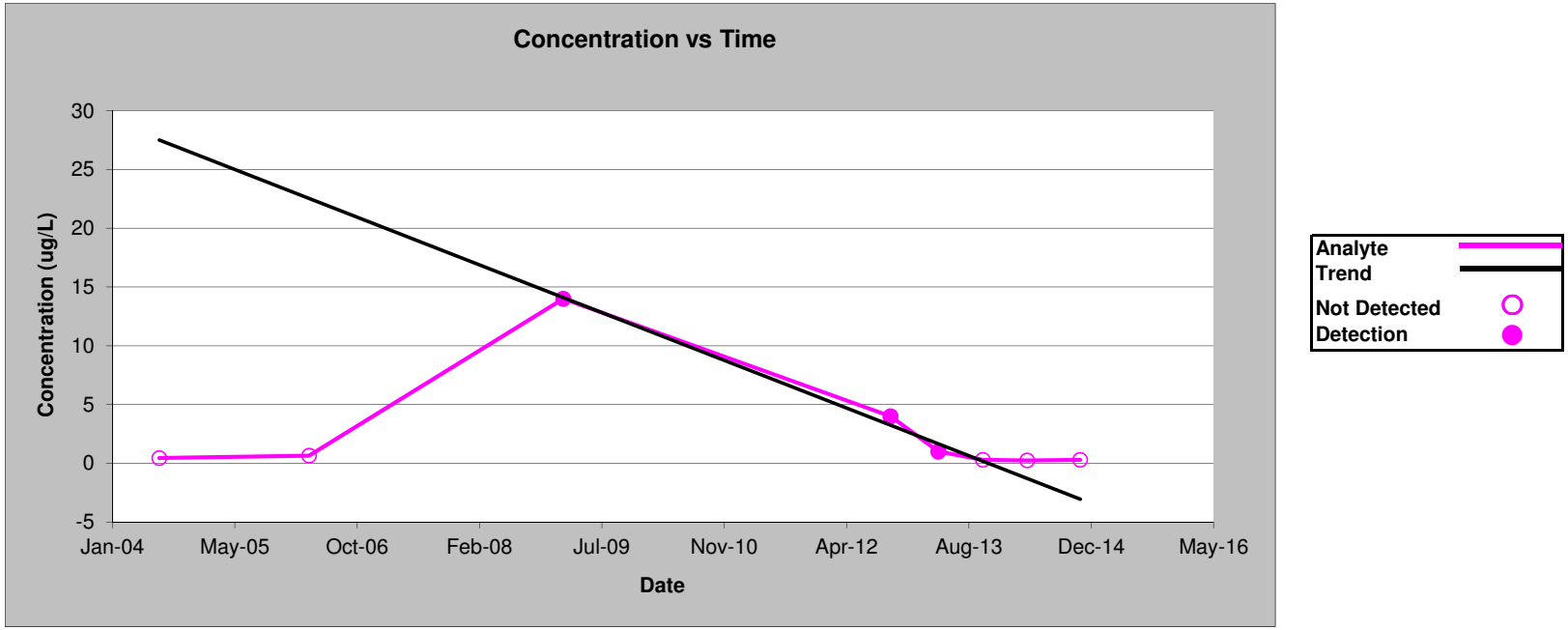
MW-213
Benzene
DuPont Brevard Site



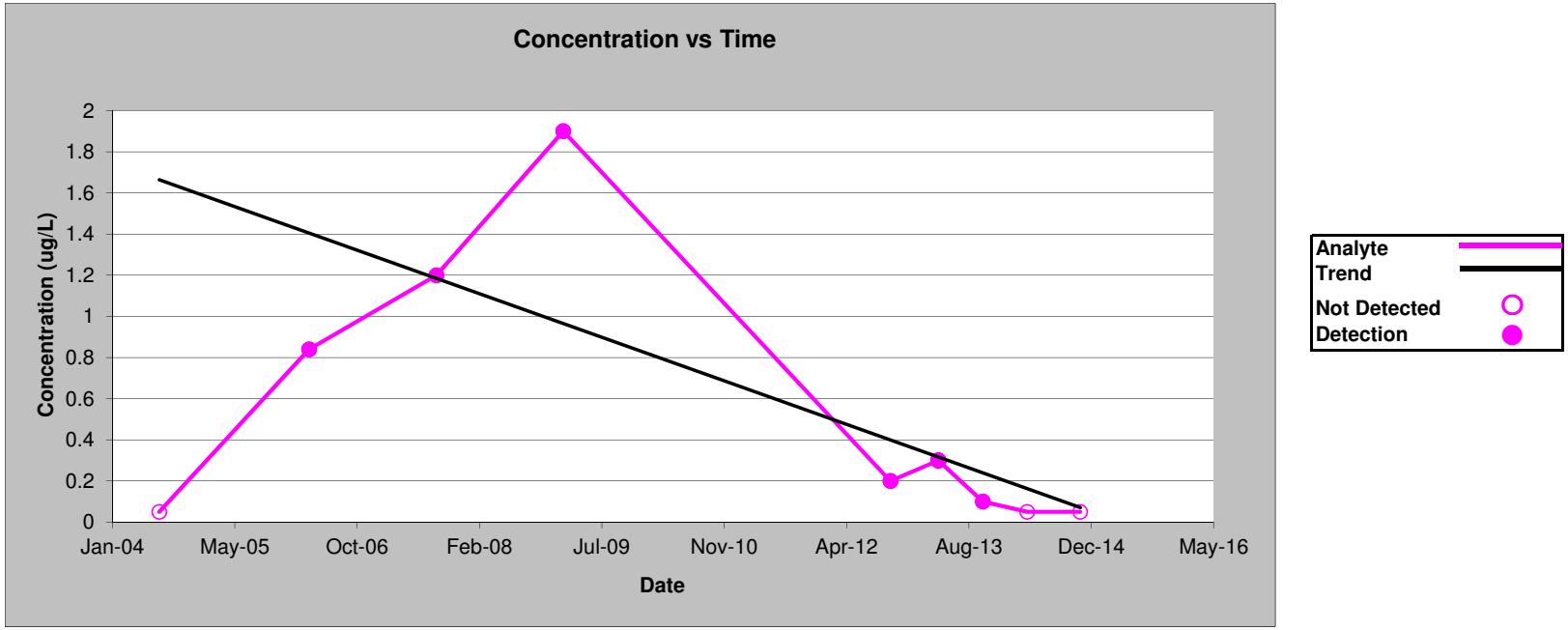
MW-213
Beryllium
DuPont Brevard Site



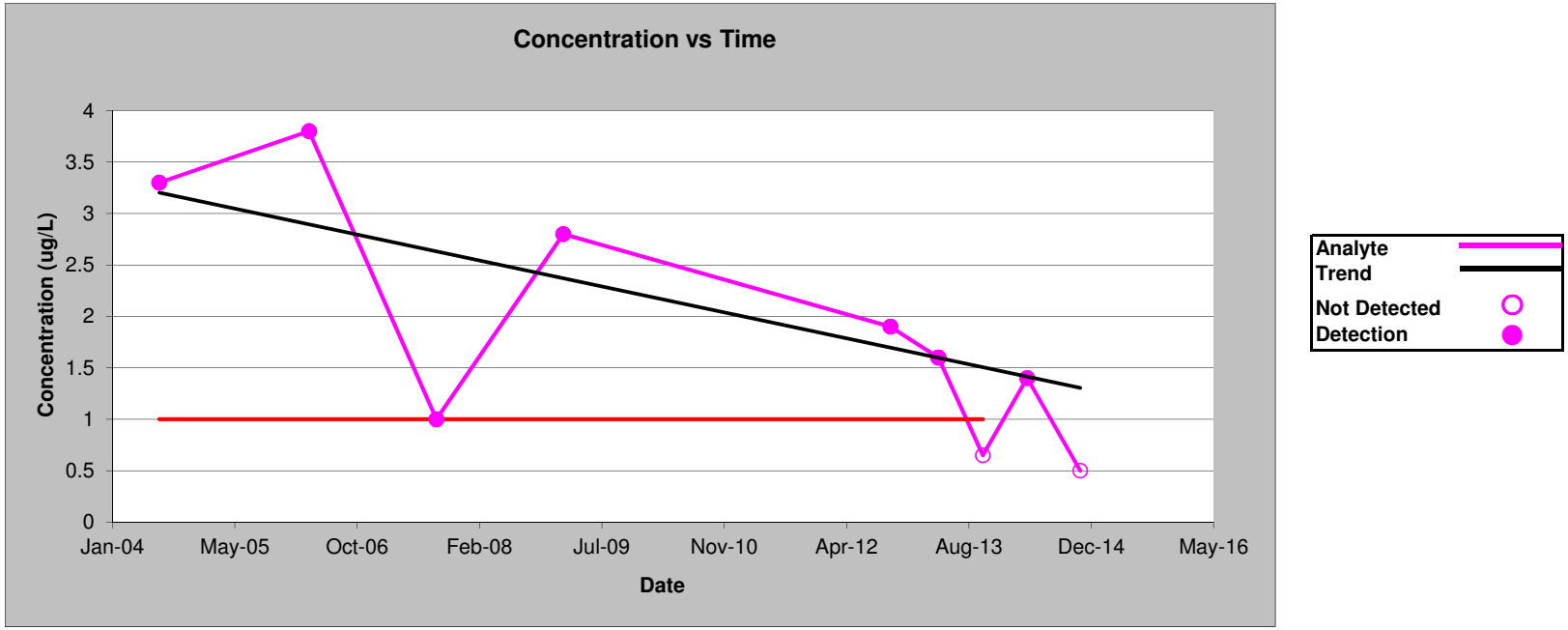
MW-213
Biphenyl
DuPont Brevard Site



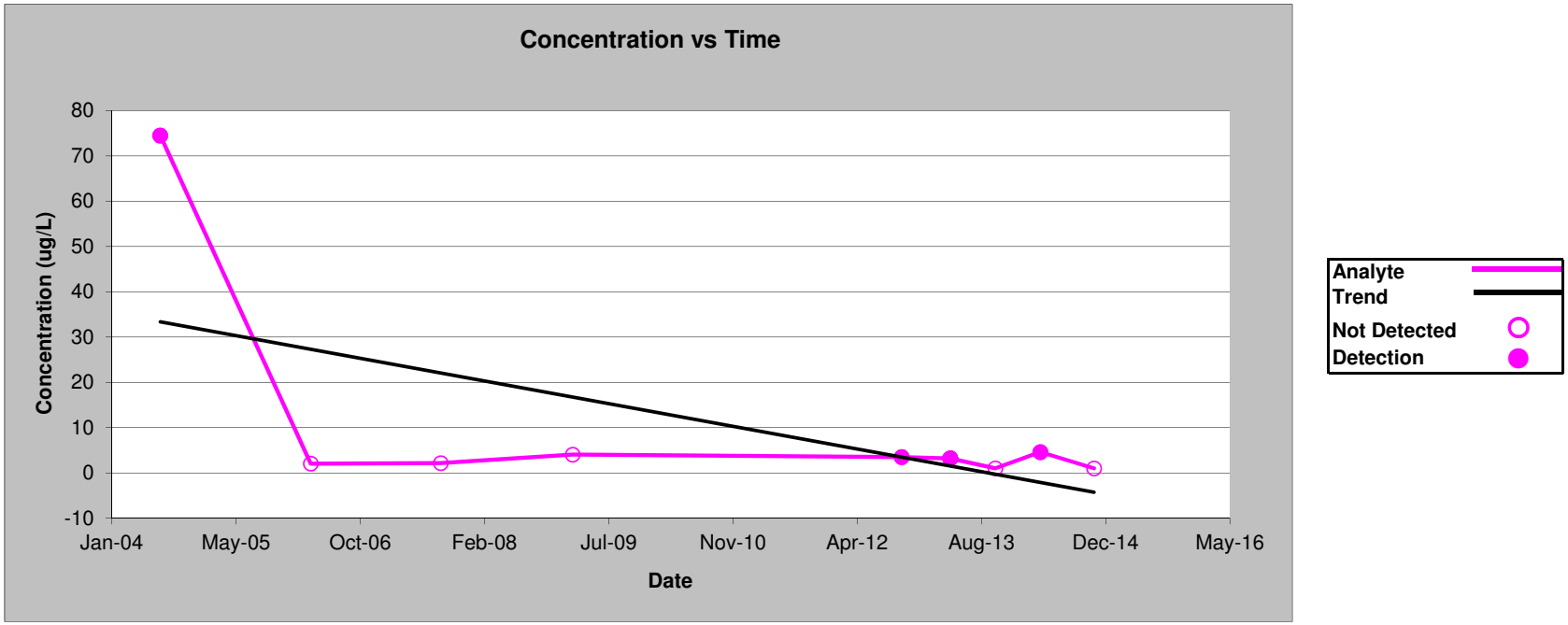
MW-213
cis-1,2 Dichloroethene
DuPont Brevard Site



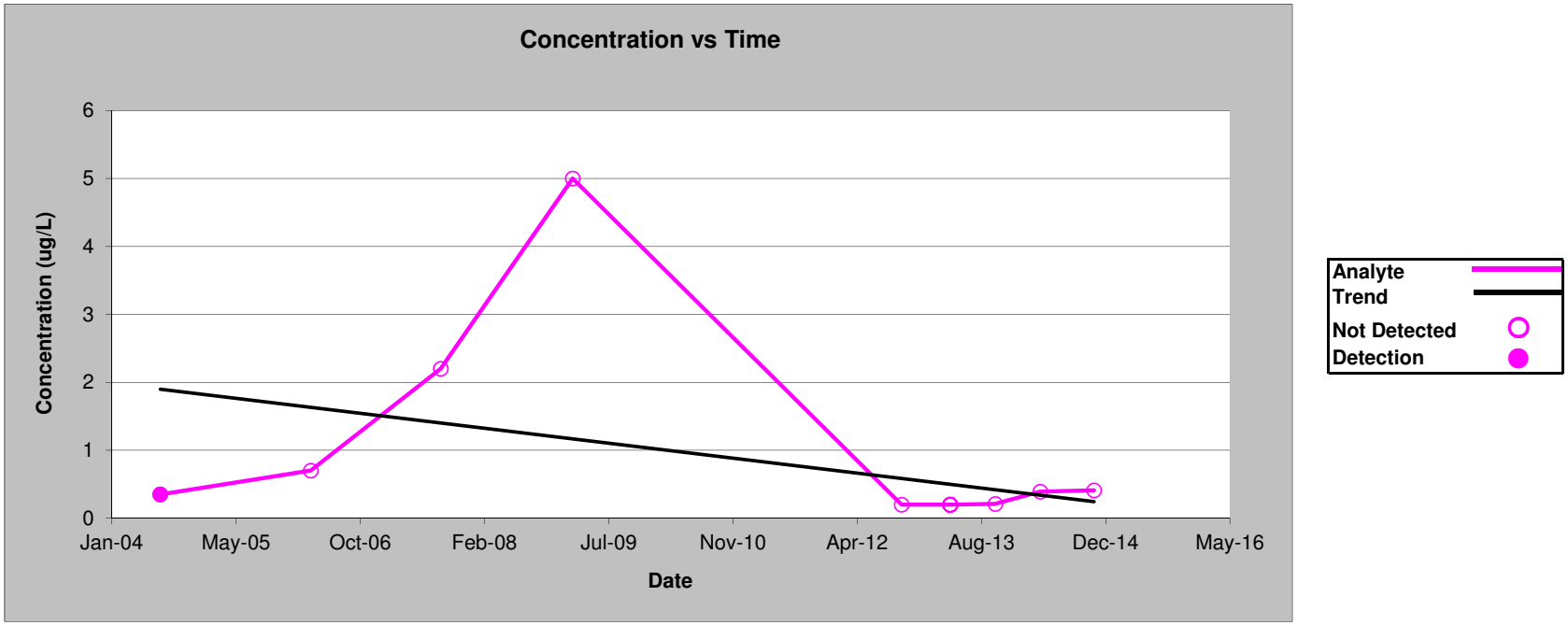
MW-213
Cobalt
DuPont Brevard Site



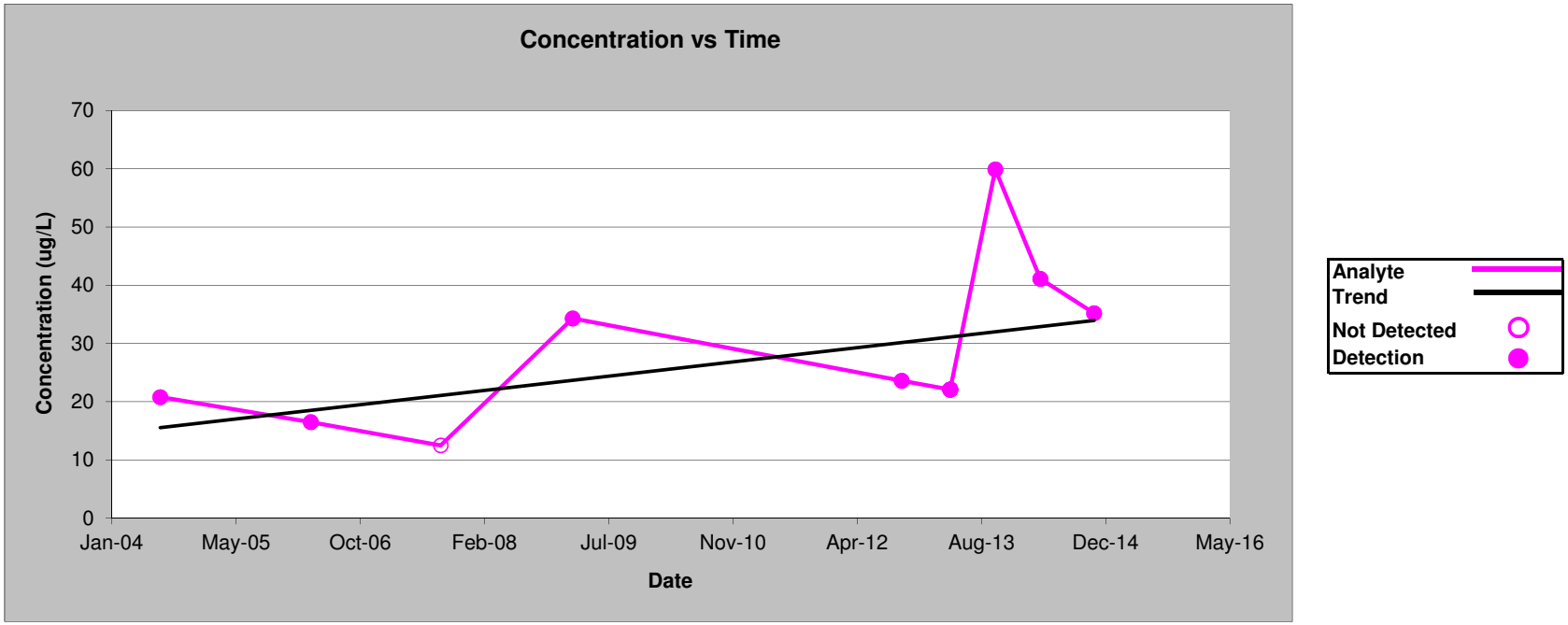
MW-216A
Zinc
DuPont Brevard Site



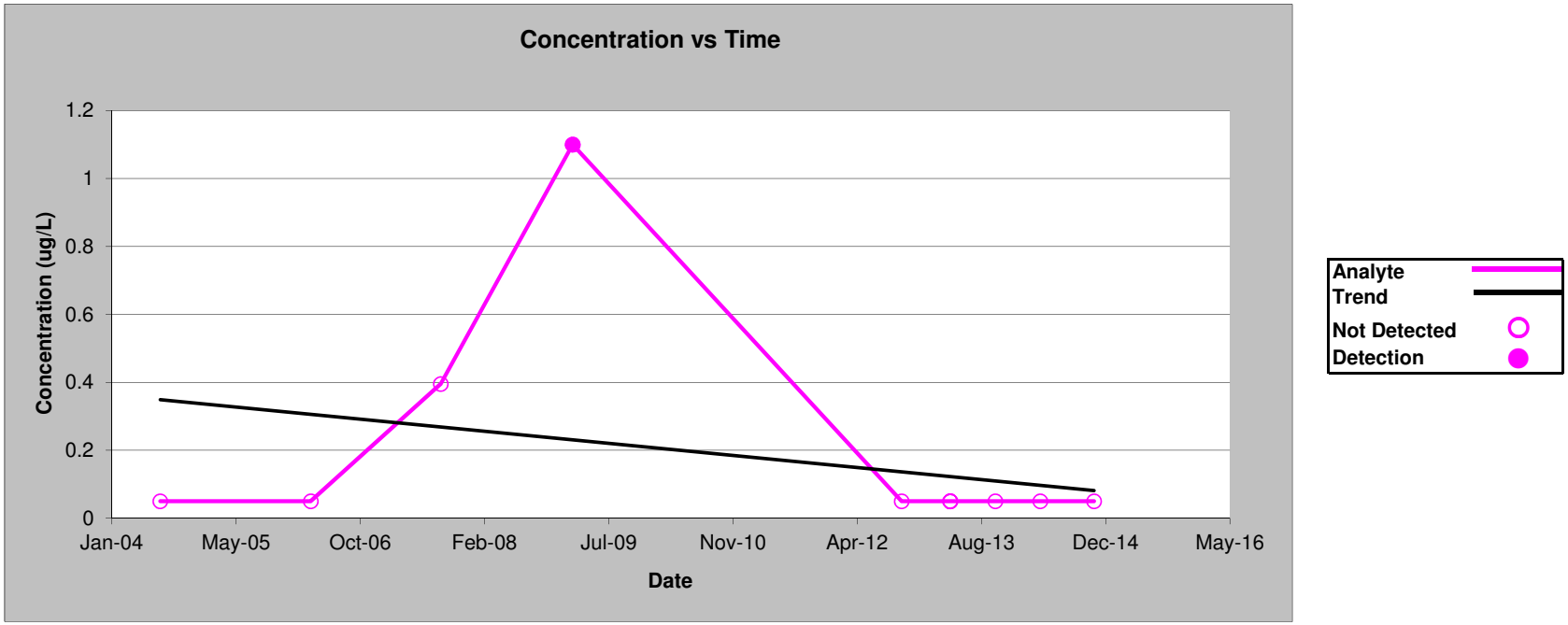
MW-216A
Arsenic
DuPont Brevard Site



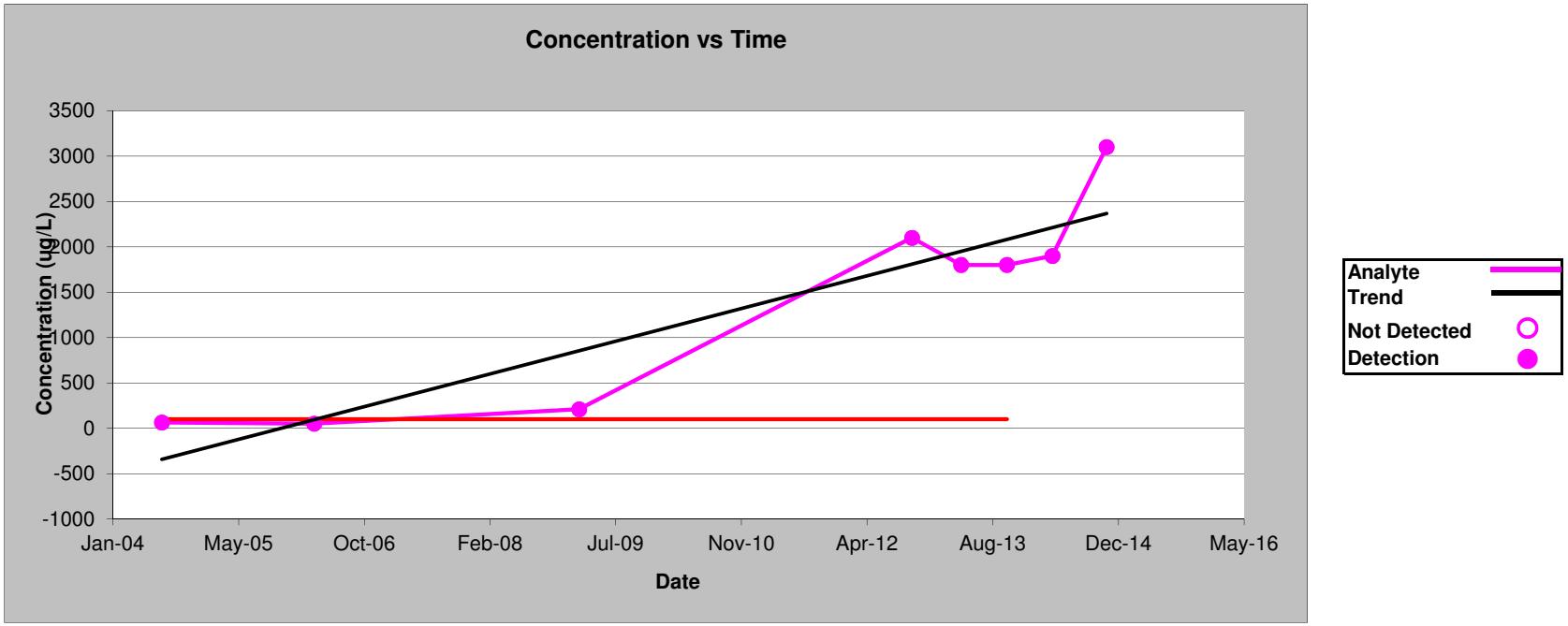
MW-216A
Barium
DuPont Brevard Site



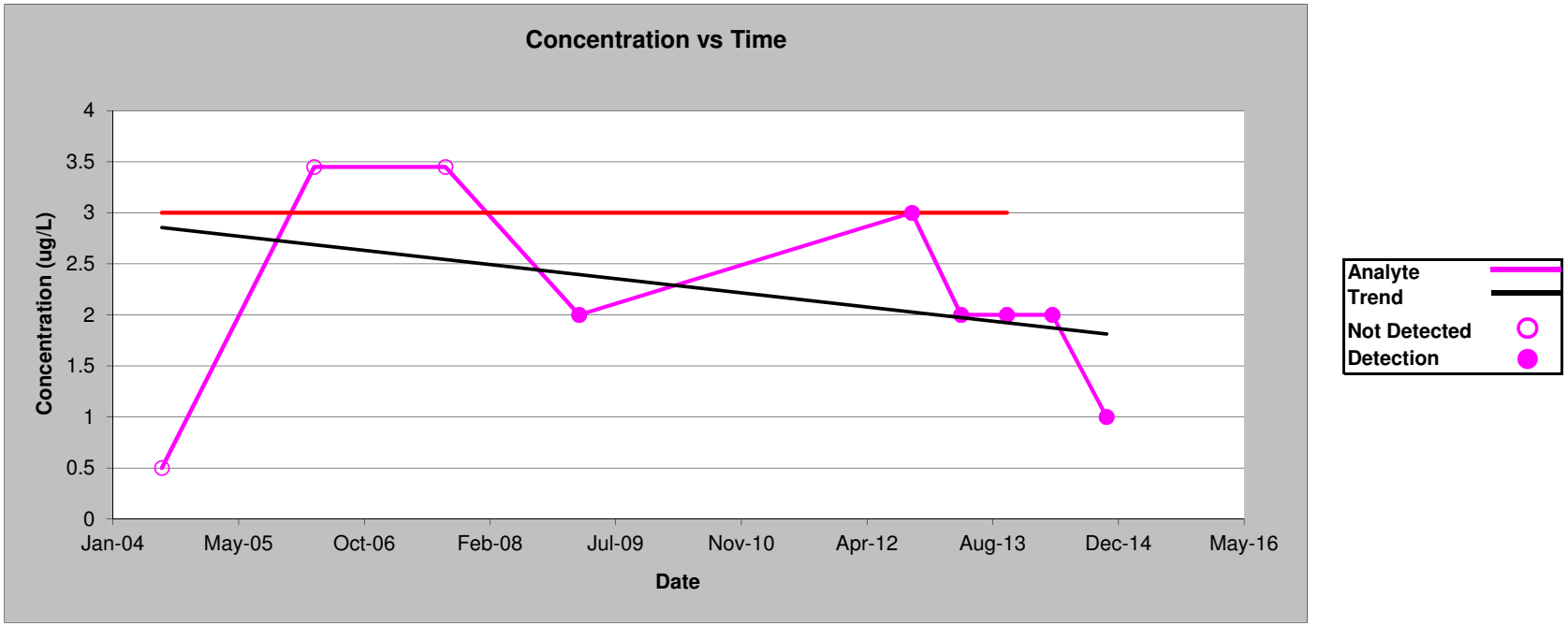
MW-216A
Chloroform
DuPont Brevard Site



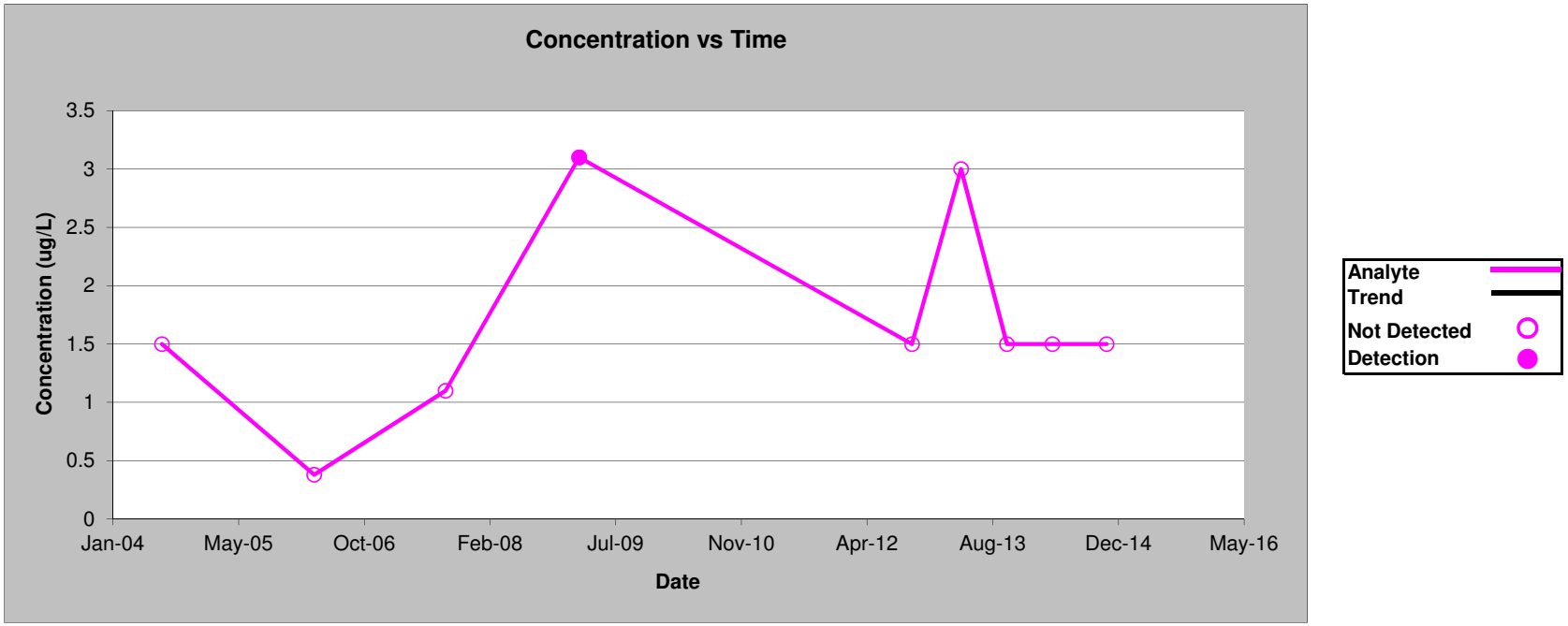
MW-216B
1,1'-Oxybisbenzene
DuPont Brevard Site



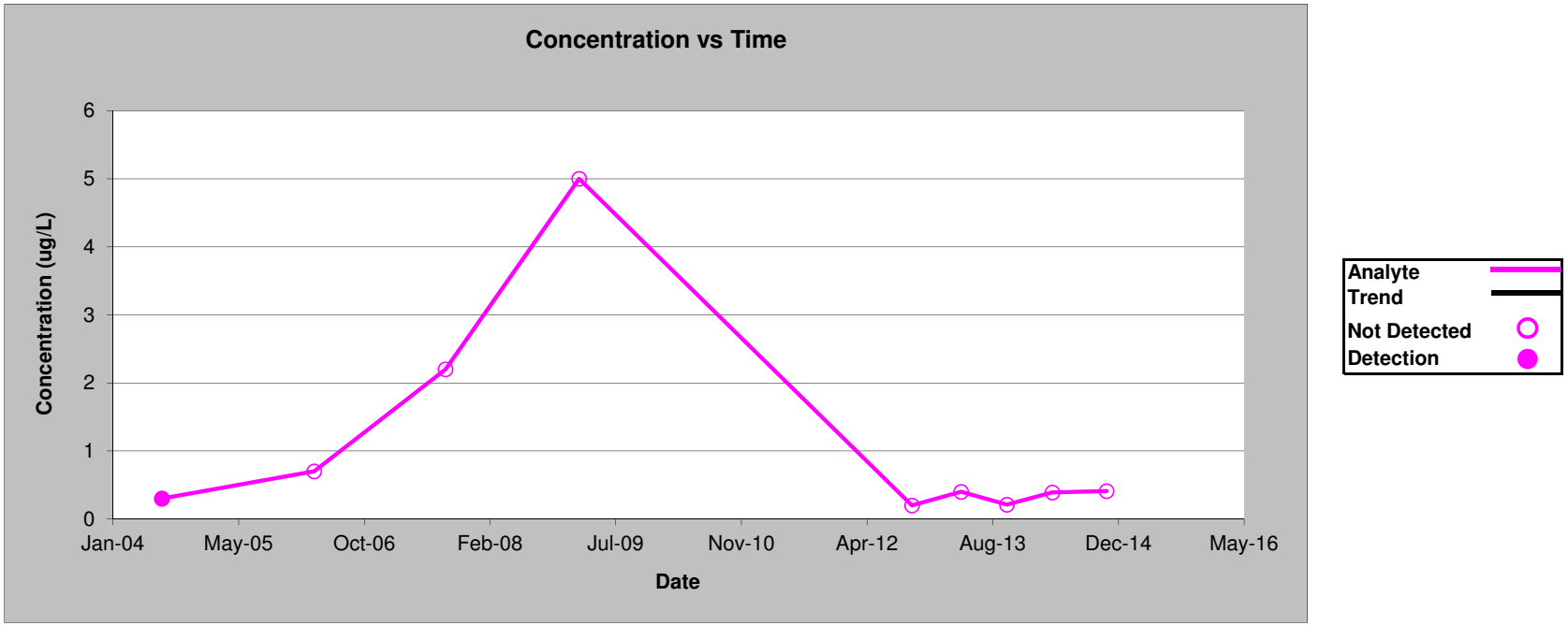
MW-216B
1,4-Dioxane
DuPont Brevard Site



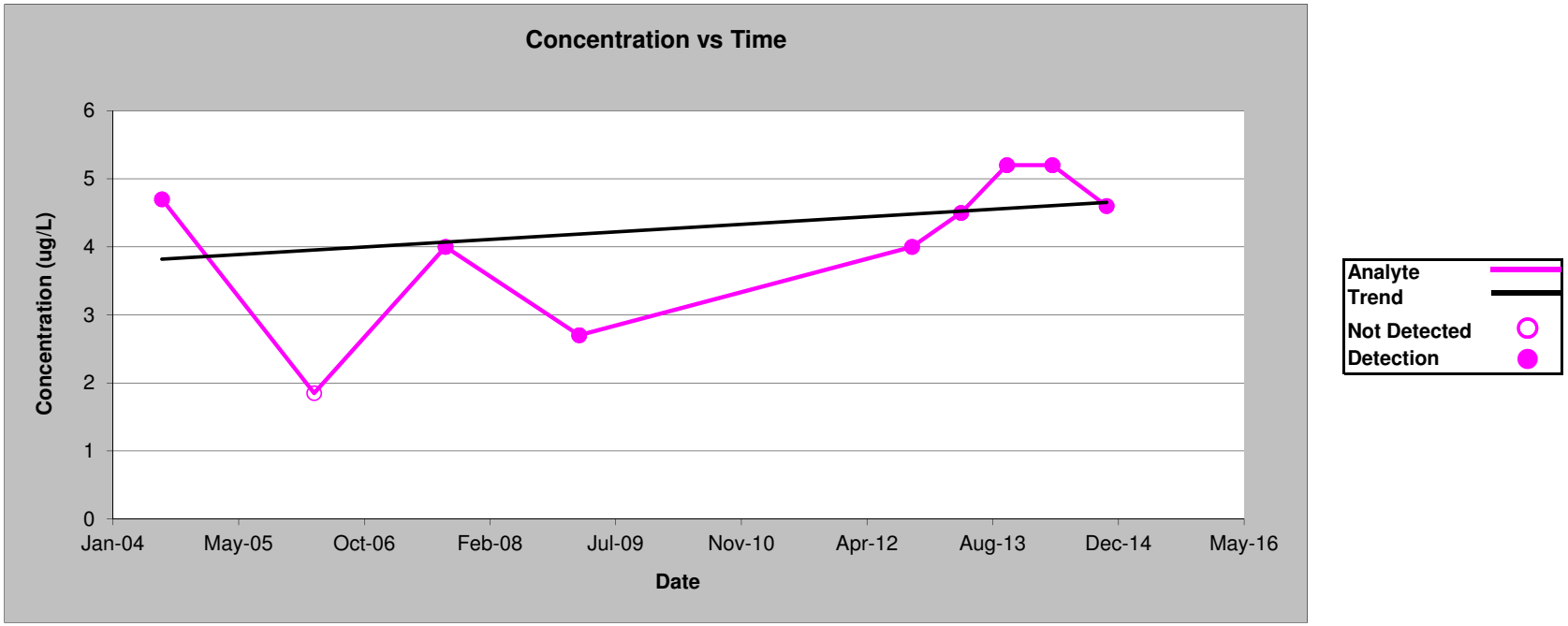
MW-216B
Acetone
DuPont Brevard Site



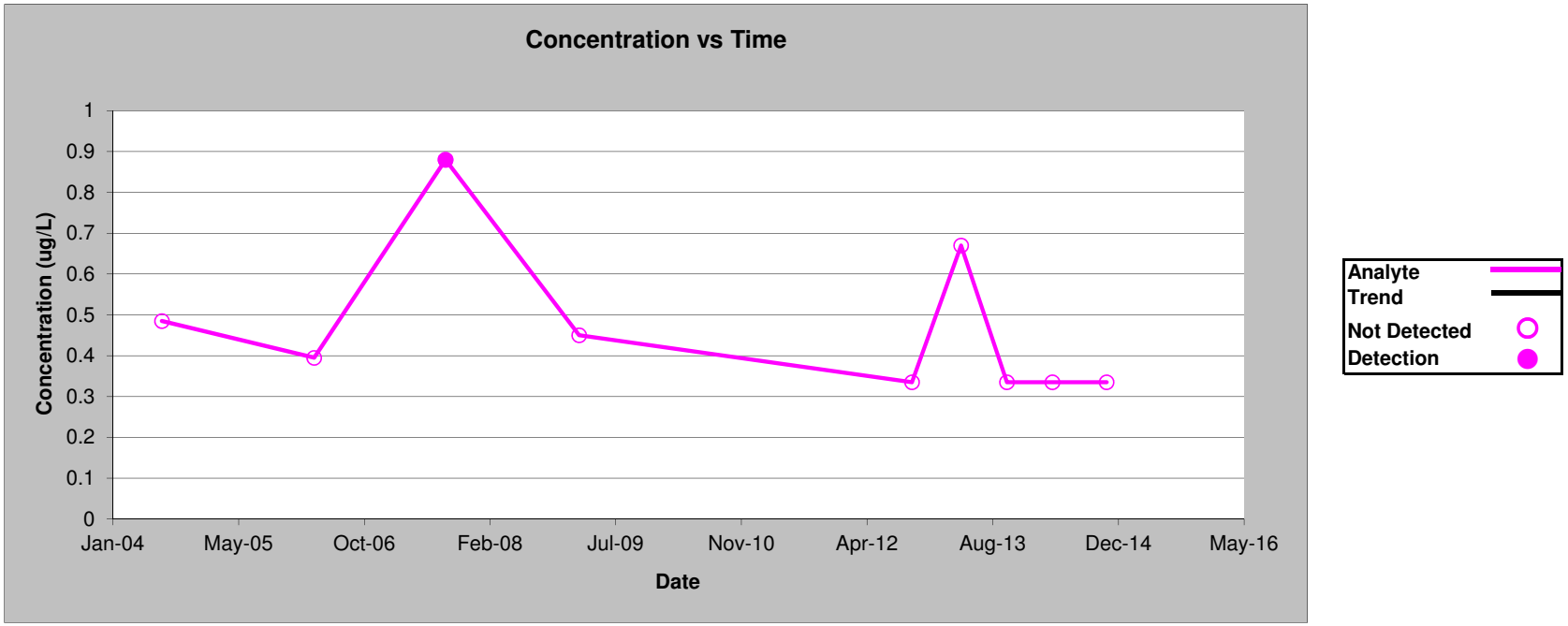
MW-216B
Arsenic
DuPont Brevard Site



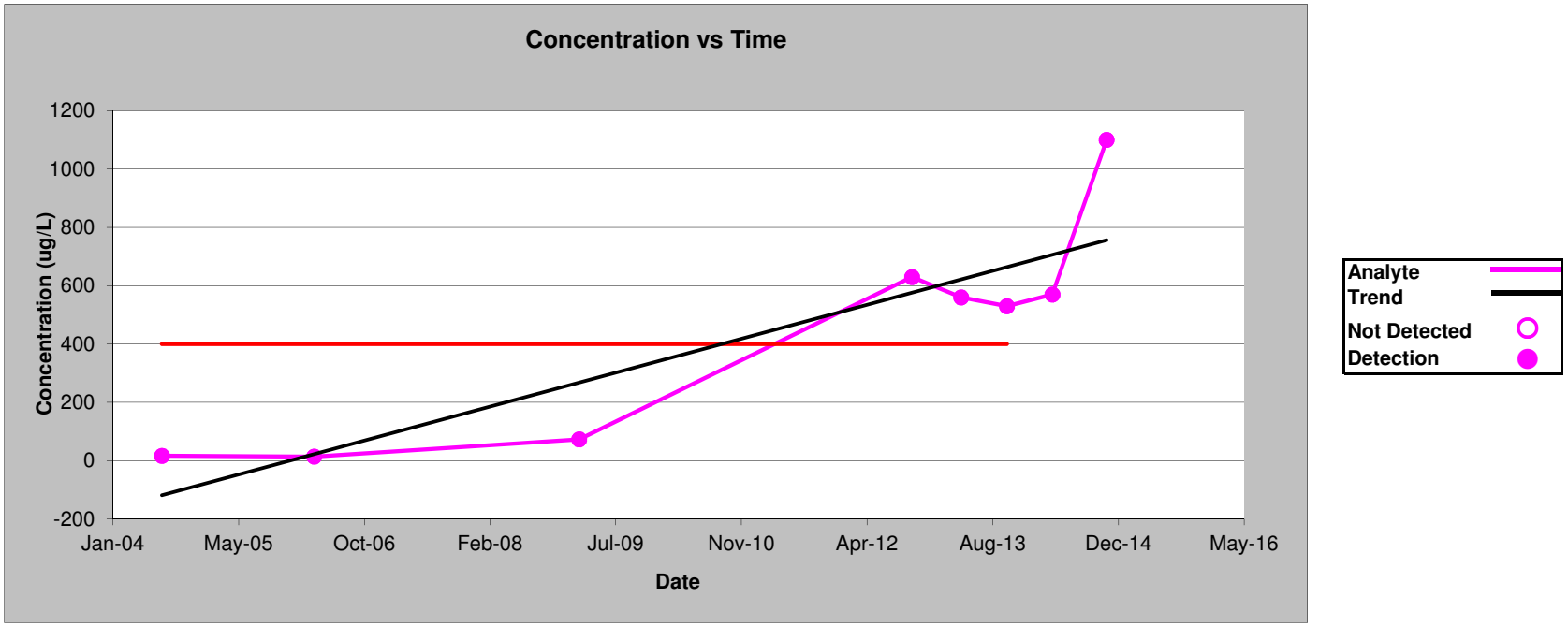
MW-216B
Barium
DuPont Brevard Site



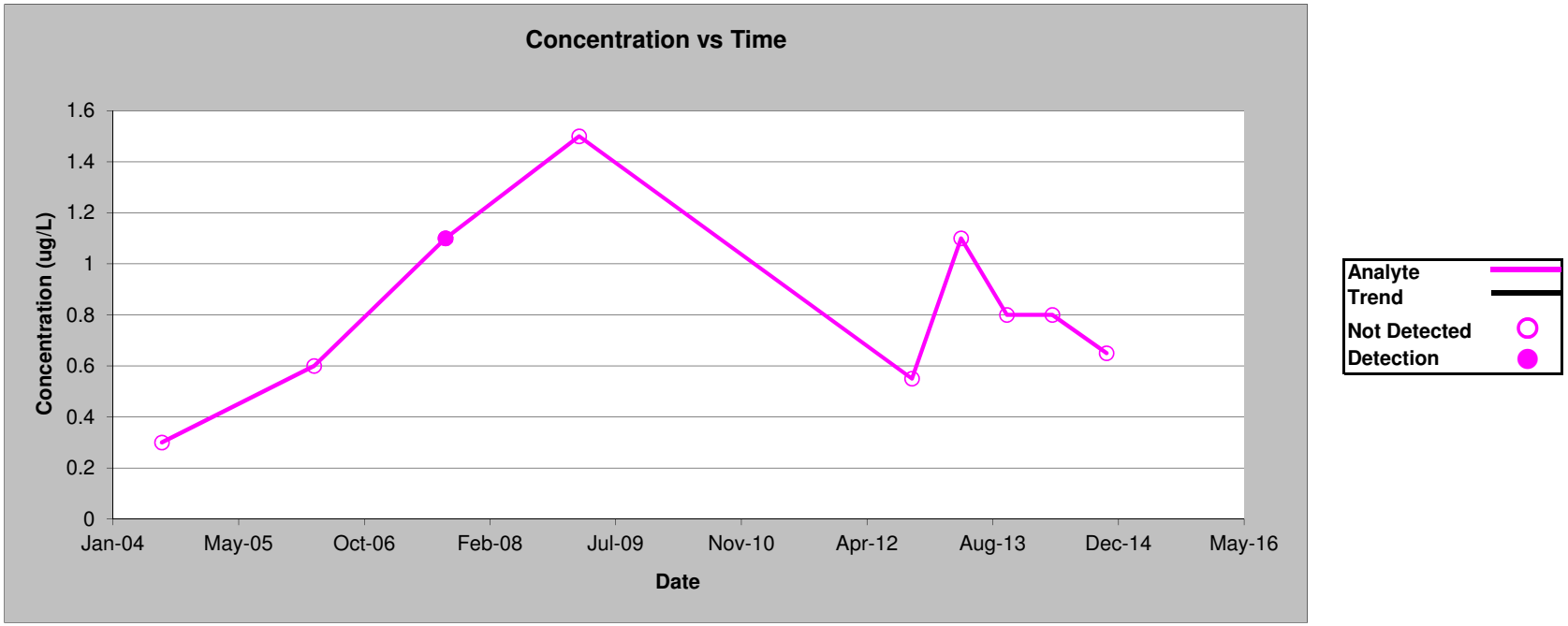
MW-216B
Beryllium
DuPont Brevard Site



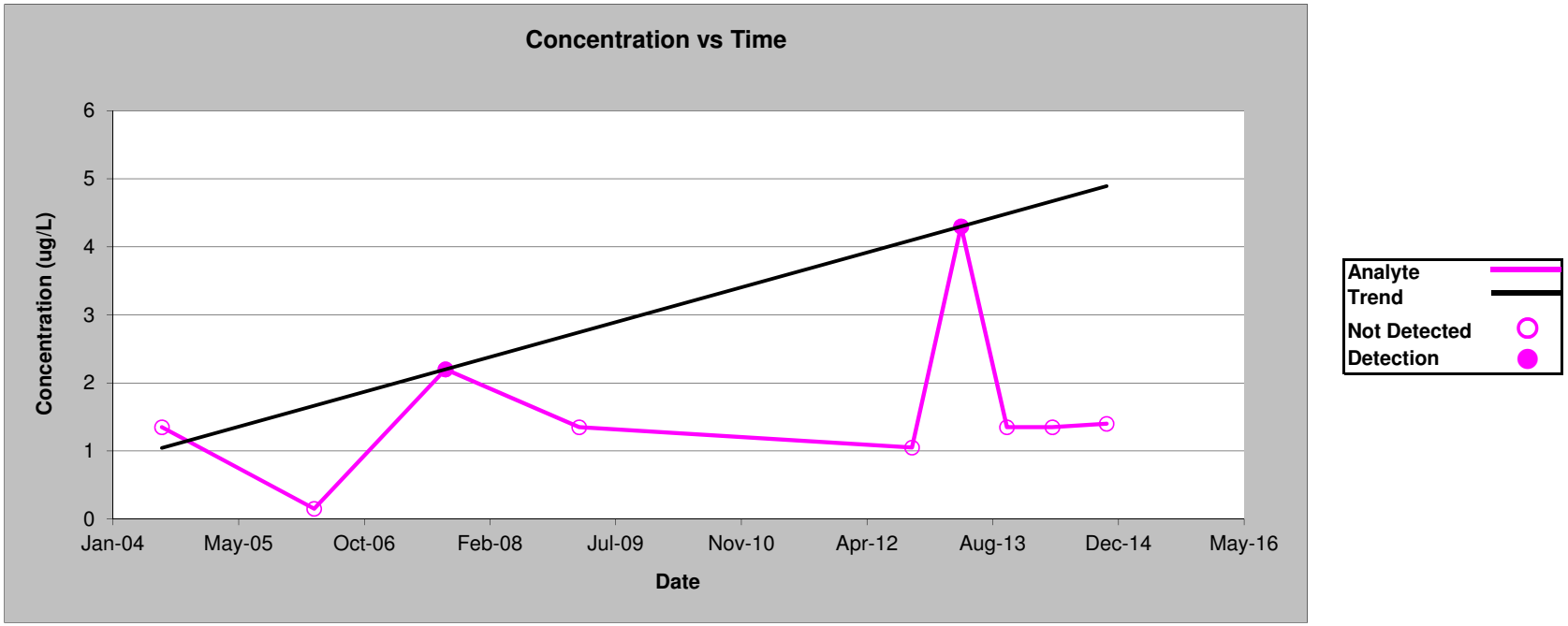
MW-216B
Biphenyl
DuPont Brevard Site



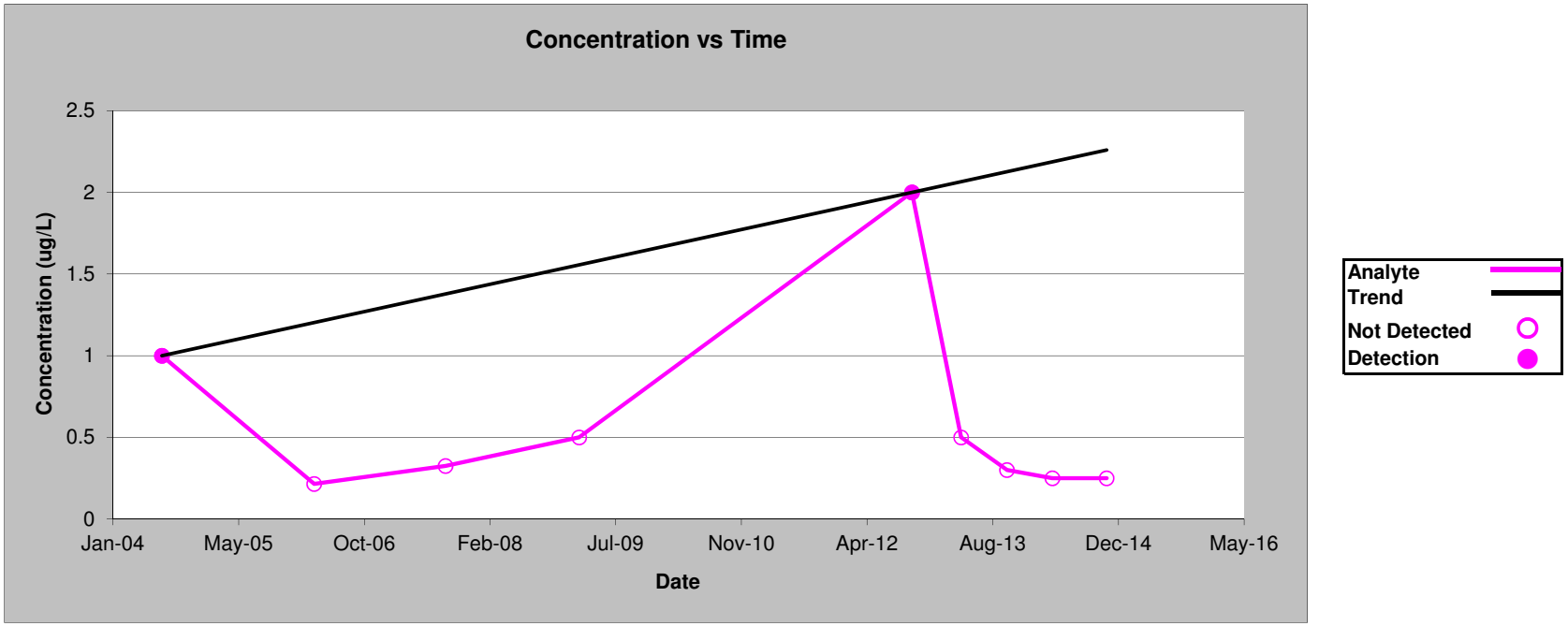
MW-216B
Chromium
DuPont Brevard Site



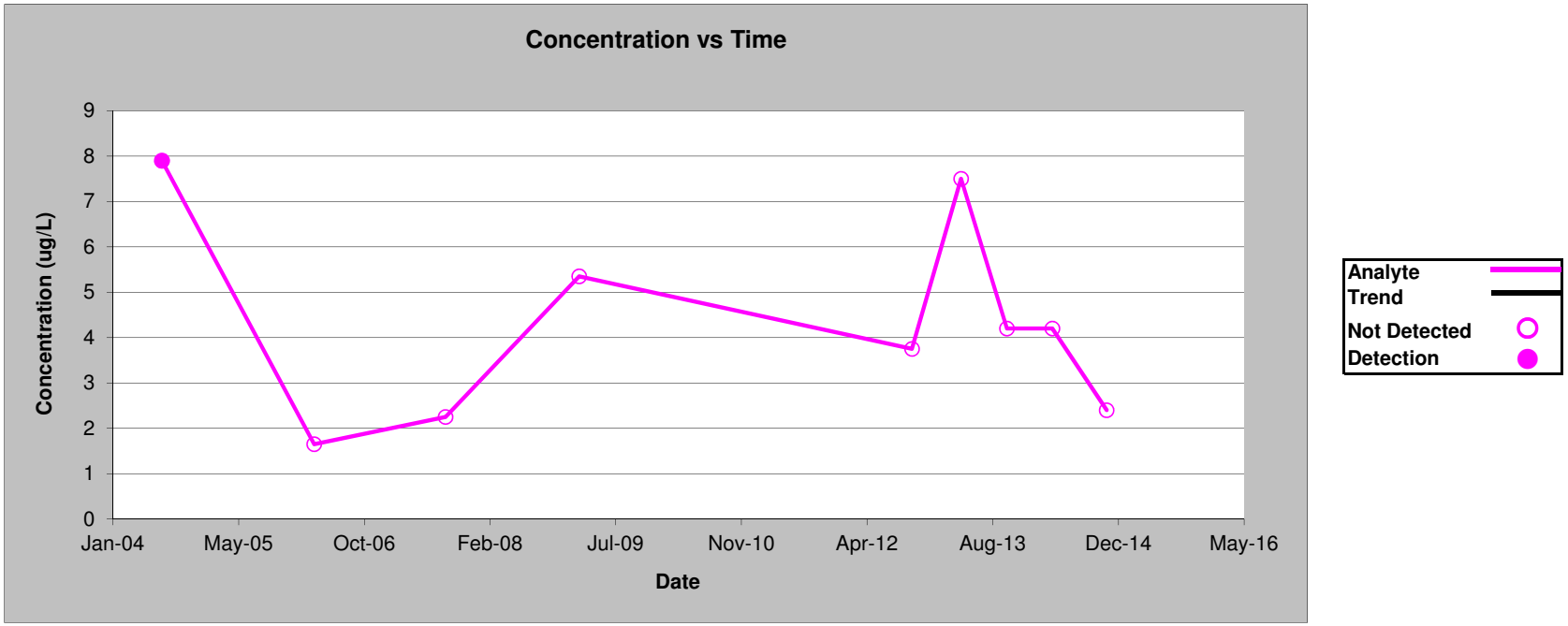
MW-216B
Copper
DuPont Brevard Site



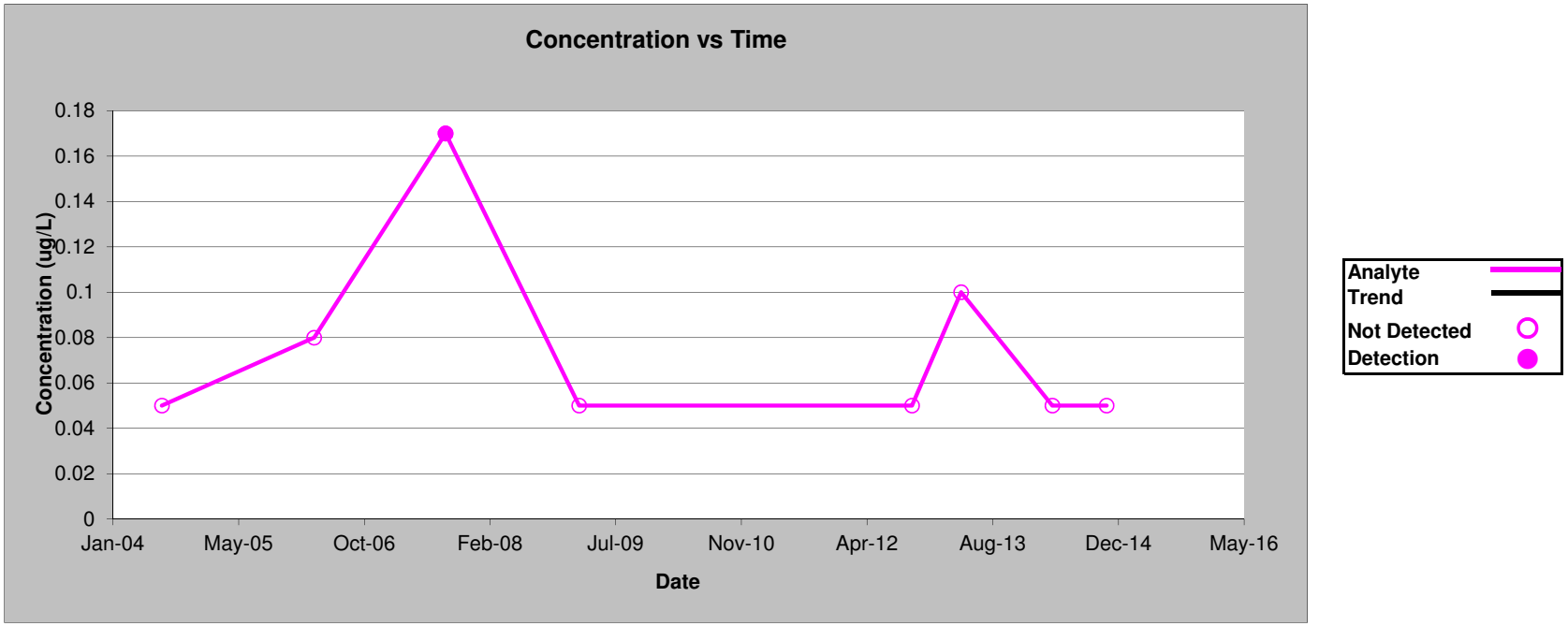
MW-216B
Phenol
DuPont Brevard Site



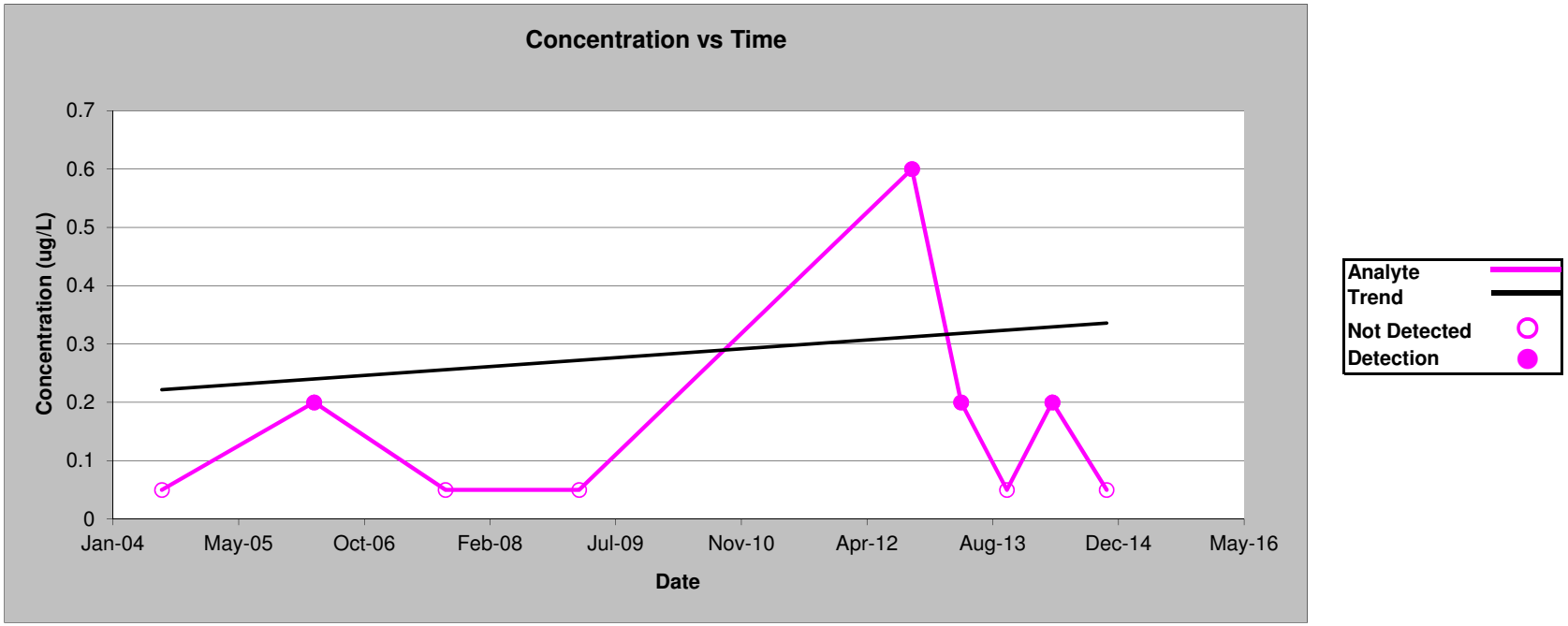
MW-216B
Selenium
DuPont Brevard Site



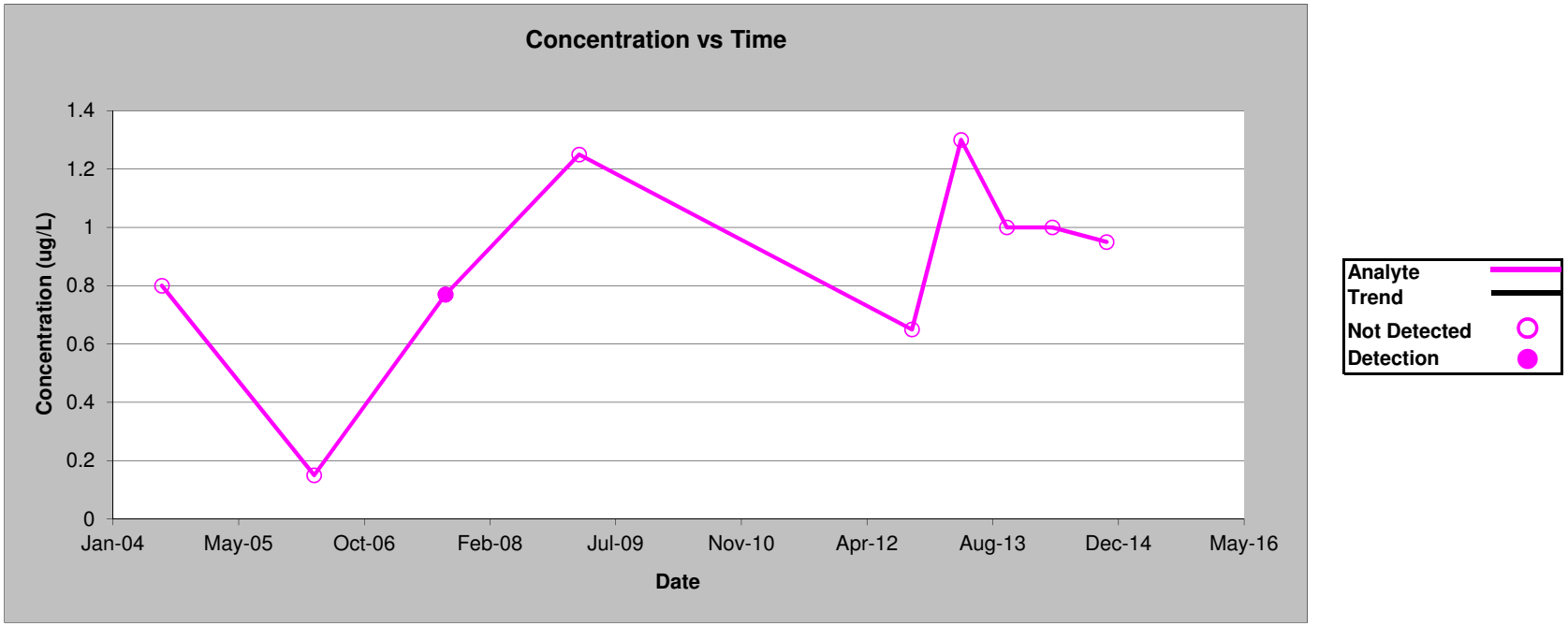
MW-216B
Tetrachloroethylene
DuPont Brevard Site



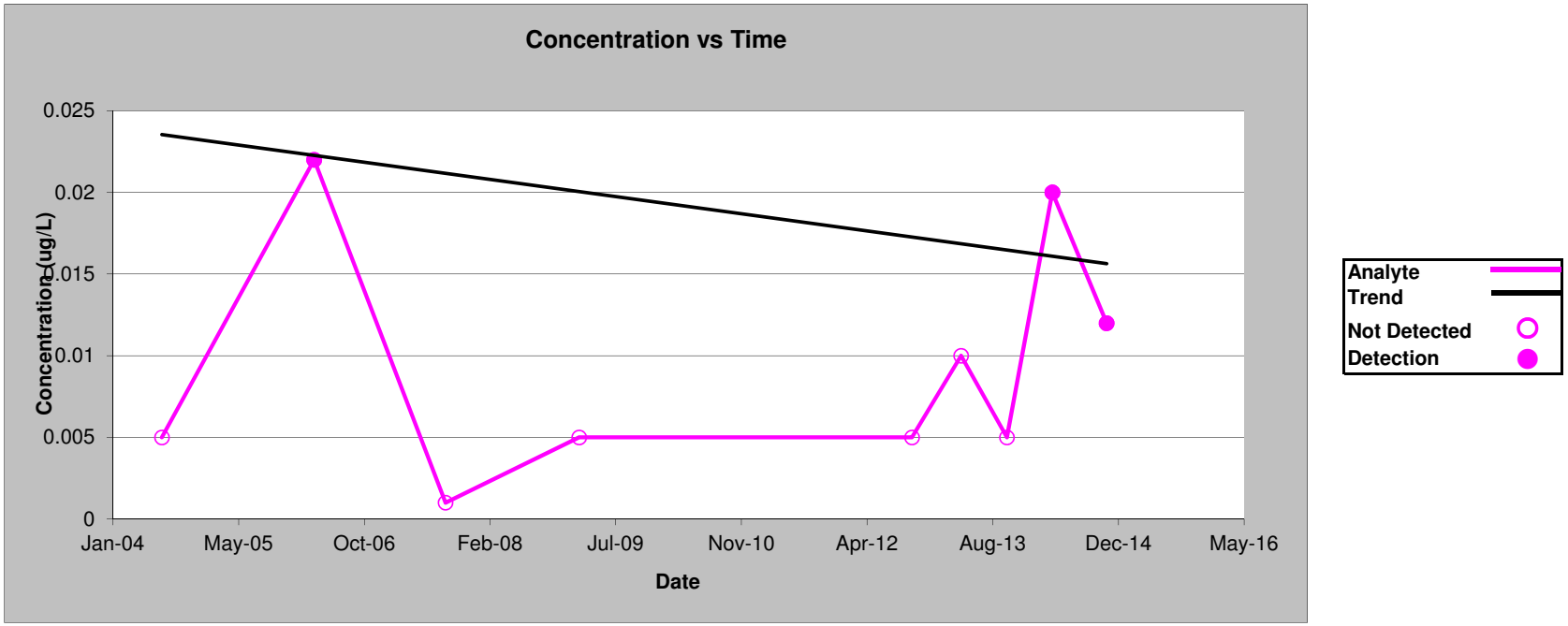
MW-216B
Toluene
DuPont Brevard Site



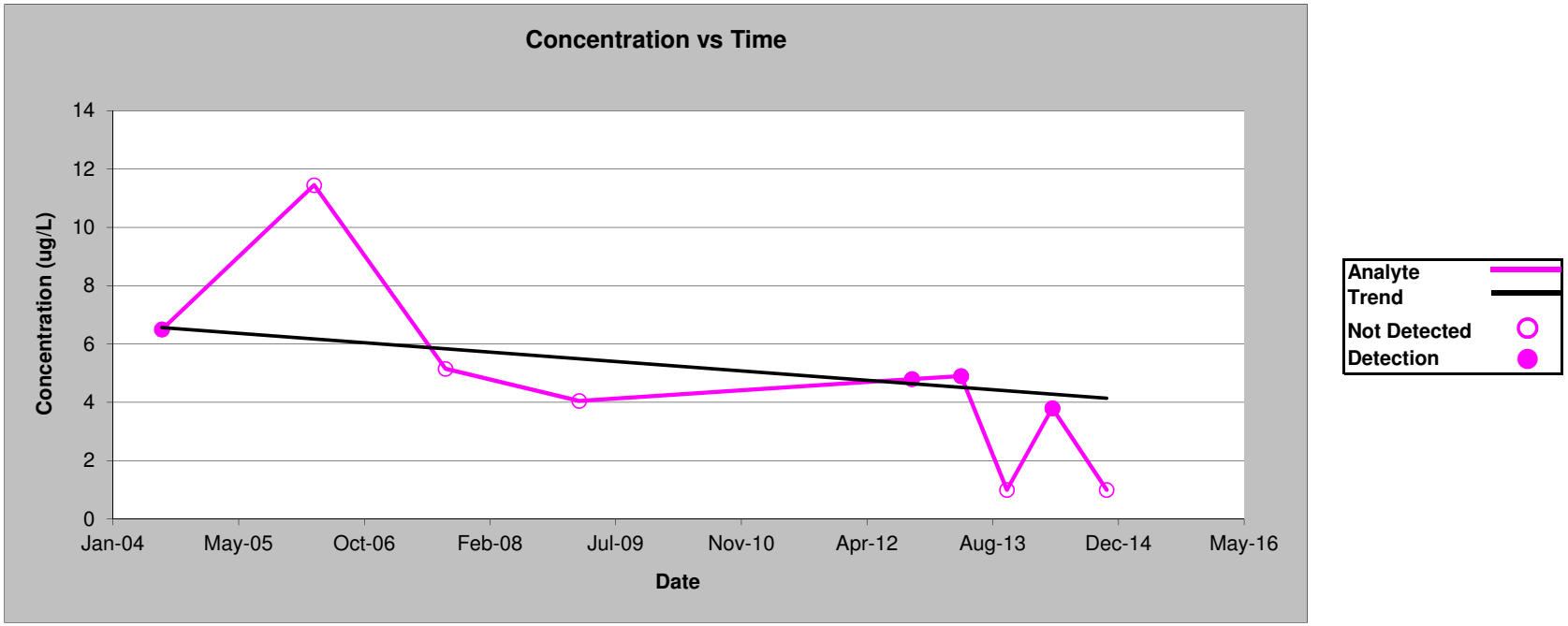
MW-216B
Vanadium
DuPont Brevard Site



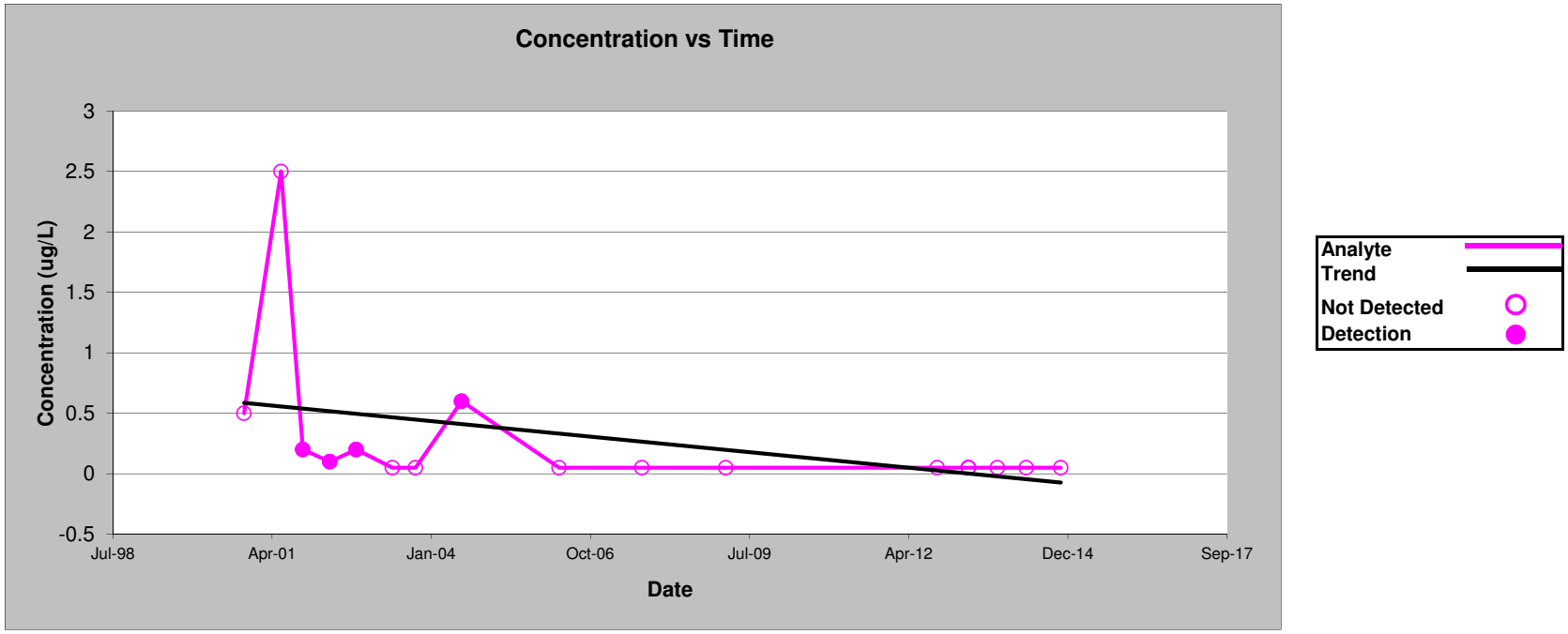
MW-216B
Vinylchloroide
DuPont Brevard Site



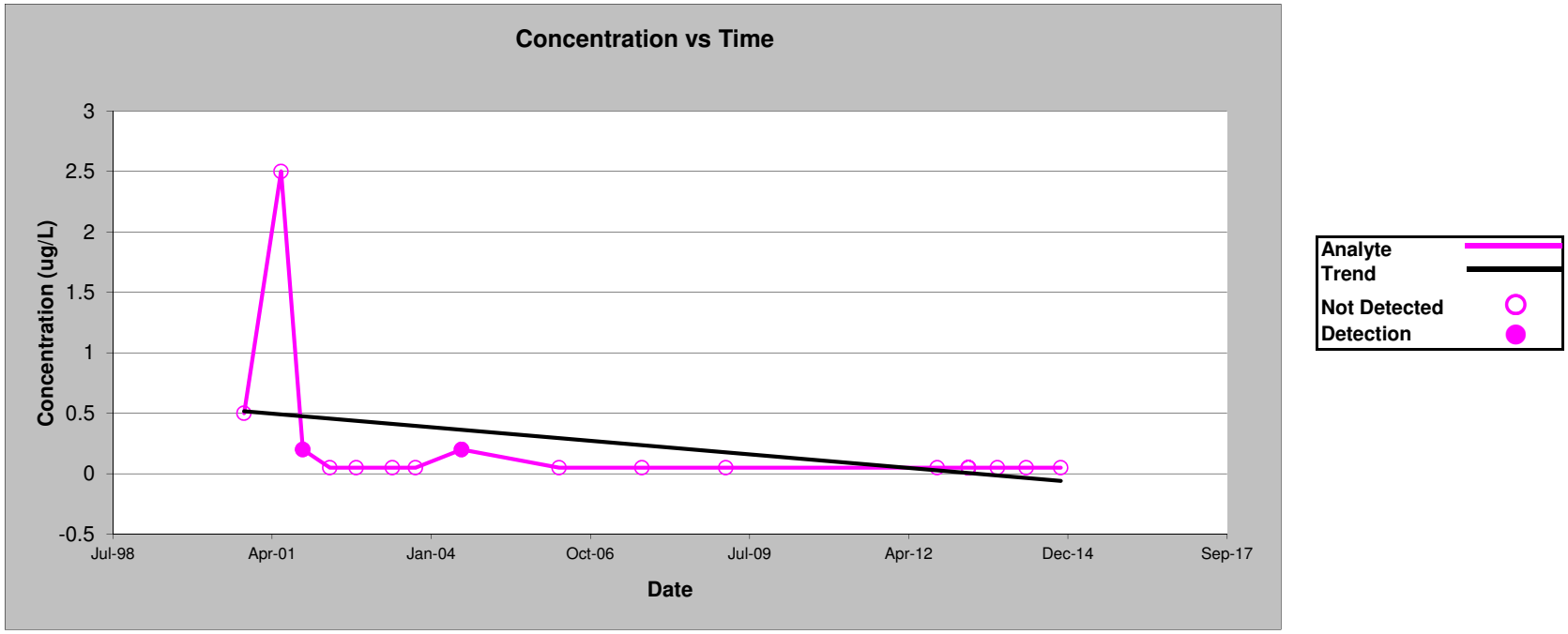
MW-216B
Zinc
DuPont Brevard Site



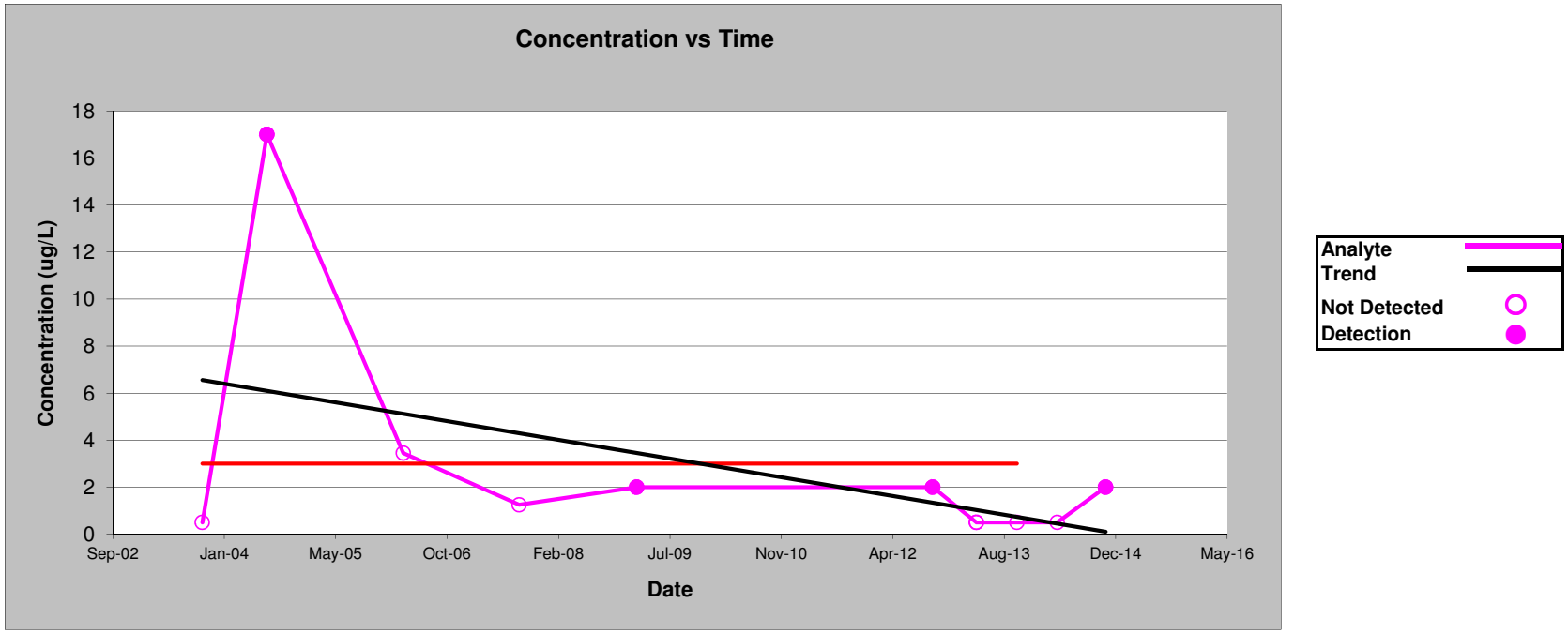
R87-S8
1,1-Dichloroethane
DuPont Brevard Site



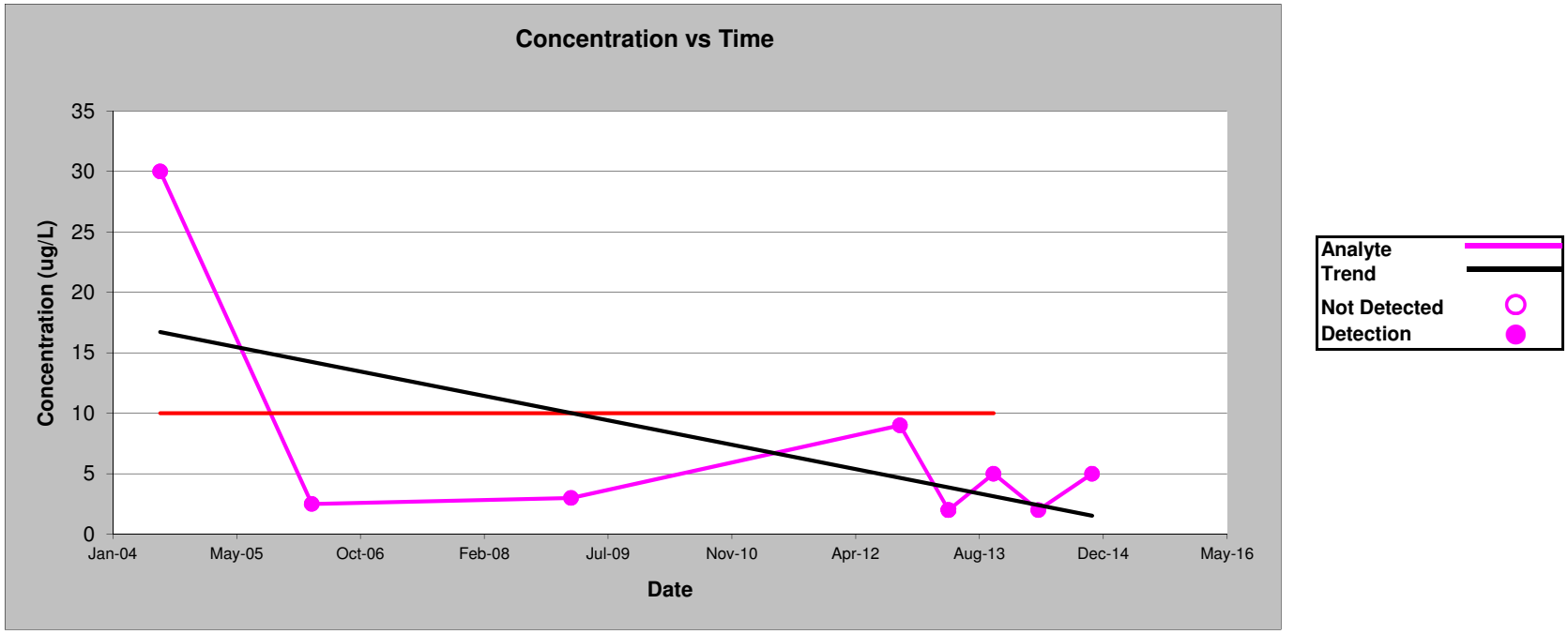
R87-S8
1,2-Dichloroethane
DuPont Brevard Site



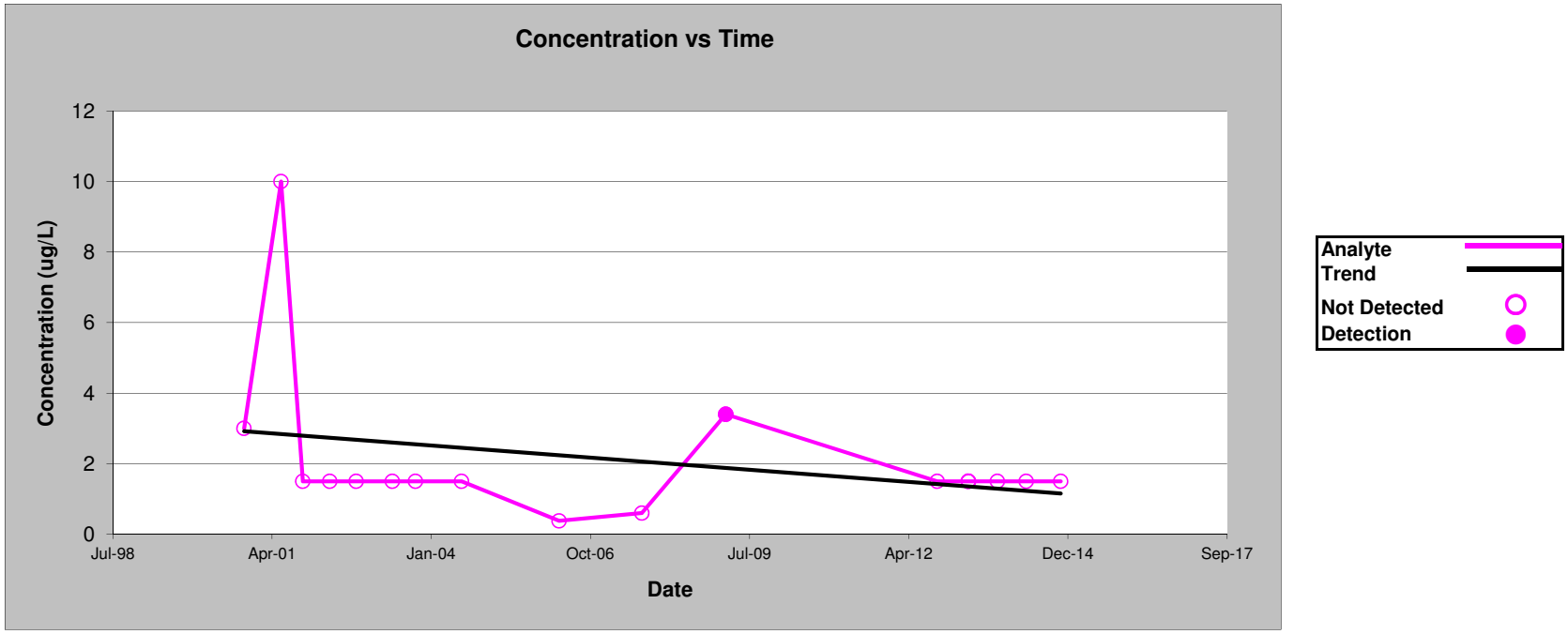
R87-S8
1,4-Dioxane
DuPont Brevard Site



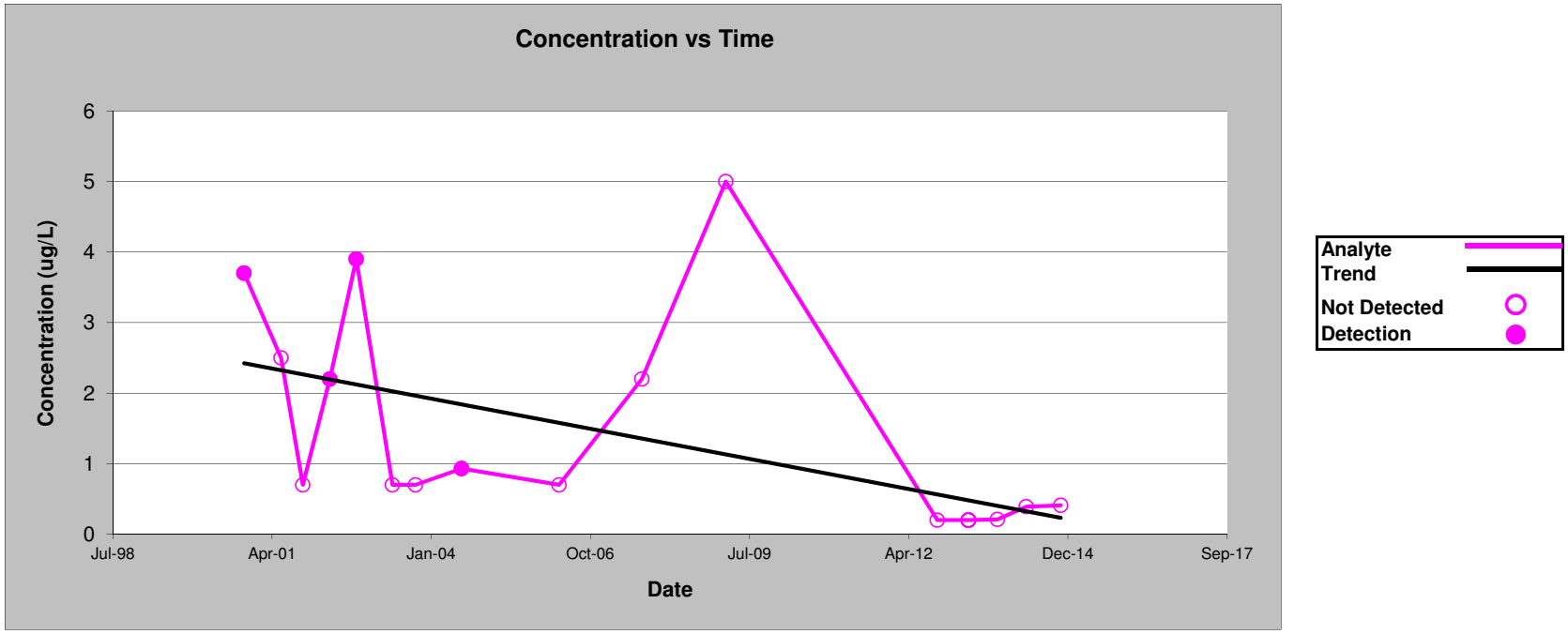
R87-S8
1,1'-Oxybisbenzene
DuPont Brevard Site



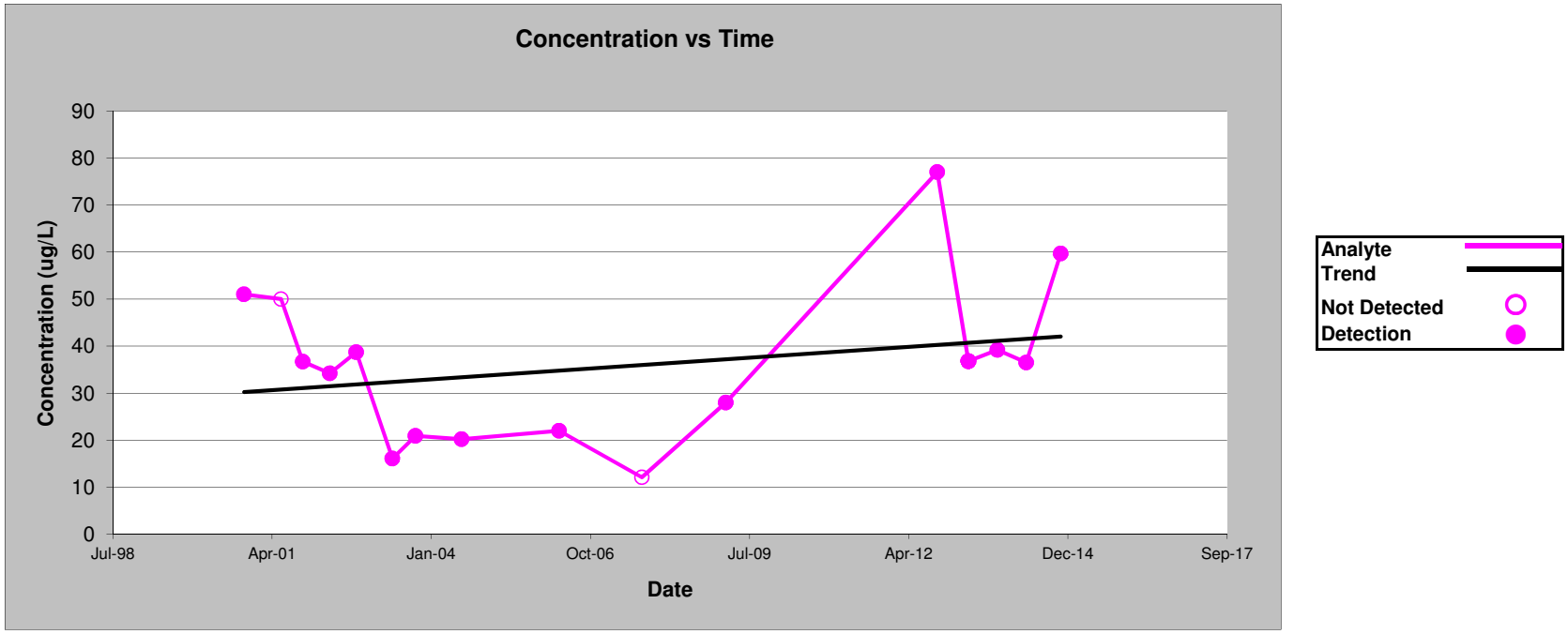
R87-S8
Acetone
DuPont Brevard Site



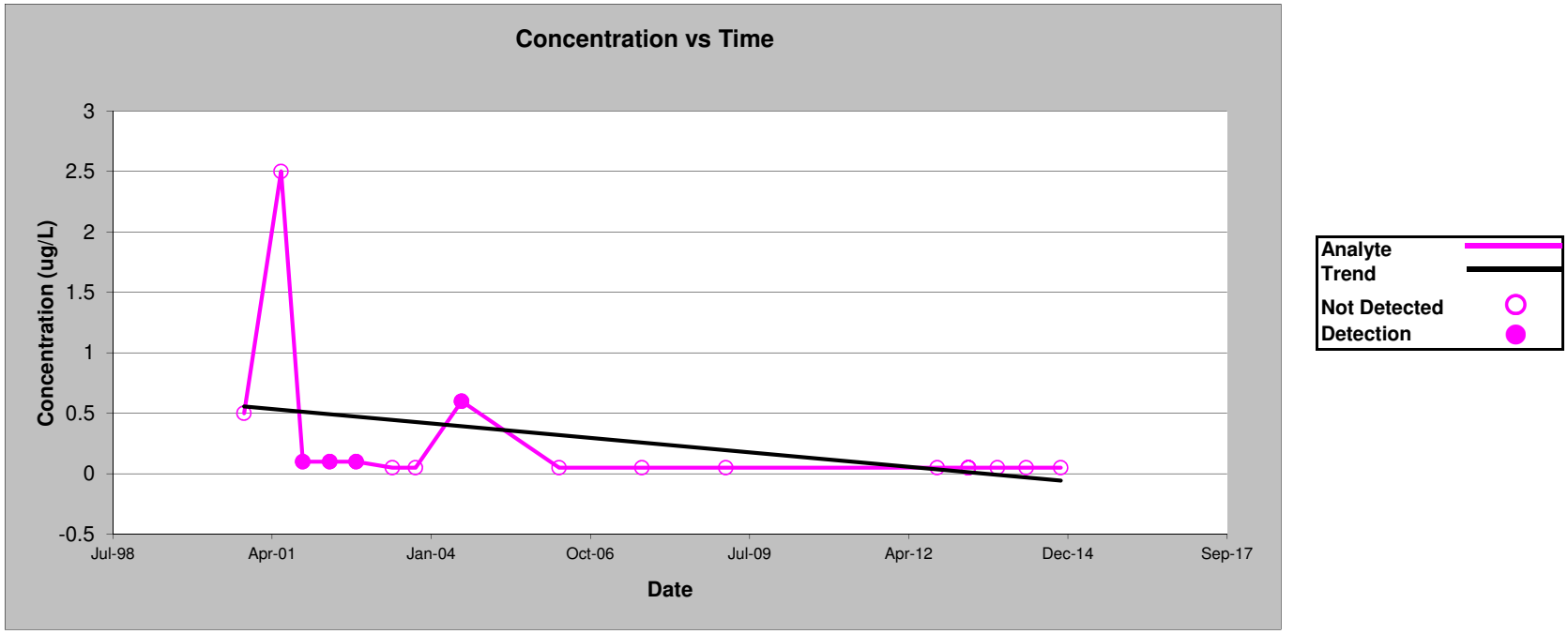
R87-S8
Arsenic
DuPont Brevard Site



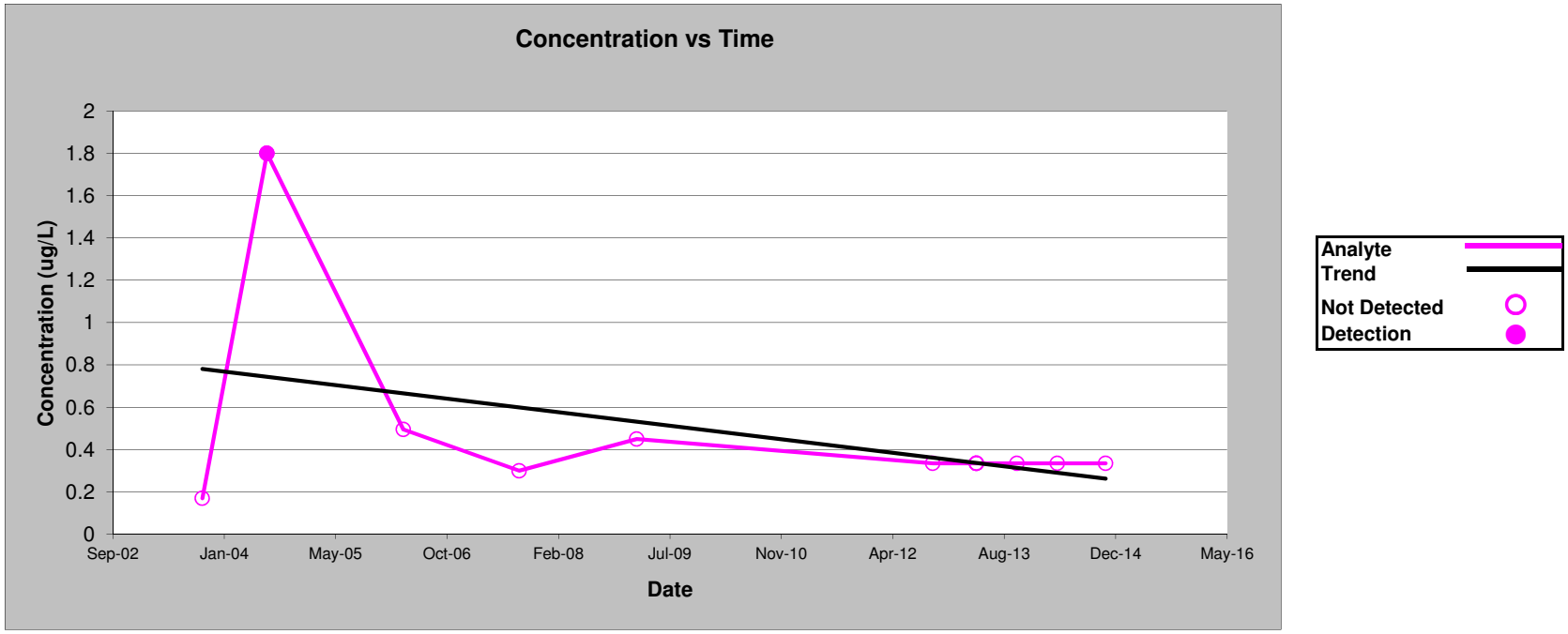
R87-S8
Barium
DuPont Brevard Site



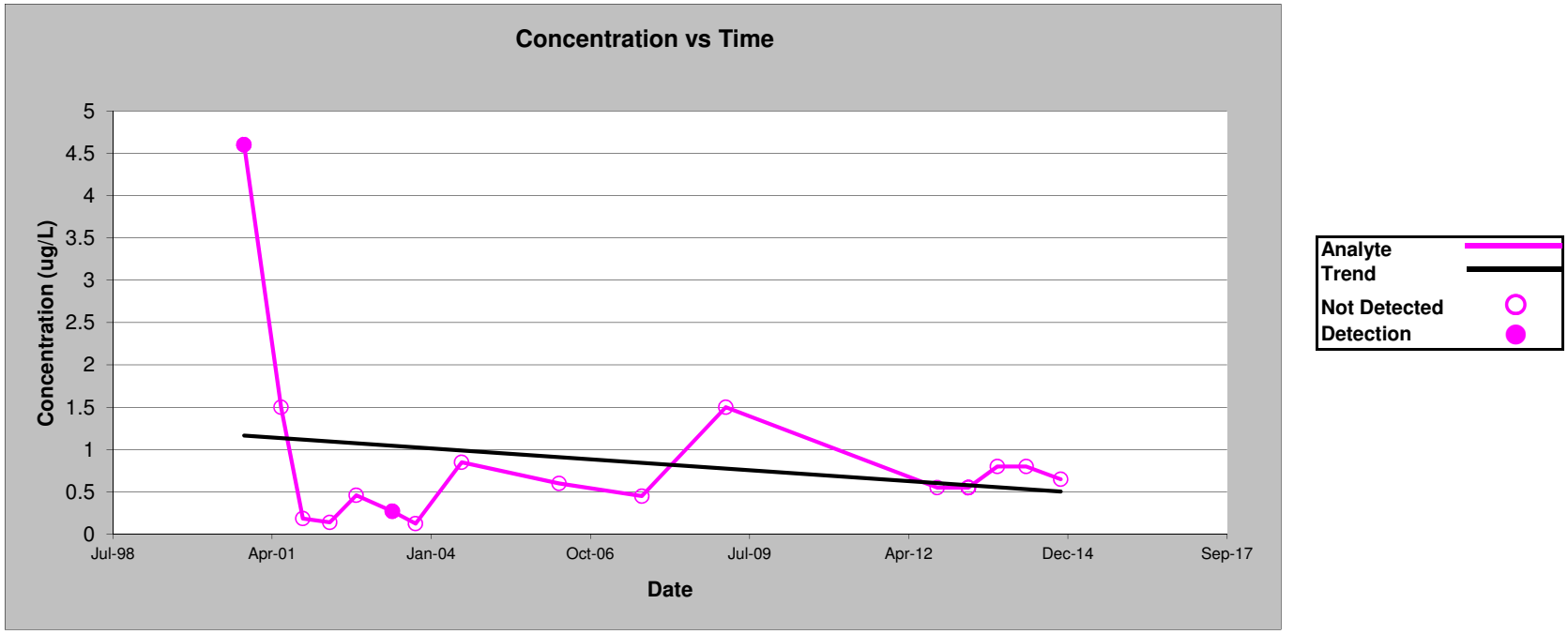
R87-S8
Benzene
DuPont Brevard Site



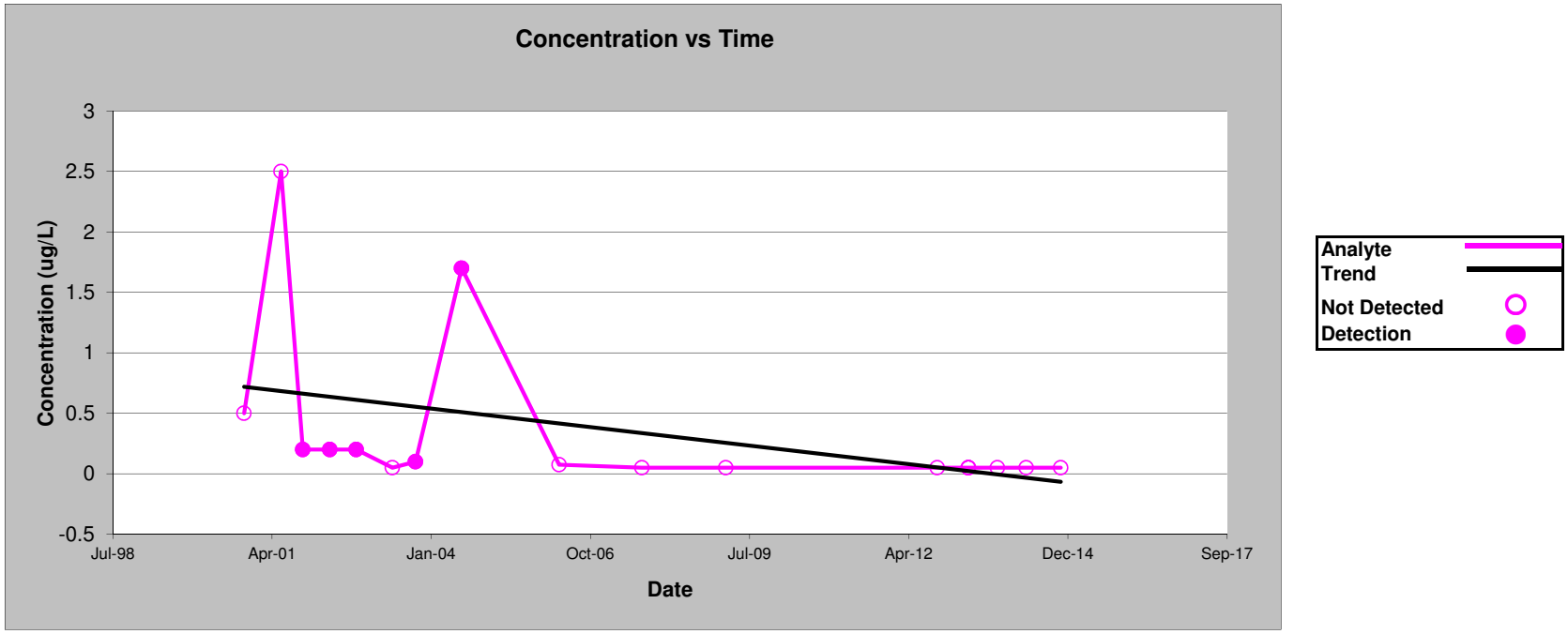
R87-S8
Beryllium
DuPont Brevard Site



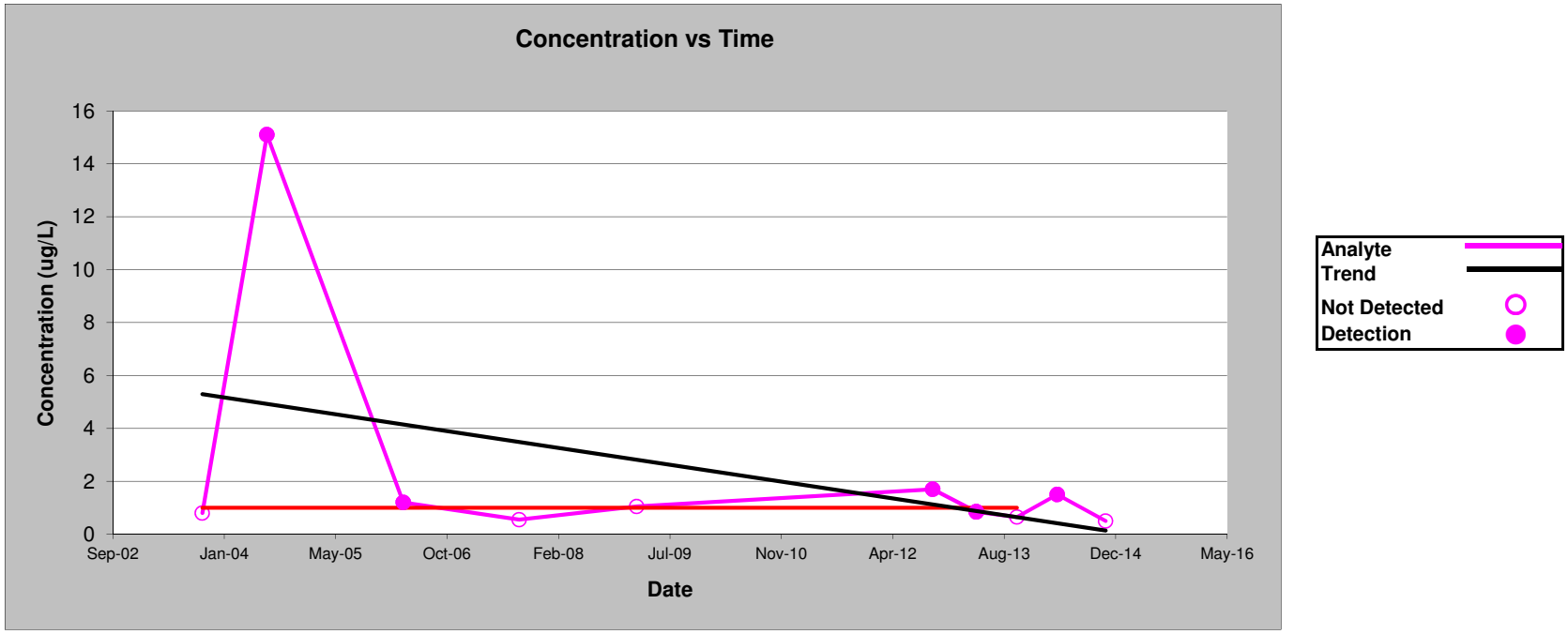
R87-S8
Chromium
DuPont Brevard Site



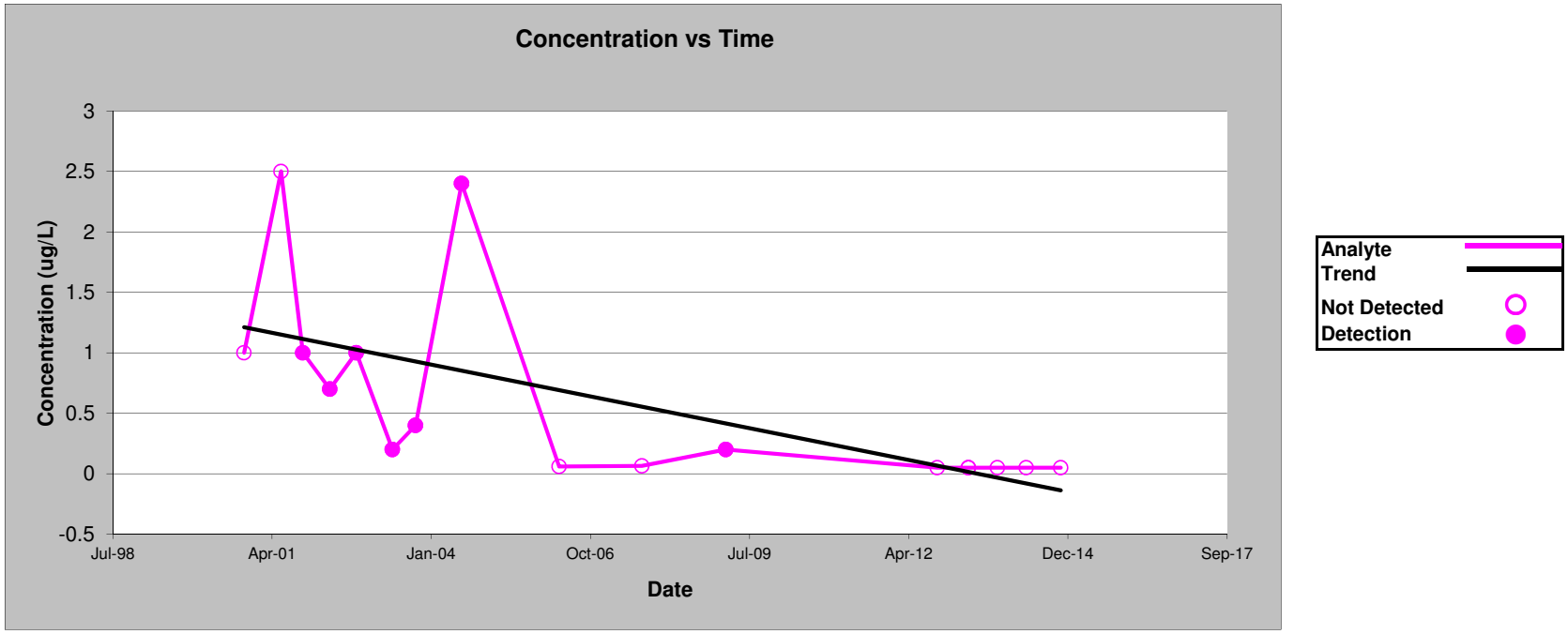
R87-S8
cis-1,2 Dichloroethene
DuPont Brevard Site



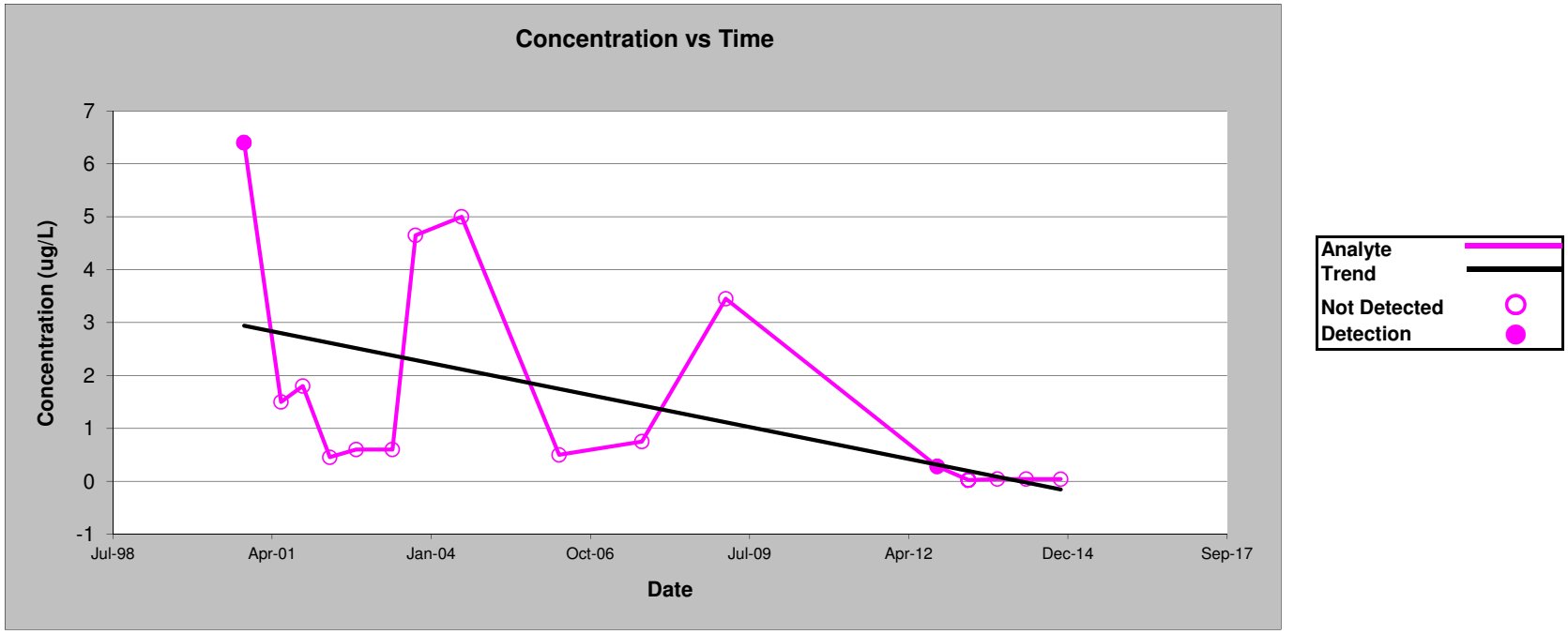
R87-S8
Cobalt
DuPont Brevard Site



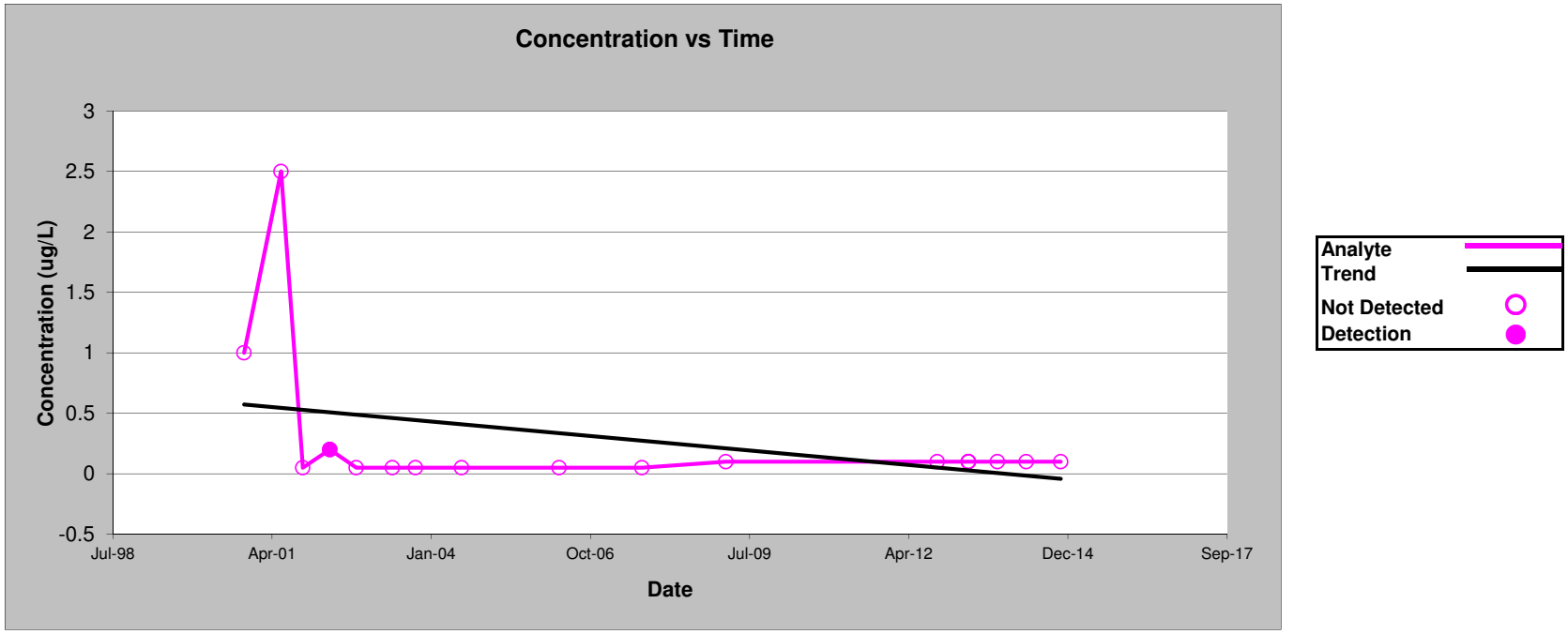
R87-S8
Ethyl Chloride
DuPont Brevard Site



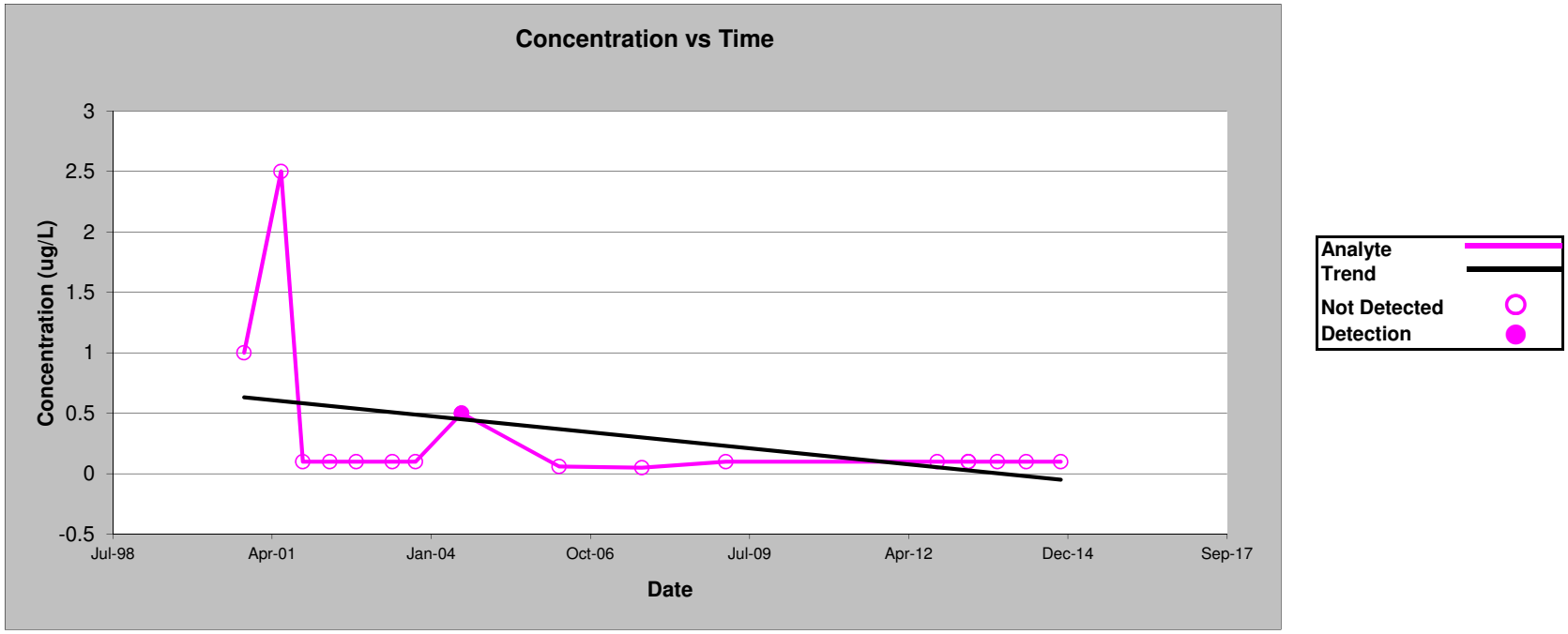
R87-S8
Lead
DuPont Brevard Site



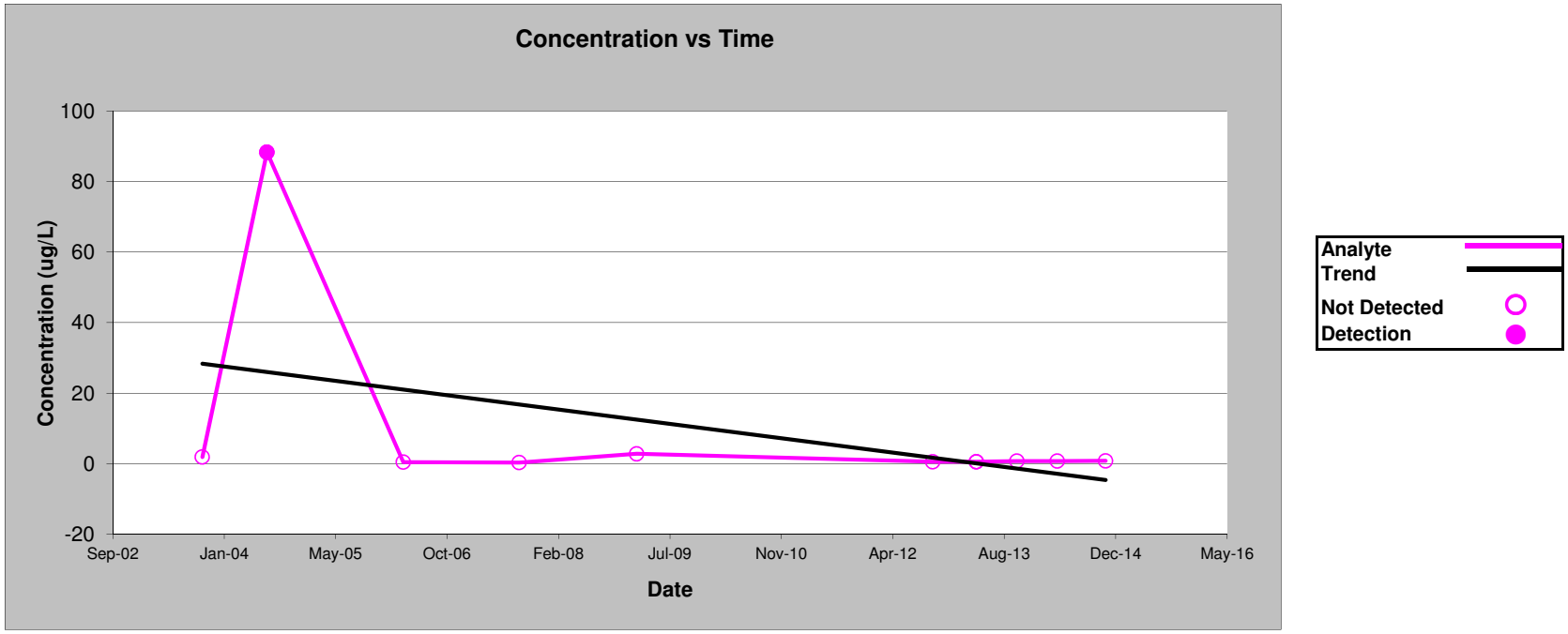
R87-S8
Methyl Chloride
DuPont Brevard Site



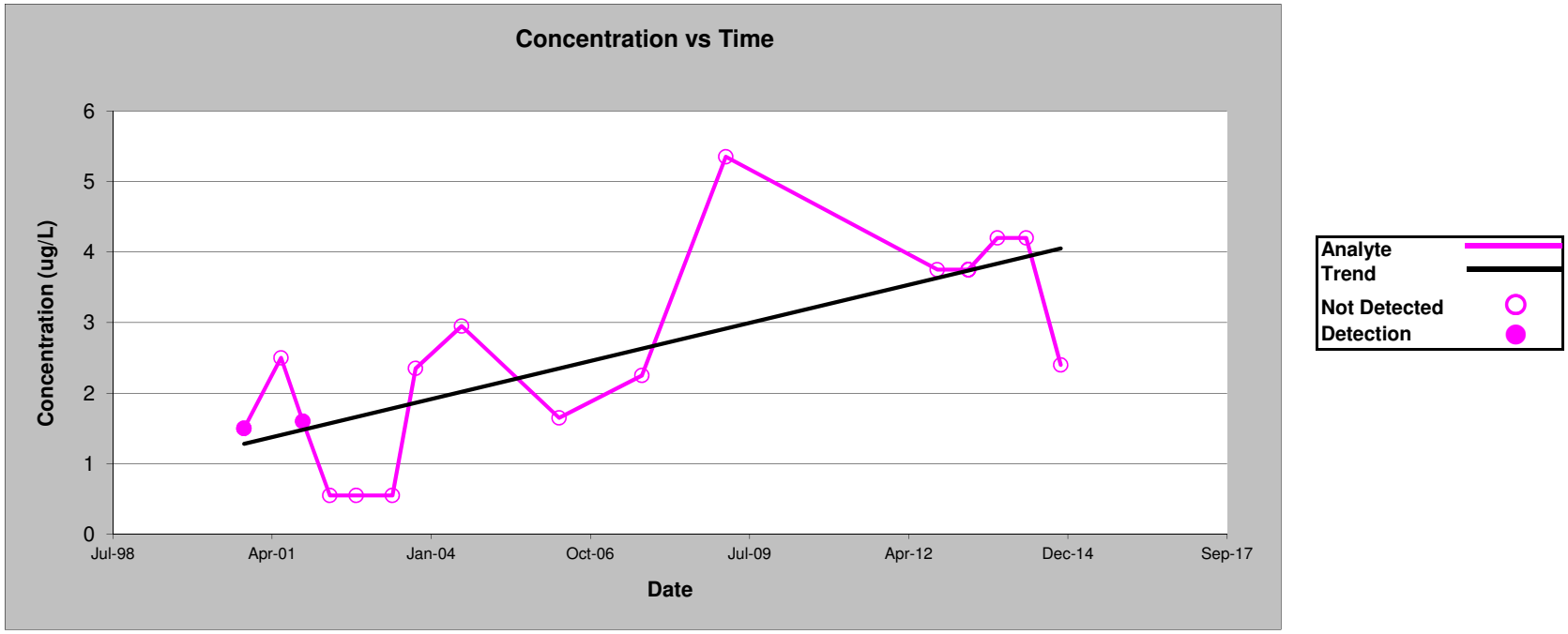
R87-S8
Methylene Chloride
DuPont Brevard Site



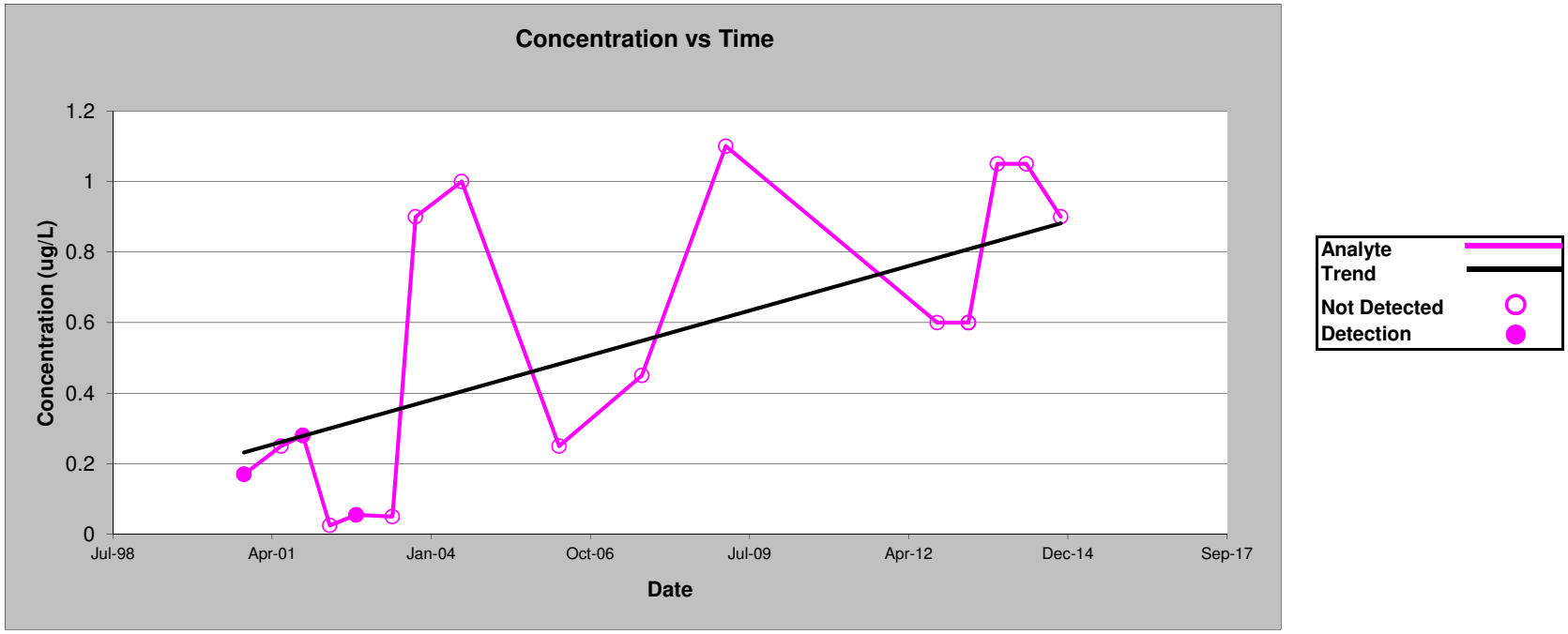
R87-S8
Nickel
DuPont Brevard Site



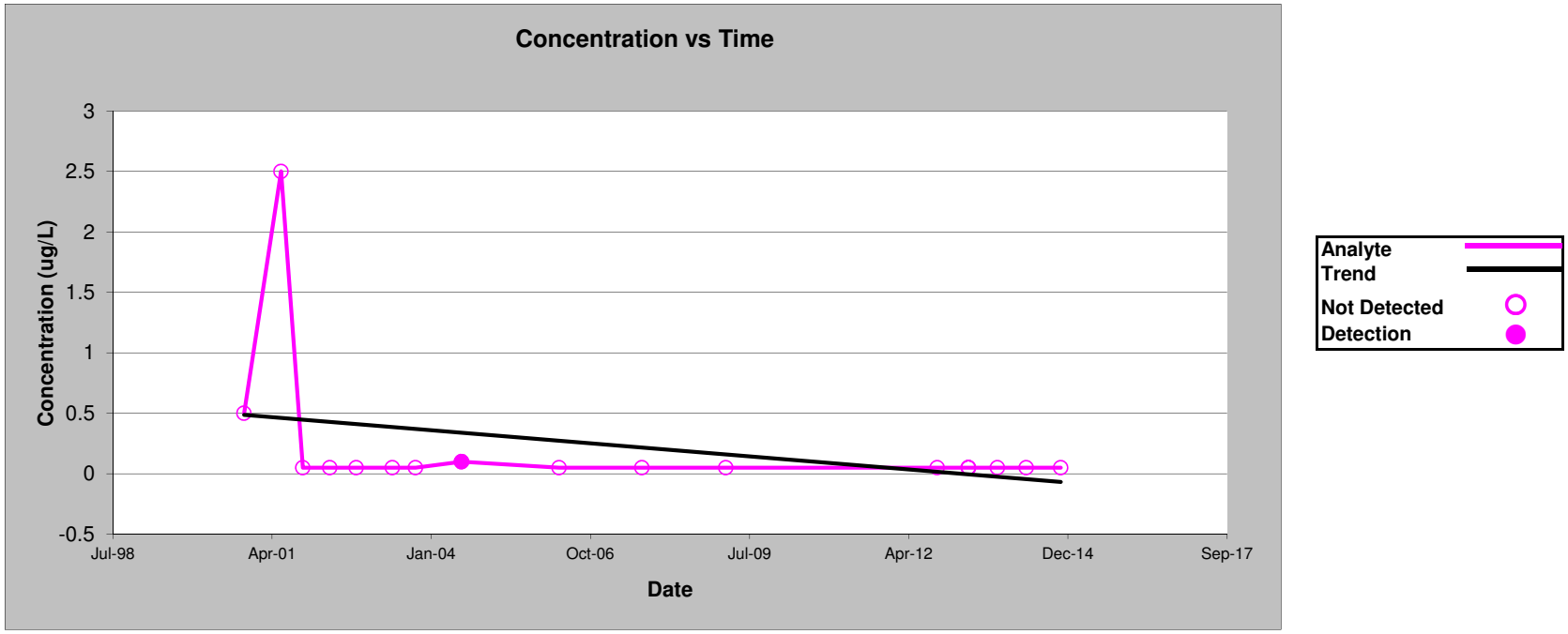
R87-S8
Selenium
DuPont Brevard Site



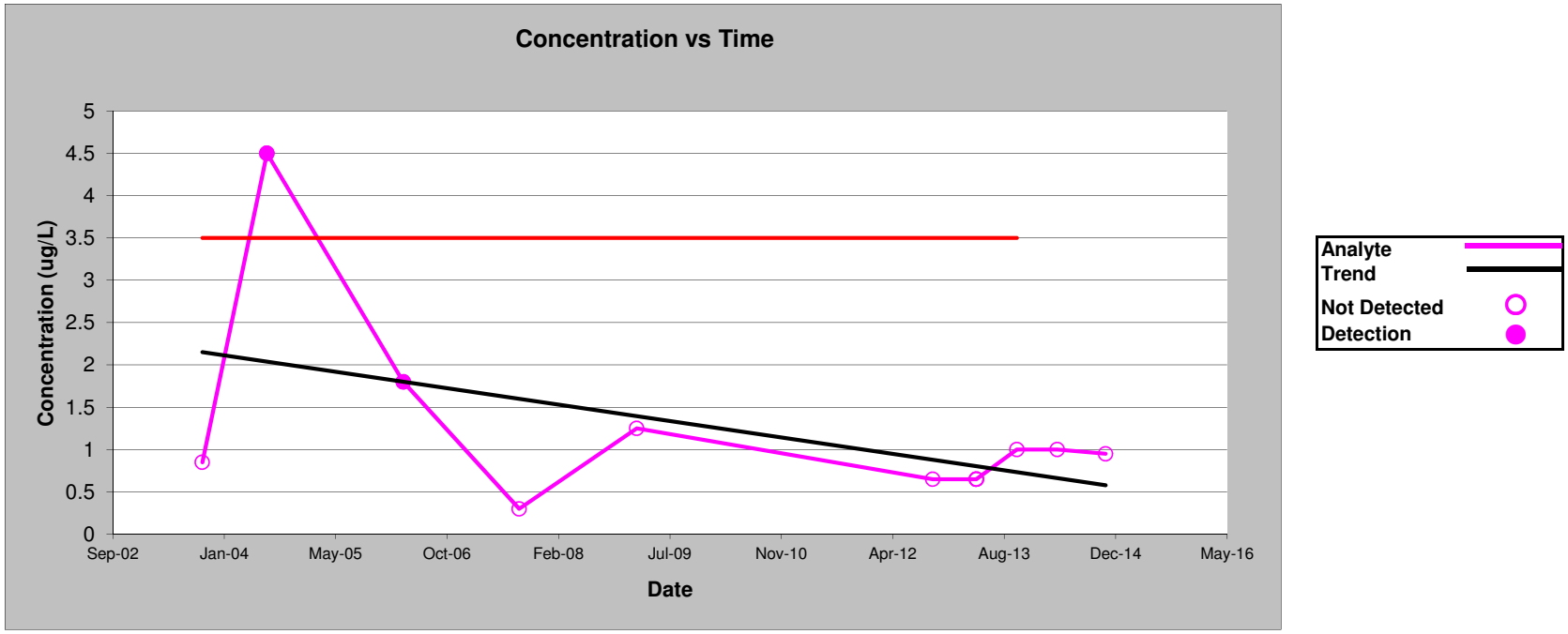
R87-S8
Silver
DuPont Brevard Site



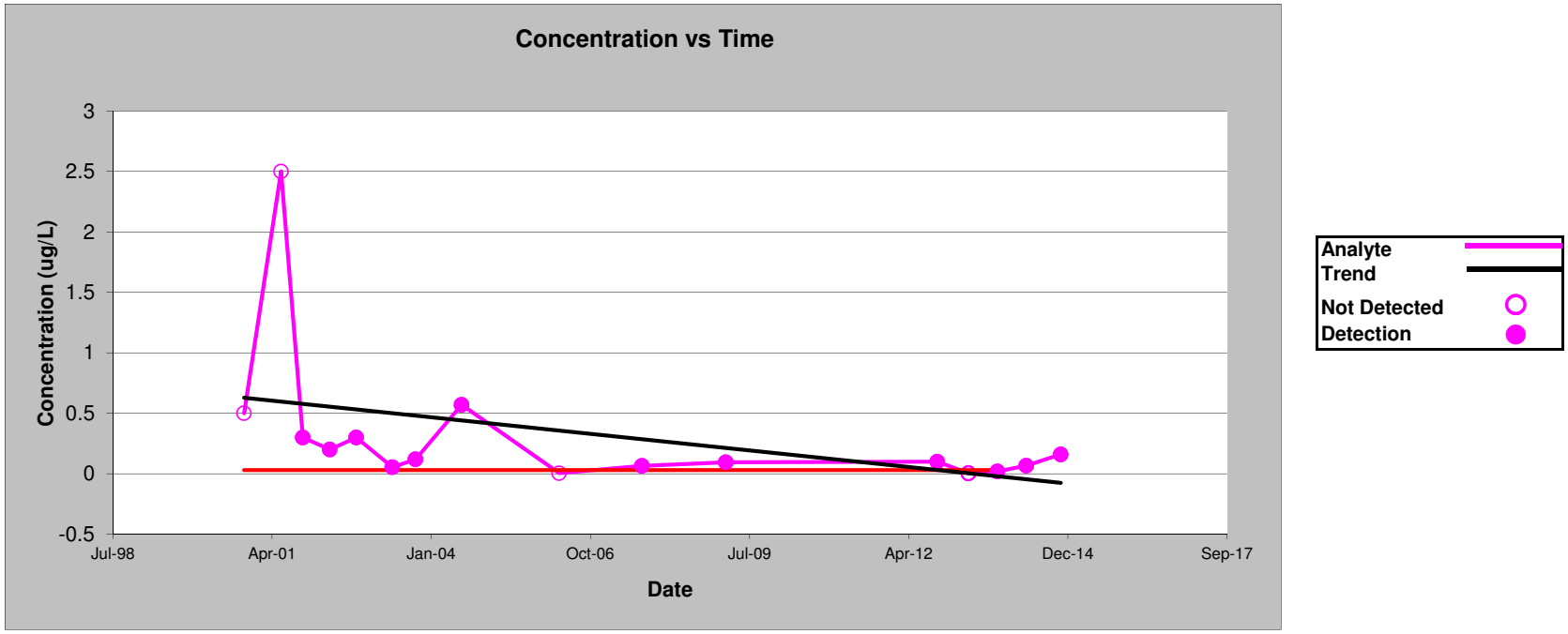
R87-S8
trans-1,2 Dichloroethene
DuPont Brevard Site



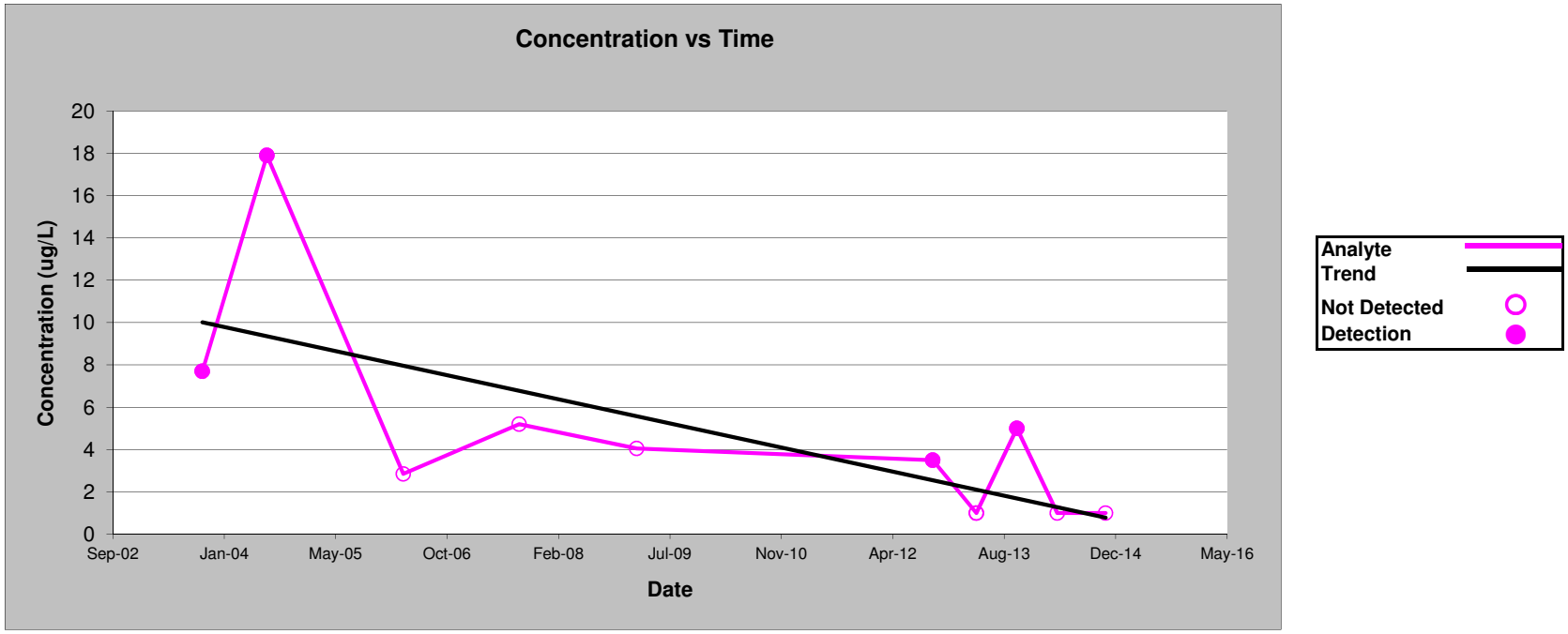
R87-S8
Vanadium
DuPont Brevard Site



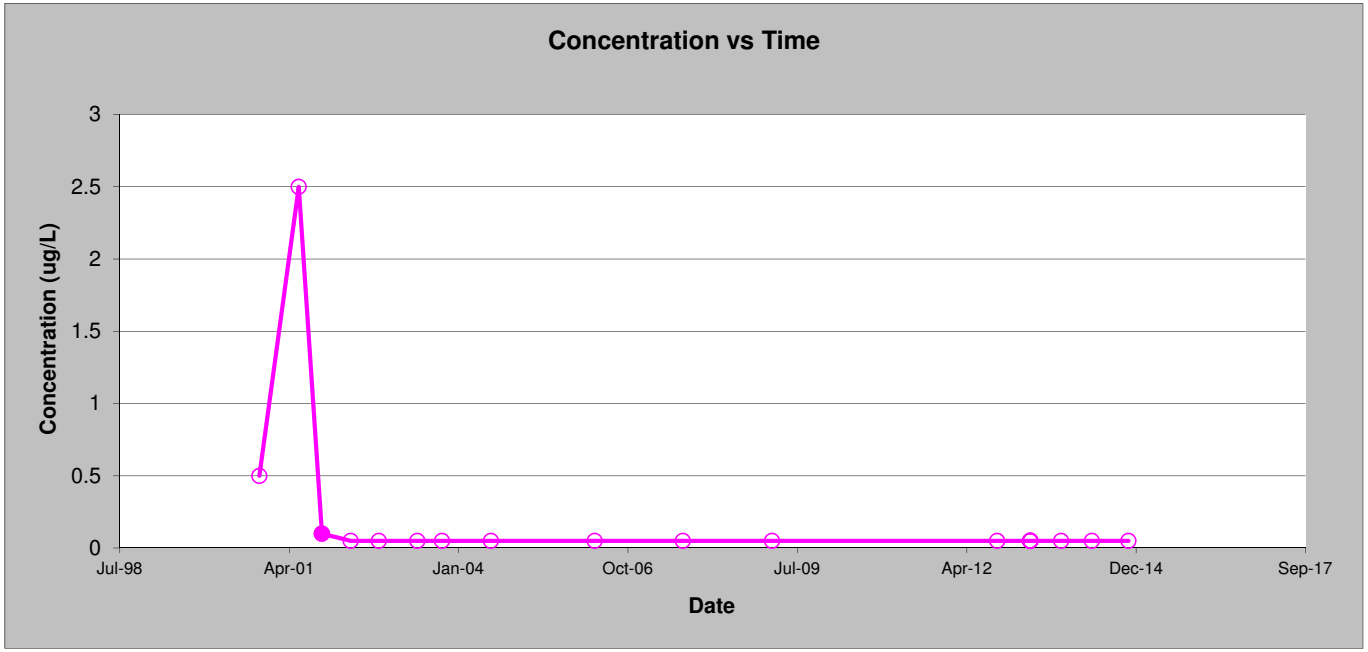
R87-S8
Vinyl Chloride
DuPont Brevard Site

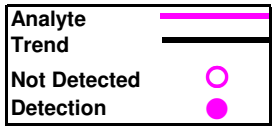


R87-S8
Zinc
DuPont Brevard Site

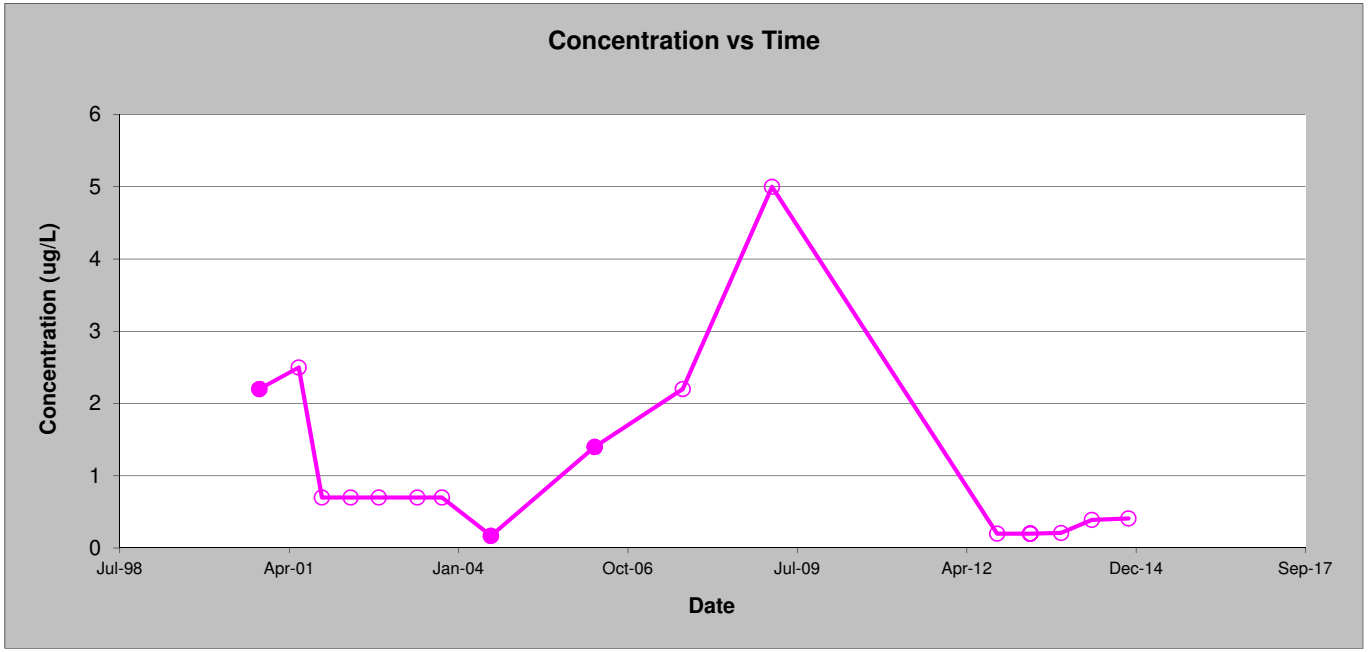


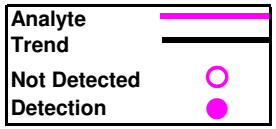
R87-S9
1,2-Dichloroethane
DuPont Brevard Site



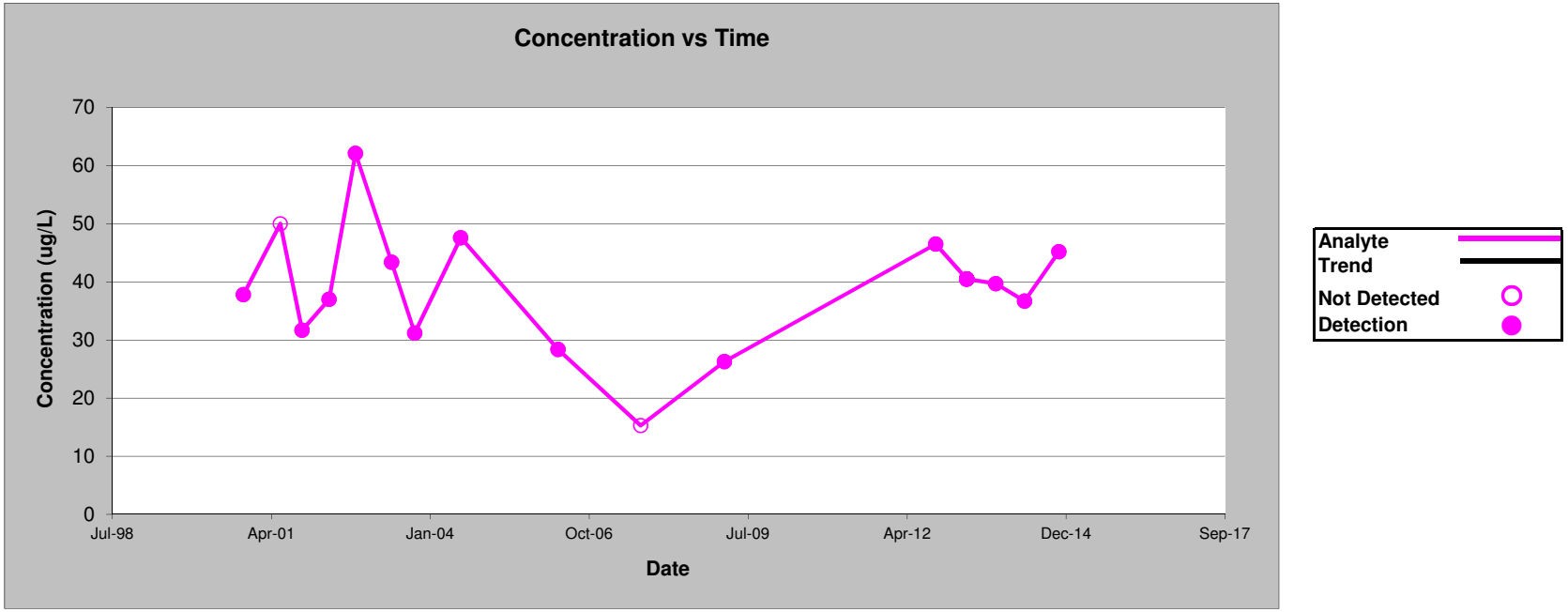


R87-S9
Arsenic
DuPont Brevard Site

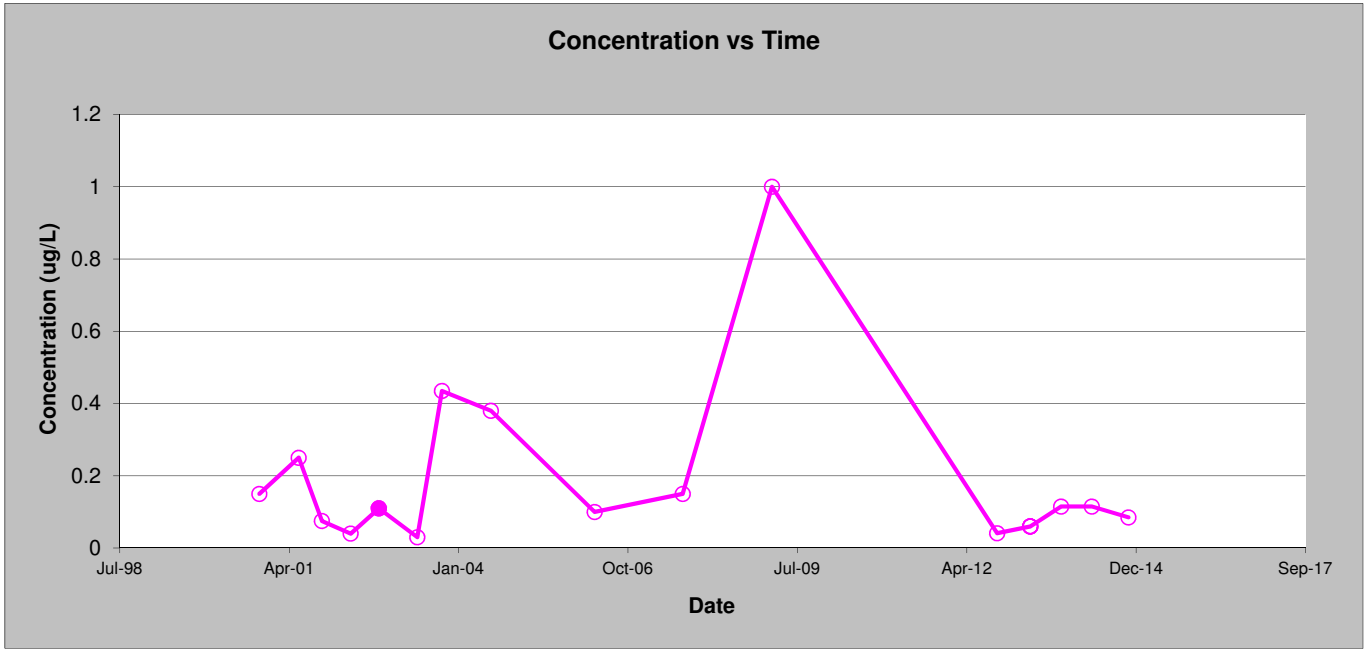


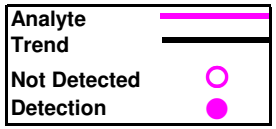


R87-S9
Barium
DuPont Brevard Site

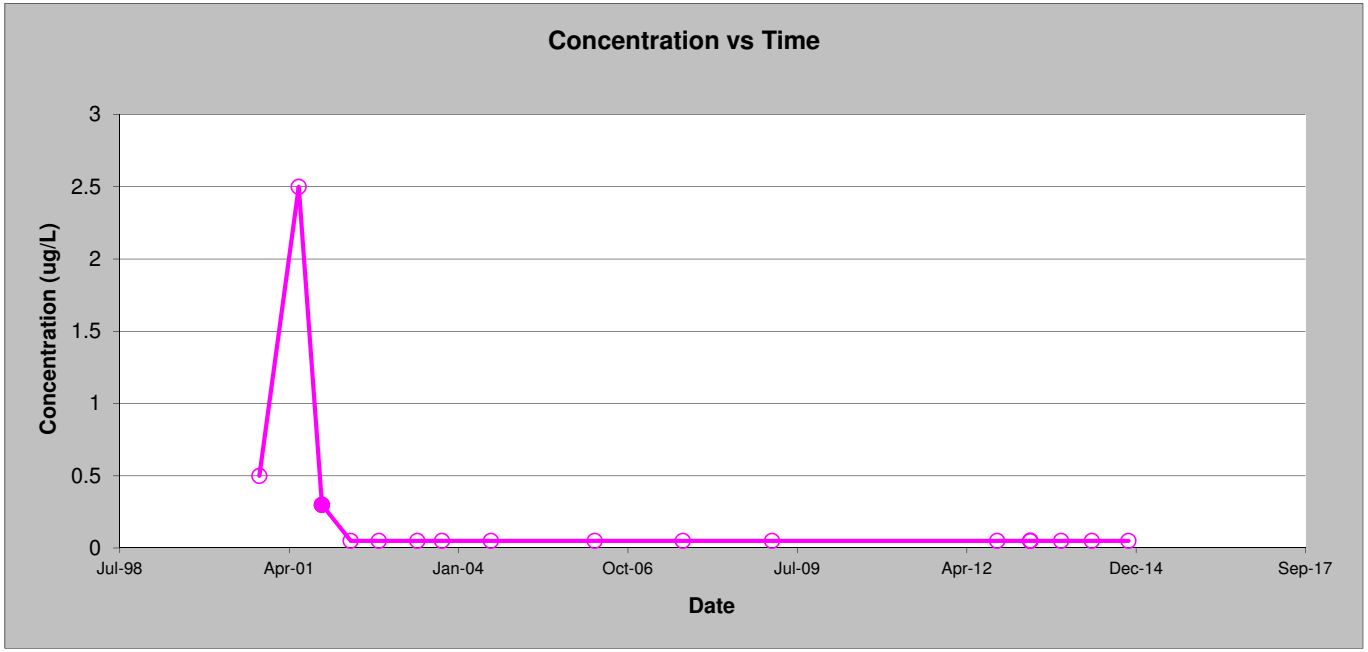


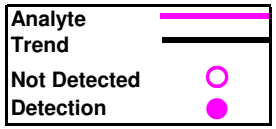
R87-S9
Cadmium
DuPont Brevard Site



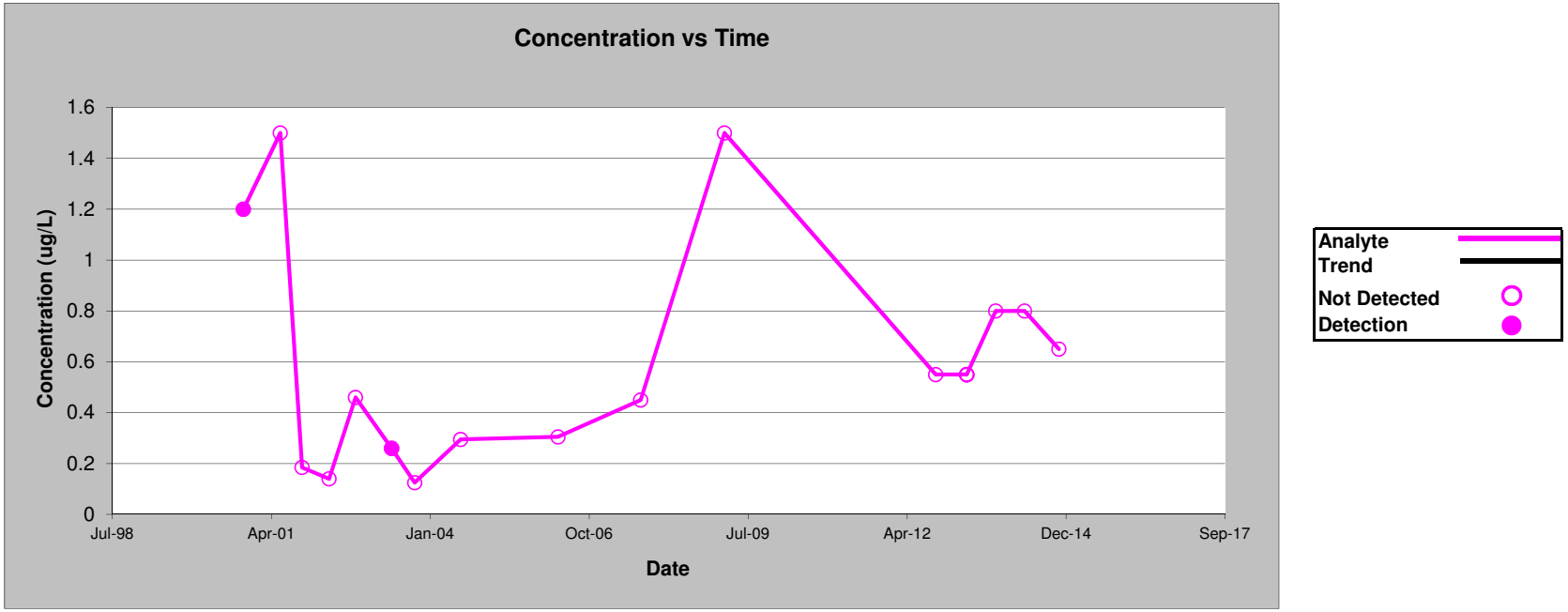


R87-S9
Chlorobenzene
DuPont Brevard Site

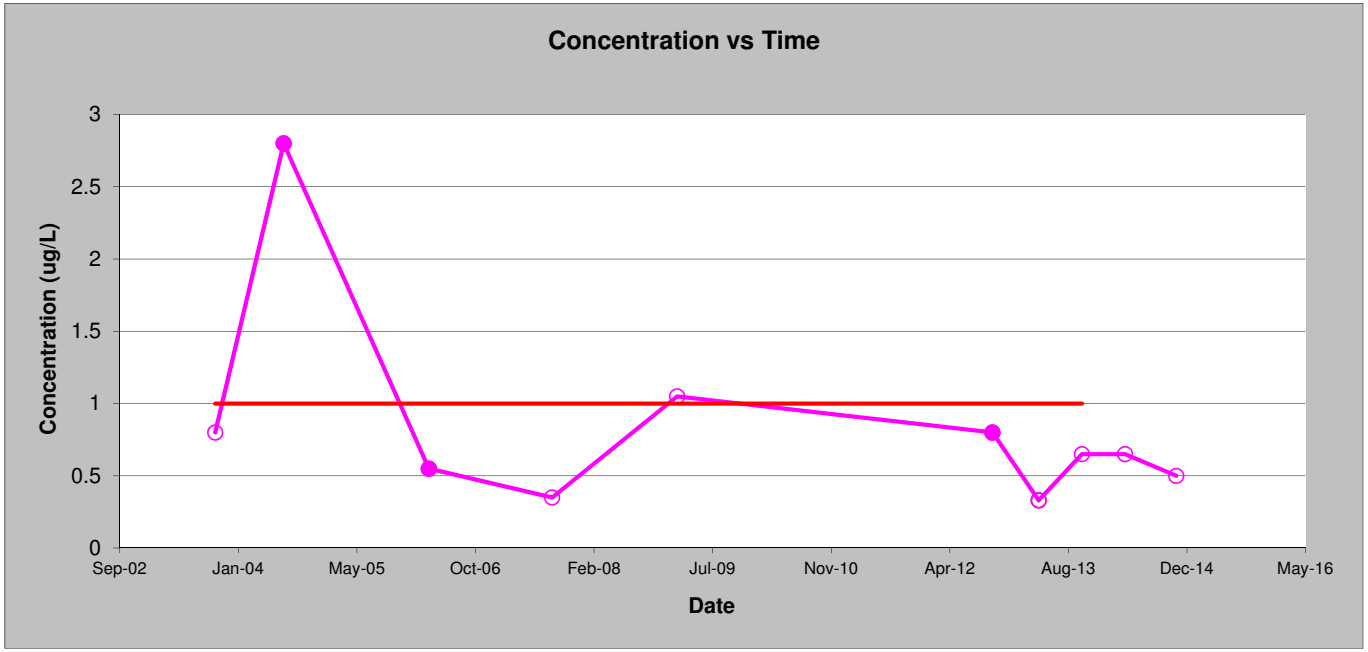


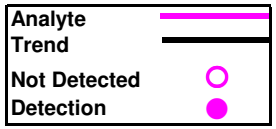


R87-S9
Chromium
DuPont Brevard Site

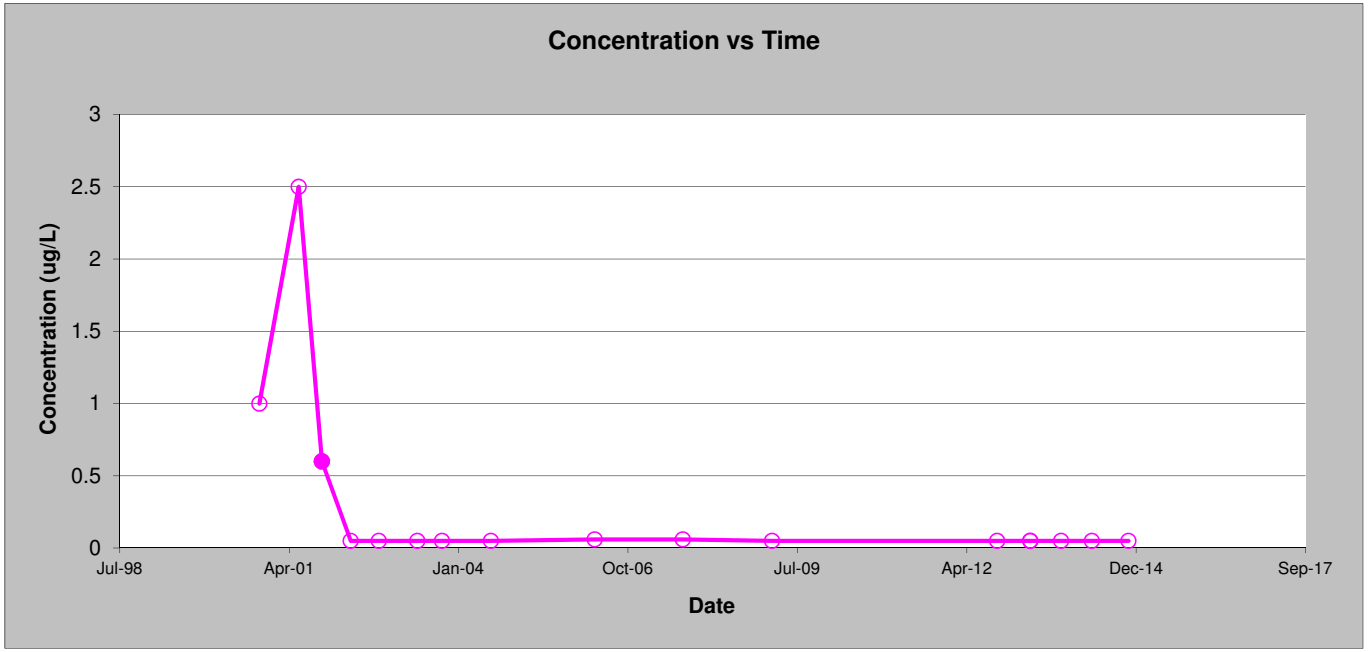


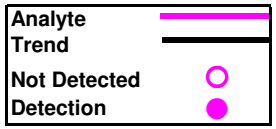
R87-S9
Cobalt
DuPont Brevard Site



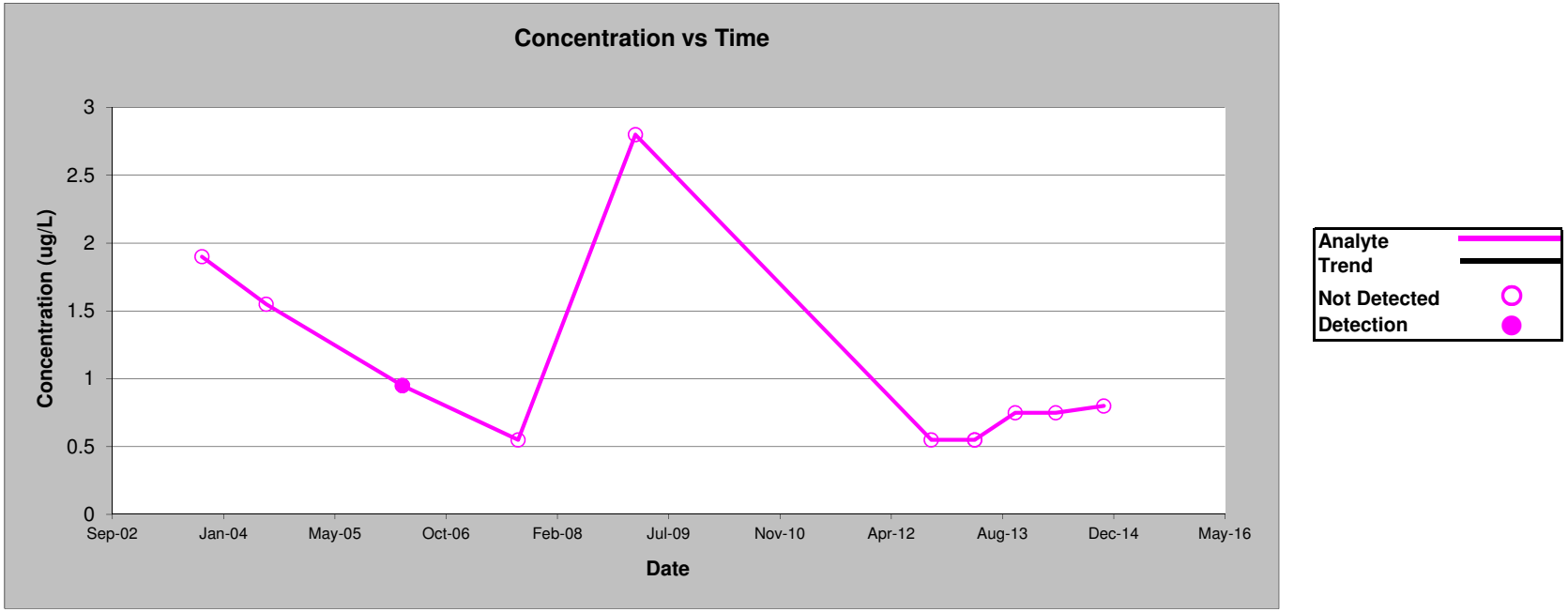


R87-S9
Ethyl Chloride
DuPont Brevard Site

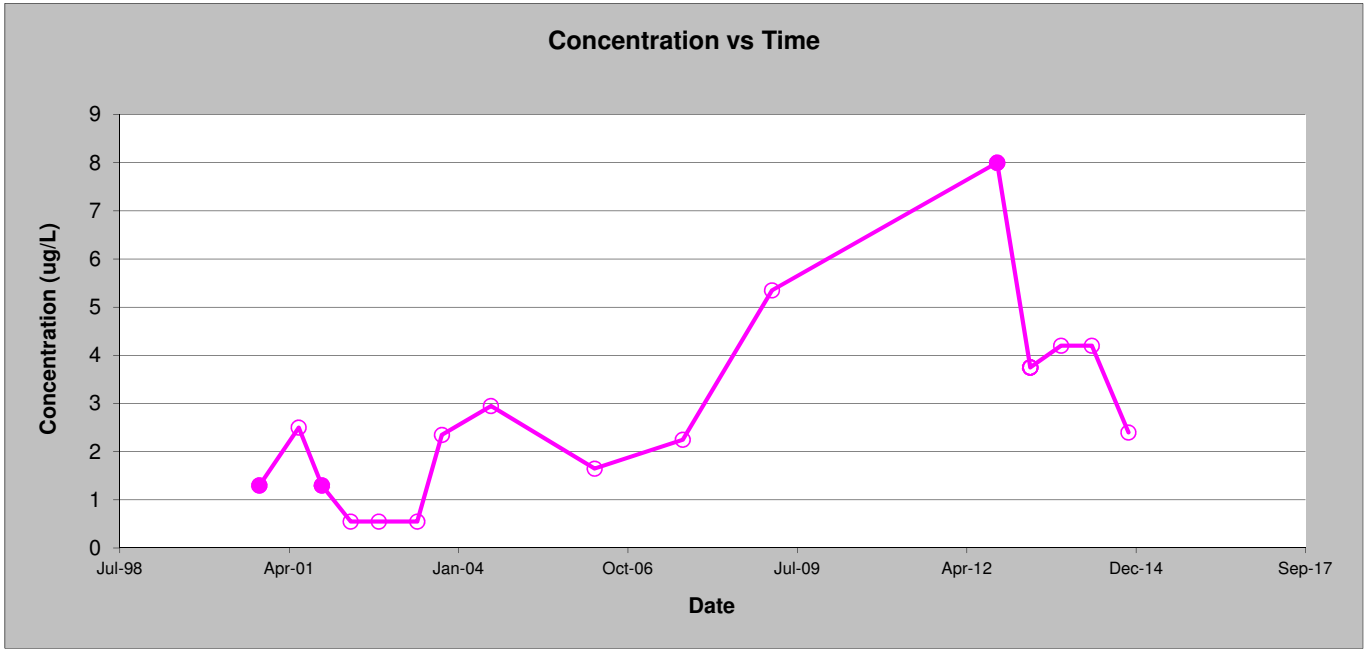


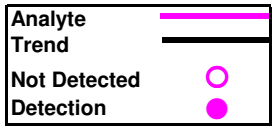


R87-S9
Nickel
DuPont Brevard Site

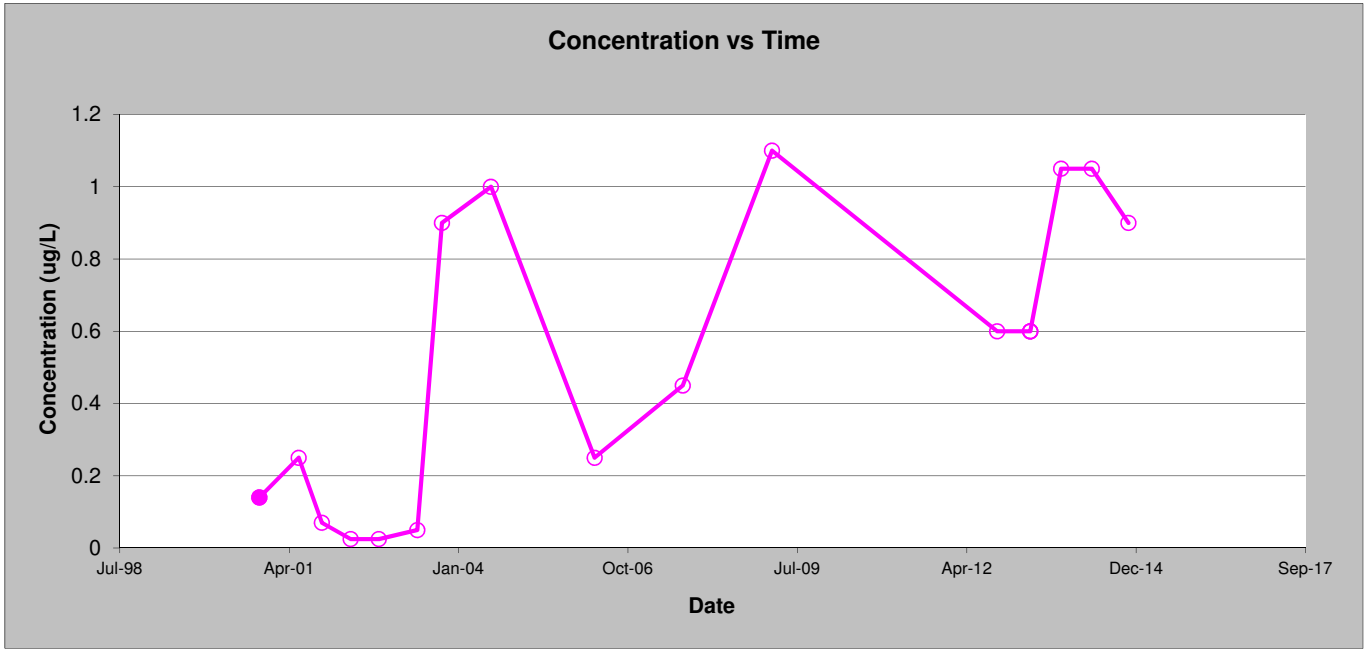


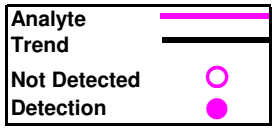
R87-S9
Selenium
DuPont Brevard Site



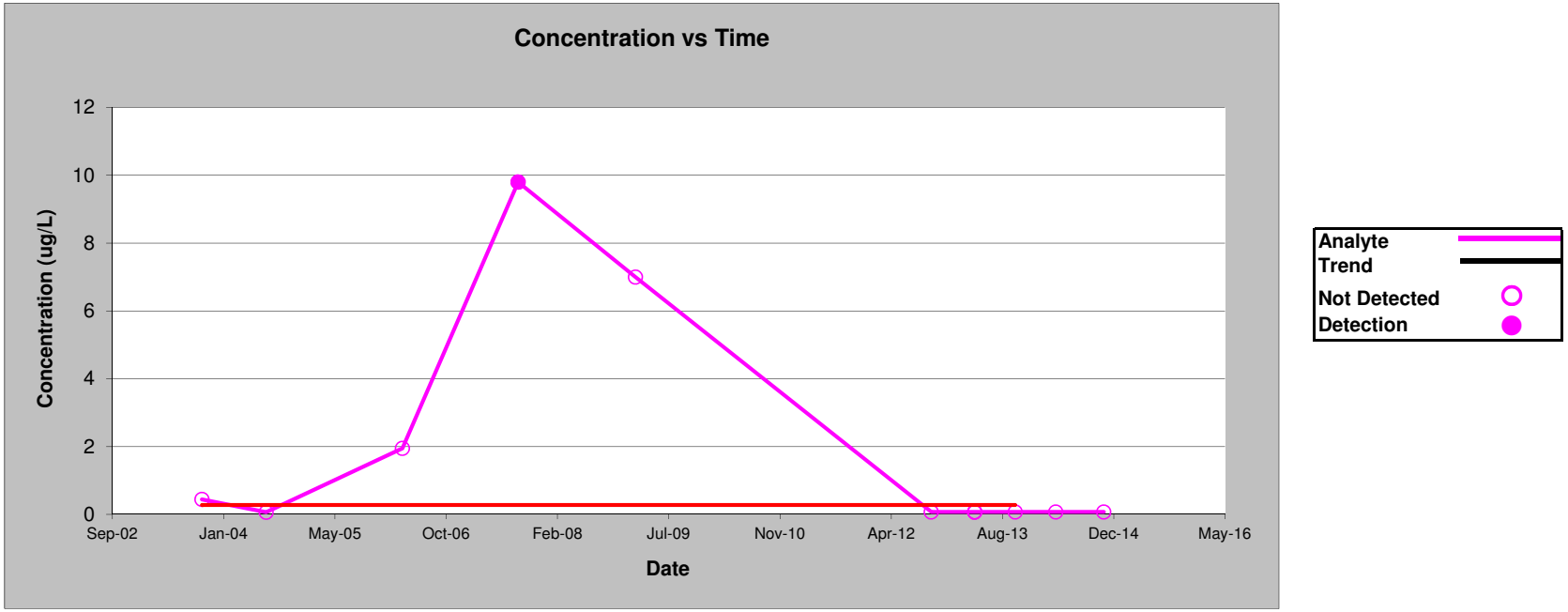


R87-S9
Silver
DuPont Brevard Site

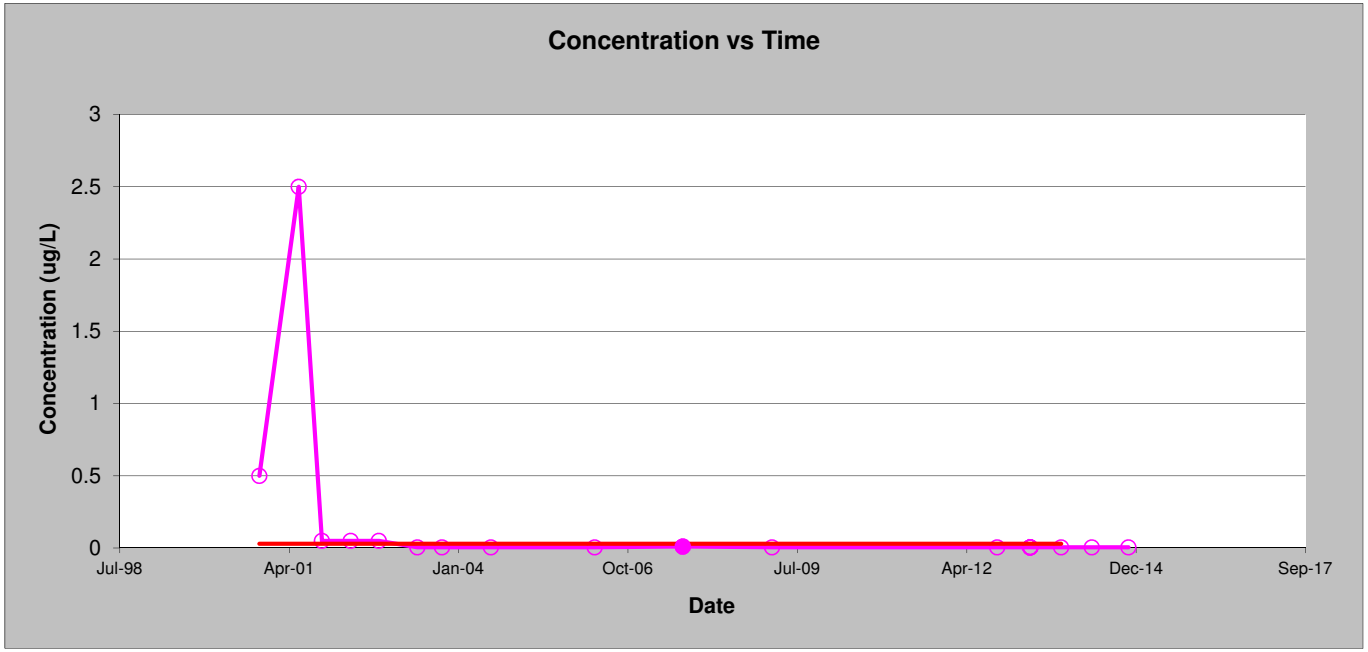


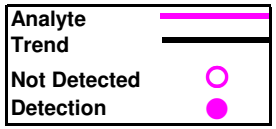


R87-S9
Thallium
DuPont Brevard Site

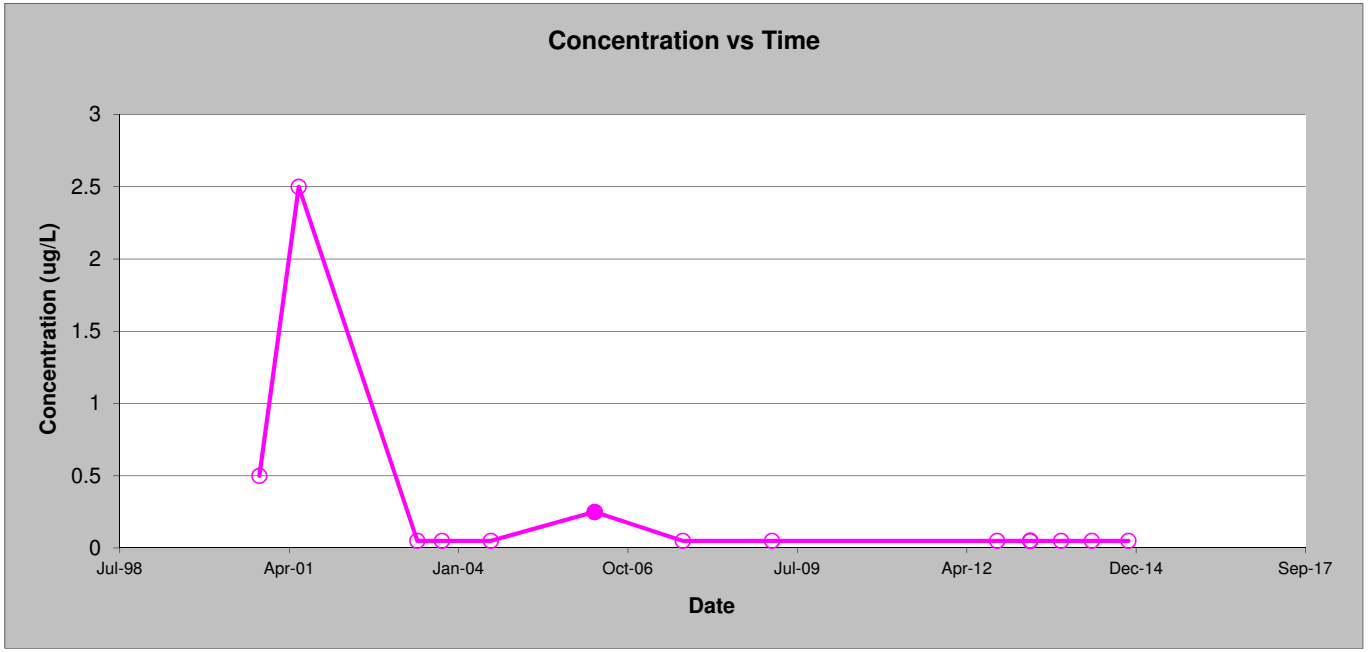


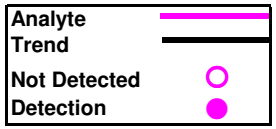
R87-S9
Vinyl Chloride
DuPont Brevard Site



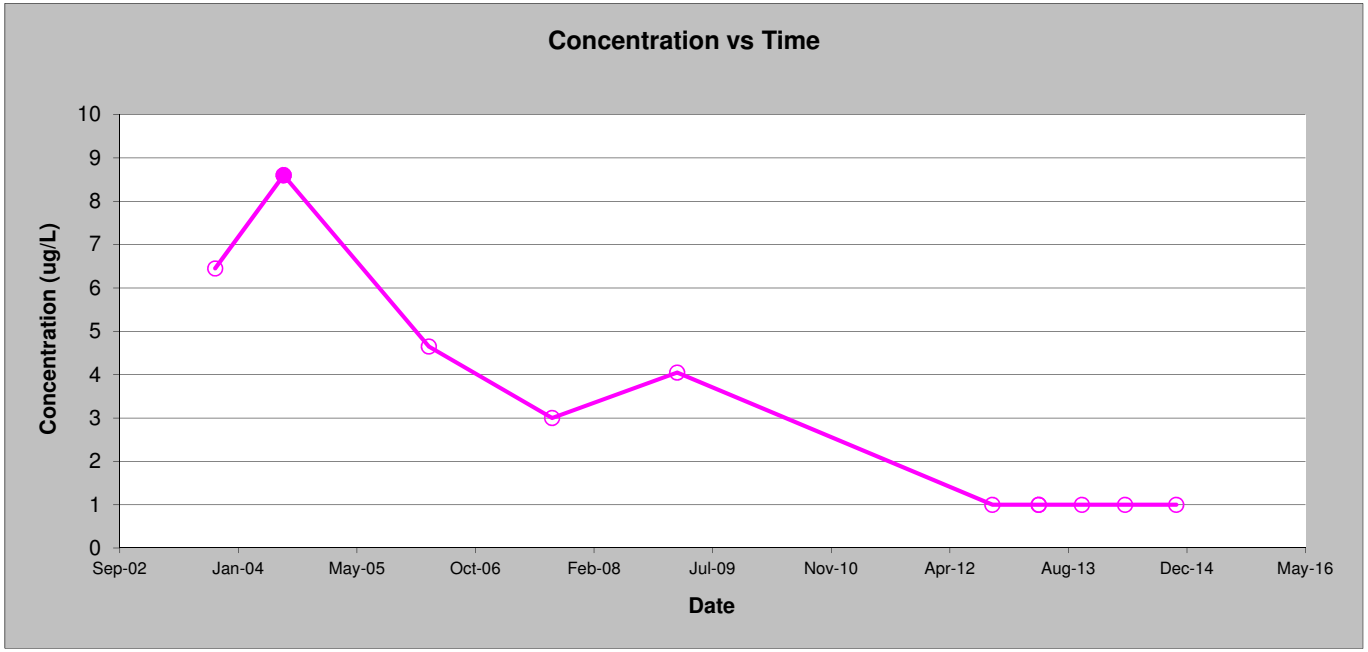


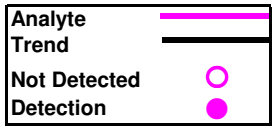
R87-S9
Xylenes
DuPont Brevard Site



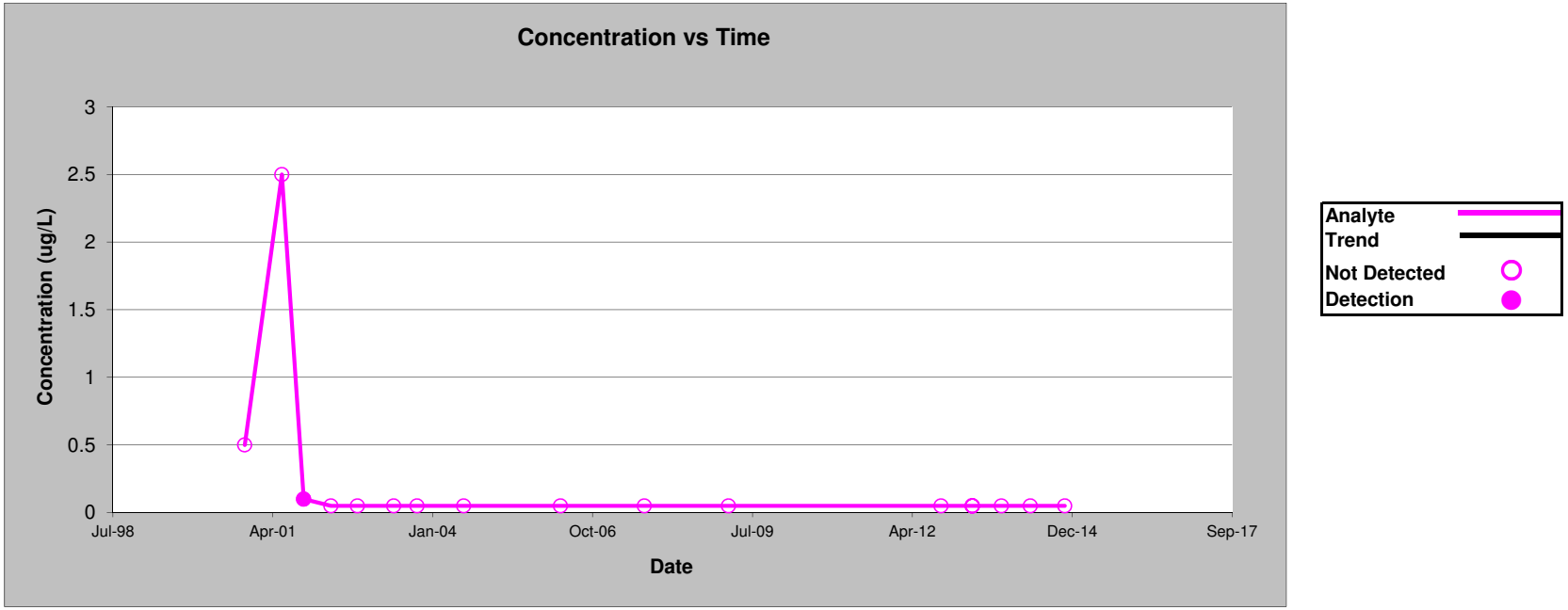


R87-S9
Zinc
DuPont Brevard Site

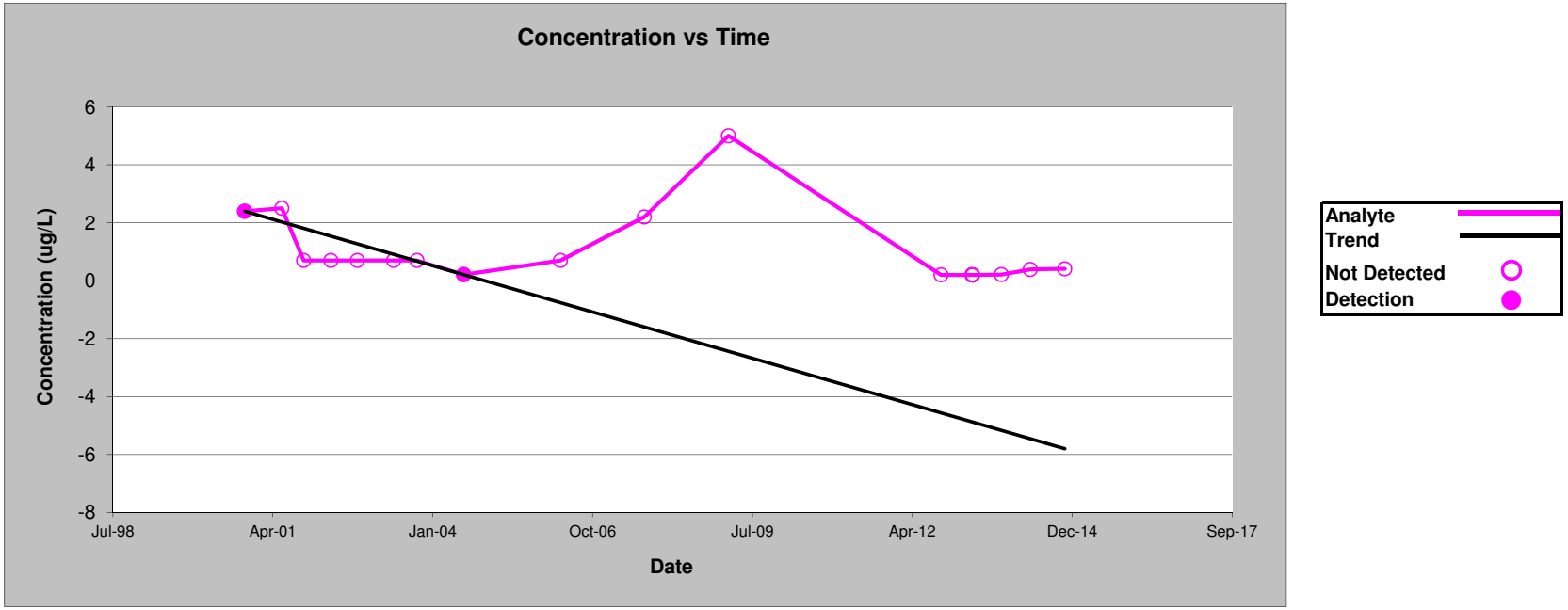




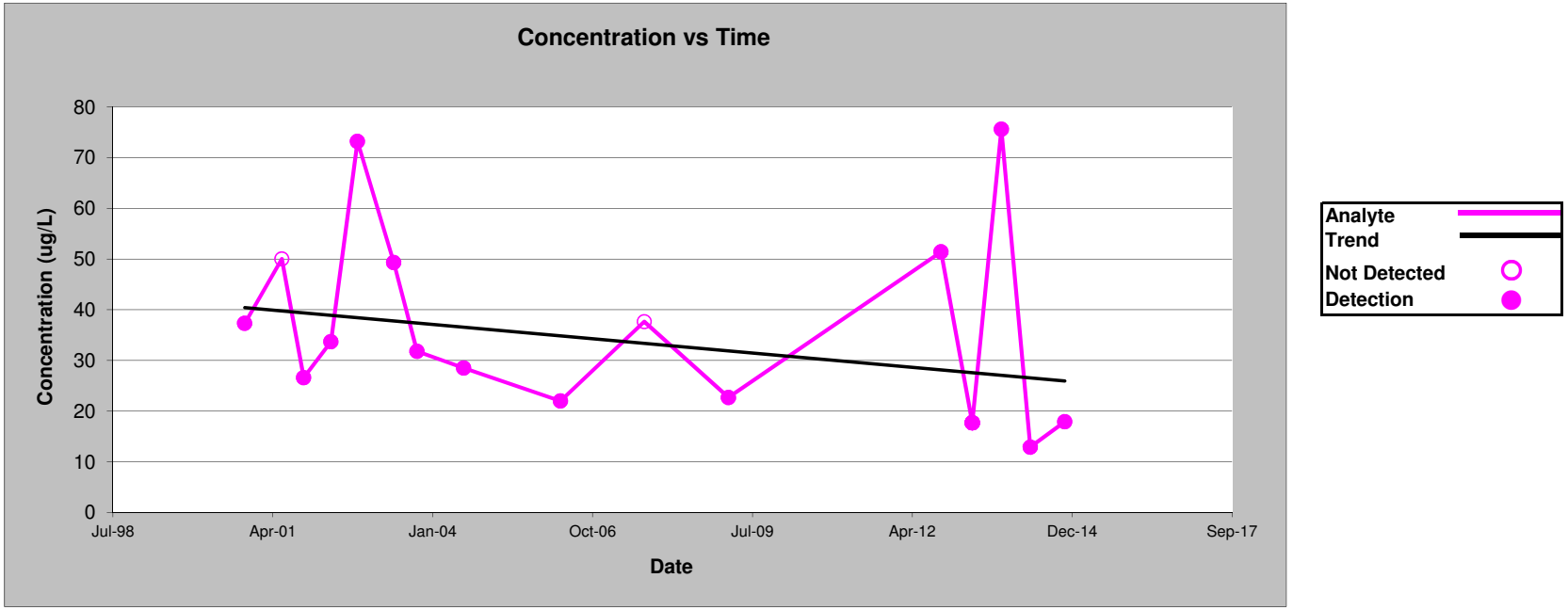
R87-S10
1,2-Dichloroethane
DuPont Brevard Site



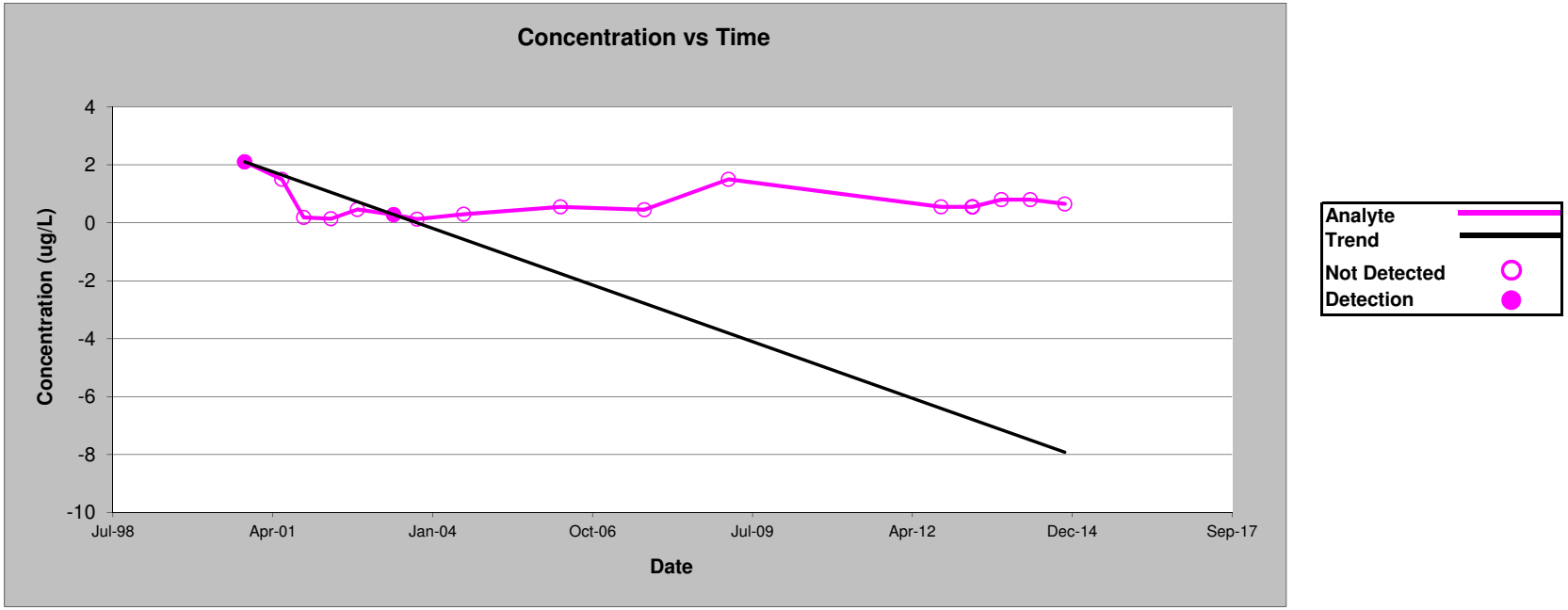
R87-S10
Arsenic
DuPont Brevard Site



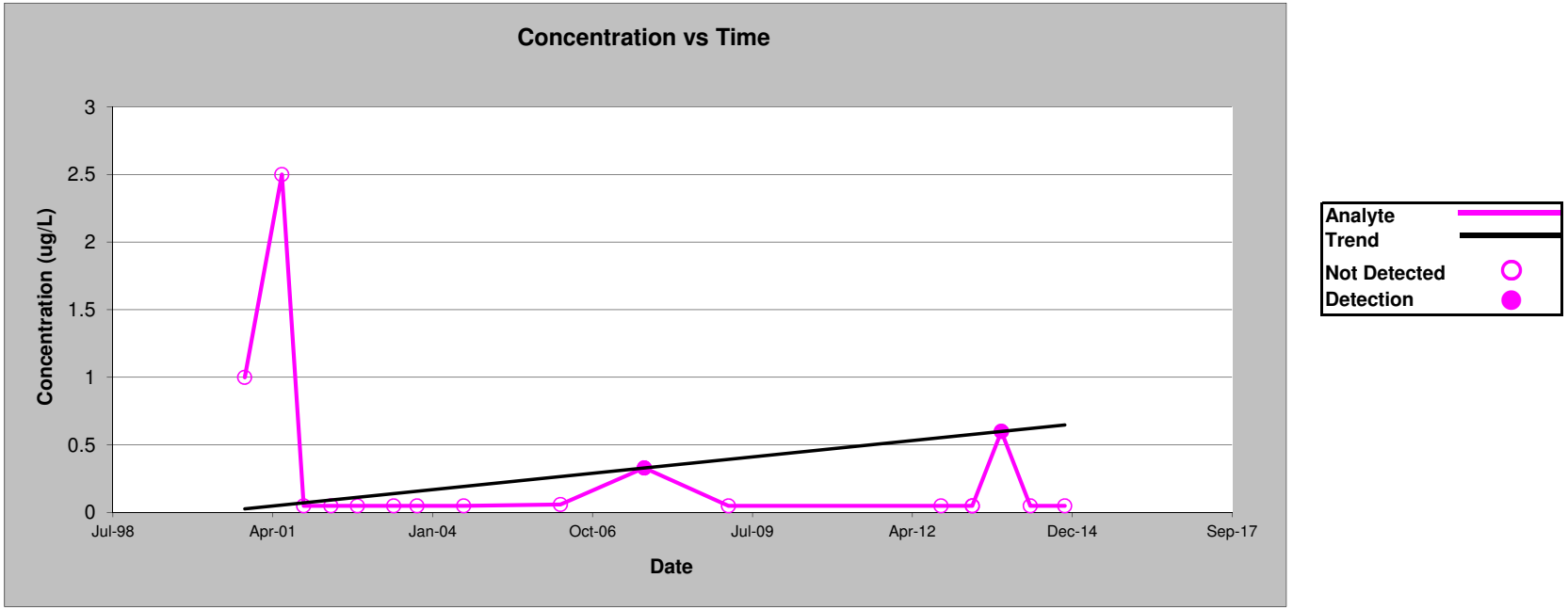
R87-S10
Barium
DuPont Brevard Site



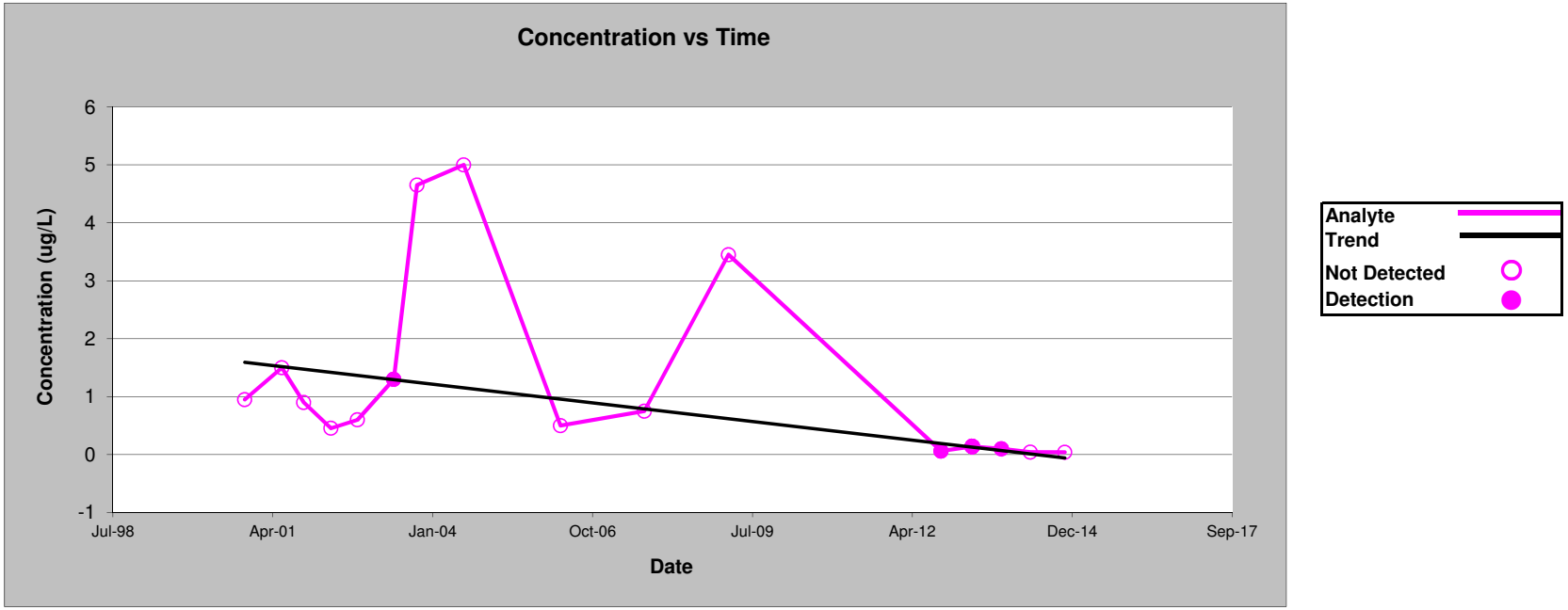
R87-S10
Chromium
DuPont Brevard Site



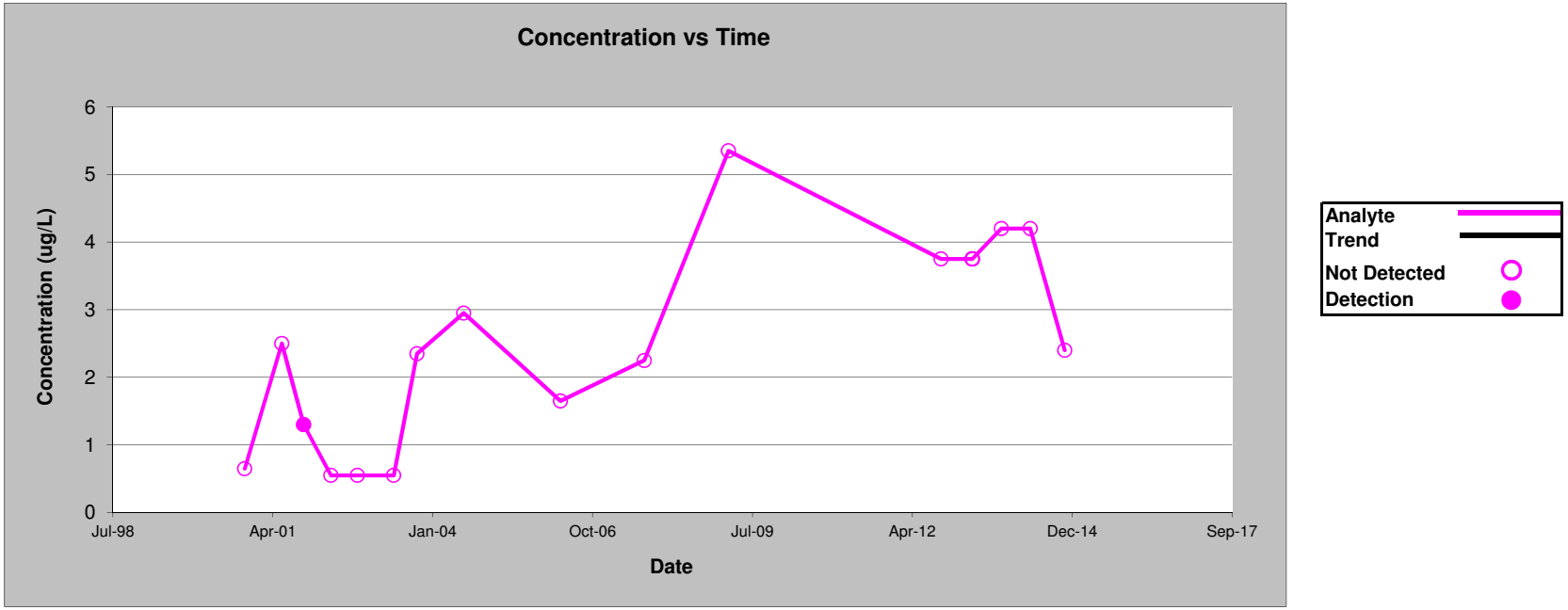
R87-S10
Ethyl Chloride
DuPont Brevard Site



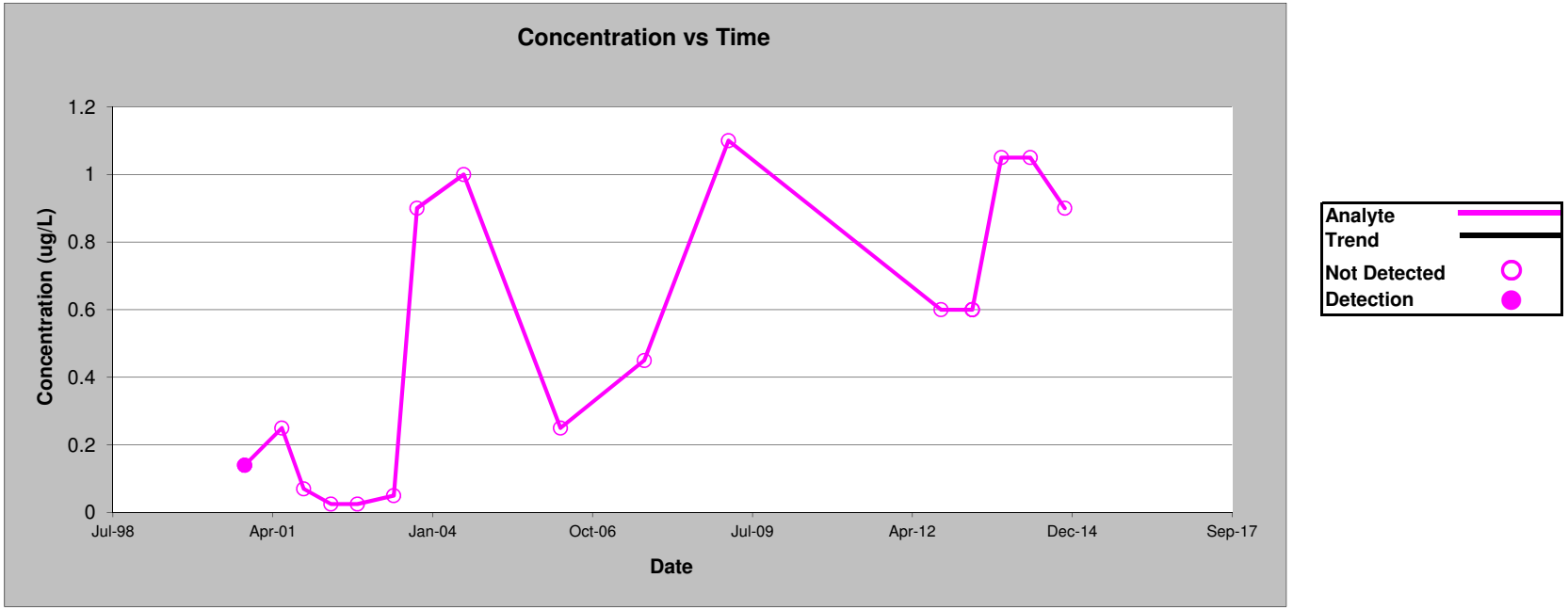
R87-S10
Lead
DuPont Brevard Site



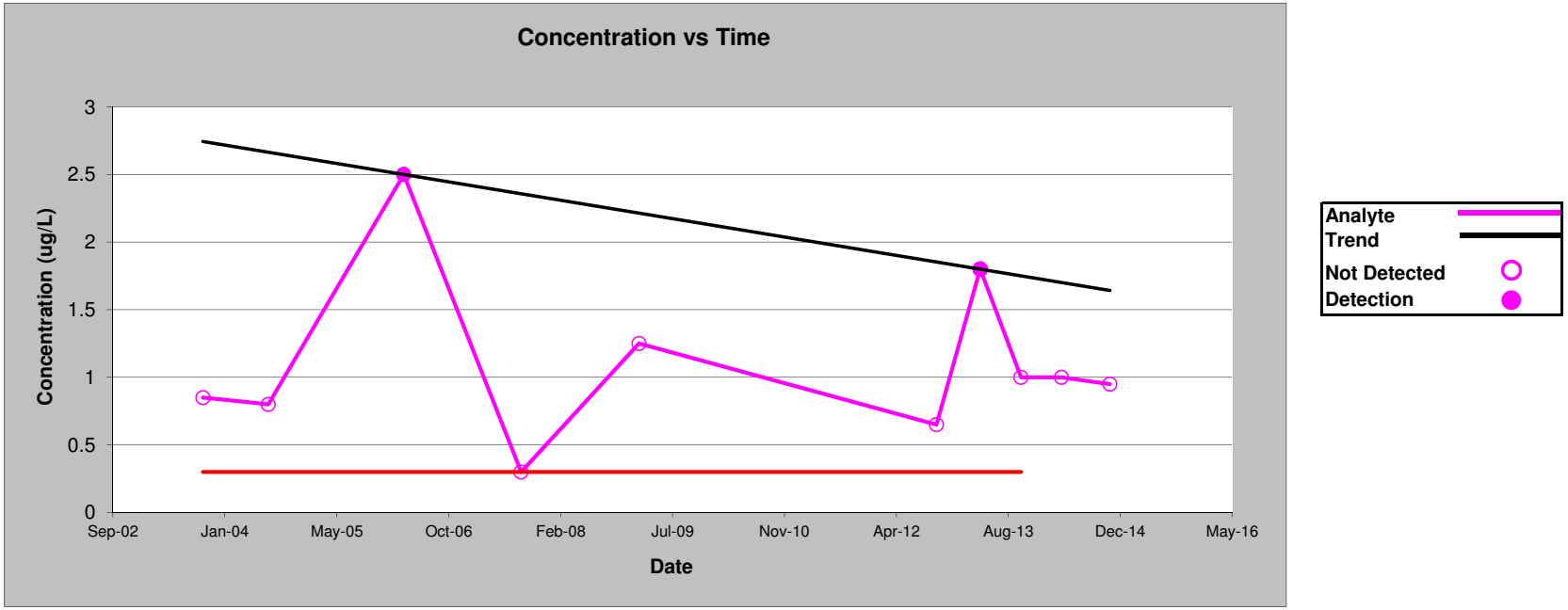
R87-S10
Selenium
DuPont Brevard Site



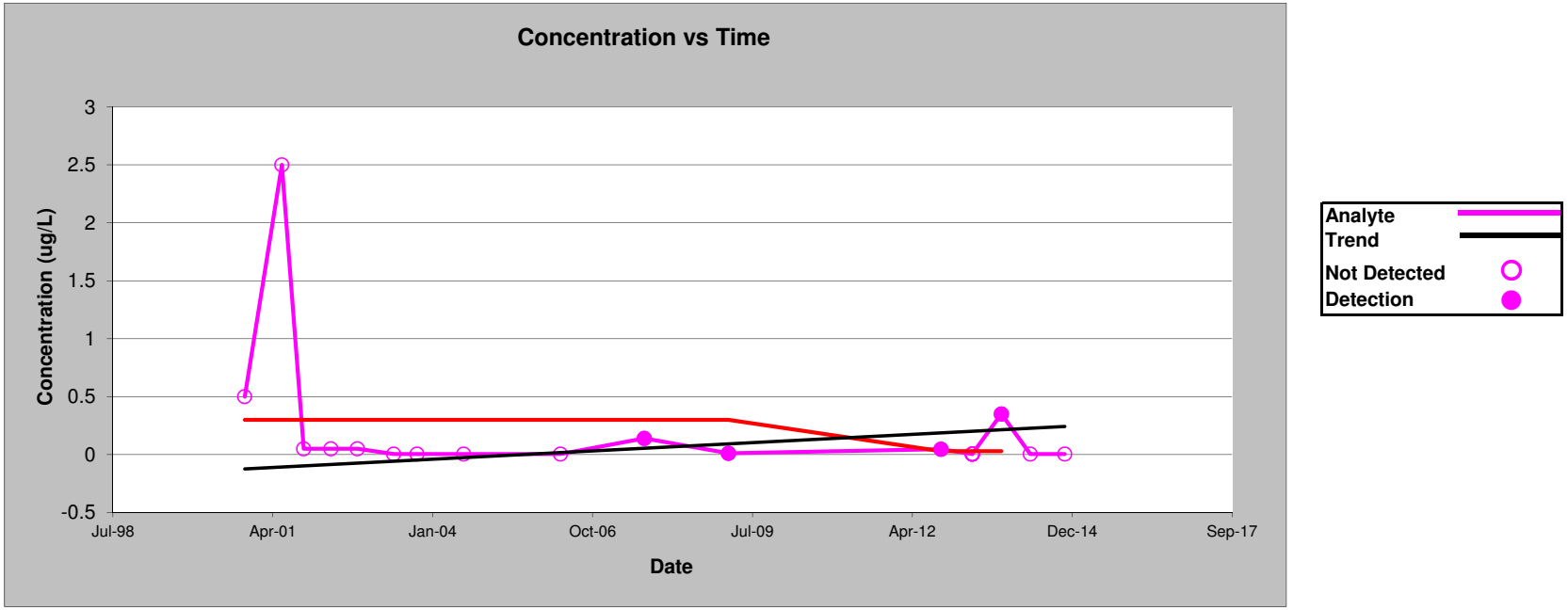
R87-S10
Silver
DuPont Brevard Site



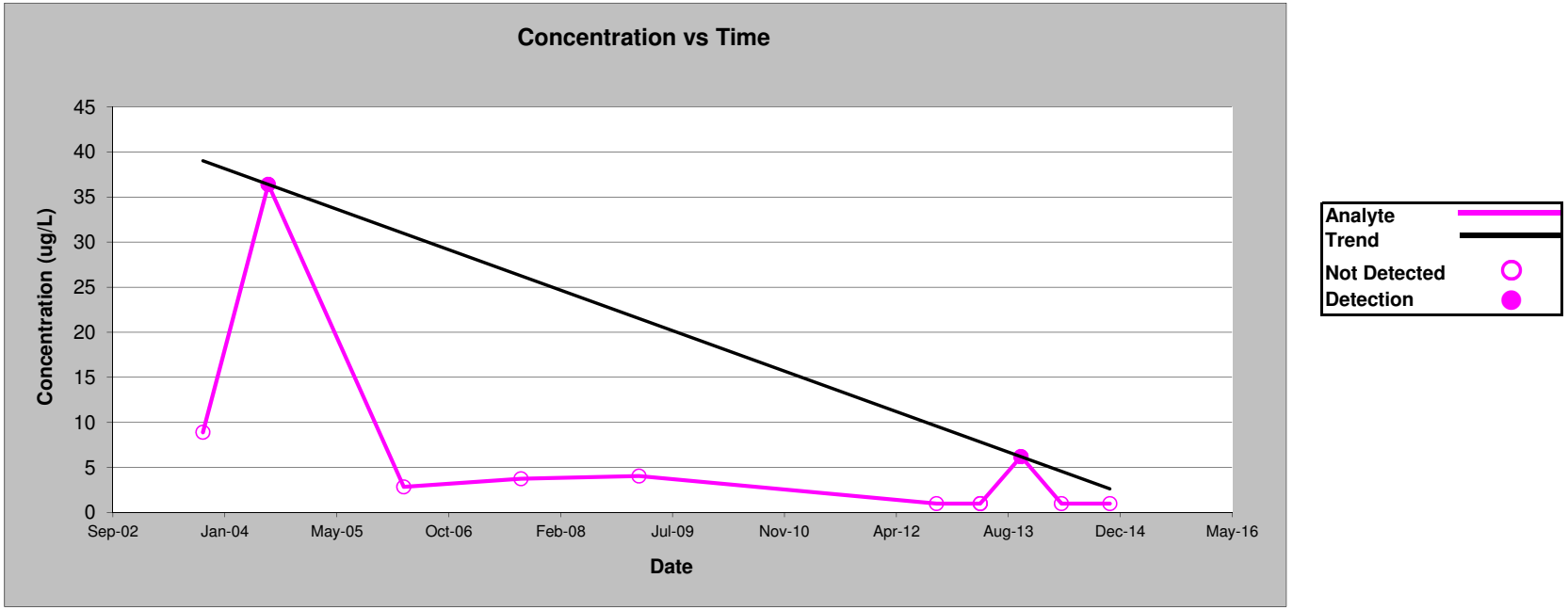
R87-S10
Vanadium
DuPont Brevard Site



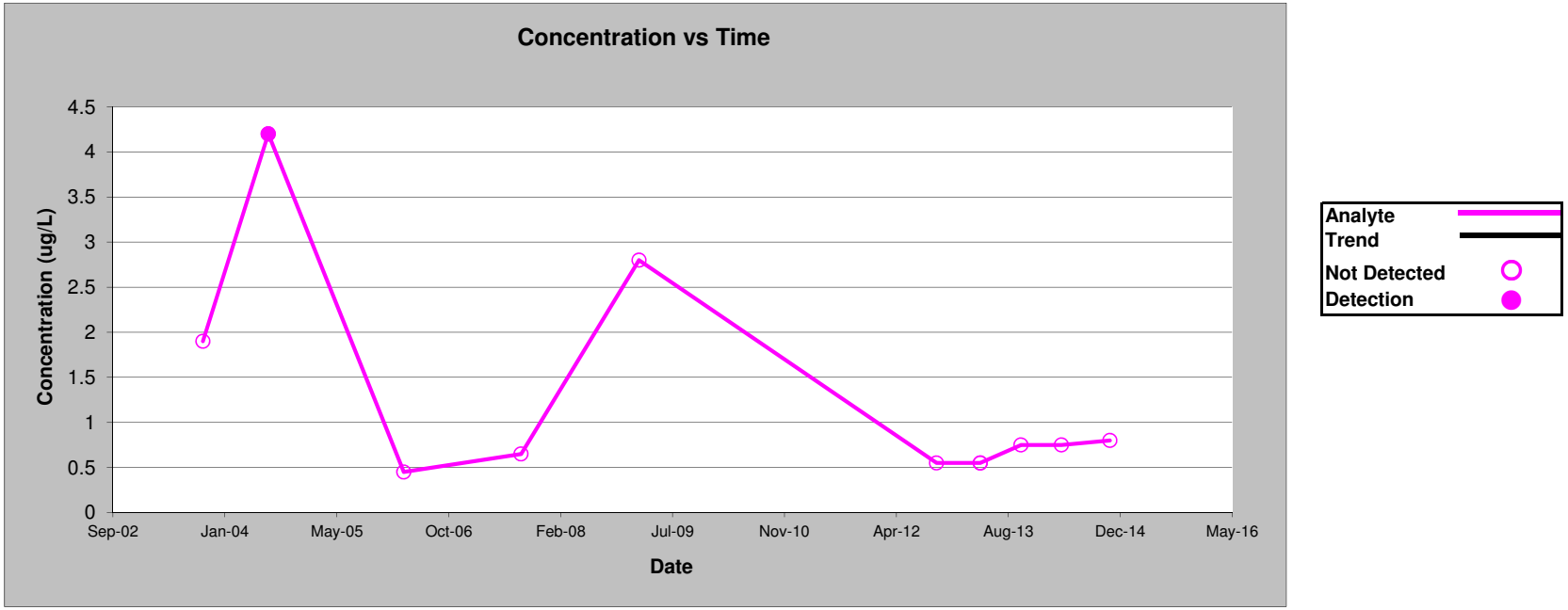
R87-S10
Vinyl Chloride
DuPont Brevard Site



R87-S10
Zinc
DuPont Brevard Site



R87-S10
Nickel
DuPont Brevard Site



DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Parsons - Environment and Infrastructure

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Tracy Ovbey Phone: 704-558-4403

E-mail: tracy.ovbey@parsons.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
DuPont Brevard Facility	Staton Road Cedar Mountain, North Carolina	NCD 003 152 329		October and November 2014

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☐ Detection Monitoring ☒ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify) _____

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Karen Teague — NC Professional Geologist — 704-558-4155

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

Karen Teague — 05-06-2015

Signature — Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 2210 GEOLOGIST KAREN L. TEAGUE

4701 Hedgemore Drive, Charlotte, NC 28209

Facility Representative Address

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

ADQM DATA REVIEW
NARRATIVE

Site **BRE: BREVARD**

Project **CAMU GW2H14**

Project Reviewer **Wanda M. Davis**

Sampling Date **October 30, 2014 and November 10-12, 2014**
Analytical Protocol

Laboratory	Analytical Method	Parameter(s)
Eurofins Lancaster	SW846 6010C/6020A/7470A	Metals
Eurofins Lancaster	SW846 8260B SIM	Vinyl Chloride
Eurofins Lancaster	SW8468260B	Volatiles (25 ml purge)/Acrylonitrile
Eurofins Lancaster	SW846 8270D SIM	PAHs
Eurofins Lancaster	SW846 8270D	SVOCs/Library Search: 2,5-Dimethyl furan
Eurofins Lancaster	SW846 8015B	Glycols

Sample Receipt

The following items are noted for this data set:

- All samples were received Eurofins Lancaster Laboratories in satisfactory condition on October 31, and November 12-13, 2014. The cooler temperatures were as follows: 0.6, 0.4, 0.4, 0.3, 0.9, 0.2, 0.2, 0.4, 0.4, 2.2, 0.4, 0.3, and 1.6 degrees C. The ADQM chemist doesn't believe the data to be impacted since the samples were cold but not frozen upon receipt.

- The following sample id discrepancies were noted however the samples were logged in as indicated on the COC:

    - SSP14-SW-07 and SSP14-SW-27 Glycol vials were received empty.
    - GW2H14-R87-S10 metals aliquot was received in a plastic 500 ml container.
    - EB- sample ids were missing (rubbed off) from the sample container.

Data Review

One hundred percent of the electronic data submitted for this project was reviewed via the automated DuPont Data Review (DDR) process. Overall the data is acceptable for use without qualification as reported by Eurofins Laboratories, with the exception of the nine metals and three hardness results flagged "B" due to equipment or method blank contamination. 2, 5-Dimethylfuran (Targeted TIC) was not detected and therefore was flagged "UJ", estimated. One Mercury, 7470A, and three Silver, 6010C, non-detect results were flagged "UJ", estimated, due to low Relative Percent Recovery, RPR, between the MS/MSD. Results detected between the method detection limit (MDL) and practical quantitation limit (PQL) were qualified "J" estimated. The DuPont Data Review (DDR) Narrative Report, which follows this cover letter, lists the samples that were qualified, the specific reasons for qualification, and potential bias in reported results.

DuPont Data Review (DDR)

The DDR is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software (Locus EIM™ database Data Validation Module (DVM)) and manual reviewer evaluations. The data is evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike(MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample(LCS)/control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference / percent difference between total and dissolved sample pairs.

The DDR applies the following data evaluation qualifiers to analysis results, as warranted:

Qualifier	Definition
B	Not detected substantially above the level reported in the laboratory or field blanks.
R	Unusable result. Analyte may or may not be present in the sample.
J	Analyte present. Reported value may not be accurate or precise.
UJ	Not detected. Reporting limit may not be accurate or precise.

Please refer to the laboratory report for a description of the lab qualifiers.

DVM Narrative Report

Site: Brevard **Sampling Program:** GW2H14 CAMU **Validation Options:** LABSTATS

Validation Reason Code: Contamination detected in equipment blank(s). Sample result does not differ significantly from the analyte concentration detected in the associated equipment blank(s).

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
GW2H14-SW-5	10/30/2014	7658013	Total Hardness As CaCO3	8.6	MG/L	MDL	0.033	0.40	B	2340 B-1997		
GW2H14-SW-5	10/30/2014	7658013	Calcium	2.67	MG/L	MDL	0.0334	0.400	B	6010C		3010A
GW2H14-SW-6	10/30/2014	7658000	Total Hardness As CaCO3	4.3	MG/L	MDL	0.033	0.40	B	2340 B-1997		
GW2H14-SW-6	10/30/2014	7658000	Calcium	1.08	MG/L	MDL	0.0334	0.400	B	6010C		3010A
GW2H14-SW-6-D	10/30/2014	7658011	Total Hardness As CaCO3	6.8	MG/L	MDL	0.033	0.40	B	2340 B-1997		
GW2H14-SW-6-D	10/30/2014	7658011	Calcium	2.06	MG/L	MDL	0.0334	0.400	B	6010C		3010A

Site: Brevard **Sampling Program:** GW2H14 CAMU **Validation Options:** LABSTATS

Validation Reason Code: Contamination detected in Method Blank(s). Sample result does not differ significantly from the analyte concentration detected in the associated method blank(s).

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
GW2H14-SW-5	10/30/2014	7658013	Zinc	0.0029	MG/L	MDL	0.0020	0.0400	B	6010C		3010A
GW2H14-SW-5-Z	10/30/2014	7658014	Zinc	0.0044	MG/L	MDL	0.0020	0.0400	B	6010C		3010A
GW2H14-MW-107B	11/11/2014	7672669	Barium	0.00088	MG/L	MDL	0.00033	0.0100	B	6010C		3010A
GW2H14-SW-6	10/30/2014	7658000	Zinc	0.0043	MG/L	MDL	0.0020	0.0400	B	6010C		3010A
GW2H14-SW-6-D	10/30/2014	7658011	Zinc	0.0030	MG/L	MDL	0.0020	0.0400	B	6010C		3010A
GW2H14-SW-6-Z	10/30/2014	7658004	Zinc	0.0040	MG/L	MDL	0.0020	0.0400	B	6010C		3010A

Site: Brevard **Sampling Program:** GW2H14 CAMU **Validation Options:** LABSTATS

Validation Reason Code: Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EB-GW-111214	11/12/2014	7674180	Mercury	0.000060	MG/L	MDL	0.000060	0.00020	UJ	7470A		7470A
GW2H14-SW-6	10/30/2014	7658000	Silver	0.0018	MG/L	MDL	0.0018	0.0100	UJ	6010C		3010A
GW2H14-SW-6-D	10/30/2014	7658011	Silver	0.0018	MG/L	MDL	0.0018	0.0100	UJ	6010C		3010A
GW2H14-SW-5	10/30/2014	7658013	Silver	0.0018	MG/L	MDL	0.0018	0.0100	UJ	6010C		3010A

Site: Brevard **Sampling Program:** GW2H14 CAMU **Validation Options:** LABSTATS

Validation Reason Code: This is a targeted tentatively identified compound; it should be considered an estimated value.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
GW2H14-MW-107B	11/11/2014	7672669	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C
GW2H14-MW-213	11/12/2014	7674176	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C
GW2H14-MW-216A	11/10/2014	7672661	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D SIM		3510C
EB-GW-111214	11/12/2014	7674180	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C
GW2H14-MW-106A	11/10/2014	7672665	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D SIM		3510C
GW2H14-SW-6	10/30/2014	7658000	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D SIM		3510C
GW2H14-SW-6-D	10/30/2014	7658011	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D SIM		3510C
GW2H14-SW-5	10/30/2014	7658013	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D SIM		3510C
GW2H14-MW-216B	11/10/2014	7672663	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D SIM		3510C
GW2H14-R87-S10	11/11/2014	7674167	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C
GW2H14-R87-S10-D	11/11/2014	7674174	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C
GW2H14-R87-S8	11/12/2014	7674163	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C
GW2H14-MW-107A	11/11/2014	7672667	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C
GW2H14-R87-S9	11/12/2014	7674165	2,5-Dimethylfuran (Targeted TIC)	ND	UG/L	MDL		0	UJ	8270D		3510C

Site: Brevard **Sampling Program:** GW2H14 CAMU **Validation Options:** LABSTATS

Validation Reason Code: The result is estimated since the concentration is between the method detection limit and practical quantitation limit.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
GW2H14-R87-S9	11/12/2014	7674165	Lead	0.00062	MG/L	MDL	0.000082	0.0020	J	6020A		3010A MOD.
GW2H14-R87-S8	11/12/2014	7674163	1,4-Dioxane	2	UG/L	MDL	1	5	J	8270D		3510C
GW2H14-SW-5	10/30/2014	7658013	Barium	0.0080	MG/L	MDL	0.00033	0.0100	J	6010C		3010A
GW2H14-SW-5	10/30/2014	7658013	Lead	0.00019	MG/L	MDL	0.000082	0.0020	J	6020A		3010A MOD.
GW2H14-SW-5-Z	10/30/2014	7658014	Iron	0.268	MG/L	MDL	0.0334	0.400	J	6010C		3010A
GW2H14-SW-5-Z	10/30/2014	7658014	Barium	0.0055	MG/L	MDL	0.00033	0.0100	J	6010C		3010A
GW2H14-SW-6-D	10/30/2014	7658011	Barium	0.0060	MG/L	MDL	0.00033	0.0100	J	6010C		3010A
GW2H14-SW-6-D	10/30/2014	7658011	Iron	0.310	MG/L	MDL	0.0334	0.400	J	6010C		3010A
GW2H14-SW-6-Z	10/30/2014	7658004	Iron	0.206	MG/L	MDL	0.0334	0.400	J	6010C		3010A
GW2H14-SW-6-Z	10/30/2014	7658004	Barium	0.0053	MG/L	MDL	0.00033	0.0100	J	6010C		3010A
GW2H14-SW-6	10/30/2014	7658000	Barium	0.0056	MG/L	MDL	0.00033	0.0100	J	6010C		3010A
GW2H14-SW-6	10/30/2014	7658000	Iron	0.299	MG/L	MDL	0.0334	0.400	J	6010C		3010A
GW2H14-MW-107A	11/11/2014	7672667	Toluene	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-107A	11/11/2014	7672667	1,4-Dioxane	3	UG/L	MDL	1	6	J	8270D		3510C
GW2H14-MW-107A	11/11/2014	7672667	cis-1,2 Dichloroethene	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-107A	11/11/2014	7672667	Chromium	0.0015	MG/L	MDL	0.0013	0.0300	J	6010C		3010A
GW2H14-MW-107A	11/11/2014	7672667	Zinc	0.0022	MG/L	MDL	0.0020	0.0400	J	6010C		3010A
GW2H14-MW-107A	11/11/2014	7672667	Ethyl Chloride	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-107A	11/11/2014	7672667	1,1-Dichloroethane	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-107A	11/11/2014	7672667	Fluorene	0.012	UG/L	MDL	0.011	0.056	J	8270D SIM		3510C
GW2H14-MW-106A	11/10/2014	7672665	1,4-Dichlorobenzene	0.1	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-106A	11/10/2014	7672665	Phenol	0.7	UG/L	MDL	0.5	1	J	8270D		3510C
GW2H14-MW-106A	11/10/2014	7672665	1,4-Dioxane	3	UG/L	MDL	1	5	J	8270D		3510C

Site: Brevard **Sampling Program:** GW2H14 CAMU **Validation Options:** LABSTATS

Validation Reason Code: The result is estimated since the concentration is between the method detection limit and practical quantitation limit.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
GW2H14-MW-106A	11/10/2014	7672665	cis-1,2 Dichloroethene	0.3	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-106A	11/10/2014	7672665	Benzene	0.3	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-106A	11/10/2014	7672665	Chromium	0.0016	MG/L	MDL	0.0013	0.0300	J	6010C		3010A
GW2H14-MW-106A	11/10/2014	7672665	1,1-Dichloroethane	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-216B	11/10/2014	7672663	1,4-Dioxane	1	UG/L	MDL	1	5	J	8270D		3510C
GW2H14-MW-216B	11/10/2014	7672663	Barium	0.0046	MG/L	MDL	0.00033	0.0100	J	6010C		3010A
GW2H14-MW-216B	11/10/2014	7672663	Vinyl Chloride	0.012	UG/L	MDL	0.010	0.050	J	8260B SIM		5030B
GW2H14-MW-216B	11/10/2014	7672663	1,1-Dichloroethene	0.3	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-216B	11/10/2014	7672663	Phenanthrene	0.033	UG/L	MDL	0.030	0.061	J	8270D SIM		3510C
GW2H14-MW-216B	11/10/2014	7672663	Fluorene	0.029	UG/L	MDL	0.010	0.051	J	8270D SIM		3510C
GW2H14-MW-216A	11/10/2014	7672661	Tetrachloroethene	0.4	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-216A	11/10/2014	7672661	Lead	0.00014	MG/L	MDL	0.000082	0.0020	J	6020A		3010A MOD.
GW2H14-MW-216A	11/10/2014	7672661	Thallium	0.00016	MG/L	MDL	0.00015	0.0010	J	6020A		3010A MOD.
GW2H14-MW-216A	11/10/2014	7672661	Beryllium	0.00082	MG/L	MDL	0.00067	0.0100	J	6010C		3010A
GW2H14-MW-216A	11/10/2014	7672661	1,1-Dichloroethene	0.3	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-213	11/12/2014	7674176	1,4-Dioxane	3	UG/L	MDL	1	6	J	8270D		3510C
GW2H14-MW-213	11/12/2014	7674176	Barium	0.0061	MG/L	MDL	0.00033	0.0100	J	6010C		3010A
GW2H14-MW-213	11/12/2014	7674176	Beryllium	0.0012	MG/L	MDL	0.00067	0.0100	J	6010C		3010A
GW2H14-MW-107B	11/11/2014	7672669	1,1-Dichloroethane	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-107B	11/11/2014	7672669	1,1-Dichloroethene	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B
GW2H14-MW-107B	11/11/2014	7672669	Trichlorofluoromethane	0.2	UG/L	MDL	0.1	0.5	J	8260B		5030B

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

November 12, 2014

Project: BRE - CAMU GWM

Submittal Date: 10/31/2014
Group Number: 1515243
PO Number: LBIO-67047
State of Sample Origin: NC

Client Sample Description	Lancaster Labs (LL) #
GW2H14-SW-6 Surface Water	7658000
GW2H14-SW-6 MS Surface Water	7658001
GW2H14-SW-6 MSD Surface Water	7658002
GW2H14-SW-6 Dupl Surface Water	7658003
GW2H14-SW-6-Z Filtered Surface Water	7658004
GW2H14-SW-6-A Surface Water	7658008
GW2H14-SW-6-A MS Surface Water	7658009
GW2H14-SW-6-A MSD Surface Water	7658010
GW2H14-SW-6-D Surface Water	7658011
GW2H14-SW-6-D-A Surface Water	7658012
GW2H14-SW-5 Surface Water	7658013
GW2H14-SW-5-Z Filtered Surface Water	7658014
GW2H14-SW-5-A Surface Water	7658015
TB-103014-3 Blank Water	7658016
TB-103014-A-3 Blank Water	7658017
TB-103014 Blank Water	7658018
TB-103014-A Blank Water	7658019
EB-103014 Blank Water	7658020
EB-103014-A Blank Water	7658021

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

Respectfully Submitted,

Nancy Jean Bornholm
Principal Specialist

(717) 556-7250

eurofins
Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-SW-6 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658000
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1

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

Sample Description: GW2H14-SW-6 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658000
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		ug/l		ug/l	ug/l	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/l		ug/l	ug/l	
12971	Acenaphthene	83-32-9	0.010	U	0.010	0.051	1
12971	Acenaphthylene	208-96-8	0.010	U	0.010	0.051	1
12971	Anthracene	120-12-7	0.010	U	0.010	0.051	1
12971	Benzo(a)anthracene	56-55-3	0.010	U	0.010	0.051	1
12971	Benzo(a)pyrene	50-32-8	0.010	U	0.010	0.051	1
12971	Benzo(b)fluoranthene	205-99-2	0.010	U	0.010	0.051	1
12971	Benzo(g,h,i)perylene	191-24-2	0.010	U	0.010	0.051	1
12971	Benzo(k)fluoranthene	207-08-9	0.010	U	0.010	0.051	1
12971	Chrysene	218-01-9	0.010	U	0.010	0.051	1
12971	Dibenz(a,h)anthracene	53-70-3	0.010	U	0.010	0.051	1
12971	Fluoranthene	206-44-0	0.010	U	0.010	0.051	1
12971	Fluorene	86-73-7	0.010	U	0.010	0.051	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.010	U	0.010	0.051	1
12971	2-Methylnaphthalene	91-57-6	0.010	U	0.010	0.051	1
12971	Naphthalene	91-20-3	0.030	U	0.030	0.061	1
12971	Phenanthrene	85-01-8	0.030	U	0.030	0.061	1
12971	Pyrene	129-00-0	0.010	U	0.010	0.051	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		mg/l		mg/l	mg/l	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1

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

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-SW-6 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658000
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SM 2340 B-1997**		**mg/l**		**mg/l**	**mg/l**	
06256	Total Hardness as CaCO3	471-34-1	4.3		0.033	0.40	1
	SW-846 6010C		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0056	J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
01750	Calcium	7440-70-2	1.08		0.0334	0.400	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.299	J	0.0334	0.400	1
01757	Magnesium	7439-95-4	0.393		0.0167	0.200	1
07058	Manganese	7439-96-5	0.0263		0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024	U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0043	J	0.0020	0.0400	1
	SW-846 6020A		**mg/l**		**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033	U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082	U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017	U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082	U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015	U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**		**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060	U	0.000060	0.00020	1
Wet Chemistry	**SM 2540 D-1997**		**mg/l**		**mg/l**	**mg/l**	
10457	Total Suspended Solids	n.a.	1.00	U	1.00	3.00	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

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

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-SW-6 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658000
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 03:08	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/03/2014 22:01	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/03/2014 22:01	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014 03:08	Kevin A Sposito	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14309WAI026	11/07/2014 14:31	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14309WAJ026	11/06/2014 20:38	Catherine E Bachman	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14309WAJ026	11/05/2014 22:20	Karen L Beyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014 22:20	Karen L Beyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014 01:27	Tyler O Griffin	1
06256	Total Hardness as CaCO3	SM 2340 B-1997	1	143096256010	11/05/2014 07:45	Jennifer L Moyer	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
01750	Calcium	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
01757	Magnesium	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 16:09	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014 08:04	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014 08:04	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014 08:04	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014 08:04	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014 08:04	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014 06:44	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014 08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014 08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014 10:25	Micaela L Dishong	1
10457	Total Suspended Solids	SM 2540 D-1997	1	14309145702A	11/05/2014 07:40	Noah M Rainbow	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
4SW-6

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 7658000
Sample wt/vol: 247 (g/mL) mL Lab File ID: dk0284.d
Level: (low/med) LOW Date Received: 10/31/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/05/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/07/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		2,5-Dimethyl Furan		0	U
2.					
3.					
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30.					

page 1 of 1

FORM I SV-1

Sample Description: GW2H14-SW-6 MS Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658001
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l	ug/l	ug/l	
02898	Acetone	67-64-1	36	3.0	5.0	1
02898	Acetonitrile	75-05-8	31	7.0	20	1
02898	Allyl Chloride	107-05-1	5.2	0.1	0.5	1
02898	Benzene	71-43-2	5.5	0.1	0.5	1
02898	Bromochloromethane	74-97-5	5.5	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	5.4	0.1	0.5	1
02898	Bromoform	75-25-2	5.5	0.1	0.5	1
02898	Bromomethane	74-83-9	4.6	0.1	0.5	1
02898	2-Butanone	78-93-3	37	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	5.6	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	5.9	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	5.6	0.1	0.5	1
02898	Chlorobenzene	108-90-7	5.6	0.1	0.5	1
02898	Chloroethane	75-00-3	4.6	0.1	0.5	1
02898	Chloroform	67-66-3	5.6	0.1	0.5	1
02898	Chloromethane	74-87-3	4.6	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	5.1	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	5.6	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	5.6	0.1	0.5	1
02898	Dibromomethane	74-95-3	5.6	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	17	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	5.4	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	5.4	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	5.4	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	5.3	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	5.4	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	5.6	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	5.8	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	5.4	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	5.7	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	5.4	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	5.2	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	5.5	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	5.4	0.1	0.5	1
02898	Ethylbenzene	100-41-4	5.6	0.1	0.5	1
02898	2-Hexanone	591-78-6	27	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	130	10	25	1
02898	Methacrylonitrile	126-98-7	39	1.0	5.0	1
02898	Methyl Iodide	74-88-4	5.2	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	5.0	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	26	1.0	5.0	1
02898	Methylene Chloride	75-09-2	5.5	0.2	0.5	1
02898	Pentachloroethane	76-01-7	5.5	0.2	0.5	1
02898	Propionitrile	107-12-0	38	2.0	10	1
02898	Styrene	100-42-5	6.0	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	5.6	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	5.4	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	5.6	0.1	0.5	1
02898	Toluene	108-88-3	5.6	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	5.6	0.1	0.5	1

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

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Analysis Report

Sample Description: GW2H14-SW-6 MS Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658001
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
02898	1,1,2-Trichloroethane	79-00-5	5.7	0.1	0.5	1
02898	Trichloroethene	79-01-6	5.6	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	5.0	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	5.7	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	15	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	18	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**	**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.56	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	55	0.5	1	1
10461	Dibenzofuran	132-64-9	57	0.5	1	1
10461	1,4-Dioxane	123-91-1	33	1	5	1
10461	Diphenyl ether	101-84-8	55	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	42	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	52	0.1	0.5	1
10461	Phenol	108-95-2	24	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**	**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	1.2	0.010	0.051	1
12971	Acenaphthylene	208-96-8	1.1	0.010	0.051	1
12971	Anthracene	120-12-7	1.2	0.010	0.051	1
12971	Benzo(a)anthracene	56-55-3	1.1	0.010	0.051	1
12971	Benzo(a)pyrene	50-32-8	1.1	0.010	0.051	1
12971	Benzo(b)fluoranthene	205-99-2	1.1	0.010	0.051	1
12971	Benzo(g,h,i)perylene	191-24-2	0.78	0.010	0.051	1
12971	Benzo(k)fluoranthene	207-08-9	1.1	0.010	0.051	1
12971	Chrysene	218-01-9	1.1	0.010	0.051	1
12971	Dibenz(a,h)anthracene	53-70-3	0.73	0.010	0.051	1
12971	Fluoranthene	206-44-0	1.1	0.010	0.051	1
12971	Fluorene	86-73-7	1.1	0.010	0.051	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.75	0.010	0.051	1
12971	2-Methylnaphthalene	91-57-6	1.0	0.010	0.051	1
12971	Naphthalene	91-20-3	1.1	0.030	0.061	1
12971	Phenanthrene	85-01-8	1.1	0.030	0.061	1
12971	Pyrene	129-00-0	1.2	0.010	0.051	1
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**	**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	190	8.0	10	1
12926	Ethylene glycol	107-21-1	200	8.0	10	1
12926	Propylene glycol	57-55-6	200	8.0	10	1
12926	Triethylene glycol	112-27-6	170	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	1.99	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.0489	0.00067	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-SW-6 MS Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658001
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07051	Chromium	7440-47-3	0.202	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.508	0.0010	0.0100	1
07053	Copper	7440-50-8	0.243	0.0028	0.0200	1
01754	Iron	7439-89-6	1.29	0.0334	0.400	1
07058	Manganese	7439-96-5	0.512	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.515	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.147	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0366	0.0018	0.0100	1
07069	Tin	7440-31-5	3.96	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.481	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.492	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.0058	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.0098	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.0051	0.00017	0.0010	1
06035	Lead	7439-92-1	0.0148	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.0020	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.00092	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 03:30	Kevin A Sposito	1
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 04:16	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/03/2014 22:22	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/03/2014 22:22	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014 03:30	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	3	C143082AA	11/05/2014 04:16	Kevin A Sposito	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14309WAI026	11/07/2014 14:58	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14309WAJ026	11/06/2014 21:05	Catherine E Bachman	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14309WAJ026	11/05/2014 22:20	Karen L Beyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014 22:20	Karen L Beyer	1

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

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Analysis Report

Sample Description: GW2H14-SW-6 MS Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658001
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014	01:42	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014	16:21	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:09	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:09	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:09	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:09	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:09	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	06:49	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1

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

Sample Description: GW2H14-SW-6 MSD Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658002
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l	ug/l	ug/l	
02898	Acetone	67-64-1	38	3.0	5.0	1
02898	Acetonitrile	75-05-8	30	7.0	20	1
02898	Allyl Chloride	107-05-1	5.3	0.1	0.5	1
02898	Benzene	71-43-2	5.4	0.1	0.5	1
02898	Bromochloromethane	74-97-5	5.5	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	5.3	0.1	0.5	1
02898	Bromoform	75-25-2	5.3	0.1	0.5	1
02898	Bromomethane	74-83-9	4.6	0.1	0.5	1
02898	2-Butanone	78-93-3	39	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	5.6	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	5.8	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	5.6	0.1	0.5	1
02898	Chlorobenzene	108-90-7	5.5	0.1	0.5	1
02898	Chloroethane	75-00-3	4.5	0.1	0.5	1
02898	Chloroform	67-66-3	5.5	0.1	0.5	1
02898	Chloromethane	74-87-3	4.7	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	5.5	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	5.4	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	5.5	0.1	0.5	1
02898	Dibromomethane	74-95-3	5.4	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	19	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	5.4	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	5.4	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	5.4	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	5.2	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	5.3	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	5.5	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	5.7	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	5.4	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	5.5	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	5.3	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	5.2	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	5.4	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	5.4	0.1	0.5	1
02898	Ethylbenzene	100-41-4	5.5	0.1	0.5	1
02898	2-Hexanone	591-78-6	27	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	130	10	25	1
02898	Methacrylonitrile	126-98-7	43	1.0	5.0	1
02898	Methyl Iodide	74-88-4	5.2	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	5.6	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	26	1.0	5.0	1
02898	Methylene Chloride	75-09-2	5.4	0.2	0.5	1
02898	Pentachloroethane	76-01-7	5.5	0.2	0.5	1
02898	Propionitrile	107-12-0	40	2.0	10	1
02898	Styrene	100-42-5	5.9	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	5.6	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	5.5	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	5.5	0.1	0.5	1
02898	Toluene	108-88-3	5.5	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	5.4	0.1	0.5	1

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

Sample Description: GW2H14-SW-6 MSD Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658002
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
02898	1,1,2-Trichloroethane	79-00-5	5.4	0.1	0.5	1
02898	Trichloroethene	79-01-6	5.5	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	5.0	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	5.6	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	15	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	17	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**	**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.60	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	53	0.5	1	1
10461	Dibenzofuran	132-64-9	54	0.5	1	1
10461	1,4-Dioxane	123-91-1	33	1	5	1
10461	Diphenyl ether	101-84-8	52	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	40	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	50	0.1	0.5	1
10461	Phenol	108-95-2	29	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**	**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	1.2	0.010	0.051	1
12971	Acenaphthylene	208-96-8	1.1	0.010	0.051	1
12971	Anthracene	120-12-7	1.2	0.010	0.051	1
12971	Benzo(a)anthracene	56-55-3	1.2	0.010	0.051	1
12971	Benzo(a)pyrene	50-32-8	1.2	0.010	0.051	1
12971	Benzo(b)fluoranthene	205-99-2	1.3	0.010	0.051	1
12971	Benzo(g,h,i)perylene	191-24-2	1.1	0.010	0.051	1
12971	Benzo(k)fluoranthene	207-08-9	1.3	0.010	0.051	1
12971	Chrysene	218-01-9	1.2	0.010	0.051	1
12971	Dibenz(a,h)anthracene	53-70-3	1.1	0.010	0.051	1
12971	Fluoranthene	206-44-0	1.1	0.010	0.051	1
12971	Fluorene	86-73-7	1.2	0.010	0.051	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	1.1	0.010	0.051	1
12971	2-Methylnaphthalene	91-57-6	1.0	0.010	0.051	1
12971	Naphthalene	91-20-3	1.1	0.030	0.061	1
12971	Phenanthrene	85-01-8	1.1	0.030	0.061	1
12971	Pyrene	129-00-0	1.2	0.010	0.051	1
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**	**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	180	8.0	10	1
12926	Ethylene glycol	107-21-1	190	8.0	10	1
12926	Propylene glycol	57-55-6	190	8.0	10	1
12926	Triethylene glycol	112-27-6	170	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	2.00	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.0494	0.00067	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-SW-6 MSD Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658002
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07051	Chromium	7440-47-3	0.196	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.502	0.0010	0.0100	1
07053	Copper	7440-50-8	0.251	0.0028	0.0200	1
01754	Iron	7439-89-6	1.33	0.0334	0.400	1
07058	Manganese	7439-96-5	0.521	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.511	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.148	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0430	0.0018	0.0100	1
07069	Tin	7440-31-5	4.01	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.504	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.496	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.0056	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.0100	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.0050	0.00017	0.0010	1
06035	Lead	7439-92-1	0.0152	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.0019	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.00090	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014	03:53	Kevin A Sposito	1
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014	04:38	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/03/2014	22:42	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/03/2014	22:42	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014	03:53	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	3	C143082AA	11/05/2014	04:38	Kevin A Sposito	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14309WAI026	11/07/2014	15:25	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14309WAJ026	11/06/2014	21:33	Catherine E Bachman	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14309WAJ026	11/05/2014	22:20	Karen L Beyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014	22:20	Karen L Beyer	1

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

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Analysis Report

Sample Description: GW2H14-SW-6 MSD Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658002
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014 01:56	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 16:24	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014 08:11	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014 08:11	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014 08:11	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014 08:11	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014 08:11	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014 06:51	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014 08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014 08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014 10:25	Micaela L Dishong	1

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

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Analysis Report

Sample Description: GW2H14-SW-6 Dupl Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658003
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SM 2340 B-1997**		mg/l	mg/l	mg/l	
06256	Total Hardness as CaCO3	471-34-1	4.3	0.033	0.40	1
	SW-846 6010C		mg/l	mg/l	mg/l	
07046	Barium	7440-39-3	0.0054 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
01750	Calcium	7440-70-2	1.10	0.0334	0.400	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.292 J	0.0334	0.400	1
01757	Magnesium	7439-95-4	0.378	0.0167	0.200	1
07058	Manganese	7439-96-5	0.0259	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0037 J	0.0020	0.0400	1
	SW-846 6020A		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06256	Total Hardness as CaCO3	SM 2340 B-1997	1	143096256010	11/05/2014 07:45	Jennifer L Moyer	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 16:17	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 16:17	Katlin N Cataldi	1
01750	Calcium	SW-846 6010C	1	143070636001	11/04/2014 16:17	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 16:17	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 16:17	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 16:17	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 16:17	Katlin N Cataldi	1

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

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Analysis Report

Sample Description: GW2H14-SW-6 Dupl Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658003
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-6

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
01757	Magnesium	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014	16:17	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:07	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:07	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:07	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:07	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:07	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	06:47	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1

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

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Analysis Report

Sample Description: GW2H14-SW-6-Z Filtered Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658004
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW6Z

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		mg/l	mg/l	mg/l	
07046	Barium	7440-39-3	0.0053 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.206 J	0.0334	0.400	1
07058	Manganese	7439-96-5	0.0178	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0040 J	0.0020	0.0400	1
	SW-846 6020A		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 17:21	Katlin N Cataldi	1

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

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Analysis Report

Sample Description: GW2H14-SW-6-Z Filtered Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658004
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW6Z

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:45	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:45	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:45	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:45	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:45	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	07:19	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1

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Analysis Report

Sample Description: GW2H14-SW-6-A Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658008
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

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4051 Ogletown Road, Suite 300
Newark DE 19713

4SW6A

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 15:04	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 15:04	Sarah A Guill	1

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Analysis Report

Sample Description: GW2H14-SW-6-A MS Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658009
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

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URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW6A

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acrolein	107-02-8	160	40	100	1
10335	Acrylonitrile	107-13-1	73	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 15:27	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 15:27	Sarah A Guill	1

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Analysis Report

Sample Description: GW2H14-SW-6-A MSD Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658010
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

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Newark DE 19713

4SW6A

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acrolein	107-02-8	160	40	100	1
10335	Acrylonitrile	107-13-1	75	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 15:51	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 15:51	Sarah A Guill	1

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

Sample Description: GW2H14-SW-6-D Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658011
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

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Newark DE 19713

4S-6D

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1

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

Sample Description: GW2H14-SW-6-D Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658011
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

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4S-6D

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		ug/l		ug/l	ug/l	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/l		ug/l	ug/l	
12971	Acenaphthene	83-32-9	0.010	U	0.010	0.050	1
12971	Acenaphthylene	208-96-8	0.010	U	0.010	0.050	1
12971	Anthracene	120-12-7	0.010	U	0.010	0.050	1
12971	Benzo(a)anthracene	56-55-3	0.010	U	0.010	0.050	1
12971	Benzo(a)pyrene	50-32-8	0.010	U	0.010	0.050	1
12971	Benzo(b)fluoranthene	205-99-2	0.010	U	0.010	0.050	1
12971	Benzo(g,h,i)perylene	191-24-2	0.010	U	0.010	0.050	1
12971	Benzo(k)fluoranthene	207-08-9	0.010	U	0.010	0.050	1
12971	Chrysene	218-01-9	0.010	U	0.010	0.050	1
12971	Dibenz(a,h)anthracene	53-70-3	0.010	U	0.010	0.050	1
12971	Fluoranthene	206-44-0	0.010	U	0.010	0.050	1
12971	Fluorene	86-73-7	0.010	U	0.010	0.050	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.010	U	0.010	0.050	1
12971	2-Methylnaphthalene	91-57-6	0.010	U	0.010	0.050	1
12971	Naphthalene	91-20-3	0.030	U	0.030	0.060	1
12971	Phenanthrene	85-01-8	0.030	U	0.030	0.060	1
12971	Pyrene	129-00-0	0.010	U	0.010	0.050	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		mg/l		mg/l	mg/l	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1

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

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Analysis Report

Sample Description: GW2H14-SW-6-D Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658011
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
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Newark DE 19713

4S-6D

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**	**mg/l**	**mg/l**	
12926	Triethylene glycol	112-27-6	8.0 U	8.0	10	1
Metals	**SM 2340 B-1997**		**mg/l**	**mg/l**	**mg/l**	
06256	Total Hardness as CaCO3	471-34-1	6.8	0.033	0.40	1
	SW-846 6010C		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0060 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
01750	Calcium	7440-70-2	2.06	0.0334	0.400	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.310 J	0.0334	0.400	1
01757	Magnesium	7439-95-4	0.404	0.0167	0.200	1
07058	Manganese	7439-96-5	0.0269	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0030 J	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 07:15	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/04/2014 01:24	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/04/2014 01:24	Sara E Johnson	1

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

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Analysis Report

Sample Description: GW2H14-SW-6-D Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658011
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4S-6D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014	07:15	Kevin A Sposito	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14309WAI026	11/07/2014	19:02	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14309WAJ026	11/06/2014	23:50	Catherine E Bachman	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14309WAJ026	11/05/2014	22:20	Karen L Beyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014	22:20	Karen L Beyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014	00:42	Tyler O Griffin	1
06256	Total Hardness as CaCO3	SM 2340 B-1997	1	143106256011	11/06/2014	11:30	Jennifer L Moyer	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
01750	Calcium	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
01757	Magnesium	SW-846 6010C	1	143070636001	11/05/2014	17:33	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014	17:32	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:46	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:46	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:46	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:46	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:46	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	07:25	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
4S-6D

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 7658011
Sample wt/vol: 248 (g/mL) mL Lab File ID: dk0294.d
Level: (low/med) LOW Date Received: 10/31/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/05/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/07/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl Furan		0	U
2.				
3.				
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30.				

page 1 of 1

FORM I SV-1

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-SW-6-D-A Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658012
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4S6DA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 14:17	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 14:17	Sarah A Guill	1

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

Sample Description: GW2H14-SW-5 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658013
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-5

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1

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

Sample Description: GW2H14-SW-5 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658013
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-5

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		ug/l		ug/l	ug/l	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/l		ug/l	ug/l	
12971	Acenaphthene	83-32-9	0.010	U	0.010	0.051	1
12971	Acenaphthylene	208-96-8	0.010	U	0.010	0.051	1
12971	Anthracene	120-12-7	0.010	U	0.010	0.051	1
12971	Benzo(a)anthracene	56-55-3	0.010	U	0.010	0.051	1
12971	Benzo(a)pyrene	50-32-8	0.010	U	0.010	0.051	1
12971	Benzo(b)fluoranthene	205-99-2	0.010	U	0.010	0.051	1
12971	Benzo(g,h,i)perylene	191-24-2	0.010	U	0.010	0.051	1
12971	Benzo(k)fluoranthene	207-08-9	0.010	U	0.010	0.051	1
12971	Chrysene	218-01-9	0.010	U	0.010	0.051	1
12971	Dibenz(a,h)anthracene	53-70-3	0.010	U	0.010	0.051	1
12971	Fluoranthene	206-44-0	0.010	U	0.010	0.051	1
12971	Fluorene	86-73-7	0.010	U	0.010	0.051	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.010	U	0.010	0.051	1
12971	2-Methylnaphthalene	91-57-6	0.010	U	0.010	0.051	1
12971	Naphthalene	91-20-3	0.030	U	0.030	0.061	1
12971	Phenanthrene	85-01-8	0.030	U	0.030	0.061	1
12971	Pyrene	129-00-0	0.010	U	0.010	0.051	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		mg/l		mg/l	mg/l	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1

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

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Lancaster Laboratories Environmental
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Analysis Report

Sample Description: GW2H14-SW-5 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658013
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**	**mg/l**	**mg/l**	
12926	Triethylene glycol	112-27-6	8.0 U	8.0	10	1
Metals	**SM 2340 B-1997**		**mg/l**	**mg/l**	**mg/l**	
06256	Total Hardness as CaCO3	471-34-1	8.6	0.033	0.40	1
	SW-846 6010C		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0080 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
01750	Calcium	7440-70-2	2.67	0.0334	0.400	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.653	0.0334	0.400	1
01757	Magnesium	7439-95-4	0.481	0.0167	0.200	1
07058	Manganese	7439-96-5	0.0532	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0029 J	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.00019 J	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1
Wet Chemistry	**SM 2540 D-1997**		**mg/l**	**mg/l**	**mg/l**	
10457	Total Suspended Solids	n.a.	37.6	1.00	3.00	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

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

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-SW-5 Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658013
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW-5

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014	07:38	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/04/2014	01:44	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/04/2014	01:44	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014	07:38	Kevin A Sposito	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14309WAI026	11/07/2014	19:29	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14309WAJ026	11/07/2014	00:18	Catherine E Bachman	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14309WAJ026	11/05/2014	22:20	Karen L Beyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014	22:20	Karen L Beyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014	00:57	Tyler O Griffin	1
06256	Total Hardness as CaCO3	SM 2340 B-1997	1	143156256010	11/11/2014	06:00	Jennifer L Moyer	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
01750	Calcium	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
01757	Magnesium	SW-846 6010C	1	143070636001	11/06/2014	11:35	Joanne M Gates	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014	17:36	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:48	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:48	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:48	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:48	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:48	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	07:27	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1
10457	Total Suspended Solids	SM 2540 D-1997	1	14309145702A	11/05/2014	07:40	Noah M Rainbow	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
4SW-5

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7658013
Sample wt/vol: 246 (g/mL) mL Lab File ID: dk0295.d
Level: (low/med) LOW Date Received: 10/31/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/05/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/07/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
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30.				

page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-SW-5-Z Filtered Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658014
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW5Z

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		mg/l	mg/l	mg/l	
07046	Barium	7440-39-3	0.0055 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.268 J	0.0334	0.400	1
07058	Manganese	7439-96-5	0.0339	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0044 J	0.0020	0.0400	1
	SW-846 6020A		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014 17:40	Katlin N Cataldi	1

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

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Analysis Report

Sample Description: GW2H14-SW-5-Z Filtered Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658014
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW5Z

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:50	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:50	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:50	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:50	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:50	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	07:29	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1

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

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Analysis Report

Sample Description: GW2H14-SW-5-A Surface Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658015
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4SW5A

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 14:40	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 14:40	Sarah A Guill	1

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

Sample Description: TB-103014-3 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658016
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4STB3

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1

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

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Analysis Report

Sample Description: TB-103014-3 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658016
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4STB3

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 00:52	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/03/2014 21:01	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/03/2014 21:01	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014 00:52	Kevin A Sposito	1

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

eurofins
Lancaster Laboratories Environmental
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Analysis Report

Sample Description: TB-103014-A-3 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658017
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 09:30 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4TB3A

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 17:25	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 17:25	Sarah A Guill	1

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

Sample Description: TB-103014 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658018
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4-TB-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1

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

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Analysis Report

Sample Description: TB-103014 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658018
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4-TB-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 01:15	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/03/2014 21:21	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/03/2014 21:21	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014 01:15	Kevin A Sposito	1

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

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Analysis Report

Sample Description: TB-103014-A Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658019
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 10:35 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4-TBA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 17:49	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 17:49	Sarah A Guill	1

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

Sample Description: EB-103014 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658020
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 11:45 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4-EB-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Acetonitrile	75-05-8	7.0	U	7.0	20	1
02898	Allyl Chloride	107-05-1	0.1	U	0.1	0.5	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	2-Chloro-1,3-butadiene	126-99-8	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethyl Methacrylate	97-63-2	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Isobutyl Alcohol	78-83-1	10	U	10	25	1
02898	Methacrylonitrile	126-98-7	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	Methyl Methacrylate	80-62-6	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Pentachloroethane	76-01-7	0.2	U	0.2	0.5	1
02898	Propionitrile	107-12-0	2.0	U	2.0	10	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1

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

Sample Description: EB-103014 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658020
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 11:45 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

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CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.010	U	0.010	0.051	1
12971	Acenaphthylene	208-96-8	0.010	U	0.010	0.051	1
12971	Anthracene	120-12-7	0.010	U	0.010	0.051	1
12971	Benzo(a)anthracene	56-55-3	0.010	U	0.010	0.051	1
12971	Benzo(a)pyrene	50-32-8	0.010	U	0.010	0.051	1
12971	Benzo(b)fluoranthene	205-99-2	0.010	U	0.010	0.051	1
12971	Benzo(g,h,i)perylene	191-24-2	0.010	U	0.010	0.051	1
12971	Benzo(k)fluoranthene	207-08-9	0.010	U	0.010	0.051	1
12971	Chrysene	218-01-9	0.010	U	0.010	0.051	1
12971	Dibenz(a,h)anthracene	53-70-3	0.010	U	0.010	0.051	1
12971	Fluoranthene	206-44-0	0.010	U	0.010	0.051	1
12971	Fluorene	86-73-7	0.010	U	0.010	0.051	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.010	U	0.010	0.051	1
12971	2-Methylnaphthalene	91-57-6	0.010	U	0.010	0.051	1
12971	Naphthalene	91-20-3	0.031	U	0.031	0.061	1
12971	Phenanthrene	85-01-8	0.031	U	0.031	0.061	1
12971	Pyrene	129-00-0	0.010	U	0.010	0.051	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1

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

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Analysis Report

Sample Description: EB-103014 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658020
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 11:45 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**	**mg/l**	**mg/l**	
12926	Triethylene glycol	112-27-6	8.0 U	8.0	10	1
Metals	**SM 2340 B-1997**		**mg/l**	**mg/l**	**mg/l**	
06256	Total Hardness as CaCO3	471-34-1	2.2	0.033	0.40	1
	SW-846 6010C		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0011 J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
01750	Calcium	7440-70-2	0.804	0.0334	0.400	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
01754	Iron	7439-89-6	0.0334 U	0.0334	0.400	1
01757	Magnesium	7439-95-4	0.0348 J	0.0167	0.200	1
07058	Manganese	7439-96-5	0.00083 U	0.00083	0.0100	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07069	Tin	7440-31-5	0.0024 U	0.0024	0.0400	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0032 J	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	APPIX Volatiles	SW-846 8260B 25mL purge	1	C143082AA	11/05/2014 01:38	Kevin A Sposito	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143071AA	11/03/2014 21:41	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143071AA	11/03/2014 21:41	Sara E Johnson	1

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

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Analysis Report

Sample Description: EB-103014 Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658020
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 11:45 by ME

Submitted: 10/31/2014 09:25
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URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	2	C143082AA	11/05/2014	01:38	Kevin A Sposito	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14309WAI026	11/07/2014	19:57	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14309WAJ026	11/07/2014	00:45	Catherine E Bachman	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14309WAJ026	11/05/2014	22:20	Karen L Beyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14309WAI026	11/05/2014	22:20	Karen L Beyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143090027A	11/06/2014	01:12	Tyler O Griffin	1
06256	Total Hardness as CaCO3	SM 2340 B-1997	1	143106256011	11/06/2014	11:30	Jennifer L Moyer	1
07046	Barium	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07047	Beryllium	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
01750	Calcium	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07051	Chromium	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07052	Cobalt	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07053	Copper	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
01754	Iron	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
01757	Magnesium	SW-846 6010C	1	143070636001	11/05/2014	17:40	Katlin N Cataldi	1
07058	Manganese	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07061	Nickel	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07036	Selenium	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07066	Silver	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07069	Tin	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07071	Vanadium	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
07072	Zinc	SW-846 6010C	1	143070636001	11/04/2014	17:43	Katlin N Cataldi	1
06024	Antimony	SW-846 6020A	1	143070639001A	11/05/2014	08:52	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143070639001A	11/05/2014	08:52	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143070639001A	11/05/2014	08:52	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143070639001A	11/05/2014	08:52	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143070639001A	11/05/2014	08:52	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143075713001	11/05/2014	07:31	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143070636001	11/04/2014	08:41	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143070639001	11/04/2014	08:58	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143075713001	11/04/2014	10:25	Micaela L Dishong	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
4-EB-

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7658020
Sample wt/vol: 245 (g/mL) mL Lab File ID: dk0296.d
Level: (low/med) LOW Date Received: 10/31/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/05/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/07/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
5.				
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30.				

page 1 of 1

FORM I SV-1

eurofins
Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: EB-103014-A Blank Water
GW2H14 CAMU/SED SW PW

LL Sample # WW 7658021
LL Group # 1515243
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 10/30/2014 11:45 by ME

Submitted: 10/31/2014 09:25
Reported: 11/12/2014 14:10

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

4-EBA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acrolein	107-02-8	40	U	40	100	1
10335	Acrylonitrile	107-13-1	4	U	4	20	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	Acrolein, Acrylonitrile	SW-846 8260B	1	W143061AA	11/02/2014 18:12	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W143061AA	11/02/2014 18:12	Sarah A Guill	1

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

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

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C143082AA	Sample number(s): 7658000-7658002,7658011,7658013,7658016,7658018,7658020									
Acetone	3.0	U	3.0	5.0	ug/l	89		60-139		
Acetonitrile	7.0	U	7.0	20	ug/l	81		50-145		
Allyl Chloride	0.1	U	0.1	0.5	ug/l	96		66-120		
Benzene	0.1	U	0.1	0.5	ug/l	103		80-120		
Bromochloromethane	0.1	U	0.1	0.5	ug/l	100		80-125		
Bromodichloromethane	0.1	U	0.1	0.5	ug/l	100		80-120		
Bromoform	0.1	U	0.1	0.5	ug/l	97		72-138		
Bromomethane	0.1	U	0.1	0.5	ug/l	89		62-126		
2-Butanone	1.0	U	1.0	5.0	ug/l	100		63-137		
Carbon Disulfide	0.4	U	0.4	1.0	ug/l	104		70-128		
Carbon Tetrachloride	0.1	U	0.1	0.5	ug/l	107		80-135		
2-Chloro-1,3-butadiene	0.1	U	0.1	0.5	ug/l	99		78-120		
Chlorobenzene	0.1	U	0.1	0.5	ug/l	107		80-120		
Chloroethane	0.1	U	0.1	0.5	ug/l	93		68-120		
Chloroform	0.1	U	0.1	0.5	ug/l	105		80-120		
Chloromethane	0.2	U	0.2	0.5	ug/l	92		55-120		
1,2-Dibromo-3-chloropropane	0.2	U	0.2	0.5	ug/l	104		64-141		
Dibromochloromethane	0.1	U	0.1	0.5	ug/l	99		80-126		
1,2-Dibromoethane	0.1	U	0.1	0.5	ug/l	104		80-120		
Dibromomethane	0.1	U	0.1	0.5	ug/l	105		80-120		
trans-1,4-Dichloro-2-butene	1.0	U	1.0	5.0	ug/l	31		14-166		
1,2-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	103		80-120		
1,3-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	104		80-120		
1,4-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	104		80-120		
Dichlorodifluoromethane	0.1	U	0.1	0.5	ug/l	99		35-142		
1,1-Dichloroethane	0.1	U	0.1	0.5	ug/l	101		80-120		
1,2-Dichloroethane	0.1	U	0.1	0.5	ug/l	107		76-132		
1,1-Dichloroethene	0.1	U	0.1	0.5	ug/l	107		80-123		
cis-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	100		80-120		
trans-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	106		80-120		
1,2-Dichloropropane	0.1	U	0.1	0.5	ug/l	103		80-120		
cis-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	86		80-120		
trans-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	94		80-120		
Ethyl Methacrylate	0.1	U	0.1	0.5	ug/l	93		70-120		
Ethylbenzene	0.1	U	0.1	0.5	ug/l	103		80-120		
2-Hexanone	1.0	U	1.0	5.0	ug/l	99		72-124		
Isobutyl Alcohol	10	U	10.	25	ug/l	104		73-146		
Methacrylonitrile	1.0	U	1.0	5.0	ug/l	110		59-150		
Methyl Iodide	0.1	U	0.1	0.5	ug/l	101		80-129		
Methyl Methacrylate	0.1	U	0.1	0.5	ug/l	101		56-137		
4-Methyl-2-pentanone	1.0	U	1.0	5.0	ug/l	92		71-123		
Methylene Chloride	0.2	U	0.2	0.5	ug/l	104		80-120		
Pentachloroethane	0.2	U	0.2	0.5	ug/l	100		75-126		

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Propionitrile	2.0	U	2.0	10	ug/l	108		67-143		
Styrene	0.1	U	0.1	0.5	ug/l	110		80-120		
1,1,1,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	104		80-120		
1,1,2,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	109		80-120		
Tetrachloroethene	0.1	U	0.1	0.5	ug/l	102		80-120		
Toluene	0.1	U	0.1	0.5	ug/l	104		80-120		
1,1,1-Trichloroethane	0.1	U	0.1	0.5	ug/l	101		80-120		
1,1,2-Trichloroethane	0.1	U	0.1	0.5	ug/l	106		80-120		
Trichloroethene	0.1	U	0.1	0.5	ug/l	106		80-120		
Trichlorofluoromethane	0.1	U	0.1	0.5	ug/l	89		64-141		
1,2,3-Trichloropropane	0.3	U	0.3	1.0	ug/l	102		80-120		
Vinyl Acetate	0.2	U	0.2	0.5	ug/l	122		38-145		
Xylene (Total)	0.1	U	0.1	0.5	ug/l	107		80-120		
Batch number: E143071AA	Sample number(s): 7658000-7658002,7658011,7658013,7658016,7658018,7658020									
Vinyl Chloride	0.010	U	0.010	0.050	ug/l	102		70-130		
Batch number: W143061AA	Sample number(s): 7658008-7658010,7658012,7658015,7658017,7658019,7658021									
Acrolein	40	U	40.	100	ug/l	96		59-120		
Acrylonitrile	4	U	4.	20	ug/l	75		62-120		
Batch number: 14309WAI026	Sample number(s): 7658000-7658002,7658011,7658013,7658020									
1,1'-Biphenyl	0.5	U	0.5	1	ug/l	100		56-134		
Dibenzofuran	0.5	U	0.5	1	ug/l	103		81-110		
1,4-Dioxane	1	U	1.	5	ug/l	66		39-83		
Diphenyl ether	0.5	U	0.5	1	ug/l	98		77-113		
1,2-Diphenylhydrazine	0.5	U	0.5	1	ug/l	78		74-124		
1-Methylnaphthalene	0.1	U	0.1	0.5	ug/l	95		79-111		
Phenol	0.5	U	0.5	1	ug/l	54		25-80		
Batch number: 14309WAJ026	Sample number(s): 7658000-7658002,7658011,7658013,7658020									
Acenaphthene	0.010	U	0.010	0.050	ug/l	114		82-126		
Acenaphthylene	0.010	U	0.010	0.050	ug/l	79		72-124		
Anthracene	0.010	U	0.010	0.050	ug/l	101		83-125		
Benzo(a)anthracene	0.010	U	0.010	0.050	ug/l	116		79-122		
Benzo(a)pyrene	0.010	U	0.010	0.050	ug/l	101		72-126		
Benzo(b)fluoranthene	0.010	U	0.010	0.050	ug/l	124		79-136		
Benzo(g,h,i)perylene	0.010	U	0.010	0.050	ug/l	93		59-137		
Benzo(k)fluoranthene	0.010	U	0.010	0.050	ug/l	119		72-129		
Chrysene	0.010	U	0.010	0.050	ug/l	115		77-122		
Dibenz(a,h)anthracene	0.010	U	0.010	0.050	ug/l	85		42-143		
Fluoranthene	0.010	U	0.010	0.050	ug/l	104		76-121		
Fluorene	0.010	U	0.010	0.050	ug/l	110		82-119		
Indeno(1,2,3-cd)pyrene	0.010	U	0.010	0.050	ug/l	88		53-136		
2-Methylnaphthalene	0.010	U	0.010	0.050	ug/l	94		68-124		
Naphthalene	0.030	U	0.030	0.060	ug/l	167*		78-117		
Phenanthrene	0.030	U	0.030	0.060	ug/l	104		83-116		
Pyrene	0.010	U	0.010	0.050	ug/l	118		70-124		
Batch number: 143090027A	Sample number(s): 7658000-7658002,7658011,7658013,7658020									
Diethylene glycol	8.0	U	8.0	10	mg/l	97		55-122		
Ethylene glycol	8.0	U	8.0	10	mg/l	96		54-129		
Propylene glycol	8.0	U	8.0	10	mg/l	95		57-137		
Triethylene glycol	8.0	U	8.0	10	mg/l	88		46-118		
Batch number: 143070636001	Sample number(s): 7658000-7658004,7658011,7658013-7658014,7658020									

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Barium	0.00033 U	0.00033	0.0100	mg/l	97		80-120		
Beryllium	0.00067 U	0.00067	0.0100	mg/l	97		80-120		
Calcium	0.0609 J	0.0334	0.400	mg/l	100		80-120		
Chromium	0.0013 U	0.0013	0.0300	mg/l	96		80-120		
Cobalt	0.0010 U	0.0010	0.0100	mg/l	99		80-120		
Copper	0.0028 U	0.0028	0.0200	mg/l	98		80-120		
Iron	0.0334 U	0.0334	0.400	mg/l	100		80-120		
Magnesium	0.0342 J	0.0167	0.200	mg/l	99		80-120		
Manganese	0.00083 U	0.00083	0.0100	mg/l	97		80-120		
Nickel	0.0016 U	0.0016	0.0200	mg/l	101		80-120		
Selenium	0.0048 U	0.0048	0.0400	mg/l	94		80-120		
Silver	0.0018 U	0.0018	0.0100	mg/l	86		80-120		
Tin	0.0024 U	0.0024	0.0400	mg/l	98		80-120		
Vanadium	0.0019 U	0.0019	0.0100	mg/l	99		80-120		
Zinc	0.0038 J	0.0020	0.0400	mg/l	97		80-120		
Batch number: 143070639001A	Sample number(s): 7658000-7658004,7658011,7658013-7658014,7658020								
Antimony	0.00033 U	0.00033	0.0020	mg/l	95		80-120		
Arsenic	0.00082 U	0.00082	0.0040	mg/l	92		80-120		
Cadmium	0.00017 U	0.00017	0.0010	mg/l	98		80-120		
Lead	0.000082 U	0.000082	0.0020	mg/l	97		80-120		
Thallium	0.00015 U	0.00015	0.0010	mg/l	94		80-120		
Batch number: 143075713001	Sample number(s): 7658000-7658004,7658011,7658013-7658014,7658020								
Mercury	0.000060 U	0.000060	0.00020	mg/l	93		80-120		
Batch number: 14309145702A	Sample number(s): 7658000,7658013								
Total Suspended Solids	1.00 U	1.00	3.00	mg/l	96		91-105		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: C143082AA	Sample number(s): 7658000-7658002,7658011,7658013,7658016,7658018,7658020 UNSPK: 7658000								
Acetone	97	100	57-163	4	30				
Acetonitrile	82	79	77-129	4	30				
Allyl Chloride	104	107	61-120	3	30				
Benzene	109	107	87-126	2	30				
Bromochloromethane	109	111	82-125	1	30				
Bromodichloromethane	109	105	82-133	3	30				
Bromoform	109	106	60-138	4	30				
Bromomethane	93	92	66-130	1	30				
2-Butanone	98	104	56-160	6	30				
Carbon Disulfide	112	112	84-141	0	30				
Carbon Tetrachloride	119	117	81-148	2	30				
2-Chloro-1,3-butadiene	113	112	78-128	0	30				
Chlorobenzene	113	111	78-133	2	30				

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Chloroethane	93	90	70-139	3	30				
Chloroform	111	109	86-136	2	30				
Chloromethane	93	94	49-135	1	30				
1,2-Dibromo-3-chloropropane	103	111	53-163	8	30				
Dibromochloromethane	111	109	79-125	2	30				
1,2-Dibromoethane	111	110	84-127	1	30				
Dibromomethane	111	109	83-126	2	30				
trans-1,4-Dichloro-2-butene	69	77	11-172	12	30				
1,2-Dichlorobenzene	108	108	83-117	0	30				
1,3-Dichlorobenzene	108	108	79-132	0	30				
1,4-Dichlorobenzene	107	107	79-120	0	30				
Dichlorodifluoromethane	106	105	28-136	1	30				
1,1-Dichloroethane	107	106	81-126	1	30				
1,2-Dichloroethane	113	110	82-135	3	30				
1,1-Dichloroethene	116	114	86-132	2	30				
cis-1,2-Dichloroethene	109	107	82-129	1	30				
trans-1,2-Dichloroethene	115	111	88-127	3	30				
1,2-Dichloropropane	108	107	91-126	1	30				
cis-1,3-Dichloropropene	104	104	74-132	0	30				
trans-1,3-Dichloropropene	110	109	71-128	1	30				
Ethyl Methacrylate	107	109	73-134	2	30				
Ethylbenzene	112	111	80-140	1	30				
2-Hexanone	108	107	51-149	1	30				
Isobutyl Alcohol	103	108	65-146	4	30				
Methacrylonitrile	103	113	58-155	9	30				
Methyl Iodide	105	104	71-137	1	30				
Methyl Methacrylate	99	111	48-152	11	30				
4-Methyl-2-pentanone	103	103	69-149	0	30				
Methylene Chloride	109	108	77-135	1	30				
Pentachloroethane	109	111	68-145	2	30				
Propionitrile	102	107	63-147	4	30				
Styrene	119	117	71-138	2	30				
1,1,1,2-Tetrachloroethane	112	112	87-126	1	30				
1,1,2,2-Tetrachloroethane	108	111	75-131	3	30				
Tetrachloroethene	112	109	75-129	2	30				
Toluene	113	110	83-127	3	30				
1,1,1-Trichloroethane	111	109	85-140	2	30				
1,1,2-Trichloroethane	115	108	85-129	6	30				
Trichloroethene	113	111	85-131	2	30				
Trichlorofluoromethane	100	100	73-139	0	30				
1,2,3-Trichloropropane	113	111	76-120	2	30				
Vinyl Acetate	123	118	27-162	4	30				
Xylene (Total)	118	115	81-137	3	30				
Batch number: E143071AA	Sample number(s): 7658000-7658002,7658011,7658013,7658016,7658018,7658020 UNSPK: 7658000								
Vinyl Chloride	113	120	70-130	6	30				
Batch number: W143061AA	Sample number(s): 7658008-7658010,7658012,7658015,7658017,7658019,7658021 UNSPK: 7658008								
Acrolein	104	105	39-136	1	30				
Acrylonitrile	73	75	51-125	3	30				

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14309WAI026	Sample number(s): 7658000-7658002,7658011,7658013,7658020 UNSPK: 7658000								
1,1'-Biphenyl	110	105	73-114	5	30				
Dibenzofuran	113	107	71-116	5	30				
1,4-Dioxane	66	66	48-83	1	30				
Diphenyl ether	109*	103	81-105	5	30				
1,2-Diphenylhydrazine	84	79	67-129	6	30				
1-Methylnaphthalene	104	100	78-110	4	30				
Phenol	49	57	10-107	16	30				
Batch number: 14309WAJ026	Sample number(s): 7658000-7658002,7658011,7658013,7658020 UNSPK: 7658000								
Acenaphthene	121	122	69-134	0	30				
Acenaphthylene	107	108	66-132	0	30				
Anthracene	115	118	64-129	2	30				
Benzo(a)anthracene	113	120	37-135	6	30				
Benzo(a)pyrene	106	123	32-137	15	30				
Benzo(b)fluoranthene	111	125	41-137	12	30				
Benzo(g,h,i)perylene	77	108	21-127	34*	30				
Benzo(k)fluoranthene	111	130	36-139	16	30				
Chrysene	113	122	51-129	8	30				
Dibenz(a,h)anthracene	72	105	17-134	37*	30				
Fluoranthene	109	112	53-133	3	30				
Fluorene	112	114	59-137	2	30				
Indeno(1,2,3-cd)pyrene	74	105	26-130	35*	30				
2-Methylnaphthalene	103	102	64-129	1	30				
Naphthalene	112	111	58-131	1	30				
Phenanthrene	111	112	66-126	1	30				
Pyrene	119	121	49-136	2	30				
Batch number: 143090027A	Sample number(s): 7658000-7658002,7658011,7658013,7658020 UNSPK: 7658000								
Diethylene glycol	93	90	52-122	4	20				
Ethylene glycol	96	92	54-123	4	20				
Propylene glycol	97	92	55-131	6	20				
Triethylene glycol	83	82	33-123	1	20				
Batch number: 143070636001	Sample number(s): 7658000-7658004,7658011,7658013-7658014,7658020 UNSPK: 7658000 BKG: 7658000								
Barium	99	100	75-125	0	20	0.0056 J	0.0054 J	3 (1)	20
Beryllium	98	99	75-125	1	20	0.00067 U	0.00067 U	0 (1)	20
Calcium	96	99	75-125	2	20	1.08	1.10	2 (1)	20
Chromium	101	98	75-125	3	20	0.0013 U	0.0013 U	0 (1)	20
Cobalt	102	100	75-125	1	20	0.0010 U	0.0010 U	0 (1)	20
Copper	97	100	75-125	3	20	0.0028 U	0.0028 U	0 (1)	20
Iron	99	103	75-125	3	20	0.299 J	0.292 J	2 (1)	20
Magnesium	98	99	75-125	1	20	0.393	0.378	4 (1)	20
Manganese	97	99	75-125	2	20	0.0263	0.0259	2 (1)	20
Nickel	103	102	75-125	1	20	0.0016 U	0.0016 U	0 (1)	20
Selenium	98	98	75-125	0	20	0.0048 U	0.0048 U	0 (1)	20
Silver	73*	86	75-125	16	20	0.0018 U	0.0018 U	0 (1)	20
Tin	99	100	75-125	1	20	0.0024 U	0.0024 U	0 (1)	20
Vanadium	96	101	75-125	5	20	0.0019 U	0.0019 U	0 (1)	20
Zinc	97	98	75-125	1	20	0.0043 J	0.0037 J	17 (1)	20

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 143070639001A	Sample number(s): 7658000-7658004,7658011,7658013-7658014,7658020 UNSPK: 7658000 BKG: 7658000								
Antimony	97	93	75-125	3	20	0.00033 U	0.00033 U	0 (1)	20
Arsenic	98	100	75-125	3	20	0.00082 U	0.00082 U	0 (1)	20
Cadmium	103	100	75-125	3	20	0.00017 U	0.00017 U	0 (1)	20
Lead	99	101	75-125	3	20	0.000082 U	0.000082 U	0 (1)	20
Thallium	100	97	75-125	3	20	0.00015 U	0.00015 U	0 (1)	20
Batch number: 143075713001	Sample number(s): 7658000-7658004,7658011,7658013-7658014,7658020 UNSPK: 7658000 BKG: 7658000								
Mercury	92	90	80-120	2	20	0.000060 U	0.000060 U	0 (1)	20
Batch number: 14309145702A	Sample number(s): 7658000,7658013 BKG: P660298								
Total Suspended Solids						6.13	7.07	14* (1)	5

Surrogate Quality Control

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

Analysis Name: APPIX Volatiles
Batch number: C143082AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7658000	104	103	97	98
7658001	101	100	100	104
7658002	100	100	100	103
7658011	104	102	97	98
7658013	105	102	96	99
7658016	102	104	97	97
7658018	104	105	97	98
7658020	103	104	97	97
Blank	102	106	96	97
LCS	101	102	101	104
MS	101	100	100	104
MSD	100	100	100	103
Limits:	77-114	74-113	77-110	78-110

Analysis Name: Vinyl Chloride
Batch number: E143071AA

	Dibromofluoromethane
7658000	108
7658001	108
7658002	108
7658011	108
7658013	107
7658016	110
7658018	111
7658020	110

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

Surrogate Quality Control

Blank	102
LCS	108
MS	108
MSD	108
Limits:	80-120

Analysis Name: Acrolein, Acrylonitrile
Batch number: W143061AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7658008	105	96	95	93
7658009	104	103	99	99
7658010	103	99	100	100
7658012	104	100	96	93
7658015	104	99	95	93
7658017	106	102	96	92
7658019	107	101	96	92
7658021	106	103	95	92
Blank	100	99	97	95
LCS	101	99	100	99
MS	104	103	99	99
MSD	103	99	100	100
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BRE CAMU GW SVOAs
Batch number: 14309WAI026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7658000	48	71	133	85	100	124
7658001	46	62	112	84	100	116
7658002	53	77	135	80	95	120
7658011	48	72	126	85	96	124
7658013	48	69	123	87	100	111
7658020	49	72	127	94	106	109
Blank	52	74	136	82	98	133
LCS	53	75	132	83	94	102
MS	46	62	112	84	100	116
MSD	53	77	135	80	95	120
Limits:	10-83	10-107	22-150	60-123	67-116	40-147

Analysis Name: 17 PAH Compounds
Batch number: 14309WAJ026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7658000	98	111	94
7658001	104	111	107
7658002	109	128	104
7658011	102	114	94
7658013	93	97	87
7658020	89	94	87
Blank	94	109	86
LCS	102	106	98
MS	104	111	107
MSD	109	128	104
Limits:	56-134	36-156	59-132

Analysis Name: 4 Gylcol Compounds

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1515243
Reported: 11/12/14 at 02:10 PM

Surrogate Quality Control

Batch number: 143090027A

	Tetramethylene glycol
7658000	97
7658001	95
7658002	96
7658011	90
7658013	93
7658020	90
Blank	98
LCS	99
MS	95
MSD	96
Limits:	54-136

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

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515243 Sample Nos.: 7658000-21 19000
Acc't: 06643 SF: 217503 SCR No.: 163061 Cooler No.: 1
Cooler Temperature upon receipt: 0-6 °C Container No.: 1

30348

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380

Sampler(s): ME, HL

Project Name: SED SW PW 2014 / GW2H14 CAMU

Analyses Required: APPIX Volatiles (8260) / VOCs; Vinyl Chloride (8260 SIM); Acrolein/Acrylonitrile (8260)*

Comments: 3 day holding time for acrolein and acrylonitrile

Analyzed for both Programs

Surface ~~Pore~~ Water 10/28/14

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	APPIX Volatiles (8260) / VOCs	Vinyl Chloride (8260 SIM)	Acrolein/Acrylonitrile (8260)*	Condition upon receipt:
SSP14-SW-5	10/30/14	930	WW	40	HCl	5	X	X		Intact
SSP14-SW-5-A			WW	40	None	3			X	
SSP14-SW-6		1035	WW	40	HCl	5	X	X		
SSP14-SW-6-A			WW	40	None	3			X	
SSP14-SW-6-D			WW	40	HCl	5	X	X		
SSP14-SW-6-D-A			WW	40	None	3			X	
EB-103014		1145	WW	40	HCl	4	X	X		
EB-103014-A			WW	40	None	3			X	
TB-103014-3		930	WW	40	HCl	4	X	X		
TB-103014-A3			WW	40	None	2			X	

Turnaround Time Requested (please circle): Standard RUSH Number of days: 8

Special Instructions: *3 Day Holding Time

	Date	Time		Date	Time
Bottles Relinquished by: [signature]	10/21/14	15:50	Bottles Received by: [signature]	10/28/14	1200
Bottles Relinquished by: [signature]	10/30/14	1830	Bottles Received by:		
Bottles Relinquished by:			Bottles Received by:		
Bottles Relinquished by:			Bottles Received by: [signature]	10/31/14	0925

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515243 Sample Nos.: 7658000-21
Acc't: 06643 SF: 86174 SCR No.: 162897 Cooler No.: C17715 **30367**
Cooler Temperature upon receipt: 0.4 °C Container No.: 4

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): MG, HL	
Project Name: GW2H14 CAMU	

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS VOAs (25 ml purge 8260)	Vinyl Chloride (8260 SIM)	Acrylonitrile (8260)*	Comments: Condition upon receipt:
GW2H14-SW-6	10/30/14	1035	WW	40	HCl	5	X	X		MS Dilted
GW2H14-SW-6-A			WW	40	None	3			X	MS
GW2H14-SW-6			WW	40	HCl	5	X	X		MSD
GW2H14-SW-6-A			WW	40	None	3			X	MSD
TB-103014			WW	40	HCl	2	X	X		
TB-103014-A			WW	40	NONE	2			X	

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions: *3 day holding time

Bottles Relinquished by:	Date 10-17-14	Time 1400	Bottles Received by:	Date: 10/28/14	Time: 1200
Bottles Relinquished by:	Date 10/30/14	Time 1300	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 10/31/14	Time: 0915

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515243 Sample Nos.: 7658000-21
Acc't: 06643 SF: 217503 SCR No.: 162828 Cooler No.: _____
Cooler Temperature upon receipt: 0.2 °C Container No.: 3

30344

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): ME HC	
Project Name: SED SW PW 2014	

Comments: Diss. Metals 2ME 10/28/14 Surface ~~Pore~~ Water

Sample Identification	Date Collected	Time Collected	Matrix	Containers: Volume (ml)	Containers: Preserv	Containers: No.	1,4-Dioxane (8270D) 2ME 10/28/14	APPIX Metals + Fe, Mn (6010/6020/7470A)											Condition upon receipt:
~~Field blank~~			~~WW~~	~~250~~	~~None~~	~~2~~	~~X~~												Intact
SSP14-SW-5-Z	10/30/14	930	WW	250	HNO_3	1		X											
SSP14-SW-6-Z	↓	1035	WW	250	HNO_3	1		X											

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
			[signature]	10/28/14	1200
[signature]	10/30/14	1300			
			[signature]	10/31/14	0915

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515243 Sample Nos.: 7658000-21
Acc't: 06643 SF: 86174 SCR No.: 162897 Cooler No.: C24235 **30364**
Cooler Temperature upon receipt: 0.2 °C Container No.: 3

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s):	
Project Name: GW2H14 CAMU	

Comments: Metals: Ba, Be, Cr, Co, Cu, Ni, Se, Ag, V, Zn (6010C); Sb, As, Cd, Pb, Tl (6020A); Hg (7470A)

Samples analyzed for both Programs 10/28/14

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS Semivolatiles (8270D)	Glycols (8015C)	Metals / APPIX Metals + Fe, Mn (6010/6020/7470A) 10/23/14	PAHs (8270D SIM)	2,5-Dimethylfuran (8270 targeted search)	TSS (2540D)	Hardness (SM18 2340)							Condition upon receipt:
GW2H14-SW-5	10/30/14	930	WW	250	HNO3	1			X											Intact
GW2H14-SW-5			WW	250	None	2	X			X	X									
GW2H14-SW-5			WW	40	None	2		X												
GW2H14-SW-6		1035	WW	250	HNO3	1			X											
GW2H14-SW-6			WW	250	None	2	X			X	X									
GW2H14-SW-6			WW	40	None	2		X												
GW2H14-SW-6		1035	WW	500/1000	NONE	2						X								
GW2H14-SW-6			WW	250	HNO3	1							X							
GW2H14-SW-5		930	WW	500/1000	NONE	2						X								
GW2H14-SW-5			WW	250	HNO3	1							X							

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
[signature]	10-17-14	1340	[signature]	10/28/14	1200
[signature]	10/30/14	1300			
				10/31/14	0915

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515243 Sample Nos.: 7658000-21
Acc't: 06643 SF: 86174 SCR No.: 162897 Cooler No.: C24235 **30365**
Cooler Temperature upon receipt: 0.4 °C Container No.: 4

Facility Name: Brevard
Facility Contact: Chet Meinzer
Facility Address: DuPont Brevard
1300 Staton Road
Cedar Mountain NC 28718
Sampler(s): ME, HL
Project Name: GW2H14 CAMU

Project Manager: Tracy Obvey
Facility Contact Phone No.: 828-862-8379
Job No.: 9267-7720100C-WH06504681
Release No.:
PO Number: LBIO-66380

Analyses Required

Comments: Metals: Ba, Be, Cr, Co, Cu, Ni, Se, Ag, V, Zn (6010C); Sb, As, Cd, Pb, Tl (6020A); Hg (7470A)

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS Semivolatiles (8270D)	Glycols (8015C)	Metals	PAHs (8270D SIM)	2,5-Dimethylfuran (8270 targeted search)	Condition upon receipt:
GW2H14-SW-6	10/30/14	1035	WW	250	HNO3	1			X			MS Intact
GW2H14-SW-6			WW	250	None	2	X			X		MS
GW2H14-SW-6			WW	40	None	2		X				MS
GW2H14-SW-6			WW	500	HNO3	1			X			MSD
GW2H14-SW-6			WW	250	None	2	X			X		MSD
GW2H14-SW-6			WW	40	None	2		X				MSD
GW2H14-SW-6 -D			WW	250	HNO3	1			X		X	
GW2H14-SW-6 -D			WW	250	None	2	X			X		
GW2H14-SW-6 -D			WW	40	None	2		X				

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
[signature]	10-17-14	1340	[signature]	10/28/14	1300
[signature]	10/30/14	1300			
			[signature]	10/31/14	0915

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1515243 Sample Nos.: 7658000-21
Acc't: 06643 SF: 86174 SCR No.: 162897 Cooler No.: C24235 **30366**
Cooler Temperature upon receipt: 0.2 °C Container No.: 3

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): MLE, HL	
Project Name: GW2H14 CAMU	

Comments: Metals: Ba, Be, Cr, Co, Cu, Ni, Se, Ag, V, Zn (6010C); Sb, As, Cd, Pb, Tl (6020A); Hg (7470A)

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS Semivolatiles (8270D)	Glycols (8015C)	Metals	PAHs (8270D SIM)	2,5-Dimethylfuran (8270 targeted search)	Condition upon receipt:
EB-SW-10 30 14	10/30/14	1145	WW	250	HNO3	1			X			Intact
EB-SW-10 30 14	↓	↓	WW	250	None	2	X			X	X	
EB-SW-10 30 14	↓	↓	WW	40	None	2		X				

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date 10-17-14	Time 1340	Bottles Received by:	Date: 10/28/14	Time: 1200
Bottles Relinquished by:	Date 10/30/14	Time 1300	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 10/31/14	Time: 0915

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Sample Administration Receipt Documentation Log

Doc Log ID: 37717

Group Number(s): 1515243

Client: DUPONT BREVARD

SED SW PW 2014

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	10/31/2014 9:25
Number of Packages:	4	Number of Projects:	1
State/Province of Origin:	NC		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	12
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 8 HCL 4 UNPRESERVED

Unpacked by Corey Eshleman (3647) at 11:08 on 10/31/2014

Samples Chilled Details: SED SW PW 2014

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	0.6	DT	Wet	Y	Loose	N
2	DT121	0.4	DT	Wet	Y	Loose	N
3	DT121	0.4	DT	Wet	Y	Loose	N
4	DT121	0.3	DT	Wet	Y	Loose	N

General Comments: SSP14-SW-07 AND SSP14-SW-27 GLYCOL VIALS RECEIVED EMPTY

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Sample Administration Receipt Documentation Log

Doc Log ID: 37696

Group Number(s): 1515243

Client: DUPONT BREVARD

GW2H14 CAMU

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	10/31/2014 9:15
Number of Packages:	4	Number of Projects:	2
State/Province of Origin:	NC		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	No	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 2 HCL, 2 UNPRESERVED

Unpacked by Corey Eshleman (3647) at 10:17 on 10/31/2014

Samples Chilled Details: GW2H14 CAMU

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	0.9	DT	Wet	Y	Loose	N
2	DT121	0.2	DT	Wet	Y	Loose	N
3	DT121	0.2	DT	Wet	Y	Loose	N
4	DT121	0.4	DT	Wet	Y	Loose	N

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Lancaster, PA 17605-2425

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Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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

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

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

November 25, 2014

Project: BRE - CAMU GWM

Submittal Date: 11/12/2014
Group Number: 1518095
PO Number: LBIO-67047
State of Sample Origin: NC

Client Sample Description	Lancaster Labs (LL) #
GW2H14-MW-216A Groundwater	7672661
GW2H14-MW-216A-A Groundwater	7672662
GW2H14-MW-216B Groundwater	7672663
GW2H14-MW-216B-A Groundwater	7672664
GW2H14-MW-106A Groundwater	7672665
GW2H14-MW-106A-A Groundwater	7672666
GW2H14-MW-107A Groundwater	7672667
GW2H14-MW-107A-A Groundwater	7672668
GW2H14-MW-107B Groundwater	7672669
GW2H14-MW-107B-A Groundwater	7672670
TB-111014 Blank Water	7672671
TB-111014-A Blank Water	7672672

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

Respectfully Submitted,

Nancy Jean Bornholm
Principal Specialist

(717) 556-7250

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Analysis Report

Sample Description: GW2H14-MW-216A Groundwater
GW2H14 CAMU

LL Sample # WW 7672661
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216A-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.3	J	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.4	J	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	3.7		0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

Sample Description: GW2H14-MW-216A Groundwater
GW2H14 CAMU

LL Sample # WW 7672661
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216A-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.6	U	0.6	1	1
10461	Dibenzofuran	132-64-9	0.6	U	0.6	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	6	1
10461	Diphenyl ether	101-84-8	0.6	U	0.6	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.6	U	0.6	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.6	1
10461	Phenol	108-95-2	0.6	U	0.6	1	1

A targeted library search was performed yielding the following results:
2,5-Dimethylfuran is non-detect.

GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.011	U	0.011	0.056	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.056	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.056	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.056	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.056	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.056	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.056	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.056	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.056	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.056	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.056	1
12971	Fluorene	86-73-7	0.011	U	0.011	0.056	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.056	1
12971	2-Methylnaphthalene	91-57-6	0.011	U	0.011	0.056	1
12971	Naphthalene	91-20-3	0.033	U	0.033	0.067	1
12971	Phenanthrene	85-01-8	0.033	U	0.033	0.067	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.056	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0352		0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00082	J	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-MW-216A Groundwater
GW2H14 CAMU

LL Sample # WW 7672661
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216A-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.00014 J	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00016 J	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143231AA	11/19/2014 16:14	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 13:27	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 13:27	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143231AA	11/19/2014 16:14	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14318WAI026	11/18/2014 23:30	William H Saadeh	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14318WAJ026	11/18/2014 00:54	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14318WAJ026	11/15/2014 13:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14318WAI026	11/15/2014 13:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 19:02	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-MW-216A Groundwater
GW2H14 CAMU

LL Sample # WW 7672661
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216A-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 00:47	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143230639001A	11/21/2014 04:52	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143230639001A	11/21/2014 04:52	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143230639001A	11/21/2014 04:52	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143230639001A	11/21/2014 04:52	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143230639001A	11/21/2014 04:52	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:06	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143230639001	11/20/2014 09:32	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216A-

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7672661
Sample wt/vol: 224 (g/mL) mL Lab File ID: hk0805.d
Level: (low/med) LOW Date Received: 11/12/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/15/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/18/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.625-86-5	Furan, 2,5-dimethyl		0	U
2.SVOCTIC	Total SVOC TICs		0	U
3.				
4.				
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30.				

page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-MW-216A-A Groundwater
GW2H14 CAMU

LL Sample # WW 7672662
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216AA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 16:53	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 16:53	Kerri E Legerlotz	1

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

Sample Description: GW2H14-MW-216B Groundwater
GW2H14 CAMU

LL Sample # WW 7672663
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 15:31 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216B-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.3	J	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.6		0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.012	J	0.010	0.050	1

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

Sample Description: GW2H14-MW-216B Groundwater
GW2H14 CAMU

LL Sample # WW 7672663
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 15:31 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216B-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	1,100		10	20	20
10461	Dibenzofuran	132-64-9	6		0.5	1	1
10461	1,4-Dioxane	123-91-1	1	J	1	5	1
10461	Diphenyl ether	101-84-8	3,100		51	100	100
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
	A targeted library search was performed yielding the following results: 2,5-Dimethylfuran is non-detect.						
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.010	U	0.010	0.051	1
12971	Acenaphthylene	208-96-8	0.010	U	0.010	0.051	1
12971	Anthracene	120-12-7	0.010	U	0.010	0.051	1
12971	Benzo(a)anthracene	56-55-3	0.010	U	0.010	0.051	1
12971	Benzo(a)pyrene	50-32-8	0.010	U	0.010	0.051	1
12971	Benzo(b)fluoranthene	205-99-2	0.010	U	0.010	0.051	1
12971	Benzo(g,h,i)perylene	191-24-2	0.010	U	0.010	0.051	1
12971	Benzo(k)fluoranthene	207-08-9	0.010	U	0.010	0.051	1
12971	Chrysene	218-01-9	0.010	U	0.010	0.051	1
12971	Dibenz(a,h)anthracene	53-70-3	0.010	U	0.010	0.051	1
12971	Fluoranthene	206-44-0	0.010	U	0.010	0.051	1
12971	Fluorene	86-73-7	0.029	J	0.010	0.051	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.010	U	0.010	0.051	1
12971	2-Methylnaphthalene	91-57-6	0.052		0.010	0.051	1
12971	Naphthalene	91-20-3	1.5		0.030	0.061	1
12971	Phenanthrene	85-01-8	0.033	J	0.030	0.061	1
12971	Pyrene	129-00-0	0.010	U	0.010	0.051	1
11659 Targeted Library Search	The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.						
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0046	J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-MW-216B Groundwater
GW2H14 CAMU

LL Sample # WW 7672663
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 15:31 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216B-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143231AA	11/19/2014 16:36	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 13:48	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 13:48	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143231AA	11/19/2014 16:36	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14318WAI026	11/19/2014 00:00	William H Saadeh	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14318WAI026	11/19/2014 06:00	Joseph M Gambler	20
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14318WAI026	11/19/2014 06:42	Joseph M Gambler	100
12971	17 PAH Compounds	SW-846 8270D SIM	1	14318WAJ026	11/18/2014 01:22	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14318WAJ026	11/15/2014 13:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14318WAI026	11/15/2014 13:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 19:17	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-MW-216B Groundwater
GW2H14 CAMU

LL Sample # WW 7672663
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 15:31 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216B-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 00:51	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143230639001A	11/21/2014 04:54	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143230639001A	11/21/2014 04:54	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143230639001A	11/21/2014 04:54	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143230639001A	11/21/2014 04:54	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143230639001A	11/21/2014 04:54	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:08	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143230639001	11/20/2014 09:32	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216B-

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7672663
Sample wt/vol: 247 (g/mL) mL Lab File ID: hk0806.d
Level: (low/med) LOW Date Received: 11/12/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/15/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.625-86-5	Furan, 2,5-dimethyl		0	U
2.SVOCTIC	Total SVOC TICs		0	U
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page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-MW-216B-A Groundwater
GW2H14 CAMU

LL Sample # WW 7672664
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 15:31 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

216BA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 17:16	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 17:16	Kerri E Legerlotz	1

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

Sample Description: GW2H14-MW-106A Groundwater
GW2H14 CAMU

LL Sample # WW 7672665
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 16:52 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

106A-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.3	J	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.7		0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	J	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.2	J	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.3	J	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.37		0.010	0.050	1

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

Sample Description: GW2H14-MW-106A Groundwater
GW2H14 CAMU

LL Sample # WW 7672665
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 16:52 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

106A-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	3	J	1	5	1
10461	Diphenyl ether	101-84-8	32		0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.7	J	0.5	1	1

A targeted library search was performed yielding the following results:
2,5-Dimethylfuran is non-detect.

GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.011	U	0.011	0.053	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.053	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.053	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.053	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.053	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.053	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.053	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.053	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.053	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.053	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.053	1
12971	Fluorene	86-73-7	0.011	U	0.011	0.053	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.053	1
12971	2-Methylnaphthalene	91-57-6	0.011	U	0.011	0.053	1
12971	Naphthalene	91-20-3	0.032	U	0.032	0.064	1
12971	Phenanthrene	85-01-8	0.032	U	0.032	0.064	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.053	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0766		0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0016	J	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-MW-106A Groundwater
GW2H14 CAMU

LL Sample # WW 7672665
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 16:52 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

106A-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		mg/l	mg/l	mg/l	
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
	SW-846 6020A		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143231AA	11/19/2014 16:57	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 14:08	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 14:08	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143231AA	11/19/2014 16:57	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14318WAI026	11/19/2014 00:29	William H Saadeh	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14318WAJ026	11/18/2014 01:49	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14318WAJ026	11/15/2014 13:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14318WAI026	11/15/2014 13:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 19:32	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-MW-106A Groundwater
GW2H14 CAMU

LL Sample # WW 7672665
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 16:52 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

106A-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:03	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143230639001A	11/21/2014 05:01	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143230639001A	11/21/2014 05:01	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143230639001A	11/21/2014 05:01	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143230639001A	11/21/2014 05:01	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143230639001A	11/21/2014 05:01	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:10	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143230639001	11/20/2014 09:32	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
106A-

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7672665
Sample wt/vol: 236 (g/mL) mL Lab File ID: hk0807.d
Level: (low/med) LOW Date Received: 11/12/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/15/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.625-86-5	Furan, 2,5-dimethyl		0	U
2.SVOCTIC	Total SVOC TICs		0	U
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page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-MW-106A-A Groundwater
GW2H14 CAMU

LL Sample # WW 7672666
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 16:52 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

106AA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 17:38	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 17:38	Kerri E Legerlotz	1

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

Sample Description: GW2H14-MW-107A Groundwater
GW2H14 CAMU

LL Sample # WW 7672667
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 09:46 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107A-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.5	J	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.2	J	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.2	J	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.2	J	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.2	J	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.5	J	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	1.0		0.010	0.050	1

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

Sample Description: GW2H14-MW-107A Groundwater
GW2H14 CAMU

LL Sample # WW 7672667
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 09:46 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107A-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	2		0.6	1	1
10461	Dibenzofuran	132-64-9	0.6	U	0.6	1	1
10461	1,4-Dioxane	123-91-1	3	J	1	6	1
10461	Diphenyl ether	101-84-8	52		0.6	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.6	U	0.6	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.6	1
10461	Phenol	108-95-2	2		0.6	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.072		0.011	0.056	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.056	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.056	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.056	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.056	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.056	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.056	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.056	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.056	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.056	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.056	1
12971	Fluorene	86-73-7	0.012	J	0.011	0.056	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.056	1
12971	2-Methylnaphthalene	91-57-6	0.071		0.011	0.056	1
12971	Naphthalene	91-20-3	2.1		0.033	0.067	1
12971	Phenanthrene	85-01-8	0.033	U	0.033	0.067	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.056	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0743		0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0015	J	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-MW-107A Groundwater
GW2H14 CAMU

LL Sample # WW 7672667
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 09:46 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107A-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07072	Zinc	7440-66-6	0.0022 J	0.0020	0.0400	1
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143231AA	11/19/2014 17:19	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 14:28	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 14:28	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143231AA	11/19/2014 17:19	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 19:47	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 18:56	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 19:46	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-MW-107A Groundwater
GW2H14 CAMU

LL Sample # WW 7672667
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 09:46 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107A-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:06	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143230639001A	11/21/2014 05:03	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143230639001A	11/21/2014 05:03	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143230639001A	11/21/2014 05:03	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143230639001A	11/21/2014 05:03	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143230639001A	11/21/2014 05:03	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:12	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143230639001	11/20/2014 09:32	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
107A-

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 7672667
Sample wt/vol: 225 (g/mL) mL Lab File ID: dk0489.d
Level: (low/med) LOW Date Received: 11/12/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
5.				
6.				
7.				
8.				
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30.				

page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-MW-107A-A Groundwater
GW2H14 CAMU

LL Sample # WW 7672668
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 09:46 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107AA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 22:13	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 22:13	Kerri E Legerlotz	1

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

Sample Description: GW2H14-MW-107B Groundwater
GW2H14 CAMU

LL Sample # WW 7672669
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 10:54 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107B-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.2	J	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.2	J	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.2	J	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

Sample Description: GW2H14-MW-107B Groundwater
GW2H14 CAMU

LL Sample # WW 7672669
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 10:54 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107B-

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.011	U	0.011	0.054	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.054	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.054	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.054	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.054	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.054	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.054	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.054	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.054	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.054	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.054	1
12971	Fluorene	86-73-7	0.011	U	0.011	0.054	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.054	1
12971	2-Methylnaphthalene	91-57-6	0.011	U	0.011	0.054	1
12971	Naphthalene	91-20-3	0.032	U	0.032	0.065	1
12971	Phenanthrene	85-01-8	0.032	U	0.032	0.065	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.054	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.00088	J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Lancaster Laboratories Environmental
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Analysis Report

Sample Description: GW2H14-MW-107B Groundwater
GW2H14 CAMU

LL Sample # WW 7672669
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 10:54 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107B-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143231AA	11/19/2014 17:40	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 14:48	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 14:48	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143231AA	11/19/2014 17:40	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 20:15	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 19:23	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 20:01	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-MW-107B Groundwater
GW2H14 CAMU

LL Sample # WW 7672669
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 10:54 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107B-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:10	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143230639001A	11/21/2014 05:06	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143230639001A	11/21/2014 05:06	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143230639001A	11/21/2014 05:06	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143230639001A	11/21/2014 05:06	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143230639001A	11/21/2014 05:06	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:19	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143230639001	11/20/2014 09:32	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
107B-

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7672669
Sample wt/vol: 231 (g/mL) mL Lab File ID: dk0490.d
Level: (low/med) LOW Date Received: 11/12/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
5.				
6.				
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30.				

page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-MW-107B-A Groundwater
GW2H14 CAMU

LL Sample # WW 7672670
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 10:54 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107BA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 18:26	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 18:26	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: TB-111014 Blank Water GW2H14 CAMU

LL Sample # WW 7672671
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

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Analysis Report

Sample Description: TB-111014 Blank Water
GW2H14 CAMU

LL Sample # WW 7672671
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

107TB

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143231AA	11/19/2014 15:53	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 11:06	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 11:06	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143231AA	11/19/2014 15:53	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: TB-111014-A Blank Water
GW2H14 CAMU

LL Sample # WW 7672672
LL Group # 1518095
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/10/2014 13:58 by KT

Submitted: 11/12/2014 17:30
Reported: 11/25/2014 10:42

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

07TBA

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 18:04	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 18:04	Kerri E Legerlotz	1

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

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

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C143171AA	Sample number(s): 7672662,7672664,7672666,7672668,7672670,7672672									
Acrylonitrile	1.0	U	1.0	5.0	ug/l	89	85	64-141	4	30
Batch number: E143231AA	Sample number(s): 7672661,7672663,7672665,7672667,7672669,7672671									
Vinyl Chloride	0.010	U	0.010	0.050	ug/l	123		70-130		
Batch number: I143231AA	Sample number(s): 7672661,7672663,7672665,7672667,7672669,7672671									
Acetone	3.0	U	3.0	5.0	ug/l	100		60-139		
Benzene	0.1	U	0.1	0.5	ug/l	101		80-120		
Bromochloromethane	0.1	U	0.1	0.5	ug/l	102		80-125		
Bromodichloromethane	0.1	U	0.1	0.5	ug/l	93		80-120		
Bromoform	0.1	U	0.1	0.5	ug/l	82		72-138		
Bromomethane	0.1	U	0.1	0.5	ug/l	95		62-126		
2-Butanone	1.0	U	1.0	5.0	ug/l	97		63-137		
Carbon Disulfide	0.4	U	0.4	1.0	ug/l	99		70-128		
Carbon Tetrachloride	0.1	U	0.1	0.5	ug/l	98		80-135		
Chlorobenzene	0.1	U	0.1	0.5	ug/l	101		80-120		
Chloroethane	0.1	U	0.1	0.5	ug/l	93		68-120		
Chloroform	0.1	U	0.1	0.5	ug/l	101		80-120		
Chloromethane	0.2	U	0.2	0.5	ug/l	102		55-120		
1,2-Dibromo-3-chloropropane	0.2	U	0.2	0.5	ug/l	86		64-141		
Dibromochloromethane	0.1	U	0.1	0.5	ug/l	95		80-126		
1,2-Dibromoethane	0.1	U	0.1	0.5	ug/l	103		80-120		
Dibromomethane	0.1	U	0.1	0.5	ug/l	100		80-120		
trans-1,4-Dichloro-2-butene	1.0	U	1.0	5.0	ug/l	80		14-166		
1,2-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	100		80-120		
1,3-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	100		80-120		
1,4-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	101		80-120		
1,1-Dichloroethane	0.1	U	0.1	0.5	ug/l	98		80-120		
1,2-Dichloroethane	0.1	U	0.1	0.5	ug/l	100		76-132		
1,1-Dichloroethene	0.1	U	0.1	0.5	ug/l	103		80-123		
cis-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	101		80-120		
trans-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	105		80-120		
1,2-Dichloropropane	0.1	U	0.1	0.5	ug/l	100		80-120		
cis-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	94		80-120		
trans-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	93		80-120		
Ethylbenzene	0.1	U	0.1	0.5	ug/l	101		80-120		
2-Hexanone	1.0	U	1.0	5.0	ug/l	99		72-124		
Methyl Iodide	0.1	U	0.1	0.5	ug/l	104		80-129		
4-Methyl-2-pentanone	1.0	U	1.0	5.0	ug/l	103		71-123		
Methylene Chloride	0.2	U	0.2	0.5	ug/l	104		80-120		
Styrene	0.1	U	0.1	0.5	ug/l	102		80-120		
1,1,1,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	101		80-120		
1,1,2,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	100		80-120		

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Tetrachloroethene	0.1	U	0.1	0.5	ug/l	102		80-120		
Toluene	0.1	U	0.1	0.5	ug/l	101		80-120		
1,1,1-Trichloroethane	0.1	U	0.1	0.5	ug/l	99		80-120		
1,1,2-Trichloroethane	0.1	U	0.1	0.5	ug/l	102		80-120		
Trichloroethene	0.1	U	0.1	0.5	ug/l	102		80-120		
Trichlorofluoromethane	0.1	U	0.1	0.5	ug/l	107		64-141		
1,2,3-Trichloropropane	0.3	U	0.3	1.0	ug/l	104		80-120		
Vinyl Acetate	0.2	U	0.2	0.5	ug/l	114	112	38-145	2	30
Xylene (Total)	0.1	U	0.1	0.5	ug/l	101		80-120		
Batch number: 14318WAI026	Sample number(s): 7672661,7672663,7672665									
1,1'-Biphenyl	0.5	U	0.5	1	ug/l	88		56-134		
Dibenzofuran	0.5	U	0.5	1	ug/l	87		81-110		
1,4-Dioxane	1	U	1.	5	ug/l	47		39-83		
Diphenyl ether	0.5	U	0.5	1	ug/l	84		77-113		
1,2-Diphenylhydrazine	0.5	U	0.5	1	ug/l	96		74-124		
1-Methylnaphthalene	0.1	U	0.1	0.5	ug/l	87		79-111		
Phenol	0.5	U	0.5	1	ug/l	45		25-80		
Batch number: 14318WAJ026	Sample number(s): 7672661,7672663,7672665									
Acenaphthene	0.010	U	0.010	0.050	ug/l	108	108	82-126	0	30
Acenaphthylene	0.010	U	0.010	0.050	ug/l	108	109	72-124	0	30
Anthracene	0.010	U	0.010	0.050	ug/l	109	108	83-125	0	30
Benzo(a)anthracene	0.010	U	0.010	0.050	ug/l	106	105	79-122	1	30
Benzo(a)pyrene	0.010	U	0.010	0.050	ug/l	112	111	72-126	1	30
Benzo(b)fluoranthene	0.010	U	0.010	0.050	ug/l	121	120	79-136	1	30
Benzo(g,h,i)perylene	0.010	U	0.010	0.050	ug/l	105	99	59-137	5	30
Benzo(k)fluoranthene	0.010	U	0.010	0.050	ug/l	110	109	72-129	1	30
Chrysene	0.010	U	0.010	0.050	ug/l	109	109	77-122	0	30
Dibenz(a,h)anthracene	0.010	U	0.010	0.050	ug/l	100	93	42-143	8	30
Fluoranthene	0.010	U	0.010	0.050	ug/l	108	108	76-121	0	30
Fluorene	0.010	U	0.010	0.050	ug/l	113	116	82-119	2	30
Indeno(1,2,3-cd)pyrene	0.010	U	0.010	0.050	ug/l	103	97	53-136	6	30
2-Methylnaphthalene	0.010	U	0.010	0.050	ug/l	93	96	68-124	3	30
Naphthalene	0.030	U	0.030	0.060	ug/l	97	101	78-117	4	30
Phenanthrene	0.030	U	0.030	0.060	ug/l	103	103	83-116	0	30
Pyrene	0.010	U	0.010	0.050	ug/l	104	103	70-124	1	30
Batch number: 14322WAA026	Sample number(s): 7672667,7672669									
Acenaphthene	0.010	U	0.010	0.050	ug/l	122		82-126		
Acenaphthylene	0.010	U	0.010	0.050	ug/l	99		72-124		
Anthracene	0.010	U	0.010	0.050	ug/l	110		83-125		
Benzo(a)anthracene	0.010	U	0.010	0.050	ug/l	112		79-122		
Benzo(a)pyrene	0.010	U	0.010	0.050	ug/l	116		72-126		
Benzo(b)fluoranthene	0.010	U	0.010	0.050	ug/l	118		79-136		
Benzo(g,h,i)perylene	0.010	U	0.010	0.050	ug/l	117		59-137		
Benzo(k)fluoranthene	0.010	U	0.010	0.050	ug/l	119		72-129		
Chrysene	0.010	U	0.010	0.050	ug/l	116		77-122		
Dibenz(a,h)anthracene	0.010	U	0.010	0.050	ug/l	113		42-143		
Fluoranthene	0.010	U	0.010	0.050	ug/l	105		76-121		
Fluorene	0.010	U	0.010	0.050	ug/l	107		82-119		
Indeno(1,2,3-cd)pyrene	0.010	U	0.010	0.050	ug/l	117		53-136		
2-Methylnaphthalene	0.010	U	0.010	0.050	ug/l	100		68-124		
Naphthalene	0.030	U	0.030	0.060	ug/l	104		78-117		
Phenanthrene	0.030	U	0.030	0.060	ug/l	106		83-116		
Pyrene	0.010	U	0.010	0.050	ug/l	116		70-124		

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14322WAB026	Sample number(s): 7672667,7672669									
1,1'-Biphenyl	0.5	U	0.5	1	ug/l	97		56-134		
Dibenzofuran	0.5	U	0.5	1	ug/l	99		81-110		
1,4-Dioxane	1	U	1.	5	ug/l	64		39-83		
Diphenyl ether	0.5	U	0.5	1	ug/l	97		77-113		
1,2-Diphenylhydrazine	0.5	U	0.5	1	ug/l	97		74-124		
1-Methylnaphthalene	0.1	U	0.1	0.5	ug/l	96		79-111		
Phenol	0.5	U	0.5	1	ug/l	50		25-80		
Batch number: 143220036A	Sample number(s): 7672661,7672663,7672665,7672667,7672669									
Diethylene glycol	8.0	U	8.0	10	mg/l	81		55-122		
Ethylene glycol	8.0	U	8.0	10	mg/l	84		54-129		
Propylene glycol	8.0	U	8.0	10	mg/l	83		57-137		
Triethylene glycol	8.0	U	8.0	10	mg/l	79		46-118		
Batch number: 143180636002	Sample number(s): 7672661,7672663,7672665,7672667,7672669									
Barium	0.00036	J	0.00033	0.0100	mg/l	102		80-120		
Beryllium	0.00067	U	0.00067	0.0100	mg/l	99		80-120		
Chromium	0.0013	U	0.0013	0.0300	mg/l	99		80-120		
Cobalt	0.0010	U	0.0010	0.0100	mg/l	102		80-120		
Copper	0.0028	U	0.0028	0.0200	mg/l	101		80-120		
Nickel	0.0016	U	0.0016	0.0200	mg/l	104		80-120		
Selenium	0.0048	U	0.0048	0.0400	mg/l	100		80-120		
Silver	0.0018	U	0.0018	0.0100	mg/l	107		80-120		
Vanadium	0.0019	U	0.0019	0.0100	mg/l	100		80-120		
Zinc	0.0020	U	0.0020	0.0400	mg/l	101		80-120		
Batch number: 143185713010	Sample number(s): 7672661,7672663,7672665,7672667,7672669									
Mercury	0.000060	U	0.00006 0	0.00020	mg/l	87		80-120		
Batch number: 143230639001A	Sample number(s): 7672661,7672663,7672665,7672667,7672669									
Antimony	0.00033	U	0.00033	0.0020	mg/l	103		80-120		
Arsenic	0.00082	U	0.00082	0.0040	mg/l	104		80-120		
Cadmium	0.00017	U	0.00017	0.0010	mg/l	99		80-120		
Lead	0.000082	U	0.00008 2	0.0020	mg/l	102		80-120		
Thallium	0.00015	U	0.00015	0.0010	mg/l	103		80-120		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: C143171AA	Sample number(s): 7672662,7672664,7672666,7672668,7672670,7672672 UNSPK: P674171								
Acrylonitrile	89	100	56-161	11	30				
Batch number: E143231AA	Sample number(s): 7672661,7672663,7672665,7672667,7672669,7672671 UNSPK: P674167								
Vinyl Chloride	116	113	70-130	2	30				

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: I143231AA	Sample number(s): 7672661,7672663,7672665,7672667,7672669,7672671 UNSPK: P677645								
Acetone	127	107	57-163	17	30				
Benzene	105	100	87-126	5	30				
Bromochloromethane	107	101	82-125	6	30				
Bromodichloromethane	99	94	82-133	5	30				
Bromoform	83	80	60-138	4	30				
Bromomethane	95	95	66-130	1	30				
2-Butanone	121	100	56-160	19	30				
Carbon Disulfide	106	99	84-141	7	30				
Carbon Tetrachloride	108	103	81-148	5	30				
Chlorobenzene	102	98	78-133	4	30				
Chloroethane	98	95	70-139	3	30				
Chloroform	107	100	86-136	6	30				
Chloromethane	107	106	49-135	0	30				
1,2-Dibromo-3-chloropropane	104	86	53-163	18	30				
Dibromochloromethane	99	93	79-125	6	30				
1,2-Dibromoethane	109	105	84-127	4	30				
Dibromomethane	106	103	83-126	3	30				
trans-1,4-Dichloro-2-butene	97	79	11-172	19	30				
1,2-Dichlorobenzene	101	95	83-117	6	30				
1,3-Dichlorobenzene	97	92	79-132	6	30				
1,4-Dichlorobenzene	99	93	79-120	6	30				
1,1-Dichloroethane	104	98	81-126	6	30				
1,2-Dichloroethane	107	102	82-135	5	30				
1,1-Dichloroethene	111	106	86-132	5	30				
cis-1,2-Dichloroethene	107	103	82-129	4	30				
trans-1,2-Dichloroethene	110	105	88-127	5	30				
1,2-Dichloropropane	105	101	91-126	5	30				
cis-1,3-Dichloropropene	97	93	74-132	4	30				
trans-1,3-Dichloropropene	95	91	71-128	4	30				
Ethylbenzene	103	98	80-140	5	30				
2-Hexanone	112	110	51-149	3	30				
Methyl Iodide	108	103	71-137	5	30				
4-Methyl-2-pentanone	116	113	69-149	3	30				
Methylene Chloride	110	105	77-135	5	30				
Styrene	104	99	71-138	5	30				
1,1,1,2-Tetrachloroethane	103	98	87-126	5	30				
1,1,2,2-Tetrachloroethane	102	96	75-131	5	30				
Tetrachloroethene	121	116	75-129	4	30				
Toluene	103	98	83-127	5	30				
1,1,1-Trichloroethane	105	100	85-140	5	30				
1,1,2-Trichloroethane	109	104	85-129	5	30				
Trichloroethene	111	106	85-131	4	30				
Trichlorofluoromethane	114	113	73-139	1	30				
1,2,3-Trichloropropane	108	102	76-120	5	30				
Xylene (Total)	102	97	81-137	5	30				
Batch number: 14318WAI026	Sample number(s): 7672661,7672663,7672665 UNSPK: P672547								
1,1'-Biphenyl	91	93	73-114	3	30				
Dibenzofuran	92	92	71-116	1	30				
1,4-Dioxane	47*	47*	48-83	1	30				
Diphenyl ether	89	90	81-105	2	30				

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,2-Diphenylhydrazine	100	100	67-129	2	30				
1-Methylnaphthalene	91	90	78-110	0	30				
Phenol	67	67	10-107	1	30				
Batch number: 14322WAA026	Sample number(s): 7672667,7672669 UNSPK: P674167								
Acenaphthene	126	121	69-134	6	30				
Acenaphthylene	104	101	66-132	6	30				
Anthracene	114	112	64-129	5	30				
Benzo(a)anthracene	110	109	37-135	4	30				
Benzo(a)pyrene	110	108	32-137	5	30				
Benzo(b)fluoranthene	114	114	41-137	3	30				
Benzo(g,h,i)perylene	106	102	21-127	7	30				
Benzo(k)fluoranthene	113	114	36-139	3	30				
Chrysene	114	113	51-129	4	30				
Dibenz(a,h)anthracene	110	105	17-134	8	30				
Fluoranthene	106	105	53-133	4	30				
Fluorene	113	110	59-137	5	30				
Indeno(1,2,3-cd)pyrene	108	103	26-130	8	30				
2-Methylnaphthalene	101	100	64-129	5	30				
Naphthalene	109	106	58-131	6	30				
Phenanthrene	108	107	66-126	5	30				
Pyrene	120	117	49-136	6	30				
Batch number: 14322WAB026	Sample number(s): 7672667,7672669 UNSPK: P674167								
1,1'-Biphenyl	88	85	73-114	11	30				
Dibenzofuran	90	87	71-116	11	30				
1,4-Dioxane	60	58	48-83	10	30				
Diphenyl ether	89	85	81-105	12	30				
1,2-Diphenylhydrazine	89	86	67-129	11	30				
1-Methylnaphthalene	88	85	78-110	11	30				
Phenol	46	48	10-107	1	30				
Batch number: 143220036A	Sample number(s): 7672661,7672663,7672665,7672667,7672669 UNSPK: P674167								
Diethylene glycol	70	77	52-122	8	20				
Ethylene glycol	72	75	54-123	5	20				
Propylene glycol	69	70	55-131	2	20				
Triethylene glycol	70	78	33-123	11	20				
Batch number: 143180636002	Sample number(s): 7672661,7672663,7672665,7672667,7672669 UNSPK: P674167 BKG: P674167								
Barium	102	101	75-125	1	20	0.0179	0.0180	1 (1)	20
Beryllium	100	98	75-125	2	20	0.00067 U	0.00067 U	0 (1)	20
Chromium	100	99	75-125	1	20	0.0013 U	0.0013 U	0 (1)	20
Cobalt	103	101	75-125	2	20	0.0010 U	0.0010 U	0 (1)	20
Copper	101	100	75-125	1	20	0.0028 U	0.0028 U	0 (1)	20
Nickel	104	103	75-125	1	20	0.0016 U	0.0016 U	0 (1)	20
Selenium	100	101	75-125	1	20	0.0048 U	0.0048 U	0 (1)	20
Silver	107	106	75-125	1	20	0.0018 U	0.0018 U	0 (1)	20
Vanadium	102	100	75-125	2	20	0.0019 U	0.0019 U	0 (1)	20
Zinc	102	100	75-125	1	20	0.0020 U	0.0020 U	0 (1)	20
Batch number: 143185713010	Sample number(s): 7672661,7672663,7672665,7672667,7672669 UNSPK: P674167 BKG:								

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
	P674167								
Mercury	109	93	75-125	16	20	0.000060 U	0.000060 U	0 (1)	20
Batch number: 143230639001A	Sample number(s): 7672661,7672663,7672665,7672667,7672669 UNSPK: P677159 BKG: P677159								
Antimony	107	112	75-125	5	20	0.00033 U	0.00033 U	0 (1)	20
Arsenic	101	103	75-125	2	20	0.00083 J	0.00082 U	200* (1)	20
Cadmium	100	99	75-125	0	20	0.00017 U	0.00017 U	0 (1)	20
Lead	102	102	75-125	0	20	0.000098 J	0.000089 J	10 (1)	20
Thallium	93	104	75-125	9	20	0.00066 J	0.00064 J	3 (1)	20

Surrogate Quality Control

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

Analysis Name: Acrylonitrile
Batch number: C143171AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7672662	98	86	87	89
7672664	97	101	98	85
7672666	106	99	98	86
7672668	106	105	96	99
7672670	91	104	87	88
7672672	103	102	97	89
Blank	100	100	95	98
LCS	101	102	98	102
LCSD	101	103	98	104
MS	101	101	100	98
MSD	100	101	114*	100
Limits:	77-114	74-113	77-110	78-110

Analysis Name: Vinyl Chloride
Batch number: E143231AA

	Dibromofluoromethane
7672661	103
7672663	102
7672665	102
7672667	102
7672669	102
7672671	103
Blank	105
LCS	101
MS	104
MSD	103
Limits:	80-120

Analysis Name: BRE CAMU GW VOAs

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

Surrogate Quality Control

Batch number: I143231AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7672661	100	102	99	95
7672663	100	106	98	96
7672665	99	105	98	97
7672667	100	108	97	98
7672669	100	105	98	97
7672671	100	105	99	95
Blank	99	101	99	95
LCS	99	104	98	98
LCSD	99	104	99	98
MS	102	108	97	100
MSD	102	114*	98	101
Limits:	77-114	74-113	77-110	78-110

Analysis Name: BRE CAMU GW SVOAs
Batch number: 14318WAI026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7672661	28	44	63	80	84	88
7672663	31	41	74	77	84	89
7672665	42	59	72	73	76	79
Blank	31	47	86	86	81	90
LCS	42	57	92	95	88	90
MS	62	64	92	98	90	95
MSD	60	61	92	96	89	92
Limits:	10-83	10-107	22-150	60-123	67-116	40-147

Analysis Name: 17 PAH Compounds
Batch number: 14318WAJ026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7672661	107	106	92
7672663	114	105	94
7672665	117	118	100
Blank	112	125	103
LCS	114	130	104
LCSD	113	128	106
Limits:	56-134	36-156	59-132

Analysis Name: 17 PAH Compounds
Batch number: 14322WAA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7672667	94	86	92
7672669	83	94	80
Blank	104	119	95
LCS	106	126	107
MS	106	119	104
MSD	104	116	104
Limits:	56-134	36-156	59-132

Analysis Name: BRE CAMU GW SVOAs
Batch number: 14322WAB026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7672667	54	72	91	86	84	80

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518095
Reported: 11/25/14 at 10:42 AM

Surrogate Quality Control

7672669	32	50	94	89	88	101
Blank	35	52	91	87	86	95
LCS	45	63	105	95	94	103
MS	41	59	98	87	87	92
MSD	44	63	97	84	82	93
Limits:	10-83	10-107	22-150	60-123	67-116	40-147

Analysis Name: 4 Gylcol Compounds
Batch number: 143220036A

	Tetramethylene glycol
7672661	58
7672663	64
7672665	69
7672667	64
7672669	58
Blank	76
LCS	76
MS	61
MSD	64
Limits:	54-136

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1518095 Sample Nos.: 7672661-72
Acc't: 06643 SF: 86174 SCR No.: 163125 Cooler No.: C24432 **30453**
Cooler Temperature upon receipt: 0.4-2.2 °C Container No.: 3

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): K. Teague, W. Parker	
Project Name: GW2H14 CAMU	

Analyses Required

Comments:

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS VOAs (25 ml purge 8260)	Vinyl Chloride (8260 SIM)	Acrylonitrile (8260)*
GW2H14-MW-216A	11/10/14	1358	WW	40	HCl	5	X	X	
GW2H14-MW-216A-A	11/10/14	1358	WW	40	None	3			X
GW2H14-MW-216B	11/10/14	1531	WW	40	HCl	5	X	X	
GW2H14-MW-216B-A	11/10/14	1531	WW	40	None	3			X
~~GW2H14-MW-213~~			~~WW~~	~~40~~	~~HCl~~	~~5~~	~~X~~	~~X~~	
~~GW2H14-MW-213-A~~			~~WW~~	~~40~~	~~None~~	~~3~~			~~X~~

Condition upon receipt: Intact

Turnaround Time Requested (please circle): Standard RUSH Number of days: 8

Special Instructions: *3 day holding time

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Ada Mgaabko	11/5/14	8:26	Karen Teague	11/10/14	1100
Karen Teague	11/11/14	1200			
				11/12/14	1730

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1518095 Sample Nos.: 7672601-72 C24433 **30444**
Acc't: 06643 SF: 86174 SCR No.: 163125 Cooler No.: C24433
Cooler Temperature upon receipt: 0.4-2.2 °C Container No.: 3

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): K. Teague, W. Parker	
Project Name: GW2H14 CAMU	

Comments: Metals: Ba, Be, Cr, Co, Cu, Ni, Se, Ag, V, Zn (6010C); Sb, As, Cd, Pb, Tl (6020A); Hg (7470A)

Condition upon receipt: Intact

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS Semivolatiles (8270D)	Glycols (8015C)	Metals	PAHs (8270D SIM)	2,5-Dimethylfuran (8270 targeted search)
GW2H14-MW-216A	11/10/14	1358	WW	250	HNO3	1			X		
GW2H14-MW-216A	↓	↓	WW	250	None	2	X			X	X
GW2H14-MW-216A	↓	↓	WW	40	None	2		X			
GW2H14-MW-216B	11/10/14	1531	WW	250	HNO3	1			X		
GW2H14-MW-216B	↓	↓	WW	250	None	2	X			X	X
GW2H14-MW-216B	↓	↓	WW	40	None	2		X			

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Luci Megashko	11/5/14	8:26	Karen Teague	11/10/14	11:00
Karen Teague	11/11/14	1200			
				11/12/14	1730

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1518095 Sample Nos.: 7672661-72
Acc't: 06643 SF: 86174 SCR No.: 163125 Cooler No.: C24432 **30453**
Cooler Temperature upon receipt: 0.4-2.2 °C Container No.: 3

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): W. Parker, K. Teague	
Project Name: GW2H14 CAMU	

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Containers Preserv	Containers No.	GC/MS VOAs (25 ml purge 8260)	Vinyl Chloride (8260 SIM)	Acrylonitrile (8260)*	Comments: Condition upon receipt: Intact
GW2H14-MW-106A	11/10/14	1152	WW	40	HCl	5	X	X		
GW2H14-MW-106A-A	11/10/14	1152	WW	40	None	3			X	
GW2H14-MW-107A	11/11/14	0946	WW	40	HCl	5	X	X		
GW2H14-MW-107A-A	11/11/14	0946	WW	40	None	3			X	
GW2H14-MW-107B	11/11/14	1054	WW	40	HCl	5	X	X		
GW2H14-MW-107B-A	11/11/14	1054	WW	40	None	3			X	

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions: *3 day holding time

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Lisa Megahlin	11/5/14	8:26	Kevin Teague	11/10/14	1100
Kevin Teague	11/11/14	1200			
				11/12/14	1730

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1518095 Sample Nos.: 76726661-72
Acc't: 06643 SF: 86174 SCR No.: 163125 Cooler No.: C24433 **30445**
Cooler Temperature upon receipt: 0.4-2.2 °C Container No.: 3

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): W. Parker, K. Teague	
Project Name: GW2H14 CAMU	

Comments: Metals: Ba, Be, Cr, Co, Cu, Ni, Se, Ag, V, Zn (6010C); Sb, As, Cd, Pb, Tl (6020A); Hg (7470A)

Condition upon receipt: Intact

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Containers Preserv	Containers No.	GC/MS Semivolatiles (8270D)	Glycols (8015C)	Metals	PAHs (8270D SIM)	2,5-Dimethylfuran (8270 targeted search)
GW2H14-MW-106A	11/10/14	1102	WW	250	HNO3	1			X		
GW2H14-MW-106A	↓	↓	WW	250	None	2	X			X	X
GW2H14-MW-106A	↓	↓	WW	40	None	2		X			

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Ryan Megadylo	11/5/14	8:26	Kevin Teague	11/10/14	1100
Kevin Teague	11/11/14	1200			
				11/12/14	1730

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1518095 Sample Nos.: 7672661-72
Acc't: 06643 SF: 86174 SCR No.: 163125 Cooler No.: C24433 **30446**
Cooler Temperature upon receipt: 0.4-2.2 °C Container No.: 3

Facility Name: Brevard
Facility Contact: Chet Meinzer
Facility Address: DuPont Brevard
1300 Staton Road
Cedar Mountain NC 28718
Sampler(s): K. Teague, W. Parker
Project Name: GW2H14 CAMU

Project Manager: Tracy Obvey
Facility Contact Phone No.: 828-862-8379
Job No.: 9267-7720100C-WH06504681
Release No.:
PO Number: LBIO-66380

Comments: Metals: Ba, Be, Cr, Co, Cu, Ni, Se, Ag, V, Zn (6010C); Sb, As, Cd, Pb, Tl (6020A); Hg (7470A)

Condition upon receipt: Intact

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS Semivolatiles (8270D)	Glycols (8015C)	Metals	PAHs (8270D SIM)	2,5-Dimethylfuran (8270 targeted search)								
GW2H14-MW-107A	11/11/14	0946	WW	250	HNO3	1			X										
GW2H14-MW-107A	↓	↓	WW	250	None	2	X			X	X								
GW2H14-MW-107A	↓	↓	WW	40	None	2		X											
GW2H14-MW-107B	11/11/14	1054	WW	250	HNO3	1			X										
GW2H14-MW-107B	↓	↓	WW	250	None	2	X			X	X								
GW2H14-MW-107B	↓	↓	WW	40	None	2		X											

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions:

Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Lisa Miscovich	11/5/14	8:24	Karen Hague	11/10/14	1100
Karen Hague	11/11/14	1200			
				11/12/14	1730

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1518095 Sample Nos.: 7672661-72
Acc't: 06643 SF: 86174 SCR No.: 163125 Cooler No.: C24432 30453
Cooler Temperature upon receipt: 0.4-2.2 °C Container No.: 3

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): K. Teague, W Parker	
Project Name: GW2H14 CAMU	

Analyses Required

Comments:

Condition upon receipt: Intact

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS VOAs (25 ml purge 8260)	Vinyl Chloride (8260 SIM)	Acrylonitrile (8260)*
TB-11 10 14	11/10/14	1358	WW	40	HCl	3	X	X	
TB-11 10 14-A	11/10/14	1358	WW	40	None	2			X

Turnaround Time Requested (please circle): Standard RUSH Number of days: 8

Special Instructions: *3 day holding time

Bottles Relinquished by: Lisa Meczynko	Date 11/5/14	Time 8:26	Bottles Received by: Karen Teague	Date: 11/10/14	Time: 1100
Bottles Relinquished by: Karen Teague	Date 11/11/14	Time 1200	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date:	Time:
Bottles Relinquished by:	Date	Time	Bottles Received by:	Date: 11/12/14	Time: 1730

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Sample Administration Receipt Documentation Log

Doc Log ID: 39979

Group Number(s): 1518095

Client: DuPont

Delivery and Receipt Information

Delivery Method:	ELLE Courier	Arrival Timestamp:	11/12/2014 17:30
Number of Packages:	3	Number of Projects:	2
State/Province of Origin:	NC		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	3
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 2-HCl, 1-Unpreserved

Unpacked by Patrick Engle (3472) at 18:38 on 11/12/2014

Samples Chilled Details: ISM 2014

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	0.4	DT	Wet	Y	Loose	N
2	DT121	2.2	DT	Wet	Y	Loose	N
3	DT121	0.4	DT	Wet	Y	Loose	N

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Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

November 25, 2014

Project: BRE - CAMU GWM

Submittal Date: 11/13/2014
Group Number: 1518404
PO Number: LBIO-67047
State of Sample Origin: NC

Client Sample Description	Lancaster Labs (LL) #
GW2H14-R87-S8 Groundwater	7674163
GW2H14-R87-S8-A Groundwater	7674164
GW2H14-R87-S9 Groundwater	7674165
GW2H14-R87-S9-A Groundwater	7674166
GW2H14-R87-S10 Groundwater	7674167
GW2H14-R87-S10 MS Groundwater	7674168
GW2H14-R87-S10 MSD Groundwater	7674169
GW2H14-R87-S10 Dupl Groundwater	7674170
GW2H14-R87-S10-A Groundwater	7674171
GW2H14-R87-S10-A MS Groundwater	7674172
GW2H14-R87-S10-A MSD Groundwater	7674173
GW2H14-R87-S10-D Groundwater	7674174
GW2H14-R87-S10-D-A Groundwater	7674175
GW2H14-MW-213 Groundwater	7674176
GW2H14-MW-213-A Groundwater	7674177
TB-111214 Blank Water	7674178
TB-111214-A Blank Water	7674179
EB-GW-111214 Blank Water	7674180
EB-GW-111214-A Blank Water	7674181
TB-111114 Blank Water	7674182
TB-111114-A Blank Water	7674183

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

Respectfully Submitted,

Nancy Jean Bornholm

Nancy Jean Bornholm
Principal Specialist

(717) 556-7250

Sample Description: GW2H14-R87-S8 Groundwater
GW2H14 CAMU

LL Sample # WW 7674163
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 10:05 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S8

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.16		0.010	0.050	1

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

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Analysis Report

Sample Description: GW2H14-R87-S8 Groundwater
GW2H14 CAMU

LL Sample # WW 7674163
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 10:05 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S8

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	2	J	1	5	1
10461	Diphenyl ether	101-84-8	5		0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.011	U	0.011	0.053	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.053	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.053	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.053	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.053	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.053	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.053	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.053	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.053	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.053	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.053	1
12971	Fluorene	86-73-7	0.011	U	0.011	0.053	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.053	1
12971	2-Methylnaphthalene	91-57-6	0.011	U	0.011	0.053	1
12971	Naphthalene	91-20-3	0.032	U	0.032	0.063	1
12971	Phenanthrene	85-01-8	0.032	U	0.032	0.063	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.053	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0597		0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-R87-S8 Groundwater
GW2H14 CAMU

LL Sample # WW 7674163
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 10:05 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S8

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		mg/l	mg/l	mg/l	
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
Metals	**SW-846 6020A**		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 14:16	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 15:08	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 15:08	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 14:16	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 20:44	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 19:51	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143280037A	11/24/2014 22:37	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-R87-S8 Groundwater
GW2H14 CAMU

LL Sample # WW 7674163
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 10:05 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S8

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:14	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:25	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:25	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:25	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:25	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:25	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:21	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

R87S8

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7674163
Sample wt/vol: 237 (g/mL) mL Lab File ID: dk0491.d
Level: (low/med) LOW Date Received: 11/13/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
5.				
6.				
7.				
8.				
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29.				
30.				

page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-R87-S8-A Groundwater
GW2H14 CAMU

LL Sample # WW 7674164
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 10:05 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87A8

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 20:20	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 20:20	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: GW2H14-R87-S9 Groundwater
GW2H14 CAMU

LL Sample # WW 7674165
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 08:53 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S9

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

Sample Description: GW2H14-R87-S9 Groundwater
GW2H14 CAMU

LL Sample # WW 7674165
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 08:53 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S9

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.011	U	0.011	0.055	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.055	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.055	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.055	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.055	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.055	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.055	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.055	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.055	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.055	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.055	1
12971	Fluorene	86-73-7	0.011	U	0.011	0.055	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.055	1
12971	2-Methylnaphthalene	91-57-6	0.011	U	0.011	0.055	1
12971	Naphthalene	91-20-3	0.033	U	0.033	0.066	1
12971	Phenanthrene	85-01-8	0.033	U	0.033	0.066	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.055	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0452		0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Lancaster Laboratories Environmental
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Analysis Report

Sample Description: GW2H14-R87-S9 Groundwater
GW2H14 CAMU

LL Sample # WW 7674165
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 08:53 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.00062 J	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 14:38	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 15:28	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 15:28	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 14:38	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 21:13	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 20:19	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 20:31	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1

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

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-R87-S9 Groundwater
GW2H14 CAMU

LL Sample # WW 7674165
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 08:53 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87S9

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:18	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 11:12	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 11:12	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 11:12	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 11:12	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 11:12	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:23	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
R87S9

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 7674165
Sample wt/vol: 228 (g/mL) mL Lab File ID: dk0492.d
Level: (low/med) LOW Date Received: 11/13/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
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page 1 of 1

FORM I SV-1

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-R87-S9-A Groundwater
GW2H14 CAMU

LL Sample # WW 7674166
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 08:53 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

R87A9

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 20:42	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 20:42	Kerri E Legerlotz	1

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

Sample Description: GW2H14-R87-S10 Groundwater
GW2H14 CAMU

LL Sample # WW 7674167
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

Sample Description: GW2H14-R87-S10 Groundwater
GW2H14 CAMU

LL Sample # WW 7674167
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.5	U	0.5	1	1
10461	Dibenzofuran	132-64-9	0.5	U	0.5	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	5	1
10461	Diphenyl ether	101-84-8	0.5	U	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.5	U	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.5	1
10461	Phenol	108-95-2	0.5	U	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.010	U	0.010	0.051	1
12971	Acenaphthylene	208-96-8	0.010	U	0.010	0.051	1
12971	Anthracene	120-12-7	0.010	U	0.010	0.051	1
12971	Benzo(a)anthracene	56-55-3	0.010	U	0.010	0.051	1
12971	Benzo(a)pyrene	50-32-8	0.010	U	0.010	0.051	1
12971	Benzo(b)fluoranthene	205-99-2	0.010	U	0.010	0.051	1
12971	Benzo(g,h,i)perylene	191-24-2	0.010	U	0.010	0.051	1
12971	Benzo(k)fluoranthene	207-08-9	0.010	U	0.010	0.051	1
12971	Chrysene	218-01-9	0.010	U	0.010	0.051	1
12971	Dibenz(a,h)anthracene	53-70-3	0.010	U	0.010	0.051	1
12971	Fluoranthene	206-44-0	0.010	U	0.010	0.051	1
12971	Fluorene	86-73-7	0.010	U	0.010	0.051	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.010	U	0.010	0.051	1
12971	2-Methylnaphthalene	91-57-6	0.010	U	0.010	0.051	1
12971	Naphthalene	91-20-3	0.030	U	0.030	0.061	1
12971	Phenanthrene	85-01-8	0.030	U	0.030	0.061	1
12971	Pyrene	129-00-0	0.010	U	0.010	0.051	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0179		0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: GW2H14-R87-S10 Groundwater
GW2H14 CAMU

LL Sample # WW 7674167
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 12:30	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 11:26	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 11:26	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 12:30	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 18:21	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 17:33	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 22:00	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-R87-S10 Groundwater
GW2H14 CAMU

LL Sample # WW 7674167
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 00:24	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:10	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:10	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:10	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:10	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:10	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 08:57	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
87S10

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 7674167
Sample wt/vol: 247 (g/mL) mL Lab File ID: dk0486.d
Level: (low/med) LOW Date Received: 11/13/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
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FORM I SV-1

Sample Description: GW2H14-R87-S10 MS Groundwater
GW2H14 CAMU

LL Sample # WW 7674168
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
02898	Acetone	67-64-1	43	3.0	5.0	1
02898	Benzene	71-43-2	5.3	0.1	0.5	1
02898	Bromochloromethane	74-97-5	5.1	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	5.1	0.1	0.5	1
02898	Bromoform	75-25-2	4.2	0.1	0.5	1
02898	Bromomethane	74-83-9	4.9	0.1	0.5	1
02898	2-Butanone	78-93-3	42	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	5.1	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	5.3	0.1	0.5	1
02898	Chlorobenzene	108-90-7	5.4	0.1	0.5	1
02898	Chloroethane	75-00-3	5.0	0.1	0.5	1
02898	Chloroform	67-66-3	5.4	0.1	0.5	1
02898	Chloromethane	74-87-3	5.5	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	4.9	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	5.0	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	5.5	0.1	0.5	1
02898	Dibromomethane	74-95-3	5.3	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	24	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	5.4	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	5.3	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	5.4	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	5.1	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	5.4	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	5.3	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	5.3	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	5.4	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	5.4	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	4.9	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	4.9	0.1	0.5	1
02898	Ethylbenzene	100-41-4	5.5	0.1	0.5	1
02898	2-Hexanone	591-78-6	28	1.0	5.0	1
02898	Methyl Iodide	74-88-4	5.1	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	29	1.0	5.0	1
02898	Methylene Chloride	75-09-2	5.4	0.2	0.5	1
02898	Styrene	100-42-5	5.5	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	5.4	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	5.5	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	5.4	0.1	0.5	1
02898	Toluene	108-88-3	5.4	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	5.2	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	5.5	0.1	0.5	1
02898	Trichloroethene	79-01-6	5.5	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	6.1	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	5.6	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	14	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	16	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**	**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.58	0.010	0.050	1

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

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Analysis Report

Sample Description: GW2H14-R87-S10 MS Groundwater
GW2H14 CAMU

LL Sample # WW 7674168
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	50	0.6	1	1
10461	Dibenzofuran	132-64-9	51	0.6	1	1
10461	1,4-Dioxane	123-91-1	34	1	6	1
10461	Diphenyl ether	101-84-8	50	0.6	1	1
10461	1,2-Diphenylhydrazine	122-66-7	50	0.6	1	1
10461	1-Methylnaphthalene	90-12-0	50	0.1	0.6	1
10461	Phenol	108-95-2	26	0.6	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**	**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	1.4	0.011	0.056	1
12971	Acenaphthylene	208-96-8	1.2	0.011	0.056	1
12971	Anthracene	120-12-7	1.3	0.011	0.056	1
12971	Benzo(a)anthracene	56-55-3	1.2	0.011	0.056	1
12971	Benzo(a)pyrene	50-32-8	1.2	0.011	0.056	1
12971	Benzo(b)fluoranthene	205-99-2	1.3	0.011	0.056	1
12971	Benzo(g,h,i)perylene	191-24-2	1.2	0.011	0.056	1
12971	Benzo(k)fluoranthene	207-08-9	1.3	0.011	0.056	1
12971	Chrysene	218-01-9	1.3	0.011	0.056	1
12971	Dibenz(a,h)anthracene	53-70-3	1.2	0.011	0.056	1
12971	Fluoranthene	206-44-0	1.2	0.011	0.056	1
12971	Fluorene	86-73-7	1.3	0.011	0.056	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	1.2	0.011	0.056	1
12971	2-Methylnaphthalene	91-57-6	1.1	0.011	0.056	1
12971	Naphthalene	91-20-3	1.2	0.033	0.067	1
12971	Phenanthrene	85-01-8	1.2	0.033	0.067	1
12971	Pyrene	129-00-0	1.3	0.011	0.056	1
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**	**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	150	8.0	10	1
12926	Ethylene glycol	107-21-1	150	8.0	10	1
12926	Propylene glycol	57-55-6	140	8.0	10	1
12926	Triethylene glycol	112-27-6	140	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	2.05	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.0500	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.200	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.514	0.0010	0.0100	1
07053	Copper	7440-50-8	0.253	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.521	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.150	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0536	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.509	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.508	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.0063	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.0108	0.00082	0.0040	1

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

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Analysis Report

Sample Description: GW2H14-R87-S10 MS Groundwater
GW2H14 CAMU

LL Sample # WW 7674168
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06028	Cadmium	7440-43-9	0.0050	0.00017	0.0010	1
06035	Lead	7439-92-1	0.0157	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.0021	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.0011	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 12:52	Kerri E Legerlotz	1
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 13:34	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 11:47	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 11:47	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 12:52	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	3	I143251AA	11/21/2014 13:34	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 18:49	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 18:00	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 22:14	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-R87-S10 MS Groundwater
GW2H14 CAMU

LL Sample # WW 7674168
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 00:35	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:18	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:18	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:18	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:18	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:18	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:02	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

Sample Description: GW2H14-R87-S10 MSD Groundwater
GW2H14 CAMU

LL Sample # WW 7674169
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l	ug/l	ug/l	
02898	Acetone	67-64-1	42	3.0	5.0	1
02898	Benzene	71-43-2	5.2	0.1	0.5	1
02898	Bromochloromethane	74-97-5	5.0	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	5.2	0.1	0.5	1
02898	Bromoform	75-25-2	4.4	0.1	0.5	1
02898	Bromomethane	74-83-9	5.0	0.1	0.5	1
02898	2-Butanone	78-93-3	43	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	4.9	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	5.2	0.1	0.5	1
02898	Chlorobenzene	108-90-7	5.6	0.1	0.5	1
02898	Chloroethane	75-00-3	5.0	0.1	0.5	1
02898	Chloroform	67-66-3	5.4	0.1	0.5	1
02898	Chloromethane	74-87-3	5.6	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	5.0	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	5.2	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	5.7	0.1	0.5	1
02898	Dibromomethane	74-95-3	5.5	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	24	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	5.5	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	5.5	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	5.6	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	5.0	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	5.4	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	5.2	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	5.2	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	5.2	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	5.5	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	5.0	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	5.1	0.1	0.5	1
02898	Ethylbenzene	100-41-4	5.6	0.1	0.5	1
02898	2-Hexanone	591-78-6	29	1.0	5.0	1
02898	Methyl Iodide	74-88-4	5.0	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	30	1.0	5.0	1
02898	Methylene Chloride	75-09-2	5.2	0.2	0.5	1
02898	Styrene	100-42-5	5.6	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	5.6	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	5.7	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	5.5	0.1	0.5	1
02898	Toluene	108-88-3	5.5	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	5.3	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	5.7	0.1	0.5	1
02898	Trichloroethene	79-01-6	5.5	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	6.0	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	5.9	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	14	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	17	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l	ug/l	ug/l	
06008	Vinyl Chloride	75-01-4	0.57	0.010	0.050	1

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

Sample Description: GW2H14-R87-S10 MSD Groundwater
GW2H14 CAMU

LL Sample # WW 7674169
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	45	0.5	1	1
10461	Dibenzofuran	132-64-9	46	0.5	1	1
10461	1,4-Dioxane	123-91-1	30	1	5	1
10461	Diphenyl ether	101-84-8	45	0.5	1	1
10461	1,2-Diphenylhydrazine	122-66-7	45	0.5	1	1
10461	1-Methylnaphthalene	90-12-0	45	0.1	0.5	1
10461	Phenol	108-95-2	25	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**	**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	1.3	0.011	0.054	1
12971	Acenaphthylene	208-96-8	1.1	0.011	0.054	1
12971	Anthracene	120-12-7	1.2	0.011	0.054	1
12971	Benzo(a)anthracene	56-55-3	1.2	0.011	0.054	1
12971	Benzo(a)pyrene	50-32-8	1.2	0.011	0.054	1
12971	Benzo(b)fluoranthene	205-99-2	1.2	0.011	0.054	1
12971	Benzo(g,h,i)perylene	191-24-2	1.1	0.011	0.054	1
12971	Benzo(k)fluoranthene	207-08-9	1.2	0.011	0.054	1
12971	Chrysene	218-01-9	1.2	0.011	0.054	1
12971	Dibenz(a,h)anthracene	53-70-3	1.1	0.011	0.054	1
12971	Fluoranthene	206-44-0	1.1	0.011	0.054	1
12971	Fluorene	86-73-7	1.2	0.011	0.054	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	1.1	0.011	0.054	1
12971	2-Methylnaphthalene	91-57-6	1.1	0.011	0.054	1
12971	Naphthalene	91-20-3	1.1	0.032	0.065	1
12971	Phenanthrene	85-01-8	1.2	0.032	0.065	1
12971	Pyrene	129-00-0	1.3	0.011	0.054	1
GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**	**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	160	8.0	10	1
12926	Ethylene glycol	107-21-1	160	8.0	10	1
12926	Propylene glycol	57-55-6	150	8.0	10	1
12926	Triethylene glycol	112-27-6	160	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	2.03	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.0492	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.197	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.504	0.0010	0.0100	1
07053	Copper	7440-50-8	0.251	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.515	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.152	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0531	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.501	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.502	0.0020	0.0400	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.0067	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.0106	0.00082	0.0040	1

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

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Analysis Report

Sample Description: GW2H14-R87-S10 MSD Groundwater
GW2H14 CAMU

LL Sample # WW 7674169
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87S10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06028	Cadmium	7440-43-9	0.0051	0.00017	0.0010	1
06035	Lead	7439-92-1	0.0159	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.0020	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.00093	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 13:13	Kerri E Legerlotz	1
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 13:55	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 12:07	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 12:07	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 13:13	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	3	I143251AA	11/21/2014 13:55	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 19:18	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 18:28	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 22:29	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1

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Analysis Report

Sample Description: GW2H14-R87-S10 MSD Groundwater
GW2H14 CAMU

LL Sample # WW 7674169
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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Newark DE 19713

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 00:39	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:20	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:20	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:20	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:20	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:20	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:04	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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Analysis Report

Sample Description: GW2H14-R87-S10 Dupl Groundwater
GW2H14 CAMU

LL Sample # WW 7674170
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		mg/l	mg/l	mg/l	
07046	Barium	7440-39-3	0.0180	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067 U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013 U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010 U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028 U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016 U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048 U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018 U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019 U	0.0019	0.0100	1
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
	SW-846 6020A		mg/l	mg/l	mg/l	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1

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Analysis Report

Sample Description: GW2H14-R87-S10 Dupl Groundwater
GW2H14 CAMU

LL Sample # WW 7674170
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 00:31	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:15	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:15	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:15	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:15	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:15	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 08:59	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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Analysis Report

Sample Description: GW2H14-R87-S10-A Groundwater
GW2H14 CAMU

LL Sample # WW 7674171
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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87A10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 19:11	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 19:11	Kerri E Legerlotz	1

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Analysis Report

Sample Description: GW2H14-R87-S10-A MS Groundwater
GW2H14 CAMU

LL Sample # WW 7674172
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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87A10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l	ug/l	ug/l	
02898	Acrylonitrile	107-13-1	22	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 19:34	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 19:34	Kerri E Legerlotz	1

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Analysis Report

Sample Description: GW2H14-R87-S10-A MSD Groundwater
GW2H14 CAMU

LL Sample # WW 7674173
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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87A10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l	ug/l	ug/l	
02898	Acrylonitrile	107-13-1	25	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 19:57	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 19:57	Kerri E Legerlotz	1

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

Sample Description: GW2H14-R87-S10-D Groundwater
GW2H14 CAMU

LL Sample # WW 7674174
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

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CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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Analysis Report

Sample Description: GW2H14-R87-S10-D Groundwater
GW2H14 CAMU

LL Sample # WW 7674174
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87D10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.6	U	0.6	1	1
10461	Dibenzofuran	132-64-9	0.6	U	0.6	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	6	1
10461	Diphenyl ether	101-84-8	0.6	U	0.6	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.6	U	0.6	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.6	1
10461	Phenol	108-95-2	0.6	U	0.6	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.011	U	0.011	0.057	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.057	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.057	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.057	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.057	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.057	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.057	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.057	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.057	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.057	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.057	1
12971	Fluorene	86-73-7	0.011	U	0.011	0.057	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.057	1
12971	2-Methylnaphthalene	91-57-6	0.011	U	0.011	0.057	1
12971	Naphthalene	91-20-3	0.034	U	0.034	0.069	1
12971	Phenanthrene	85-01-8	0.034	U	0.034	0.069	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.057	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0173		0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Analysis Report

Sample Description: GW2H14-R87-S10-D Groundwater
GW2H14 CAMU

LL Sample # WW 7674174
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87D10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 15:00	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 15:49	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 15:49	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 15:00	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 21:41	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 20:46	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 20:46	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-R87-S10-D Groundwater
GW2H14 CAMU

LL Sample # WW 7674174
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

87D10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:22	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:34	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:34	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:34	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:34	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:34	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:25	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
87D10

Lab Name: Lancaster Laboratories Contract:
Lab Code: LANCAS Case No.: SAS No.: SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 7674174
Sample wt/vol: 218 (g/mL) mL Lab File ID: dk0493.d
Level: (low/med) LOW Date Received: 11/13/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
5.				
6.				
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30.				

page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-R87-S10-D-A Groundwater
GW2H14 CAMU

LL Sample # WW 7674175
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

8710D

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 21:05	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 21:05	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: GW2H14-MW-213 Groundwater
GW2H14 CAMU

LL Sample # WW 7674176
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

M-213

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.16		0.010	0.050	1

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

Sample Description: GW2H14-MW-213 Groundwater
GW2H14 CAMU

LL Sample # WW 7674176
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

M-213

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.6	U	0.6	1	1
10461	Dibenzofuran	132-64-9	0.6	U	0.6	1	1
10461	1,4-Dioxane	123-91-1	3	J	1	6	1
10461	Diphenyl ether	101-84-8	61		0.6	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.6	U	0.6	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.6	1
10461	Phenol	108-95-2	0.6	U	0.6	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.012	U	0.012	0.058	1
12971	Acenaphthylene	208-96-8	0.012	U	0.012	0.058	1
12971	Anthracene	120-12-7	0.012	U	0.012	0.058	1
12971	Benzo(a)anthracene	56-55-3	0.012	U	0.012	0.058	1
12971	Benzo(a)pyrene	50-32-8	0.012	U	0.012	0.058	1
12971	Benzo(b)fluoranthene	205-99-2	0.012	U	0.012	0.058	1
12971	Benzo(g,h,i)perylene	191-24-2	0.012	U	0.012	0.058	1
12971	Benzo(k)fluoranthene	207-08-9	0.012	U	0.012	0.058	1
12971	Chrysene	218-01-9	0.012	U	0.012	0.058	1
12971	Dibenz(a,h)anthracene	53-70-3	0.012	U	0.012	0.058	1
12971	Fluoranthene	206-44-0	0.012	U	0.012	0.058	1
12971	Fluorene	86-73-7	0.012	U	0.012	0.058	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.012	U	0.012	0.058	1
12971	2-Methylnaphthalene	91-57-6	0.012	U	0.012	0.058	1
12971	Naphthalene	91-20-3	0.035	U	0.035	0.069	1
12971	Phenanthrene	85-01-8	0.035	U	0.035	0.069	1
12971	Pyrene	129-00-0	0.012	U	0.012	0.058	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.0061	J	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.0012	J	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Lancaster Laboratories Environmental
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Analysis Report

Sample Description: GW2H14-MW-213 Groundwater
GW2H14 CAMU

LL Sample # WW 7674176
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

M-213

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 15:21	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 16:09	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 16:09	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 15:21	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 22:10	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 21:14	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 21:01	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: GW2H14-MW-213 Groundwater
GW2H14 CAMU

LL Sample # WW 7674176
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

M-213

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:26	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:37	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:37	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:37	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:37	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:37	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143185713010	11/18/2014 09:27	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143185713010	11/17/2014 14:46	James L Mertz	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
M-213

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7674176
Sample wt/vol: 217 (g/mL) mL Lab File ID: dk0494.d
Level: (low/med) LOW Date Received: 11/13/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: GW2H14-MW-213-A Groundwater
GW2H14 CAMU

LL Sample # WW 7674177
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

M213A

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143181AA	11/14/2014 12:03	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143181AA	11/14/2014 12:03	Kerri E Legerlotz	1

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

Sample Description: TB-111214 Blank Water
GW2H14 CAMU

LL Sample # WW 7674178
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BT-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

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Analysis Report

Sample Description: TB-111214 Blank Water
GW2H14 CAMU

LL Sample # WW 7674178
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BT-12

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 11:26	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 12:27	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 12:27	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 11:26	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: TB-111214-A Blank Water
GW2H14 CAMU

LL Sample # WW 7674179
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:00 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BTA12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 21:51	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 21:51	Kerri E Legerlotz	1

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

Sample Description: EB-GW-111214 Blank Water
GW2H14 CAMU

LL Sample # WW 7674180
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:40 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BE-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

Sample Description: EB-GW-111214 Blank Water
GW2H14 CAMU

LL Sample # WW 7674180
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:40 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BE-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	1,1'-Biphenyl	92-52-4	0.6	U	0.6	1	1
10461	Dibenzofuran	132-64-9	0.6	U	0.6	1	1
10461	1,4-Dioxane	123-91-1	1	U	1	6	1
10461	Diphenyl ether	101-84-8	0.6	U	0.6	1	1
10461	1,2-Diphenylhydrazine	122-66-7	0.6	U	0.6	1	1
10461	1-Methylnaphthalene	90-12-0	0.1	U	0.1	0.6	1
10461	Phenol	108-95-2	0.6	U	0.6	1	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.011	U	0.011	0.055	1
12971	Acenaphthylene	208-96-8	0.011	U	0.011	0.055	1
12971	Anthracene	120-12-7	0.011	U	0.011	0.055	1
12971	Benzo(a)anthracene	56-55-3	0.011	U	0.011	0.055	1
12971	Benzo(a)pyrene	50-32-8	0.011	U	0.011	0.055	1
12971	Benzo(b)fluoranthene	205-99-2	0.011	U	0.011	0.055	1
12971	Benzo(g,h,i)perylene	191-24-2	0.011	U	0.011	0.055	1
12971	Benzo(k)fluoranthene	207-08-9	0.011	U	0.011	0.055	1
12971	Chrysene	218-01-9	0.011	U	0.011	0.055	1
12971	Dibenz(a,h)anthracene	53-70-3	0.011	U	0.011	0.055	1
12971	Fluoranthene	206-44-0	0.011	U	0.011	0.055	1
12971	Fluorene	86-73-7	0.011	U	0.011	0.055	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	U	0.011	0.055	1
12971	2-Methylnaphthalene	91-57-6	0.011	U	0.011	0.055	1
12971	Naphthalene	91-20-3	0.033	U	0.033	0.066	1
12971	Phenanthrene	85-01-8	0.033	U	0.033	0.066	1
12971	Pyrene	129-00-0	0.011	U	0.011	0.055	1

11659 Targeted Library Search

The results from the semivolatile library search are listed on the attached FORM 1 - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.

GC Miscellaneous	**SW-846 8015C Feb 2007 Rev 3**		**mg/l**		**mg/l**	**mg/l**	
12926	Diethylene glycol	111-46-6	8.0	U	8.0	10	1
12926	Ethylene glycol	107-21-1	8.0	U	8.0	10	1
12926	Propylene glycol	57-55-6	8.0	U	8.0	10	1
12926	Triethylene glycol	112-27-6	8.0	U	8.0	10	1
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
07046	Barium	7440-39-3	0.00033	U	0.00033	0.0100	1
07047	Beryllium	7440-41-7	0.00067	U	0.00067	0.0100	1
07051	Chromium	7440-47-3	0.0013	U	0.0013	0.0300	1
07052	Cobalt	7440-48-4	0.0010	U	0.0010	0.0100	1
07053	Copper	7440-50-8	0.0028	U	0.0028	0.0200	1
07061	Nickel	7440-02-0	0.0016	U	0.0016	0.0200	1
07036	Selenium	7782-49-2	0.0048	U	0.0048	0.0400	1
07066	Silver	7440-22-4	0.0018	U	0.0018	0.0100	1
07071	Vanadium	7440-62-2	0.0019	U	0.0019	0.0100	1

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

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Analysis Report

Sample Description: EB-GW-111214 Blank Water
GW2H14 CAMU

LL Sample # WW 7674180
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:40 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BE-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07072	Zinc	7440-66-6	0.0020 U	0.0020	0.0400	1
Metals	**SW-846 6020A**		**mg/l**	**mg/l**	**mg/l**	
06024	Antimony	7440-36-0	0.00033 U	0.00033	0.0020	1
06025	Arsenic	7440-38-2	0.00082 U	0.00082	0.0040	1
06028	Cadmium	7440-43-9	0.00017 U	0.00017	0.0010	1
06035	Lead	7439-92-1	0.000082 U	0.000082	0.0020	1
06045	Thallium	7440-28-0	0.00015 U	0.00015	0.0010	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000060 U	0.000060	0.00020	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 11:47	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 12:47	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 12:47	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 11:47	Kerri E Legerlotz	1
10461	BRE CAMU GW SVOAs	SW-846 8270D	1	14322WAB026	11/19/2014 22:39	Catherine E Bachman	1
12971	17 PAH Compounds	SW-846 8270D SIM	1	14322WAA026	11/24/2014 21:42	Mark A Clark	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14322WAA026	11/18/2014 18:30	Nicholas W Shroyer	1
11010	8270D BNA Extraction	SW-846 3510C	1	14322WAB026	11/18/2014 18:30	Nicholas W Shroyer	1
12926	4 Gylcol Compounds	SW-846 8015C Feb 2007 Rev 3	1	143220036A	11/19/2014 21:15	Tyler O Griffin	1
07046	Barium	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07052	Cobalt	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1

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

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Analysis Report

Sample Description: EB-GW-111214 Blank Water
GW2H14 CAMU

LL Sample # WW 7674180
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:40 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BE-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07071	Vanadium	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010C	1	143180636002	11/19/2014 01:30	Elaine F Stoltzfus	1
06024	Antimony	SW-846 6020A	1	143180639002A	11/18/2014 10:57	Choon Y Tian	1
06025	Arsenic	SW-846 6020A	1	143180639002A	11/18/2014 10:57	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	143180639002A	11/18/2014 10:57	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	143180639002A	11/18/2014 10:57	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	143180639002A	11/18/2014 10:57	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	143235713005	11/21/2014 10:41	Damary Valentin	1
10636	WW/TL SW846 (IV) ICP Dig (tot)	SW-846 3010A	1	143180636002	11/17/2014 14:22	James L Mertz	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	143180639002	11/17/2014 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	143235713005	11/20/2014 11:14	Micaela L Dishong	1

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BE-12

Lab Name: Lancaster Laboratories Contract: _____
Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 7674180
Sample wt/vol: 226 (g/mL) mL Lab File ID: dk0495.d
Level: (low/med) LOW Date Received: 11/13/14
% Moisture: Decanted: (Y/N) Date Extracted: 11/18/14
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/14
Injection Volume: 0.5 (uL) Dilution Factor: 1
GPC Cleanup: N pH: Extraction: Sepf
CONCENTRATION UNITS:
Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2,5-Dimethyl furan		0	U
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
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29.				
30.				

page 1 of 1

FORM I SV-1

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Analysis Report

Sample Description: EB-GW-111214-A Blank Water
GW2H14 CAMU

LL Sample # WW 7674181
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/12/2014 11:40 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BEA12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 21:28	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 21:28	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: TB-111114 Blank Water GW2H14 CAMU

LL Sample # WW 7674182
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BT-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**		**ug/l**	**ug/l**	
02898	Acetone	67-64-1	3.0	U	3.0	5.0	1
02898	Benzene	71-43-2	0.1	U	0.1	0.5	1
02898	Bromochloromethane	74-97-5	0.1	U	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	0.1	U	0.1	0.5	1
02898	Bromoform	75-25-2	0.1	U	0.1	0.5	1
02898	Bromomethane	74-83-9	0.1	U	0.1	0.5	1
02898	2-Butanone	78-93-3	1.0	U	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	0.4	U	0.4	1.0	1
02898	Carbon Tetrachloride	56-23-5	0.1	U	0.1	0.5	1
02898	Chlorobenzene	108-90-7	0.1	U	0.1	0.5	1
02898	Chloroethane	75-00-3	0.1	U	0.1	0.5	1
02898	Chloroform	67-66-3	0.1	U	0.1	0.5	1
02898	Chloromethane	74-87-3	0.2	U	0.2	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	0.2	U	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	0.1	U	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	0.1	U	0.1	0.5	1
02898	Dibromomethane	74-95-3	0.1	U	0.1	0.5	1
02898	trans-1,4-Dichloro-2-butene	110-57-6	1.0	U	1.0	5.0	1
02898	1,2-Dichlorobenzene	95-50-1	0.1	U	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	0.1	U	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	0.1	U	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	0.1	U	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	0.1	U	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	0.1	U	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	0.1	U	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	0.1	U	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	0.1	U	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	0.1	U	0.1	0.5	1
02898	Ethylbenzene	100-41-4	0.1	U	0.1	0.5	1
02898	2-Hexanone	591-78-6	1.0	U	1.0	5.0	1
02898	Methyl Iodide	74-88-4	0.1	U	0.1	0.5	1
02898	4-Methyl-2-pentanone	108-10-1	1.0	U	1.0	5.0	1
02898	Methylene Chloride	75-09-2	0.2	U	0.2	0.5	1
02898	Styrene	100-42-5	0.1	U	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	0.1	U	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	0.1	U	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	0.1	U	0.1	0.5	1
02898	Toluene	108-88-3	0.1	U	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	0.1	U	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	0.1	U	0.1	0.5	1
02898	Trichloroethene	79-01-6	0.1	U	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	0.1	U	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	0.3	U	0.3	1.0	1
02898	Vinyl Acetate	108-05-4	0.2	U	0.2	0.5	1
02898	Xylene (Total)	1330-20-7	0.1	U	0.1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
06008	Vinyl Chloride	75-01-4	0.010	U	0.010	0.050	1

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

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Analysis Report

Sample Description: TB-111114 Blank Water
GW2H14 CAMU

LL Sample # WW 7674182
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BT-11

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	BRE CAMU GW VOAs	SW-846 8260B 25mL purge	1	I143251AA	11/21/2014 12:09	Kerri E Legerlotz	1
06008	Vinyl Chloride	SW-846 8260B SIM	1	E143231AA	11/19/2014 13:07	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E143231AA	11/19/2014 13:07	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	I143251AA	11/21/2014 12:09	Kerri E Legerlotz	1

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

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Analysis Report

Sample Description: TB-111114-A Blank Water
GW2H14 CAMU

LL Sample # WW 7674183
LL Group # 1518404
Account # 06643

Project Name: BRE - CAMU GWM

Collected: 11/11/2014 14:30 by KT

Submitted: 11/13/2014 09:05
Reported: 11/25/2014 15:50

CRG-E.I.DuPont de Nemours & Co
URS Corporation
Iron Hill Corporate Center
4051 Ogletown Road, Suite 300
Newark DE 19713

BTA11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l		ug/l	ug/l	
02898	Acrylonitrile	107-13-1	1.0	U	1.0	5.0	1

General Sample Comments

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Acrylonitrile	SW-846 8260B 25mL purge	1	C143171AA	11/13/2014 18:49	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C143171AA	11/13/2014 18:49	Kerri E Legerlotz	1

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

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

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

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C143171AA	Sample number(s): 7674164,7674166,7674171-7674173,7674175,7674179,7674181,7674183									
Acrylonitrile	1.0	U	1.0	5.0	ug/l	89	85	64-141	4	30
Batch number: C143181AA	Sample number(s): 7674177									
Acrylonitrile	1.0	U	1.0	5.0	ug/l	105		64-141		
Batch number: E143231AA	Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674178,7674180,7674182									
Vinyl Chloride	0.010	U	0.010	0.050	ug/l	123		70-130		
Batch number: I143251AA	Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674178,7674180,7674182									
Acetone	3.0	U	3.0	5.0	ug/l	110		60-139		
Benzene	0.1	U	0.1	0.5	ug/l	101		80-120		
Bromochloromethane	0.1	U	0.1	0.5	ug/l	102		80-125		
Bromodichloromethane	0.1	U	0.1	0.5	ug/l	96		80-120		
Bromoform	0.1	U	0.1	0.5	ug/l	84		72-138		
Bromomethane	0.1	U	0.1	0.5	ug/l	92		62-126		
2-Butanone	1.0	U	1.0	5.0	ug/l	105		63-137		
Carbon Disulfide	0.4	U	0.4	1.0	ug/l	94		70-128		
Carbon Tetrachloride	0.1	U	0.1	0.5	ug/l	97		80-135		
Chlorobenzene	0.1	U	0.1	0.5	ug/l	102		80-120		
Chloroethane	0.1	U	0.1	0.5	ug/l	91		68-120		
Chloroform	0.1	U	0.1	0.5	ug/l	102		80-120		
Chloromethane	0.2	U	0.2	0.5	ug/l	102		55-120		
1,2-Dibromo-3-chloropropane	0.2	U	0.2	0.5	ug/l	90		64-141		
Dibromochloromethane	0.1	U	0.1	0.5	ug/l	97		80-126		
1,2-Dibromoethane	0.1	U	0.1	0.5	ug/l	107		80-120		
Dibromomethane	0.1	U	0.1	0.5	ug/l	105		80-120		
trans-1,4-Dichloro-2-butene	1.0	U	1.0	5.0	ug/l	89		14-166		
1,2-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	101		80-120		
1,3-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	100		80-120		
1,4-Dichlorobenzene	0.1	U	0.1	0.5	ug/l	101		80-120		
1,1-Dichloroethane	0.1	U	0.1	0.5	ug/l	99		80-120		
1,2-Dichloroethane	0.1	U	0.1	0.5	ug/l	104		76-132		
1,1-Dichloroethene	0.1	U	0.1	0.5	ug/l	99		80-123		
cis-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	101		80-120		
trans-1,2-Dichloroethene	0.1	U	0.1	0.5	ug/l	102		80-120		
1,2-Dichloropropane	0.1	U	0.1	0.5	ug/l	102		80-120		
cis-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	95		80-120		
trans-1,3-Dichloropropene	0.1	U	0.1	0.5	ug/l	96		80-120		
Ethylbenzene	0.1	U	0.1	0.5	ug/l	102		80-120		
2-Hexanone	1.0	U	1.0	5.0	ug/l	106		72-124		

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Methyl Iodide	0.1	U	0.1	0.5	ug/l	99		80-129		
4-Methyl-2-pentanone	1.0	U	1.0	5.0	ug/l	109		71-123		
Methylene Chloride	0.2	U	0.2	0.5	ug/l	104		80-120		
Styrene	0.1	U	0.1	0.5	ug/l	103		80-120		
1,1,1,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	102		80-120		
1,1,2,2-Tetrachloroethane	0.1	U	0.1	0.5	ug/l	103		80-120		
Tetrachloroethene	0.1	U	0.1	0.5	ug/l	98		80-120		
Toluene	0.1	U	0.1	0.5	ug/l	101		80-120		
1,1,1-Trichloroethane	0.1	U	0.1	0.5	ug/l	97		80-120		
1,1,2-Trichloroethane	0.1	U	0.1	0.5	ug/l	106		80-120		
Trichloroethene	0.1	U	0.1	0.5	ug/l	102		80-120		
Trichlorofluoromethane	0.1	U	0.1	0.5	ug/l	106		64-141		
1,2,3-Trichloropropane	0.3	U	0.3	1.0	ug/l	107		80-120		
Vinyl Acetate	0.2	U	0.2	0.5	ug/l	115		38-145		
Xylene (Total)	0.1	U	0.1	0.5	ug/l	101		80-120		
Batch number: 14322WAA026	Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674180									
Acenaphthene	0.010	U	0.010	0.050	ug/l	122		82-126		
Acenaphthylene	0.010	U	0.010	0.050	ug/l	99		72-124		
Anthracene	0.010	U	0.010	0.050	ug/l	110		83-125		
Benzo(a)anthracene	0.010	U	0.010	0.050	ug/l	112		79-122		
Benzo(a)pyrene	0.010	U	0.010	0.050	ug/l	116		72-126		
Benzo(b)fluoranthene	0.010	U	0.010	0.050	ug/l	118		79-136		
Benzo(g,h,i)perylene	0.010	U	0.010	0.050	ug/l	117		59-137		
Benzo(k)fluoranthene	0.010	U	0.010	0.050	ug/l	119		72-129		
Chrysene	0.010	U	0.010	0.050	ug/l	116		77-122		
Dibenz(a,h)anthracene	0.010	U	0.010	0.050	ug/l	113		42-143		
Fluoranthene	0.010	U	0.010	0.050	ug/l	105		76-121		
Fluorene	0.010	U	0.010	0.050	ug/l	107		82-119		
Indeno(1,2,3-cd)pyrene	0.010	U	0.010	0.050	ug/l	117		53-136		
2-Methylnaphthalene	0.010	U	0.010	0.050	ug/l	100		68-124		
Naphthalene	0.030	U	0.030	0.060	ug/l	104		78-117		
Phenanthrene	0.030	U	0.030	0.060	ug/l	106		83-116		
Pyrene	0.010	U	0.010	0.050	ug/l	116		70-124		
Batch number: 14322WAB026	Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674180									
1,1'-Biphenyl	0.5	U	0.5	1	ug/l	97		56-134		
Dibenzofuran	0.5	U	0.5	1	ug/l	99		81-110		
1,4-Dioxane	1	U	1.	5	ug/l	64		39-83		
Diphenyl ether	0.5	U	0.5	1	ug/l	97		77-113		
1,2-Diphenylhydrazine	0.5	U	0.5	1	ug/l	97		74-124		
1-Methylnaphthalene	0.1	U	0.1	0.5	ug/l	96		79-111		
Phenol	0.5	U	0.5	1	ug/l	50		25-80		
Batch number: 143220036A	Sample number(s): 7674165,7674167-7674169,7674174,7674176,7674180									
Diethylene glycol	8.0	U	8.0	10	mg/l	81		55-122		
Ethylene glycol	8.0	U	8.0	10	mg/l	84		54-129		
Propylene glycol	8.0	U	8.0	10	mg/l	83		57-137		
Triethylene glycol	8.0	U	8.0	10	mg/l	79		46-118		
Batch number: 143280037A	Sample number(s): 7674163									
Diethylene glycol	8.0	U	8.0	10	mg/l	88		55-122		
Ethylene glycol	8.0	U	8.0	10	mg/l	90		54-129		
Propylene glycol	8.0	U	8.0	10	mg/l	87		57-137		
Triethylene glycol	8.0	U	8.0	10	mg/l	87		46-118		

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 143180636002	Sample number(s): 7674163,7674165,7674167-7674170,7674174,7674176,7674180								
Barium	0.00036 J	0.00033	0.0100	mg/l	102		80-120		
Beryllium	0.00067 U	0.00067	0.0100	mg/l	99		80-120		
Chromium	0.0013 U	0.0013	0.0300	mg/l	99		80-120		
Cobalt	0.0010 U	0.0010	0.0100	mg/l	102		80-120		
Copper	0.0028 U	0.0028	0.0200	mg/l	101		80-120		
Nickel	0.0016 U	0.0016	0.0200	mg/l	104		80-120		
Selenium	0.0048 U	0.0048	0.0400	mg/l	100		80-120		
Silver	0.0018 U	0.0018	0.0100	mg/l	107		80-120		
Vanadium	0.0019 U	0.0019	0.0100	mg/l	100		80-120		
Zinc	0.0020 U	0.0020	0.0400	mg/l	101		80-120		
Batch number: 143180639002A	Sample number(s): 7674163,7674165,7674167-7674170,7674174,7674176,7674180								
Antimony	0.00033 U	0.00033	0.0020	mg/l	103		80-120		
Arsenic	0.00082 U	0.00082	0.0040	mg/l	106		80-120		
Cadmium	0.00017 U	0.00017	0.0010	mg/l	106		80-120		
Lead	0.000082 U	0.00008 2	0.0020	mg/l	106		80-120		
Thallium	0.00015 U	0.00015	0.0010	mg/l	110		80-120		
Batch number: 143185713010	Sample number(s): 7674163,7674165,7674167-7674170,7674174,7674176								
Mercury	0.000060 U	0.00006 0	0.00020	mg/l	87		80-120		
Batch number: 143235713005	Sample number(s): 7674180								
Mercury	0.000060 U	0.00006 0	0.00020	mg/l	89		80-120		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: C143171AA	Sample number(s): 7674164,7674166,7674171-7674173,7674175,7674179,7674181,7674183 UNSPK: 7674171								
Acrylonitrile	89	100	56-161	11	30				
Batch number: C143181AA	Sample number(s): 7674177 UNSPK: P664310								
Acrylonitrile	106	101	56-161	5	30				
Batch number: E143231AA	Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674178,7674180,7674182 UNSPK: 7674167								
Vinyl Chloride	116	113	70-130	2	30				
Batch number: I143251AA	Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674178,7674180,7674182 UNSPK: 7674167								
Acetone	114	112	57-163	1	30				
Benzene	106	104	87-126	1	30				
Bromochloromethane	101	99	82-125	2	30				
Bromodichloromethane	102	103	82-133	1	30				
Bromoform	85	87	60-138	3	30				

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Bromomethane	99	100	66-130	2	30				
2-Butanone	111	114	56-160	3	30				
Carbon Disulfide	102	99	84-141	4	30				
Carbon Tetrachloride	107	105	81-148	2	30				
Chlorobenzene	109	112	78-133	3	30				
Chloroethane	99	101	70-139	2	30				
Chloroform	107	108	86-136	1	30				
Chloromethane	110	112	49-135	2	30				
1,2-Dibromo-3-chloropropane	98	101	53-163	3	30				
Dibromochloromethane	101	104	79-125	4	30				
1,2-Dibromoethane	109	114	84-127	4	30				
Dibromomethane	106	110	83-126	3	30				
trans-1,4-Dichloro-2-butene	96	97	11-172	0	30				
1,2-Dichlorobenzene	107	111	83-117	3	30				
1,3-Dichlorobenzene	107	110	79-132	3	30				
1,4-Dichlorobenzene	108	111	79-120	3	30				
1,1-Dichloroethane	103	101	81-126	2	30				
1,2-Dichloroethane	107	107	82-135	0	30				
1,1-Dichloroethene	107	105	86-132	2	30				
cis-1,2-Dichloroethene	106	104	82-129	1	30				
trans-1,2-Dichloroethene	108	105	88-127	3	30				
1,2-Dichloropropane	108	109	91-126	1	30				
cis-1,3-Dichloropropene	98	101	74-132	3	30				
trans-1,3-Dichloropropene	98	102	71-128	5	30				
Ethylbenzene	109	113	80-140	3	30				
2-Hexanone	113	118	51-149	4	30				
Methyl Iodide	103	100	71-137	3	30				
4-Methyl-2-pentanone	115	121	69-149	5	30				
Methylene Chloride	107	104	77-135	4	30				
Styrene	110	112	71-138	2	30				
1,1,1,2-Tetrachloroethane	108	112	87-126	4	30				
1,1,2,2-Tetrachloroethane	110	114	75-131	3	30				
Tetrachloroethene	108	109	75-129	1	30				
Toluene	108	109	83-127	2	30				
1,1,1-Trichloroethane	105	105	85-140	0	30				
1,1,2-Trichloroethane	110	113	85-129	3	30				
Trichloroethene	110	111	85-131	1	30				
Trichlorofluoromethane	122	120	73-139	1	30				
1,2,3-Trichloropropane	113	118	76-120	4	30				
Vinyl Acetate	113	111	27-162	2	30				
Xylene (Total)	108	111	81-137	2	30				

Batch number: 14322WAA026 Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674180 UNSPK: 7674167

Acenaphthene	126	121	69-134	6	30
Acenaphthylene	104	101	66-132	6	30
Anthracene	114	112	64-129	5	30
Benzo(a)anthracene	110	109	37-135	4	30
Benzo(a)pyrene	110	108	32-137	5	30
Benzo(b)fluoranthene	114	114	41-137	3	30
Benzo(g,h,i)perylene	106	102	21-127	7	30
Benzo(k)fluoranthene	113	114	36-139	3	30

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Chrysene	114	113	51-129	4	30				
Dibenz(a,h)anthracene	110	105	17-134	8	30				
Fluoranthene	106	105	53-133	4	30				
Fluorene	113	110	59-137	5	30				
Indeno(1,2,3-cd)pyrene	108	103	26-130	8	30				
2-Methylnaphthalene	101	100	64-129	5	30				
Naphthalene	109	106	58-131	6	30				
Phenanthrene	108	107	66-126	5	30				
Pyrene	120	117	49-136	6	30				
Batch number: 14322WAB026	Sample number(s): 7674163,7674165,7674167-7674169,7674174,7674176,7674180 UNSPK: 7674167								
1,1'-Biphenyl	88	85	73-114	11	30				
Dibenzofuran	90	87	71-116	11	30				
1,4-Dioxane	60	58	48-83	10	30				
Diphenyl ether	89	85	81-105	12	30				
1,2-Diphenylhydrazine	89	86	67-129	11	30				
1-Methylnaphthalene	88	85	78-110	11	30				
Phenol	46	48	10-107	1	30				
Batch number: 143220036A	Sample number(s): 7674165,7674167-7674169,7674174,7674176,7674180 UNSPK: 7674167								
Diethylene glycol	70	77	52-122	8	20				
Ethylene glycol	72	75	54-123	5	20				
Propylene glycol	69	70	55-131	2	20				
Triethylene glycol	70	78	33-123	11	20				
Batch number: 143280037A	Sample number(s): 7674163 UNSPK: 7674163								
Diethylene glycol	80	71	52-122	12	20				
Ethylene glycol	81	70	54-123	15	20				
Propylene glycol	76	65	55-131	16	20				
Triethylene glycol	79	73	33-123	8	20				
Batch number: 143180636002	Sample number(s): 7674163,7674165,7674167-7674170,7674174,7674176,7674180 UNSPK: 7674167 BKG: 7674167								
Barium	102	101	75-125	1	20	0.0179	0.0180	1 (1)	20
Beryllium	100	98	75-125	2	20	0.00067 U	0.00067 U	0 (1)	20
Chromium	100	99	75-125	1	20	0.0013 U	0.0013 U	0 (1)	20
Cobalt	103	101	75-125	2	20	0.0010 U	0.0010 U	0 (1)	20
Copper	101	100	75-125	1	20	0.0028 U	0.0028 U	0 (1)	20
Nickel	104	103	75-125	1	20	0.0016 U	0.0016 U	0 (1)	20
Selenium	100	101	75-125	1	20	0.0048 U	0.0048 U	0 (1)	20
Silver	107	106	75-125	1	20	0.0018 U	0.0018 U	0 (1)	20
Vanadium	102	100	75-125	2	20	0.0019 U	0.0019 U	0 (1)	20
Zinc	102	100	75-125	1	20	0.0020 U	0.0020 U	0 (1)	20
Batch number: 143180639002A	Sample number(s): 7674163,7674165,7674167-7674170,7674174,7674176,7674180 UNSPK: 7674167 BKG: 7674167								
Antimony	105	112	75-125	7	20	0.00033 U	0.00033 U	0 (1)	20
Arsenic	108	106	75-125	2	20	0.00082 U	0.00082 U	0 (1)	20
Cadmium	101	103	75-125	2	20	0.00017 U	0.00017 U	0 (1)	20
Lead	105	106	75-125	1	20	0.000082 U	0.000082 U	0 (1)	20
Thallium	103	100	75-125	3	20	0.00015 U	0.00015 U	0 (1)	20

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 143185713010	Sample number(s): 7674163,7674165,7674167-7674170,7674174,7674176 UNSPK: 7674167 BKG: 7674167								
Mercury	109	93	75-125	16	20	0.000060 U	0.000060 U	0 (1)	20
Batch number: 143235713005	Sample number(s): 7674180 UNSPK: P677159 BKG: P677159								
Mercury	74*	74*	75-125	1	20	0.000060 U	0.000060 U	0 (1)	20

Surrogate Quality Control

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

Analysis Name: Acrylonitrile
Batch number: C143171AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7674164	118*	104	88	96
7674166	120*	117*	83	94
7674171	109	105	97	97
7674172	101	101	100	98
7674173	100	101	114*	100
7674175	103	114*	84	95
7674179	107	102	87	88
7674181	100	100	94	90
7674183	106	104	98	99
Blank	100	100	95	98
LCS	101	102	98	102
LCSD	101	103	98	104
MS	101	101	100	98
MSD	100	101	114*	100
Limits:	77-114	74-113	77-110	78-110

Analysis Name: Acrylonitrile
Batch number: C143181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7674177	107	102	93	96
Blank	109	103	92	95
LCS	96	108	94	96
MS	105	101	99	102
MSD	108	102	101	102
Limits:	77-114	74-113	77-110	78-110

Analysis Name: Vinyl Chloride
Batch number: E143231AA

	Dibromofluoromethane
7674163	102
7674165	103
7674167	104

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

Surrogate Quality Control

7674168	104
7674169	103
7674174	103
7674176	103
7674178	103
7674180	104
7674182	104
Blank	105
LCS	101
MS	104
MSD	103
Limits:	80-120

Analysis Name: BRE CAMU GW VOAs
Batch number: I143251AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7674163	100	103	99	96
7674165	100	106	99	95
7674167	101	104	99	95
7674168	100	103	99	99
7674169	100	100	100	99
7674174	100	105	99	95
7674176	101	103	99	95
7674178	99	105	99	95
7674180	101	107	98	96
7674182	101	106	98	96
Blank	100	103	99	97
LCS	100	103	100	98
MS	100	103	99	99
MSD	100	100	100	99
Limits:	77-114	74-113	77-110	78-110

Analysis Name: 17 PAH Compounds
Batch number: 14322WAA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7674163	100	86	99
7674165	96	91	95
7674167	107	112	107
7674168	106	119	104
7674169	104	116	104
7674174	98	104	98
7674176	88	92	83
7674180	86	97	83
Blank	104	119	95
LCS	106	126	107
MS	106	119	104
MSD	104	116	104
Limits:	56-134	36-156	59-132

Analysis Name: BRE CAMU GW SVOAs
Batch number: 14322WAB026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7674163	33	37	74	80	78	65
7674165	32	47	83	81	79	76

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Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1518404
Reported: 11/25/14 at 03:50 PM

Surrogate Quality Control

7674167	31	46	86	88	86	79
7674168	41	59	98	87	87	92
7674169	44	63	97	84	82	93
7674174	31	49	85	78	78	87
7674176	43	48	84	83	83	91
7674180	32	51	84	80	79	93
Blank	35	52	91	87	86	95
LCS	45	63	105	95	94	103
MS	41	59	98	87	87	92
MSD	44	63	97	84	82	93
Limits:	10-83	10-107	22-150	60-123	67-116	40-147

Analysis Name: 4 Gylcol Compounds
Batch number: 143220036A

	Tetramethylene glycol
7674165	57
7674167	66
7674168	61
7674169	64
7674174	71
7674176	56
7674180	59
Blank	76
LCS	76
MS	61
MSD	64
Limits:	54-136

Analysis Name: 4 Gylcol Compounds
Batch number: 143280037A

	Tetramethylene glycol
7674163	59
Blank	58
LCS	77
MS	70
MSD	64
Limits:	54-136

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

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Analysis Request / Environmental Services Chain of Custody

For Lancaster Laboratories Use Only
Group No.: 1518404 Sample Nos.: 7674163-83
Acc't: 06643 SF: 86174 SCR No.: 163125 Cooler No.: C27707 **30453**
Cooler Temperature upon receipt: 0.5 °C Container No.: 1

Facility Name: Brevard	Project Manager: Tracy Obvey
Facility Contact: Chet Meinzer	Facility Contact Phone No.: 828-862-8379
Facility Address: DuPont Brevard	Job No.: 9267-7720100C-WH06504681
1300 Staton Road	Release No.:
Cedar Mountain NC 28718	PO Number: LBIO-66380
Sampler(s): K. Teague, W. Parker	
Project Name: GW2H14 CAMU	

Analyses Required

Sample Identification	Date Collected	Time Collected	Matrix	Containers Volume (ml)	Preserv	No.	GC/MS VOAs (25 ml purge 8260)	Vinyl Chloride (8260 SIM)	Acrylonitrile (8260)*	Comments: Condition upon receipt:
GW2H14-R87-S8	11/12/14	1005	WW	40	HCl	5	X	X		Intact
GW2H14-R87-S8-A	11/12/14	1005	WW	40	None	3			X	
GW2H14-R87-S9	11/12/14	0853	WW	40	HCl	5	X	X		
GW2H14-R87-S9-A	11/12/14	0853	WW	40	None	3			X	
GW2H14-R87-S10	11/11/14	1430	WW	40	HCl	5	X	X		
GW2H14-R87-S10-A	11/11/14	1430	WW	40	None	3			X	
GW2H14-MW-213	11/12/14	1100	WW	40	~~None~~ HCL	5	X	X		
GW2H14-MW-213-A	11/12/14	1100	WW	40	None	3			X	
TB-111214	11/12/14	1100	WW	40	HCL	2	X	X		
TB-111214-A	11/12/14	1100	WW	40	None	1			X	

Turnaround Time Requested (please circle) : (Standard) RUSH Number of days: 8

Special Instructions: *3 day holding time

	Date	Time		Date	Time
Bottles Relinquished by: Ana Megashko	11/5/14	8:26	Bottles Received by: Kaur Kagne	11/10/14	1100
Bottles Relinquished by: Kaur Kagne	11/12/14	1200	Bottles Received by:		
Bottles Relinquished by:			Bottles Received by:		
Bottles Relinquished by:			Bottles Received by:	11/13/14	405