

ANALYTICAL REPORT

Job Number: 480-139667-1

Job Description: Former Philadelphia Coke Facility

Contract Number: TAAT092507-R010110

For:

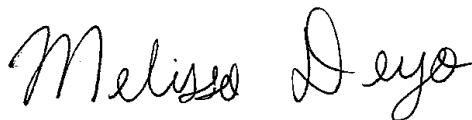
ARCADIS U.S. Inc

One Lincoln Center

110 West Fayette St, Suite 300

Syracuse, NY 13202

Attention: Mr. Lawrence C Healy III



Approved for release.
Melissa L Deyo
Project Manager I
8/22/2018 2:27 PM

Melissa L Deyo, Project Manager I
10 Hazelwood Drive, Amherst, NY, 14228-2298
(716)504-9874
melissa.deyo@testamericainc.com
08/22/2018

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

TestAmerica Laboratories, Inc.

TestAmerica Buffalo 10 Hazelwood Drive, Amherst, NY 14228-2298

Tel (716) 691-2600 Fax (716) 691-7991 www.testamericainc.com

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Job Narrative
480-139667-1

Receipt

The samples were received on 7/28/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

General Chemistry

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

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-139667-1	PCMW-15S	Water	07/27/18 12:30	07/28/18 09:50
480-139667-2	PCMW-10D	Water	07/27/18 13:40	07/28/18 09:50
480-139667-3	DUP-07272018	Water	07/27/18 00:00	07/28/18 09:50

Detection Summary

Client: ARCADIS U.S. Inc
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Client Sample ID: PCMW-15S

Lab Sample ID: 480-139667-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Free	6.2		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: PCMW-10D

Lab Sample ID: 480-139667-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Free	4.1	J F1	5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: DUP-07272018

Lab Sample ID: 480-139667-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Free	9.0		5.0	1.5	ug/L	1		9016	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Method	Method Description	Protocol	Laboratory
9016	Cyanide, Free	SW846	TAL EDI
9016	Cyanide, Preparation	SW846	TAL EDI

Protocol References:

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

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Client Sample ID: PCMW-15S

Date Collected: 07/27/18 12:30
Date Received: 07/28/18 09:50

Lab Sample ID: 480-139667-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	6.2		5.0	1.5	ug/L		08/01/18 13:50	08/01/18 15:30	1

Client Sample ID: PCMW-10D

Date Collected: 07/27/18 13:40
Date Received: 07/28/18 09:50

Lab Sample ID: 480-139667-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	4.1	J F1	5.0	1.5	ug/L		08/01/18 13:50	08/01/18 15:30	1

Client Sample ID: DUP-07272018

Date Collected: 07/27/18 00:00
Date Received: 07/28/18 09:50

Lab Sample ID: 480-139667-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	9.0		5.0	1.5	ug/L		08/01/18 13:50	08/01/18 15:30	1

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Method: 9016 - Cyanide, Free

Lab Sample ID: MB 460-541248/1-A
Matrix: Water
Analysis Batch: 541343

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 541248

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	ND		5.0	1.5	ug/L		08/01/18 13:50	08/01/18 15:30	1

Lab Sample ID: LCS 460-541248/2-A
Matrix: Water
Analysis Batch: 541343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 541248

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Free	50.0	40.03		ug/L		80	78 - 110

Lab Sample ID: 480-139667-2 MS
Matrix: Water
Analysis Batch: 541343

Client Sample ID: PCMW-10D
Prep Type: Total/NA
Prep Batch: 541248

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cyanide, Free	4.1	J F1	50.0	31.39	F1	ug/L		55	78 - 110

Lab Sample ID: 480-139667-2 MSD
Matrix: Water
Analysis Batch: 541343

Client Sample ID: PCMW-10D
Prep Type: Total/NA
Prep Batch: 541248

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cyanide, Free	4.1	J F1	50.0	33.96	F1	ug/L		60	78 - 110	8	20

Lab Sample ID: DLCK 460-541343/10
Matrix: Water
Analysis Batch: 541343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	Limits
Cyanide, Free	2.00	2.40	J	ug/L		120	50 - 150

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

General Chemistry

Prep Batch: 541248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139667-1	PCMW-15S	Total/NA	Water	9016	
480-139667-2	PCMW-10D	Total/NA	Water	9016	
480-139667-3	DUP-07272018	Total/NA	Water	9016	
MB 460-541248/1-A	Method Blank	Total/NA	Water	9016	
LCS 460-541248/2-A	Lab Control Sample	Total/NA	Water	9016	
480-139667-2 MS	PCMW-10D	Total/NA	Water	9016	
480-139667-2 MSD	PCMW-10D	Total/NA	Water	9016	

Analysis Batch: 541343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-139667-1	PCMW-15S	Total/NA	Water	9016	541248
480-139667-2	PCMW-10D	Total/NA	Water	9016	541248
480-139667-3	DUP-07272018	Total/NA	Water	9016	541248
MB 460-541248/1-A	Method Blank	Total/NA	Water	9016	541248
DLCK 460-541343/10	Lab Control Sample	Total/NA	Water	9016	
LCS 460-541248/2-A	Lab Control Sample	Total/NA	Water	9016	541248
480-139667-2 MS	PCMW-10D	Total/NA	Water	9016	541248
480-139667-2 MSD	PCMW-10D	Total/NA	Water	9016	541248

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Client Sample ID: PCMW-15S

Date Collected: 07/27/18 12:30

Date Received: 07/28/18 09:50

Lab Sample ID: 480-139667-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9016			541248	08/01/18 13:50	KYN	TAL EDI
Total/NA	Analysis	9016		1	541343	08/01/18 15:30	JXT	TAL EDI

Client Sample ID: PCMW-10D

Date Collected: 07/27/18 13:40

Date Received: 07/28/18 09:50

Lab Sample ID: 480-139667-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9016			541248	08/01/18 13:50	KYN	TAL EDI
Total/NA	Analysis	9016		1	541343	08/01/18 15:30	JXT	TAL EDI

Client Sample ID: DUP-07272018

Date Collected: 07/27/18 00:00

Date Received: 07/28/18 09:50

Lab Sample ID: 480-139667-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9016			541248	08/01/18 13:50	KYN	TAL EDI
Total/NA	Analysis	9016		1	541343	08/01/18 15:30	JXT	TAL EDI

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
 Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-139667-1

Laboratory: TestAmerica Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-19
California	State Program	9	2931	04-01-19
Connecticut	State Program	1	PH-0568	09-30-18 *
Florida	NELAP	4	E87672	06-30-19
Georgia	State Program	4	10026 (NY)	03-31-19
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-19
Kentucky (DW)	State Program	4	90029	12-31-18
Kentucky (UST)	State Program	4	30	03-31-19
Kentucky (WW)	State Program	4	90029	12-31-18
Louisiana	NELAP	6	02031	06-30-19
Maine	State Program	1	NY00044	12-04-18
Maryland	State Program	3	294	03-31-19
Massachusetts	State Program	1	M-NY044	06-30-19
Michigan	State Program	5	9937	03-31-19
Minnesota	NELAP	5	036-999-337	12-31-18
New Hampshire	NELAP	1	2337	11-17-18
New Jersey	NELAP	2	NY455	06-30-19
New York	NELAP	2	10026	03-31-19
North Dakota	State Program	8	R-176	03-31-19
Oklahoma	State Program	6	9421	08-31-18 *
Oregon	NELAP	10	NY200003	06-09-19
Pennsylvania	NELAP	3	68-00281	07-31-19
Rhode Island	State Program	1	LAO00328	12-30-18
Tennessee	State Program	4	TN02970	03-31-19
Texas	NELAP	6	T104704412-15-6	07-31-19
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-18 *
Washington	State Program	10	C784	02-10-19
Wisconsin	State Program	5	998310390	08-31-18 *

Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-19
New York	NELAP	2	11452	04-01-19
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison

Job Number: 480-139667-1

SDG No.: _____

Project: Former Philadelphia Coke Facility

Client Sample ID

Lab Sample ID

PCMW-15S

480-139667-1

PCMW-10D

480-139667-2

DUP-07272018

480-139667-3

Comments:

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: PCMW-15S

Lab Sample ID: 480-139667-1

Lab Name: TestAmerica Edison

Job No.: 480-139667-1

SDG ID.: _____

Matrix: Water

Date Sampled: 07/27/2018 12:30

Reporting Basis: WET

Date Received: 07/28/2018 09:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Cyanide, Free	6.2	5.0	1.5	ug/L			1	9016

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: PCMW-10D

Lab Sample ID: 480-139667-2

Lab Name: TestAmerica Edison

Job No.: 480-139667-1

SDG ID.: _____

Matrix: Water

Date Sampled: 07/27/2018 13:40

Reporting Basis: WET

Date Received: 07/28/2018 09:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Cyanide, Free	4.1	5.0	1.5	ug/L	J	F1	1	9016

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: DUP-07272018

Lab Sample ID: 480-139667-3

Lab Name: TestAmerica Edison

Job No.: 480-139667-1

SDG ID.: _____

Matrix: Water

Date Sampled: 07/27/2018 00:00

Reporting Basis: WET

Date Received: 07/28/2018 09:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Cyanide, Free	9.0	5.0	1.5	ug/L			1	9016

2-IN
 CALIBRATION QUALITY CONTROL
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-139667-1
 SDG No.: _____
 Analyst: JXT Batch Start Date: 08/01/2018
 Reporting Units: ug/L Analytical Batch No.: 541343

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
8	ICV	15:30	Cyanide, Free	51.43	50.0	103	85-115		WT29016-50ppb_00453
9	ICB	15:30	Cyanide, Free	ND					
11	CCV	15:30	Cyanide, Free	47.12	50.0	94	85-115		WT9016-50ppb_00433
12	CCB	15:30	Cyanide, Free	ND					
23	CCV	15:30	Cyanide, Free	43.88	50.0	88	85-115		WT9016-50ppb_00433
24	CCB	15:30	Cyanide, Free	ND					
33	CCV	15:30	Cyanide, Free	43.88	50.0	88	85-115		WT9016-50ppb_00433
34	CCB	15:30	Cyanide, Free	ND					

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

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison

Job No.: 480-139667-1

SDG No.: _____

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 541343		Date: 08/01/2018 15:30	Prep Batch: 541248		Date: 08/01/2018 13:50		
9016	MB 460-541248/1-A	Cyanide, Free	ND		ug/L	5.0	1

5-IN
 MATRIX SPIKE SAMPLE RECOVERY
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-139667-1

SDG No.: _____

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 541343		Date: 08/01/2018 15:30	Prep Batch: 541248		Date: 08/01/2018 13:50						
9016	480-139667-2	Cyanide, Free	4.1	J	ug/L						F1
9016	480-139667-2	Cyanide, Free	31.39		ug/L	50.0	55	78-110			F1
	MS										

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

5-IN
 MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-139667-1
 SDG No.: _____
 Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 541343		Date: 08/01/2018 15:30	Prep Batch: 541248		Date: 08/01/2018 13:50						
9016	480-139667-2	Cyanide, Free	33.96		ug/L	50.0	60	78-110	8	20	F1
	MSD										

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

7A-IN
 LAB CONTROL SAMPLE
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-139667-1
 SDG No.: _____
 Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 541343 Date: 08/01/2018 15:30			Prep Batch: 541248 Date: 08/01/2018 13:50			LCS Source: WT9016-2mg/l_00309					
9016	LCS 460-541248/2- A	Cyanide, Free	40.03		ug/L	50.0	80	78-110			

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

7A-IN
 DETECTION LIMIT CHECK STANDARD
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-139667-1
 SDG No.: _____
 Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 541343 Date: 08/01/2018 15:30											
						LCS Source: WT9016-2mg/l_00309					
9016	DLCK 460-541343/10	Cyanide, Free	2.40	J	ug/L	2.00	120	50-150			

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

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job Number: 480-139667-1
SDG Number: _____
Matrix: Water Instrument ID: Wet9016
Method: 9016 MDL Date: 08/15/2016 13:13
Prep Method: 9016

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Cyanide, Free		5	1.54

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job Number: 480-139667-1
SDG Number: _____
Matrix: Water Instrument ID: Wet9016
Method: 9016 XMDL Date: 08/15/2016 13:14

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Cyanide, Free		5	1.54

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-139667-1

SDG No.: _____

Prep Method: 9016

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 460-541248/1-A	08/01/2018 13:50	541248		3	1.3
LCS 460-541248/2-A	08/01/2018 13:50	541248		3	1.3
480-139667-1	08/01/2018 13:50	541248		3	1.3
480-139667-3	08/01/2018 13:50	541248		3	1.3
480-139667-2	08/01/2018 13:50	541248		3	1.3
480-139667-2 MS	08/01/2018 13:50	541248		3	1.3
480-139667-2 MSD	08/01/2018 13:50	541248		3	1.3

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-139667-1

SDG No.: _____

Instrument ID: Wet9016 Method: 9016

Start Date: 08/01/2018 15:30 End Date: 08/01/2018 15:30

Lab Sample ID	D / F	T y p e	Time	Analytes																			
				C	N	F	r	e															
IC 460-541343/1			15:30	X																			
IC 460-541343/2			15:30	X																			
IC 460-541343/3			15:30	X																			
IC 460-541343/4			15:30	X																			
IC 460-541343/5			15:30	X																			
IC 460-541343/6			15:30	X																			
IC 460-541343/7			15:30	X																			
ICV 460-541343/8	1		15:30	X																			
ICB 460-541343/9	1		15:30	X																			
DLCK 460-541343/10	1	T	15:30	X																			
CCV 460-541343/11	1		15:30	X																			
CCB 460-541343/12	1		15:30	X																			
MB 460-541248/1-A	1	T	15:30	X																			
LCS 460-541248/2-A	1	T	15:30	X																			
ZZZZZZ			15:30																				
ZZZZZZ			15:30																				
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CCV 460-541343/23	1		15:30	X																			
CCB 460-541343/24	1		15:30	X																			
ZZZZZZ			15:30																				
ZZZZZZ			15:30																				
ZZZZZZ			15:30																				
480-139667-1	1	T	15:30	X																			
480-139667-3	1	T	15:30	X																			
480-139667-2	1	T	15:30	X																			
480-139667-2 MS	1	T	15:30	X																			
480-139667-2 MSD	1	T	15:30	X																			
CCV 460-541343/33	1		15:30	X																			
CCB 460-541343/34	1		15:30	X																			

Prep Types
T = Total/NA

906

Batch Job	DL	Matrix	1 Set [Abs]	2 Set [Abs]	Avg [Abs]
# 541343					
# 490-156416, 156500, 480-139667					
0			0.000	0.000	0.000
2			0.002	0.003	0.003
5			0.007	0.005	0.006
10			0.017	0.018	0.018
25			0.038	0.039	0.039
50			0.088	0.089	0.089
150			0.279	0.275	0.277
ICV			0.095	0.091	0.093
ICB			0.000	0.000	0.000
DLCK			0.002	0.001	0.002
CCV			0.085	0.085	0.085
CCB			0.000	0.000	0.000
MB			0.000	0.000	0.000
LCS			0.169	0.169	0.169
156416-5	IX	Water	0.001	0.002	0.002
↓ -5 MS	↓	↓	0.152	0.156	0.154
↓ -5 MSB	↓	↓	0.147	0.150	0.149
↓ -6	↓	↓	0.000	0.000	0.000
↓ -7	↓	↓	0.000	0.001	0.001
↓ -8	↓	↓	0.000	0.001	0.001
↓ -9	↓	↓	0.001	0.002	0.002
↓ -10	↓	↓	0.000	0.000	0.000
CCV	—	—	0.079	0.079	0.079
CCB	—	—	0.000	0.000	0.000
156416-15	IX	Water	0.000	0.002	0.001
↓ -2	↓	↓	0.005	0.001	0.003
156500-5	↓	↓	0.004	0.001	0.003
139667-1	↓	↓	0.027	0.020	0.024
↓ -3	↓	↓	0.033	0.038	0.036

Continued on Page 37

Read and Understood By

J.T.

08/01/2018

Signed

Date

Signed

Date

Sample		D/L	Matrix	1 st Set [Abs]	2 nd Set [Abs]	Avg [Abs]
139667-2		1X	Water	0.018	0.012	0.015
↓	-2 MS	↓	↓	0.142	0.121	0.132
↓	-2 MSD	↓	↓	0.157	0.128	0.143
CCV		—	—	0.079	0.079	0.079
CCB		—	—	0.000	0.000	0.000

Continued on Page

Read and Understood By

J.T.

08/01/2018

Signed

Date

Signed

Date

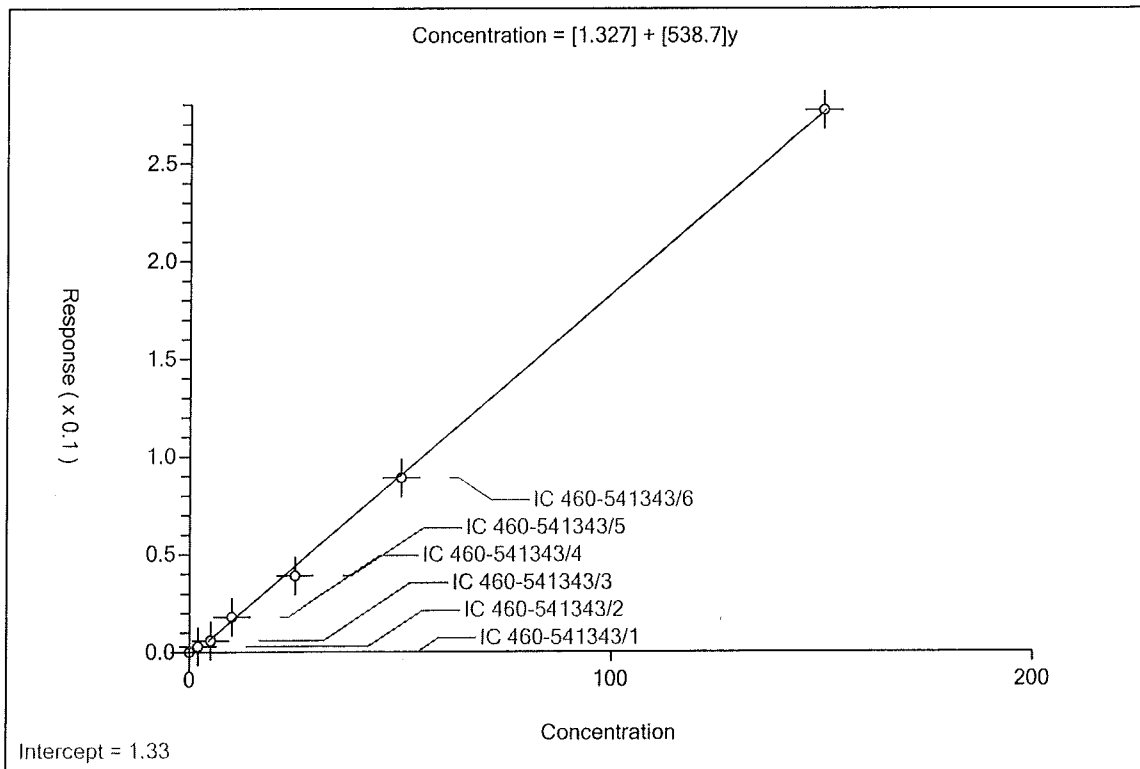
Calibration

Calib 541343-0 / Cyanide, Free

Curve Type: Linear
 Weighting: None
 Origin: None
 Dependency: Concentration
 Calib Mode: ESTD
 Response Base: AREA
 RF Rounding: 0

Curve Coefficients	
Intercept:	1.327
Slope:	538.7
Error Coefficients	
Standard Error:	1.54
Relative Standard Error:	25.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999 (0.999)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 460-541343/1	0.0	0.0			NaN	Y
2	IC 460-541343/2	2.0	0.003			0.0015	Y
3	IC 460-541343/3	5.0	0.006			0.0012	Y
4	IC 460-541343/4	10.0	0.018			0.0018	Y
5	IC 460-541343/5	25.0	0.039			0.00156	Y
6	IC 460-541343/6	50.0	0.089			0.00178	Y
7	IC 460-541343/7	150.0	0.277			0.001847	Y



GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 480-139667-1

SDG No.: _____

Batch Number: 541248 Batch Start Date: 08/01/18 07:50 Batch Analyst: Njieha, Karianna Y

Batch Method: 9016 Batch End Date: 08/01/18 13:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ResidualChloChe ck	SulfideCheck	WT9016-2mg/l 00309	AnalysisComment
MB 460-541248/1		9016, 9016		3 mL	1.3 mL	N	N		MB
LCS 460-541248/2		9016, 9016		3 mL	1.3 mL	N	N	0.075 mL	LCS
480-139667-A-1	PCMW-15S	9016, 9016	T	3 mL	1.3 mL	N	N		1-10
480-139667-A-3	DUP-07272018	9016, 9016	T	3 mL	1.3 mL	N	N		1-11
480-139667-A-2	PCMW-10D	9016, 9016	T	3 mL	1.3 mL	N	N		1-12
480-139667-A-2 MS	PCMW-10D	9016, 9016	T	3 mL	1.3 mL	N	N	0.075 mL	3-1MS
480-139667-A-2 MSD	PCMW-10D	9016, 9016	T	3 mL	1.3 mL	N	N	0.075 mL	3-1MSD

Batch Notes	
Batch Comment	2.05 g/L NaOH C-6685-18 exp 12-22-18
Potassium Phosphate ID	190 KH ₂ PO ₄ Soln C-6801-18 exp 01-18-19
Sodium Hydroxide ID	4.1 g/L NaOH C-6830-18 exp 01-24-19

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 480-139667-1

SDG No.: _____

Batch Number: 541343 Batch Start Date: 08/01/18 14:00 Batch Analyst: Tewira, Jovan X

Batch Method: 9016 Batch End Date: 08/01/18 15:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	WT29016-50ppb 00453	WT9016-2mg/l 00309	WT9016-50ppb 00433			
IC 460-541343/2		9016			0.1 mL				
IC 460-541343/3		9016			0.25 mL				
IC 460-541343/4		9016			0.5 mL				
IC 460-541343/5		9016			1.25 mL				
IC 460-541343/6		9016			2.5 mL				
IC 460-541343/7		9016			7.5 mL				
ICV 460-541343/8		9016		1 mL					
DLCK 460-541343/10		9016			0.001 mL				
CCV 460-541343/11		9016				1 mL			
CCV 460-541343/23		9016				1 mL			
CCV 460-541343/33		9016				1 mL			

Batch Notes	
Chloramine-T ID	C-6868-18 Exp.: 08/01/2018
Acidified Pot Phosphate Buffer ID	C-6793-18 Exp.: 01/14/2019
Pyridine-Barbituric Acid ID	C-6836-18 Exp.: 08/01/2018

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Subcontract Data

Shipping and Receiving Documents

Anherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.799

Client Contact Company Name: <u>Arcadis</u> Address: <u>24 N. Market St. Suite 200</u> City/State/Zip: <u>Wilmington, DE 19801</u> Phone: <u>302-654-1718</u> Fax: Project Name: <u>Philly Coke</u> Site: <u>Bridgetown</u> P.O.#		Regulatory Program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other: Project Manager: Tel/Fax: Analysis Turnaround Time: <u>5 days</u> <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below: <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: Lab Contact: <u>9016 Free Wynde</u> Date: _____ Carrier: _____ COC No: _____ of _____ COCs	
Sample Identification PCMW-155 PCMW-10D PVR-07272018		Sample Date: <u>7/27/18</u> <u>7/27/18</u> <u>7/27/18</u> Sample Time: <u>1230</u> <u>1340</u> <u>-</u> Sample Type (C=Comp, G=Grab): <u>G</u> <u>G</u> <u>G</u> Matrix: <u>GW</u> <u>GW</u> <u>GW</u> # of Cont.: <u>1</u> <u>3</u> <u>1</u>		Filtered Sample (Y/N) <u>(N)</u> Perform MS/MSD (Y/N) <u>(N)</u> Sample Specific Notes: <u>ms/msd</u> 480-139667 COC	
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other					
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.					
Special Instructions/QC Requirements & Comments:					
Relinquished by: <u>Stephen Wynn</u> Date/Time: <u>7/27/18 1345</u>		Received by: <u>Comm</u> Date/Time: <u>7/27/18 1345</u>		Cooler Temp. (°C): Obs'd: <u>3.6</u> Corr'd: _____ Therm ID No.: <u>11</u>	
Relinquished by: <u>Comm</u> Date/Time: <u>7/27/18</u>		Received by: <u>TA</u> Date/Time: <u>7/27/18</u>		Company: <u>TA</u>	
Relinquished by: <u>J Hall</u> Date/Time: <u>7/27/18</u>		Received in Laboratory by: <u>Wynn, Wynn, Kolo</u> Date/Time: <u>7/27/18</u>		Company: <u>TA</u>	

TestAmerica Buffalo

10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record



TESTAMERICA
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)

Client Contact: **Shipping/Receiving** TestAmerica Laboratories, Inc.
Address: 777 New Durham Road, Edison, NJ 08817
City: Edison, State: NJ, Zip: 08817
Phone: 732-549-3900(Tel) 732-549-3679(Fax)
Email: 732-549-3900(Tel) 732-549-3679(Fax)
Project Name: Former Philadelphia Coke Facility
Site:
Lab P.M.: Deyo, Melissa L
E-Mail: melissa.deyo@testamericainc.com
Accreditations Required (See note):
Carrier Tracking No(s):
State of Origin: Pennsylvania
Job #: 480-139667-1
Page: Page 1 of 1

Due Date Requested: 8/3/2018
TAT Requested (days):
COC No: 480-43663.1
Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amphoter
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDTA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
Other:

Sample ID	Sample Date	Sample Time	Sample Type (G=Comp, L=Grab)	Matrix (Metal, Solid, Composite, Inorganic Anal)	Field Filtered Sample (Yes or No)	Special Instructions/Note
PCMW-15S (480-139667-1)	7/27/18	12:30	Eastern	Water	X	
PCMW-10D (480-139667-2)	7/27/18	13:40	Eastern	Water	X	
PCMW-10D (480-139667-2MS)	7/27/18	13:40	Eastern	Water	X	
PCMW-10D (480-139667-2MSD)	7/27/18	13:40	Eastern	Water	X	
DUP-07272018 (480-139667-3)	7/27/18	13:40	Eastern	Water	X	

Sample Identification - Client ID (Lab ID)
Total Number of containers: 1
Special Instructions/Note:
Field Filtered Sample (Yes or No): 9016/9016_Prep Free Cyanide

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)
Primary Deliverable Rank: 2
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	Date: 7/31/18	Time: 0920	Method of Shipment: <i>via FedEx</i>
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:
Custody Seals Intact: <i>Yes</i>	Custody Seal No.: 526066	Cooler Temperature(s) °C and Other Remarks: 5.1°C	Company: <i>YAGI</i>

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-139667-1

Login Number: 139667

List Source: TestAmerica Buffalo

List Number: 1

Creator: Kolb, Chris M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ARCADIS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-139667-1

Login Number: 139667
List Number: 2
Creator: Armbruster, Chris

List Source: TestAmerica Edison
List Creation: 07/31/18 11:13 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	526066
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.1°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	