

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

TestAmerica Job ID: 460-146882-1
Client Project/Site: Rock Hill Quarry
Revision: 2

For:
Hanson Aggregates PA LLC
7660 Imperial Way
Allentown, Pennsylvania 18195

Attn: Andrew Gutshall



Authorized for release by:
4/18/2018 10:04:41 AM

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LINKS

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

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

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

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Definitions/Glossary

Client: Hanson Aggregates PA LLC
Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

Metals

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

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

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

Case Narrative

Client: Hanson Aggregates PA LLC
Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

Job ID: 460-146882-1

Laboratory: TestAmerica Edison

Narrative

Job Narrative
460-146882-1
Revision(2)

Revision(1)

TKN did not pull into the original report. This report corrects that error.

Revision(2)

Client requested MDLs and MDL statement in case narrative

The method detection limit (MDL) is the lowest value detectable by the laboratory for a given analyte as determined by the MDL procedure detailed in EPA 40 CFR 136. Reported MDL values are adjusted for any dilutions and percent moisture (as applicable). The lab is unable to report values below the MDL.

Receipt

The sample was received on 12/13/2017 11:45 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

GC Semi VOA

Method(s) 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: NPDES 001 (460-146882-1) at 2.0. Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: (460-146898-G-2), (460-146898-G-2 MS) and (460-146898-G-2 MSD) at 50.0, 50.0 and 50.0. Elevated reporting limits (RLs) are provided.

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

Metals

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

General Chemistry

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

Client Sample Results

Client: Hanson Aggregates PA LLC
Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

Client Sample ID: NPDES 001

Lab Sample ID: 460-146882-1

Date Collected: 12/12/17 10:50

Matrix: Water

Date Received: 12/13/17 11:45

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.043	U	0.40	0.043	mg/L			12/20/17 05:05	1
Fluoride	0.13		0.080	0.012	mg/L			12/20/17 05:05	1
Sulfate	10.1		0.60	0.33	mg/L			12/20/17 05:05	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.59	D	0.24	0.16	mg/L			12/20/17 12:04	2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	96.9		8.0	2.5	ug/L		12/16/17 09:00	12/16/17 21:35	2
Iron	237		120	42.4	ug/L		12/16/17 09:00	12/16/17 21:35	2
Cadmium	0.71	U	2.0	0.71	ug/L		12/16/17 09:00	12/16/17 21:35	2
Barium	7.8		4.0	1.2	ug/L		12/16/17 09:00	12/16/17 21:35	2
Nickel	1.4	U	4.0	1.4	ug/L		12/16/17 09:00	12/16/17 21:35	2
Arsenic	0.64	U	2.0	0.64	ug/L		12/16/17 09:00	12/16/17 21:35	2
Copper	1.7	J	4.0	1.4	ug/L		12/16/17 09:00	12/16/17 21:35	2
Aluminum	23.0	J	40.0	18.2	ug/L		12/16/17 09:00	12/16/17 21:35	2
Lead	0.38	U	1.2	0.38	ug/L		12/16/17 09:00	12/16/17 21:35	2
Zinc	7.0	U	16.0	7.0	ug/L		12/16/17 09:00	12/16/17 21:35	2
Selenium	0.73	U	10.0	0.73	ug/L		12/16/17 09:00	12/16/17 21:35	2

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	42.4	U	120	42.4	ug/L		12/19/17 11:49	12/19/17 14:46	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.17	U	0.20	0.17	ug/L		12/15/17 11:53	12/15/17 14:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	2.2	U	5.4	2.2	mg/L			12/20/17 15:30	1
Nitrogen, Kjeldahl	0.10	U	0.20	0.10	mg/L		12/18/17 10:48	12/19/17 11:50	1
Color	5.00		5.00	5.00	Color Units			12/14/17 06:37	1
Acidity	37.8		20.0	20.0	mg/L			12/19/17 09:54	1
Alkalinity	133		5.0	5.0	mg/L			12/15/17 14:03	1
Total Dissolved Solids	195		10.0	10.0	mg/L			12/18/17 13:10	1
Total Suspended Solids	1.1		1.0	1.0	mg/L			12/18/17 08:02	1
pH	7.9	HF			SU			12/20/17 13:40	1

Lab Chronicle

Client: Hanson Aggregates PA LLC
Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

Client Sample ID: NPDES 001

Lab Sample ID: 460-146882-1

Date Collected: 12/12/17 10:50

Matrix: Water

Date Received: 12/13/17 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	485553	12/20/17 05:05	HXM	TAL EDI
Total/NA	Analysis	300.0	DL	2	485553	12/20/17 12:04	HXM	TAL EDI
Dissolved	Filtration	FILTRATION			484180	12/14/17 08:57	MDC	TAL EDI
Dissolved	Prep	3010A			485505	12/19/17 11:49	MDC	TAL EDI
Dissolved	Analysis	6020A		2	485548	12/19/17 14:46	MDC	TAL EDI
Total/NA	Prep	3010A			484774	12/16/17 09:00	QZY	TAL EDI
Total/NA	Analysis	6020A		2	485137	12/16/17 21:35	PHP	TAL EDI
Total/NA	Prep	7470A			484564	12/15/17 11:53	RBS	TAL EDI
Total/NA	Analysis	7470A		1	484612	12/15/17 14:18	RBS	TAL EDI
Total/NA	Analysis	1664A		1	485713	12/20/17 15:30	JXT	TAL EDI
Total/NA	Prep	Digestion			506771	12/18/17 10:48	CFJ	TAL SAV
Total/NA	Analysis	351.2		1	507035	12/19/17 11:50	JER	TAL SAV
Total/NA	Analysis	SM 2120B		1	484131	12/14/17 06:37	KYN	TAL EDI
Total/NA	Analysis	SM 2310B		1	485461	12/19/17 09:54	IAA	TAL EDI
Total/NA	Analysis	SM 2320B		1	485119	12/15/17 14:03	LED	TAL EDI
Total/NA	Analysis	SM 2540C		1	485191	12/18/17 13:10	PLS	TAL EDI
Total/NA	Analysis	SM 2540D		1	485104	12/18/17 08:02	PLS	TAL EDI
Total/NA	Analysis	SM 4500 H+ B		1	485874	12/20/17 13:40	YAH	TAL EDI

Laboratory References:

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

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Hanson Aggregates PA LLC
 Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

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	06-30-18
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

Laboratory: TestAmerica Savannah

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
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	09-22-19
Arizona	State Program	9	AZ0808	12-14-18
Arkansas DEQ	State Program	6	88-0692	02-01-19
California	State Program	9	2939	06-30-18
Colorado	State Program	8	N/A	12-31-18
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Guam	State Program	9	15-005r	04-16-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-18
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-18
Kentucky (UST)	State Program	4	18	06-30-18
Kentucky (WW)	State Program	4	90084	12-31-18 *
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-18
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-18
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-19
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-18
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-18

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

TestAmerica Edison

Accreditation/Certification Summary

Client: Hanson Aggregates PA LLC
Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

Laboratory: TestAmerica Savannah (Continued)

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
South Carolina	State Program	4	98001	06-30-18
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		P330-17-00213	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia (DW)	State Program	3	9950C	12-31-18
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

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

TestAmerica Edison

Method Summary

Client: Hanson Aggregates PA LLC
 Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL EDI
7470A	Mercury (CVAA)	SW846	TAL EDI
1664A	HEM and SGT-HEM	1664A	TAL EDI
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL SAV
SM 2120B	Color, Colorimetric	SM	TAL EDI
SM 2310B	Acidity	SM	TAL EDI
SM 2320B	Alkalinity	SM	TAL EDI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL EDI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL EDI
SM 4500 H+ B	pH	SM	TAL EDI
3010A	Preparation, Total Metals	SW846	TAL EDI
7470A	Preparation, Mercury	SW846	TAL EDI
Digestion	Digestion, Hot Block	MCAWW	TAL SAV
FILTRATION	Sample Filtration	None	TAL EDI

Protocol References:

1664A = EPA-821-98-002

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Hanson Aggregates PA LLC
Project/Site: Rock Hill Quarry

TestAmerica Job ID: 460-146882-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-146882-1	NPDES 001	Water	12/12/17 10:50	12/13/17 11:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Login Sample Receipt Checklist

Client: Hanson Aggregates PA LLC

Job Number: 460-146882-1

Login Number: 146882

List Number: 1

Creator: Gilmore, Julie L

List Source: TestAmerica Edison

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.	N/A	
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	IR KOP#1 1.3
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Hanson Aggregates PA LLC

Job Number: 460-146882-1

Login Number: 146882

List Number: 2

Creator: Hopkins, Ashley

List Source: TestAmerica Savannah

List Creation: 12/14/17 12:34 PM

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