November 15, 2024

An Annual Groundwater Monitoring and Corrective Action Report (Annual Report) documenting the activities completed in 2018 for the Agremax Staging Area at AES Puerto Rico, LP in Guayama, PR (AES-PR) was completed and placed in the facilities operating record on January 31, 2019, as required by 40 CFR Part 257 §257.90(e)(1) through §257.90(e)(6) and subsequently posted to the AES-PR CCR public website.

This Addendum has been prepared to supplement the 2018 Annual Report. AES Puerto Rico is providing the following, as applicable:

- Laboratory Analytical Reports;
- Well Purging and Sampling and Field Data Sheets; and
- Statistical Analysis Results.

This information is being provided in the appendices to this Addendum as follows:

- Appendix A – Laboratory Analytical Reports
  Includes laboratory data packages with supporting information, such as case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation.
- Appendix B – Well Purging and Sampling and Field Data Sheets
  Includes forms documenting well purging and sampling efforts from groundwater sampling events.
- Appendix C – Statistical Analysis Reports
  Includes statistical analysis results presented in a summary table.

APPENDIX A
Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-155625-1
Client Project/Site: CCR GW Monitoring, AES Puerto Rico, LP
Revision: 2

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
8/2/2018 3:11:13 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

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

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

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

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Case Narrative

Job ID: 400-155625-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-155625-1

Comments
Revised Reports (Rev.1, Rev. 2) - The Job Narrative has been revised for clarity. (All sample results are consistent with the original report.)

Receipt
The samples were received on 6/27/2018 9:16 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt time was 3.6º C.

Metals
Method(s) 200.8, 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-062518 (400-155625-1), AES-MW2-062518 (400-155625-2), AES-MW3-062518 (400-155625-3), AES-MW4-062618 (400-155625-5), AES-MW4-DUP-062618 (400-155625-6) and AES-MW5-062618 (400-155625-7). 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.

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

General Chemistry
Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-062518 (400-155625-1), AES-MW1-062518 (400-155625-1[MS]), AES-MW1-062518 (400-155625-1[MSD]), AES-MW2-062518 (400-155625-2), AES-MW3-062518 (400-155625-3), AES-MW4-062618 (400-155625-5), AES-MW4-DUP-062618 (400-155625-6), and AES-MW5-062618 (400-155625-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 Cl- E: The ICB for analytical batch 400-403902 contained above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-062518 (400-155625-1), AES-MW1-062518 (400-155625-1[MS]), AES-MW1-062518 (400-155625-1[MSD]), AES-MW2-062518 (400-155625-2), AES-MW4-062618 (400-155625-5), AES-MW4-DUP-062618 (400-155625-6), and AES-MW5-062618 (400-155625-7). 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.

Client Sample ID: AES-MW1-062518 — Lab Sample ID: 400-155625-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.039		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.25		0.050	0.021	mg/L	5		6020	Total Recoverable
Lead	0.00077	J	0.0013	0.00035	mg/L	5		6020	Total Recoverable
Magnesium	55		0.13	0.032	mg/L	5		6020	Total Recoverable
Potassium	0.89		0.25	0.11	mg/L	5		6020	Total Recoverable
Selenium	0.025		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	130		1.3	0.63	mg/L	25		6020	Total Recoverable
Sodium - DL	310		1.3	0.84	mg/L	25		6020	Total Recoverable
Alkalinity, Total	350		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	350		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1500		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	260		20	6.0	mg/L	10		SM 4500 Cl- E	Total/NA
Fluoride	0.61		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	510		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	7.13				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-062518 — Lab Sample ID: 400-155625-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.15		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.16		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00067	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Magnesium	53		0.13	0.032	mg/L	5		6020	Total Recoverable
Potassium	0.75		0.25	0.11	mg/L	5		6020	Total Recoverable
Selenium	0.00040	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Sodium	110		0.25	0.17	mg/L	5		6020	Total Recoverable
Calcium - DL	110		1.3	0.63	mg/L	25		6020	Total Recoverable
Alkalinity, Total	500		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	500		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	740		10	6.8	mg/L	1		SM 2540C	Total/NA
Chloride	140		20	6.0	mg/L	10		SM 4500 Cl- E	Total/NA
Fluoride	0.52		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	43		10	2.8	mg/L	2		SM 4500 SO4 E	Total/NA
Field pH	6.84				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-062518 — Lab Sample ID: 400-155625-3

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW3-062518 (Continued) Lab Sample ID: 400-155625-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0018		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.24		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.2		0.050	0.021	mg/L	5		6020	Total Recoverable
Cadmium	0.00042	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0031		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0073		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.22		0.015	0.00085	mg/L	5		6020	Total Recoverable
Potassium	32		0.25	0.11	mg/L	5		6020	Total Recoverable
Selenium	0.21		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	330		5.0	2.5	mg/L	100		6020	Total Recoverable
Magnesium - DL	410		2.5	0.64	mg/L	100		6020	Total Recoverable
Sodium - DL	3300		5.0	3.4	mg/L	100		6020	Total Recoverable
Alkalinity, Total	510		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	510		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000		250	170	mg/L	1		SM 2540C	Total/NA
Chloride	4400		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	1.6		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2800		450	130	mg/L	90		SM 4500 SO4 E	Total/NA
Field pH	7.23				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-062518 Lab Sample ID: 400-155625-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00047	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable

Client Sample ID: AES-MW4-062618 Lab Sample ID: 400-155625-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0023	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0024		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.044		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00034	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0016	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.54		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Magnesium	110		0.13	0.032	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW4-062618 (Continued) — Lab Sample ID: 400-155625-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.55		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0064		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.2		2.0	0.84	mg/L	200		6020	Total Recoverable
Calcium - DL	460		10	5.0	mg/L	200		6020	Total Recoverable
Potassium - DL	1600		10	4.4	mg/L	200		6020	Total Recoverable
Sodium - DL2	9700		25	17	mg/L	500		6020	Total Recoverable
Alkalinity, Total	440		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	440		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	16000		1000	680	mg/L	1		SM 2540C	Total/NA
Chloride	9100		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.76		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	12000		2500	700	mg/L	500		SM 4500 SO4 E	Total/NA
Field pH	7.27				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-062618 — Lab Sample ID: 400-155625-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0019	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0021		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.046		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0016	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.57		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Magnesium	100		0.13	0.032	mg/L	5		6020	Total Recoverable
Molybdenum	0.58		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0055		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.2		2.0	0.84	mg/L	200		6020	Total Recoverable
Calcium - DL	440		10	5.0	mg/L	200		6020	Total Recoverable
Potassium - DL	1600		10	4.4	mg/L	200		6020	Total Recoverable
Sodium - DL2	9300		25	17	mg/L	500		6020	Total Recoverable
Alkalinity, Total	480		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	480		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	17000		1000	680	mg/L	1		SM 2540C	Total/NA
Chloride	8900		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.76		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	12000		2500	700	mg/L	500		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW5-062618 Lab Sample ID: 400-155625-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0071		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.036		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.47		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0030		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0038	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0042	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Potassium	7.8		0.25	0.11	mg/L	5		6020	Total Recoverable
Calcium - DL	690		5.0	2.5	mg/L	100		6020	Total Recoverable
Magnesium - DL	370		2.5	0.64	mg/L	100		6020	Total Recoverable
Sodium - DL	2100		5.0	3.4	mg/L	100		6020	Total Recoverable
Alkalinity, Total	500		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	500		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8700		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	3700		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	0.49		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2100		300	84	mg/L	60		SM 4500 SO4 E	Total/NA
Field pH	6.72				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-062618 Lab Sample ID: 400-155625-8

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2320B	Alkalinity	SM	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN
7470A	Preparation, Mercury	SW846	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

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 PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-155625-1	AES-MW1-062518	Water	06/25/18 08:45	06/27/18 09:16
400-155625-2	AES-MW2-062518	Water	06/25/18 11:05	06/27/18 09:16
400-155625-3	AES-MW3-062518	Water	06/25/18 14:20	06/27/18 09:16
400-155625-4	AES-FB-062518	Water	06/25/18 15:20	06/27/18 09:16
400-155625-5	AES-MW4-062618	Water	06/26/18 10:15	06/27/18 09:16
400-155625-6	AES-MW4-DUP-062618	Water	06/26/18 11:35	06/27/18 09:16
400-155625-7	AES-MW5-062618	Water	06/26/18 11:40	06/27/18 09:16
400-155625-8	AES-FB-062618	Water	06/26/18 13:00	06/27/18 09:16

Client Sample ID: AES-MW1-062518

Lab Sample ID: 400-155625-1

Date Collected: 06/25/18 08:45
Matrix: Water
Date Received: 06/27/18 09:16

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 17:16	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 17:16	5
Barium	**0.039**		0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 17:16	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:16	5
Boron	**0.25**		0.050	0.021	mg/L		07/06/18 10:10	07/06/18 17:16	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:16	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 17:16	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 17:16	5
Lead	**0.00077**	**J**	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 17:16	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 17:16	5
Magnesium	**55**		0.13	0.032	mg/L		07/06/18 10:10	07/06/18 17:16	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 17:16	5
Potassium	**0.89**		0.25	0.11	mg/L		07/06/18 10:10	07/06/18 17:16	5
Selenium	**0.025**		0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 17:16	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 17:16	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**130**		1.3	0.63	mg/L		07/06/18 10:10	07/09/18 13:34	25
Sodium	**310**		1.3	0.84	mg/L		07/06/18 10:10	07/09/18 13:34	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 15:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**350**		1.0	0.98	mg/L			07/02/18 19:03	1
Bicarbonate Alkalinity as CaCO3	**350**		1.0	0.98	mg/L			07/02/18 19:03	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/02/18 19:03	1
Total Dissolved Solids	**1500**		25	17	mg/L			06/28/18 17:17	1
Chloride	**260**		20	6.0	mg/L			07/09/18 10:21	10
Fluoride	**0.61**		0.10	0.032	mg/L			07/06/18 07:46	1
Sulfate	**510**		100	28	mg/L			07/08/18 10:37	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.13**				SU			06/25/18 08:45	1

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP
TestAmerica Job ID: 400-155625-1

Client Sample ID: AES-MW2-062518
Lab Sample ID: 400-155625-2
Date Collected: 06/25/18 11:05
Matrix: Water
Date Received: 06/27/18 09:16

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 17:38	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 17:38	5
Barium	**0.15**		0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 17:38	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:38	5
Boron	**0.16**		0.050	0.021	mg/L		07/06/18 10:10	07/06/18 17:38	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:38	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 17:38	5
Cobalt	**0.00067**	**J**	0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 17:38	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 17:38	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 17:38	5
Magnesium	**53**		0.13	0.032	mg/L		07/06/18 10:10	07/06/18 17:38	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 17:38	5
Potassium	**0.75**		0.25	0.11	mg/L		07/06/18 10:10	07/06/18 17:38	5
Selenium	**0.00040**	**J**	0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 17:38	5
Sodium	**110**		0.25	0.17	mg/L		07/06/18 10:10	07/06/18 17:38	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 17:38	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		1.3	0.63	mg/L		07/06/18 10:10	07/09/18 13:39	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 15:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**500**		1.0	0.98	mg/L			06/29/18 15:37	1
Bicarbonate Alkalinity as CaCO3	**500**		1.0	0.98	mg/L			06/29/18 15:37	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 15:37	1
Total Dissolved Solids	**740**		10	6.8	mg/L			06/28/18 17:17	1
Chloride	**140**		20	6.0	mg/L			07/09/18 10:21	10
Fluoride	**0.52**		0.10	0.032	mg/L			07/06/18 08:04	1
Sulfate	**43**		10	2.8	mg/L			07/08/18 09:43	2

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.84**				SU			06/25/18 11:05	1

Client Sample ID: AES-MW3-062518

Lab Sample ID: 400-155625-3

Date Collected: 06/25/18 14:20
Matrix: Water
Date Received: 06/27/18 09:16

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 17:43	5
Arsenic	**0.0018**		0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 17:43	5
Barium	**0.24**		0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 17:43	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:43	5
Boron	**1.2**		0.050	0.021	mg/L		07/06/18 10:10	07/06/18 17:43	5
Cadmium	**0.00042**	**J**	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:43	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 17:43	5
Cobalt	**0.0031**		0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 17:43	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 17:43	5
Lithium	**0.0073**		0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 17:43	5
Molybdenum	**0.22**		0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 17:43	5
Potassium	**32**		0.25	0.11	mg/L		07/06/18 10:10	07/06/18 17:43	5
Selenium	**0.21**		0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 17:43	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 17:43	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**330**		5.0	2.5	mg/L		07/06/18 10:10	07/09/18 13:43	100
Magnesium	**410**		2.5	0.64	mg/L		07/06/18 10:10	07/09/18 13:43	100
Sodium	**3300**		5.0	3.4	mg/L		07/06/18 10:10	07/09/18 13:43	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 16:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**510**		1.0	0.98	mg/L			06/29/18 15:45	1
Bicarbonate Alkalinity as CaCO3	**510**		1.0	0.98	mg/L			06/29/18 15:45	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 15:45	1
Total Dissolved Solids	**11000**		250	170	mg/L			06/28/18 17:17	1
Chloride	**4400**		180	54	mg/L			07/09/18 10:21	90
Fluoride	**1.6**		0.10	0.032	mg/L			07/06/18 08:07	1
Sulfate	**2800**		450	130	mg/L			07/08/18 11:11	90

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.23**				SU			06/25/18 14:20	1

Client Sample Results

Client: DNA-Environment, LLC — TestAmerica Job ID: 400-155625-1
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Client Sample ID: AES-FB-062518 — Lab Sample ID: 400-155625-4

Date Collected: 06/25/18 15:20 — **Matrix: Water**
Date Received: 06/27/18 09:16

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 17:47	5
Arsenic	**0.00047**	**J**	0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 17:47	5
Barium	0.00049	U	0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 17:47	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:47	5
Boron	0.021	U	0.050	0.021	mg/L		07/06/18 10:10	07/06/18 17:47	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:47	5
Calcium	0.13	U	0.25	0.13	mg/L		07/06/18 10:10	07/06/18 17:47	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 17:47	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 17:47	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 17:47	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 17:47	5
Magnesium	0.032	U	0.13	0.032	mg/L		07/06/18 10:10	07/06/18 17:47	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 17:47	5
Potassium	0.11	U	0.25	0.11	mg/L		07/06/18 10:10	07/06/18 17:47	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 17:47	5
Sodium	0.17	U	0.25	0.17	mg/L		07/06/18 10:10	07/06/18 17:47	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 17:47	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 16:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			06/29/18 15:50	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 15:50	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 15:50	1
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			07/01/18 10:37	1
Chloride	0.60	U	2.0	0.60	mg/L			07/09/18 09:39	1
Fluoride	0.032	U	0.10	0.032	mg/L			07/06/18 08:11	1
Sulfate	1.4	U	5.0	1.4	mg/L			07/08/18 09:30	1

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-1

Client Sample ID: AES-MW4-062618

Date Collected: 06/26/18 10:15
Date Received: 06/27/18 09:16

Lab Sample ID: 400-155625-5
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0023	J	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 18:14	5
Arsenic	0.0024		0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 18:14	5
Barium	0.044		0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 18:14	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:14	5
Cadmium	0.00034	J	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:14	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 18:14	5
Cobalt	0.0016	J	0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 18:14	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 18:14	5
Lithium	0.54		0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 18:14	5
Magnesium	110		0.13	0.032	mg/L		07/06/18 10:10	07/06/18 18:14	5
Molybdenum	0.55		0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 18:14	5
Selenium	0.0064		0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 18:14	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 18:14	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.2		2.0	0.84	mg/L		07/06/18 10:10	07/09/18 13:48	200
Calcium	460		10	5.0	mg/L		07/06/18 10:10	07/09/18 13:48	200
Potassium	1600		10	4.4	mg/L		07/06/18 10:10	07/09/18 13:48	200

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	9700		25	17	mg/L		07/06/18 10:10	07/09/18 14:51	500

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 16:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	440		1.0	0.98	mg/L			06/29/18 15:58	1
Bicarbonate Alkalinity as CaCO3	440		1.0	0.98	mg/L			06/29/18 15:58	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 15:58	1
Total Dissolved Solids	16000		1000	680	mg/L			07/02/18 16:23	1
Chloride	9100		600	180	mg/L			07/10/18 06:48	300
Fluoride	0.76		0.10	0.032	mg/L			07/06/18 08:55	1
Sulfate	12000		2500	700	mg/L			07/08/18 11:11	500

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.27				SU			06/26/18 10:15	1

Client Sample ID: AES-MW4-DUP-062618 Lab Sample ID: 400-155625-6

Date Collected: 06/26/18 11:35 **Matrix: Water**
Date Received: 06/27/18 09:16

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0019**	**J**	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 18:19	5
Arsenic	**0.0021**		0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 18:19	5
Barium	**0.046**		0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 18:19	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:19	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:19	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 18:19	5
Cobalt	**0.0016**	**J**	0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 18:19	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 18:19	5
Lithium	**0.57**		0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 18:19	5
Magnesium	**100**		0.13	0.032	mg/L		07/06/18 10:10	07/06/18 18:19	5
Molybdenum	**0.58**		0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 18:19	5
Selenium	**0.0055**		0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 18:19	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 18:19	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.2**		2.0	0.84	mg/L		07/06/18 10:10	07/09/18 13:52	200
Calcium	**440**		10	5.0	mg/L		07/06/18 10:10	07/09/18 13:52	200
Potassium	**1600**		10	4.4	mg/L		07/06/18 10:10	07/09/18 13:52	200

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**9300**		25	17	mg/L		07/06/18 10:10	07/09/18 14:56	500

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 16:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**480**		1.0	0.98	mg/L			06/29/18 16:06	1
Bicarbonate Alkalinity as CaCO3	**480**		1.0	0.98	mg/L			06/29/18 16:06	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 16:06	1
Total Dissolved Solids	**17000**		1000	680	mg/L			07/02/18 16:23	1
Chloride	**8900**		600	180	mg/L			07/10/18 06:48	300
Fluoride	**0.76**		0.10	0.032	mg/L			07/06/18 08:57	1
Sulfate	**12000**		2500	700	mg/L			07/08/18 11:11	500

Client Sample ID: AES-MW5-062618   Lab Sample ID: 400-155625-7

Date Collected: 06/26/18 11:40   **Matrix: Water**
Date Received: 06/27/18 09:16

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 18:23	5
Arsenic	**0.0071**		0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 18:23	5
Barium	**0.036**		0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 18:23	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:23	5
Boron	**0.47**		0.050	0.021	mg/L		07/06/18 10:10	07/06/18 18:23	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:23	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 18:23	5
Cobalt	**0.0030**		0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 18:23	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 18:23	5
Lithium	**0.0038**	**J**	0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 18:23	5
Molybdenum	**0.0042**	**J**	0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 18:23	5
Potassium	**7.8**		0.25	0.11	mg/L		07/06/18 10:10	07/06/18 18:23	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 18:23	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 18:23	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**690**		5.0	2.5	mg/L		07/06/18 10:10	07/09/18 13:57	100
Magnesium	**370**		2.5	0.64	mg/L		07/06/18 10:10	07/09/18 13:57	100
Sodium	**2100**		5.0	3.4	mg/L		07/06/18 10:10	07/09/18 13:57	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 16:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**500**		1.0	0.98	mg/L			07/02/18 19:29	1
Bicarbonate Alkalinity as CaCO3	**500**		1.0	0.98	mg/L			07/02/18 19:29	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/02/18 19:29	1
Total Dissolved Solids	**8700**		130	85	mg/L			07/02/18 16:23	1
Chloride	**3700**		180	54	mg/L			07/09/18 10:32	90
Fluoride	**0.49**		0.10	0.032	mg/L			07/06/18 09:03	1
Sulfate	**2100**		300	84	mg/L			07/08/18 10:45	60

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.72**				SU			06/26/18 11:40	1

Client Sample ID: AES-FB-062618 Lab Sample ID: 400-155625-8

Date Collected: 06/26/18 13:00 **Matrix: Water**
Date Received: 06/27/18 09:16

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 18:28	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 18:28	5
Barium	0.00049	U	0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 18:28	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:28	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 18:28	5
Calcium	0.13	U	0.25	0.13	mg/L		07/06/18 10:10	07/06/18 18:28	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 18:28	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 18:28	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 18:28	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 18:28	5
Magnesium	0.032	U	0.13	0.032	mg/L		07/06/18 10:10	07/06/18 18:28	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 18:28	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 18:28	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 18:28	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.021	U	0.050	0.021	mg/L		07/06/18 10:10	07/09/18 13:21	5
Potassium	0.11	U	0.25	0.11	mg/L		07/06/18 10:10	07/09/18 13:21	5
Sodium	0.17	U	0.25	0.17	mg/L		07/06/18 10:10	07/09/18 13:21	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 16:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			07/02/18 19:34	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/02/18 19:34	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/02/18 19:34	1
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			07/02/18 16:23	1
Chloride	0.60	U	2.0	0.60	mg/L			07/09/18 09:46	1
Fluoride	0.032	U	0.10	0.032	mg/L			07/06/18 09:01	1
Sulfate	1.4	U	5.0	1.4	mg/L			07/12/18 12:22	1

Qualifiers

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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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.
¤	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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-1

Client Sample ID: AES-MW1-062518

Date Collected: 06/25/18 08:45
Date Received: 06/27/18 09:16

Lab Sample ID: 400-155625-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 17:16	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	25	403911	07/09/18 13:34	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN
Total/NA	Analysis	7470A		1	403800	07/08/18 15:44	DN1	TAL PEN
Total/NA	Analysis	SM 2320B		1	403301	07/02/18 19:03	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	402866	06/28/18 17:17	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		10	403902	07/09/18 10:21	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403590	07/06/18 07:46	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	403758	07/08/18 10:37	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	404594	06/25/18 08:45	ERM	TAL PEN

Client Sample ID: AES-MW2-062518

Date Collected: 06/25/18 11:05
Date Received: 06/27/18 09:16

Lab Sample ID: 400-155625-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 17:38	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	25	403911	07/09/18 13:39	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN
Total/NA	Analysis	7470A		1	403800	07/08/18 15:59	DN1	TAL PEN
Total/NA	Analysis	SM 2320B		1	403090	06/29/18 15:37	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	402866	06/28/18 17:17	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		10	403902	07/09/18 10:21	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403590	07/06/18 08:04	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		2	403758	07/08/18 09:43	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	404594	06/25/18 11:05	ERM	TAL PEN

Client Sample ID: AES-MW3-062518

Date Collected: 06/25/18 14:20
Date Received: 06/27/18 09:16

Lab Sample ID: 400-155625-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 17:43	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	403911	07/09/18 13:43	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN
Total/NA	Analysis	7470A		1	403800	07/08/18 16:01	DN1	TAL PEN

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

Client Sample ID: AES-MW3-062518 — Lab Sample ID: 400-155625-3

Date Collected: 06/25/18 14:20 — **Matrix: Water**
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1	403090	06/29/18 15:45	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	402866	06/28/18 17:17	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	403902	07/09/18 10:21	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403590	07/06/18 08:07	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		90	403758	07/08/18 11:11	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	404594	06/25/18 14:20	ERM	TAL PEN

Client Sample ID: AES-FB-062518 — Lab Sample ID: 400-155625-4

Date Collected: 06/25/18 15:20 — **Matrix: Water**
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 17:47	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN
Total/NA	Analysis	7470A		1	403800	07/08/18 16:03	DN1	TAL PEN
Total/NA	Analysis	SM 2320B		1	403090	06/29/18 15:50	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	403133	07/01/18 10:37	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	403902	07/09/18 09:39	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403590	07/06/18 08:11	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	403758	07/08/18 09:30	RRC	TAL PEN

Client Sample ID: AES-MW4-062618 — Lab Sample ID: 400-155625-5

Date Collected: 06/26/18 10:15 — **Matrix: Water**
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 18:14	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	200	403911	07/09/18 13:48	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL2		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL2	500	403911	07/09/18 14:51	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN
Total/NA	Analysis	7470A		1	403800	07/08/18 16:04	DN1	TAL PEN
Total/NA	Analysis	SM 2320B		1	403090	06/29/18 15:58	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	403217	07/02/18 16:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	403902	07/10/18 06:48	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403609	07/06/18 08:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		500	403758	07/08/18 11:11	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	404594	06/26/18 10:15	ERM	TAL PEN

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

Client Sample ID: AES-MW4-DUP-062618 Lab Sample ID: 400-155625-6

Date Collected: 06/26/18 11:35 **Matrix: Water**
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 18:19	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	200	403911	07/09/18 13:52	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL2		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL2	500	403911	07/09/18 14:56	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN
Total/NA	Analysis	7470A		1	403800	07/08/18 16:06	DN1	TAL PEN
Total/NA	Analysis	SM 2320B		1	403090	06/29/18 16:06	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	403217	07/02/18 16:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	403902	07/10/18 06:48	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403609	07/06/18 08:57	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		500	403758	07/08/18 11:11	RRC	TAL PEN

Client Sample ID: AES-MW5-062618 Lab Sample ID: 400-155625-7

Date Collected: 06/26/18 11:40 **Matrix: Water**
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 18:23	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	403911	07/09/18 13:57	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN
Total/NA	Analysis	7470A		1	403800	07/08/18 16:08	DN1	TAL PEN
Total/NA	Analysis	SM 2320B		1	403301	07/02/18 19:29	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	403217	07/02/18 16:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	403902	07/09/18 10:32	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403609	07/06/18 09:03	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		60	403758	07/08/18 10:45	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	404594	06/26/18 11:40	ERM	TAL PEN

Client Sample ID: AES-FB-062618 Lab Sample ID: 400-155625-8

Date Collected: 06/26/18 13:00 **Matrix: Water**
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	403822	07/06/18 18:28	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		403613	07/06/18 10:10	DRE	TAL PEN
Total Recoverable	Analysis	6020	RA	5	403911	07/09/18 13:21	DRE	TAL PEN
Total/NA	Prep	7470A			402991	06/30/18 15:03	DN1	TAL PEN

Lab Chronicle

Client Sample ID: AES-FB-062618
Lab Sample ID: 400-155625-8
Date Collected: 06/26/18 13:00
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	403800	07/08/18 16:10	DN1	TAL PEN
Total/NA	Analysis	SM 2320B		1	403301	07/02/18 19:34	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	403217	07/02/18 16:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	403902	07/09/18 09:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403609	07/06/18 09:01	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404294	07/12/18 12:22	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 402991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	7470A	
400-155625-2	AES-MW2-062518	Total/NA	Water	7470A	
400-155625-3	AES-MW3-062518	Total/NA	Water	7470A	
400-155625-4	AES-FB-062518	Total/NA	Water	7470A	
400-155625-5	AES-MW4-062618	Total/NA	Water	7470A	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	7470A	
400-155625-7	AES-MW5-062618	Total/NA	Water	7470A	
400-155625-8	AES-FB-062618	Total/NA	Water	7470A	
MB 400-402991/13-A	Method Blank	Total/NA	Water	7470A	
LCS 400-402991/14-A	Lab Control Sample	Total/NA	Water	7470A	
400-155625-1 MS	AES-MW1-062518	Total/NA	Water	7470A	
400-155625-1 MSD	AES-MW1-062518	Total/NA	Water	7470A	

Prep Batch: 403613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total Recoverable	Water	3005A	
400-155625-1 - DL	AES-MW1-062518	Total Recoverable	Water	3005A	
400-155625-2 - DL	AES-MW2-062518	Total Recoverable	Water	3005A	
400-155625-2	AES-MW2-062518	Total Recoverable	Water	3005A	
400-155625-3	AES-MW3-062518	Total Recoverable	Water	3005A	
400-155625-3 - DL	AES-MW3-062518	Total Recoverable	Water	3005A	
400-155625-4	AES-FB-062518	Total Recoverable	Water	3005A	
400-155625-5 - DL2	AES-MW4-062618	Total Recoverable	Water	3005A	
400-155625-5	AES-MW4-062618	Total Recoverable	Water	3005A	
400-155625-5 - DL	AES-MW4-062618	Total Recoverable	Water	3005A	
400-155625-6 - DL	AES-MW4-DUP-062618	Total Recoverable	Water	3005A	
400-155625-6	AES-MW4-DUP-062618	Total Recoverable	Water	3005A	
400-155625-6 - DL2	AES-MW4-DUP-062618	Total Recoverable	Water	3005A	
400-155625-7 - DL	AES-MW5-062618	Total Recoverable	Water	3005A	
400-155625-7	AES-MW5-062618	Total Recoverable	Water	3005A	
400-155625-8	AES-FB-062618	Total Recoverable	Water	3005A	
400-155625-8 - RA	AES-FB-062618	Total Recoverable	Water	3005A	
MB 400-403613/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-403613/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-155625-1 MS	AES-MW1-062518	Total Recoverable	Water	3005A	
400-155625-1 MSD	AES-MW1-062518	Total Recoverable	Water	3005A	

Analysis Batch: 403800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	7470A	402991
400-155625-2	AES-MW2-062518	Total/NA	Water	7470A	402991
400-155625-3	AES-MW3-062518	Total/NA	Water	7470A	402991
400-155625-4	AES-FB-062518	Total/NA	Water	7470A	402991
400-155625-5	AES-MW4-062618	Total/NA	Water	7470A	402991
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	7470A	402991
400-155625-7	AES-MW5-062618	Total/NA	Water	7470A	402991
400-155625-8	AES-FB-062618	Total/NA	Water	7470A	402991
MB 400-402991/13-A	Method Blank	Total/NA	Water	7470A	402991
LCS 400-402991/14-A	Lab Control Sample	Total/NA	Water	7470A	402991
400-155625-1 MS	AES-MW1-062518	Total/NA	Water	7470A	402991
400-155625-1 MSD	AES-MW1-062518	Total/NA	Water	7470A	402991

Analysis Batch: 403822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total Recoverable	Water	6020	403613
400-155625-2	AES-MW2-062518	Total Recoverable	Water	6020	403613
400-155625-3	AES-MW3-062518	Total Recoverable	Water	6020	403613
400-155625-4	AES-FB-062518	Total Recoverable	Water	6020	403613
400-155625-5	AES-MW4-062618	Total Recoverable	Water	6020	403613
400-155625-6	AES-MW4-DUP-062618	Total Recoverable	Water	6020	403613
400-155625-7	AES-MW5-062618	Total Recoverable	Water	6020	403613
400-155625-8	AES-FB-062618	Total Recoverable	Water	6020	403613
MB 400-403613/1-A ^5	Method Blank	Total Recoverable	Water	6020	403613
LCS 400-403613/2-A	Lab Control Sample	Total Recoverable	Water	6020	403613
400-155625-1 MS	AES-MW1-062518	Total Recoverable	Water	6020	403613
400-155625-1 MSD	AES-MW1-062518	Total Recoverable	Water	6020	403613

Analysis Batch: 403911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1 - DL	AES-MW1-062518	Total Recoverable	Water	6020	403613
400-155625-2 - DL	AES-MW2-062518	Total Recoverable	Water	6020	403613
400-155625-3 - DL	AES-MW3-062518	Total Recoverable	Water	6020	403613
400-155625-5 - DL	AES-MW4-062618	Total Recoverable	Water	6020	403613
400-155625-5 - DL2	AES-MW4-062618	Total Recoverable	Water	6020	403613
400-155625-6 - DL	AES-MW4-DUP-062618	Total Recoverable	Water	6020	403613
400-155625-6 - DL2	AES-MW4-DUP-062618	Total Recoverable	Water	6020	403613
400-155625-7 - DL	AES-MW5-062618	Total Recoverable	Water	6020	403613
400-155625-8 - RA	AES-FB-062618	Total Recoverable	Water	6020	403613

General Chemistry

Analysis Batch: 402866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	SM 2540C	
400-155625-2	AES-MW2-062518	Total/NA	Water	SM 2540C	
400-155625-3	AES-MW3-062518	Total/NA	Water	SM 2540C	
MB 400-402866/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-402866/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 403090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-2	AES-MW2-062518	Total/NA	Water	SM 2320B	
400-155625-3	AES-MW3-062518	Total/NA	Water	SM 2320B	
400-155625-4	AES-FB-062518	Total/NA	Water	SM 2320B	
400-155625-5	AES-MW4-062618	Total/NA	Water	SM 2320B	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	SM 2320B	
MB 400-403090/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 400-403090/6	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 403133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-4	AES-FB-062518	Total/NA	Water	SM 2540C	
MB 400-403133/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-403133/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 403217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-5	AES-MW4-062618	Total/NA	Water	SM 2540C	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	SM 2540C	
400-155625-7	AES-MW5-062618	Total/NA	Water	SM 2540C	
400-155625-8	AES-FB-062618	Total/NA	Water	SM 2540C	
MB 400-403217/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-403217/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 403301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	SM 2320B	
400-155625-7	AES-MW5-062618	Total/NA	Water	SM 2320B	
400-155625-8	AES-FB-062618	Total/NA	Water	SM 2320B	
MB 400-403301/4	Method Blank	Total/NA	Water	SM 2320B	
LCS 400-403301/5	Lab Control Sample	Total/NA	Water	SM 2320B	
400-155625-1 DU	AES-MW1-062518	Total/NA	Water	SM 2320B	

Analysis Batch: 403590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	SM 4500 F C	
400-155625-2	AES-MW2-062518	Total/NA	Water	SM 4500 F C	
400-155625-3	AES-MW3-062518	Total/NA	Water	SM 4500 F C	
400-155625-4	AES-FB-062518	Total/NA	Water	SM 4500 F C	
MB 400-403590/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-403590/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-155625-1 MS	AES-MW1-062518	Total/NA	Water	SM 4500 F C	
400-155625-1 MSD	AES-MW1-062518	Total/NA	Water	SM 4500 F C	

Analysis Batch: 403609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-5	AES-MW4-062618	Total/NA	Water	SM 4500 F C	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	SM 4500 F C	
400-155625-7	AES-MW5-062618	Total/NA	Water	SM 4500 F C	
400-155625-8	AES-FB-062618	Total/NA	Water	SM 4500 F C	
MB 400-403609/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-403609/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

Analysis Batch: 403694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-403694/4	Method Blank	Total/NA	Water	SM 2320B	
LCS 400-403694/5	Lab Control Sample	Total/NA	Water	SM 2320B	
400-155625-1 DU	AES-MW1-062518	Total/NA	Water	SM 2320B	

Analysis Batch: 403758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	SM 4500 SO4 E	
400-155625-2	AES-MW2-062518	Total/NA	Water	SM 4500 SO4 E	
400-155625-3	AES-MW3-062518	Total/NA	Water	SM 4500 SO4 E	
400-155625-4	AES-FB-062518	Total/NA	Water	SM 4500 SO4 E	
400-155625-5	AES-MW4-062618	Total/NA	Water	SM 4500 SO4 E	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	SM 4500 SO4 E	
400-155625-7	AES-MW5-062618	Total/NA	Water	SM 4500 SO4 E	

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

General Chemistry (Continued)

Analysis Batch: 403758 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-403758/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-403758/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-403758/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-155625-1 MS	AES-MW1-062518	Total/NA	Water	SM 4500 SO4 E	
400-155625-1 MSD	AES-MW1-062518	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 403902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	SM 4500 Cl- E	
400-155625-2	AES-MW2-062518	Total/NA	Water	SM 4500 Cl- E	
400-155625-3	AES-MW3-062518	Total/NA	Water	SM 4500 Cl- E	
400-155625-4	AES-FB-062518	Total/NA	Water	SM 4500 Cl- E	
400-155625-5	AES-MW4-062618	Total/NA	Water	SM 4500 Cl- E	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	SM 4500 Cl- E	
400-155625-7	AES-MW5-062618	Total/NA	Water	SM 4500 Cl- E	
400-155625-8	AES-FB-062618	Total/NA	Water	SM 4500 Cl- E	
MB 400-403902/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-403902/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-155625-1 MS	AES-MW1-062518	Total/NA	Water	SM 4500 Cl- E	
400-155625-1 MSD	AES-MW1-062518	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 404294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-8	AES-FB-062618	Total/NA	Water	SM 4500 SO4 E	
MB 400-404294/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-404294/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-404294/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

Field Service / Mobile Lab

Analysis Batch: 404594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	Field Sampling	
400-155625-2	AES-MW2-062518	Total/NA	Water	Field Sampling	
400-155625-3	AES-MW3-062518	Total/NA	Water	Field Sampling	
400-155625-5	AES-MW4-062618	Total/NA	Water	Field Sampling	
400-155625-7	AES-MW5-062618	Total/NA	Water	Field Sampling	

Client: DNA-Environment, LLC	TestAmerica Job ID: 400-155625-1
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-403613/1-A ^5
Matrix: Water
Analysis Batch: 403822

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 403613

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		07/06/18 10:10	07/06/18 17:02	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		07/06/18 10:10	07/06/18 17:02	5
Barium	0.00049	U	0.0025	0.00049	mg/L		07/06/18 10:10	07/06/18 17:02	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:02	5
Boron	0.021	U	0.050	0.021	mg/L		07/06/18 10:10	07/06/18 17:02	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		07/06/18 10:10	07/06/18 17:02	5
Calcium	0.13	U	0.25	0.13	mg/L		07/06/18 10:10	07/06/18 17:02	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		07/06/18 10:10	07/06/18 17:02	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		07/06/18 10:10	07/06/18 17:02	5
Lead	0.00035	U	0.0013	0.00035	mg/L		07/06/18 10:10	07/06/18 17:02	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		07/06/18 10:10	07/06/18 17:02	5
Magnesium	0.032	U	0.13	0.032	mg/L		07/06/18 10:10	07/06/18 17:02	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		07/06/18 10:10	07/06/18 17:02	5
Potassium	0.11	U	0.25	0.11	mg/L		07/06/18 10:10	07/06/18 17:02	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		07/06/18 10:10	07/06/18 17:02	5
Sodium	0.17	U	0.25	0.17	mg/L		07/06/18 10:10	07/06/18 17:02	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		07/06/18 10:10	07/06/18 17:02	5

Lab Sample ID: LCS 400-403613/2-A
Matrix: Water
Analysis Batch: 403822

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 403613

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0497		mg/L		99	80 - 120
Arsenic	0.0500	0.0493		mg/L		99	80 - 120
Barium	0.0500	0.0504		mg/L		101	80 - 120
Beryllium	0.0500	0.0469		mg/L		94	80 - 120
Boron	0.100	0.0997		mg/L		100	80 - 120
Cadmium	0.0500	0.0511		mg/L		102	80 - 120
Calcium	5.00	4.80		mg/L		96	80 - 120
Chromium	0.0500	0.0487		mg/L		97	80 - 120
Cobalt	0.0500	0.0525		mg/L		105	80 - 120
Lead	0.0500	0.0498		mg/L		100	80 - 120
Lithium	0.0500	0.0506		mg/L		101	80 - 120
Magnesium	5.00	5.05		mg/L		101	80 - 120
Molybdenum	0.0500	0.0521		mg/L		104	80 - 120
Potassium	5.00	5.00		mg/L		100	80 - 120
Selenium	0.0500	0.0494		mg/L		99	80 - 120
Sodium	5.00	5.07		mg/L		101	80 - 120
Thallium	0.0100	0.00977		mg/L		98	80 - 120

Lab Sample ID: 400-155625-1 MS
Matrix: Water
Analysis Batch: 403822

Client Sample ID: AES-MW1-062518
Prep Type: Total Recoverable
Prep Batch: 403613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0530		mg/L		106	75 - 125
Arsenic	0.00046	U	0.0500	0.0516		mg/L		103	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-155625-1 MS — **Client Sample ID: AES-MW1-062518**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 403822 — **Prep Batch: 403613**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.039		0.0500	0.0892		mg/L		101	75 - 125
Beryllium	0.00034	U	0.0500	0.0485		mg/L		97	75 - 125
Boron	0.25		0.100	0.364		mg/L		112	75 - 125
Cadmium	0.00034	U	0.0500	0.0492		mg/L		98	75 - 125
Calcium	140	E	5.00	144	E 4	mg/L		169	75 - 125
Chromium	0.0011	U	0.0500	0.0490		mg/L		98	75 - 125
Cobalt	0.00040	U	0.0500	0.0513		mg/L		103	75 - 125
Lead	0.00077	J	0.0500	0.0479		mg/L		94	75 - 125
Lithium	0.0011	U	0.0500	0.0480		mg/L		96	75 - 125
Magnesium	55		5.00	61.4	4	mg/L		121	75 - 125
Molybdenum	0.00085	U	0.0500	0.0535		mg/L		107	75 - 125
Potassium	0.89		5.00	6.23		mg/L		107	75 - 125
Selenium	0.025		0.0500	0.0748		mg/L		100	75 - 125
Sodium	310	E	5.00	324	E 4	mg/L		208	75 - 125
Thallium	0.000085	U	0.0100	0.00937		mg/L		94	75 - 125

Lab Sample ID: 400-155625-1 MSD — **Client Sample ID: AES-MW1-062518**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 403822 — **Prep Batch: 403613**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0514		mg/L		103	75 - 125	3	20
Arsenic	0.00046	U	0.0500	0.0514		mg/L		103	75 - 125	0	20
Barium	0.039		0.0500	0.0884		mg/L		100	75 - 125	1	20
Beryllium	0.00034	U	0.0500	0.0490		mg/L		98	75 - 125	1	20
Boron	0.25		0.100	0.366		mg/L		113	75 - 125	0	20
Cadmium	0.00034	U	0.0500	0.0504		mg/L		101	75 - 125	2	20
Calcium	140	E	5.00	140	E 4	mg/L		99	75 - 125	2	20
Chromium	0.0011	U	0.0500	0.0504		mg/L		101	75 - 125	3	20
Cobalt	0.00040	U	0.0500	0.0515		mg/L		103	75 - 125	0	20
Lead	0.00077	J	0.0500	0.0483		mg/L		95	75 - 125	1	20
Lithium	0.0011	U	0.0500	0.0495		mg/L		99	75 - 125	3	20
Magnesium	55		5.00	61.6	4	mg/L		126	75 - 125	0	20
Molybdenum	0.00085	U	0.0500	0.0534		mg/L		107	75 - 125	0	20
Potassium	0.89		5.00	6.24		mg/L		107	75 - 125	0	20
Selenium	0.025		0.0500	0.0747		mg/L		100	75 - 125	0	20
Sodium	310	E	5.00	325	E 4	mg/L		238	75 - 125	0	20
Thallium	0.000085	U	0.0100	0.00946		mg/L		95	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-402991/13-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 403800 — **Prep Batch: 402991**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		06/30/18 15:03	07/08/18 15:39	1

Client: DNA-Environment, LLC
TestAmerica Job ID: 400-155625-1
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 400-402991/14-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403800
Prep Batch: 402991

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.00112		mg/L		111	80 - 120

Lab Sample ID: 400-155625-1 MS
Client Sample ID: AES-MW1-062518
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403800
Prep Batch: 402991

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U	0.00201	0.00209		mg/L		104	80 - 120

Lab Sample ID: 400-155625-1 MSD
Client Sample ID: AES-MW1-062518
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403800
Prep Batch: 402991

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U	0.00201	0.00216		mg/L		107	80 - 120	3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 400-403090/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403090

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			06/29/18 13:02	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 13:02	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			06/29/18 13:02	1

Lab Sample ID: LCS 400-403090/6
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403090

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	99.0		mg/L		99	80 - 120

Lab Sample ID: MB 400-403301/4
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403301

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			07/02/18 18:39	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/02/18 18:39	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/02/18 18:39	1

Lab Sample ID: LCS 400-403301/5
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403301

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	97.4		mg/L		97	80 - 120

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 400-155625-1 DU
Matrix: Water
Analysis Batch: 403301

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity, Total	350		400		mg/L		15	20
Bicarbonate Alkalinity as CaCO3	350		400		mg/L		15	20
Carbonate Alkalinity as CaCO3	0.98	U	0.98	U	mg/L		NC	20

Lab Sample ID: MB 400-403694/4
Matrix: Water
Analysis Batch: 403694

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			07/06/18 13:26	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/06/18 13:26	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			07/06/18 13:26	1

Lab Sample ID: LCS 400-403694/5
Matrix: Water
Analysis Batch: 403694

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	100		mg/L		100	80 - 120

Lab Sample ID: 400-155625-1 DU
Matrix: Water
Analysis Batch: 403694

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity, Total	370		397		mg/L		6	20
Bicarbonate Alkalinity as CaCO3	370		397		mg/L		6	20
Carbonate Alkalinity as CaCO3	0.98	U	0.98	U	mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-402866/1
Matrix: Water
Analysis Batch: 402866

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			06/28/18 17:17	1

Lab Sample ID: LCS 400-402866/2
Matrix: Water
Analysis Batch: 402866

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	246		mg/L		84	78 - 122

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 400-403133/1
Matrix: Water
Analysis Batch: 403133

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			07/01/18 10:37	1

Lab Sample ID: LCS 400-403133/2
Matrix: Water
Analysis Batch: 403133

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	258		mg/L		88	78 - 122

Lab Sample ID: MB 400-403217/1
Matrix: Water
Analysis Batch: 403217

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			07/02/18 16:23	1

Lab Sample ID: LCS 400-403217/2
Matrix: Water
Analysis Batch: 403217

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	246		mg/L		84	78 - 122

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-403902/6
Matrix: Water
Analysis Batch: 403902

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			07/09/18 09:35	1

Lab Sample ID: LCS 400-403902/7
Matrix: Water
Analysis Batch: 403902

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.0		mg/L		107	90 - 110

Lab Sample ID: 400-155625-1 MS
Matrix: Water
Analysis Batch: 403902

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	260		10.0	264	4	mg/L		4	73 - 120

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: 400-155625-1 MSD
Matrix: Water
Analysis Batch: 403902

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	260		10.0	267	4	mg/L		26	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-403590/3
Matrix: Water
Analysis Batch: 403590

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			07/06/18 07:01	1

Lab Sample ID: LCS 400-403590/4
Matrix: Water
Analysis Batch: 403590

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.94		mg/L		99	90 - 110

Lab Sample ID: 400-155625-1 MS
Matrix: Water
Analysis Batch: 403590

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.61		1.00	1.63		mg/L		102	75 - 125

Lab Sample ID: 400-155625-1 MSD
Matrix: Water
Analysis Batch: 403590

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.61		1.00	1.60		mg/L		99	75 - 125	2	4

Lab Sample ID: MB 400-403609/3
Matrix: Water
Analysis Batch: 403609

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			07/06/18 08:36	1

Lab Sample ID: LCS 400-403609/4
Matrix: Water
Analysis Batch: 403609

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.94		mg/L		99	90 - 110

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-1

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-403758/6
Matrix: Water
Analysis Batch: 403758

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			07/08/18 09:27	1

Lab Sample ID: LCS 400-403758/7
Matrix: Water
Analysis Batch: 403758

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.8		mg/L		99	90 - 110

Lab Sample ID: MRL 400-403758/3
Matrix: Water
Analysis Batch: 403758

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	5.58		mg/L		112	50 - 150

Lab Sample ID: 400-155625-1 MS
Matrix: Water
Analysis Batch: 403758

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	510		10.0	497	4	mg/L		-87	77 - 128

Lab Sample ID: 400-155625-1 MSD
Matrix: Water
Analysis Batch: 403758

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	510		10.0	489	4	mg/L		-168	77 - 128	2	5

Lab Sample ID: MB 400-404294/6
Matrix: Water
Analysis Batch: 404294

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			07/12/18 12:22	1

Lab Sample ID: LCS 400-404294/7
Matrix: Water
Analysis Batch: 404294

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.3		mg/L		95	90 - 110

Lab Sample ID: MRL 400-404294/3
Matrix: Water
Analysis Batch: 404294

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.27	J	mg/L		85	50 - 150

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

400-155625 COC

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Client Information	Sampler: VICENTE PEREZ	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-75000-29494.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: eric.lang@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC	2nd SAMPLER: WILLIAM RODRIGUEZ	Analysis Requested		Job #:
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:			
City: Guaynabo	TAT Requested (days): 10 DAYS (REGULAR TAT)			
State, Zip: PR, 00969-5375				
Phone: 787-209-6386	PO #: 555			
Email: alberto.melendez@dnaenv.com	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 40008317			
Site: AES Puerto Rico LP, Guayama, PR	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, SM2540C - TDS, SM2320B - Alkalinity	6020 - Total Metals, 7470A - Total Mercury	Total Number of containers	Special Instructions/Note:
				Preservation Code:			D	N	D		
AES-MW1-062518	6-25-18	0845	G	Water	N		X	X	X	3	⊛pH = 7.13
AES-MW1-062518 MS	↓	0955	↓	Water		Y	X	X	X	3	
AES-MW1-062518 MSD		1045		Water		Y	X	X	X	3	
AES-MW2-062518		1105		Water			X	X	X	3	pH = 6.84
AES-MW3-062518		1420		Water			X	X	X	3	pH = 7.23
AES-FB-062518	↓	1520		Water			X	X	X	3	
AES-MW4-062618	6-26-18	1015		Water			X	X	X	3	pH = 7.27
AES-MW4-DUP-062618		1135		Water			X	X	X	3	
AES-MW5-062618		1140		Water			X	X	X	3	pH = 6.72
AES-FB-062618	↓	1300	↓	Water	↓		X	X	X	3	
				Water							⊛ FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL IV

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 06-26-18 1645	Company: DNA	Received by: [signature]	Date/Time: 6/27/18 0916	Company: TAPEN		
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:		
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:		

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.6°C, 2.8°C IR7

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-155625-1

Login Number: 155625
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	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	3.6°C IR-7
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-18 *
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

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

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-155625-2
Client Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
8/5/2018 10:31:41 AM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

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

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

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

Table of Contents

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-155625-1	AES-MW1-062518	Water	06/25/18 08:45	06/27/18 09:16
400-155625-2	AES-MW2-062518	Water	06/25/18 11:05	06/27/18 09:16
400-155625-3	AES-MW3-062518	Water	06/25/18 14:20	06/27/18 09:16
400-155625-4	AES-FB-062518	Water	06/25/18 15:20	06/27/18 09:16
400-155625-5	AES-MW4-062618	Water	06/26/18 10:15	06/27/18 09:16
400-155625-6	AES-MW4-DUP-062618	Water	06/26/18 11:35	06/27/18 09:16
400-155625-7	AES-MW5-062618	Water	06/26/18 11:40	06/27/18 09:16
400-155625-8	AES-FB-062618	Water	06/26/18 13:00	06/27/18 09:16

Client Sample ID: AES-MW1-062518

Lab Sample ID: 400-155625-1

Date Collected: 06/25/18 08:45

Matrix: Water

Date Received: 06/27/18 09:16

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.124	U	0.137	0.137	1.00	0.216	pCi/L	07/03/18 13:38	07/26/18 07:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.7*		*40 - 110*	*07/03/18 13:38*	*07/26/18 07:38*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0693	U	0.420	0.420	1.00	0.753	pCi/L	07/03/18 14:46	07/25/18 16:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.7*		*40 - 110*	*07/03/18 14:46*	*07/25/18 16:14*	*1*
Y Carrier	*72.1*		*40 - 110*	*07/03/18 14:46*	*07/25/18 16:14*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0551	U	0.442	0.442	5.00	0.753	pCi/L		07/27/18 12:14	1

Client Sample ID: AES-MW2-062518 Lab Sample ID: 400-155625-2

Date Collected: 06/25/18 11:05 **Matrix: Water**
Date Received: 06/27/18 09:16

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0197	U	0.0848	0.0848	1.00	0.206	pCi/L	07/03/18 13:38	07/26/18 07:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*07/03/18 13:38*	*07/26/18 07:38*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0769	U	0.199	0.199	1.00	0.371	pCi/L	07/03/18 14:46	07/25/18 13:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:52*	*1*
Y Carrier	*92.0*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0965	U	0.216	0.216	5.00	0.371	pCi/L		07/27/18 12:14	1

Client Sample ID: AES-MW3-062518 | **Lab Sample ID: 400-155625-3**
Date Collected: 06/25/18 14:20 | **Matrix: Water**
Date Received: 06/27/18 09:16

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.172	U	0.136	0.137	1.00	0.192	pCi/L	07/03/18 13:38	07/26/18 07:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*07/03/18 13:38*	*07/26/18 07:39*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.140	U	0.215	0.215	1.00	0.362	pCi/L	07/03/18 14:46	07/25/18 13:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:53*	*1*
Y Carrier	*81.1*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:53*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.311	U	0.254	0.255	5.00	0.362	pCi/L		07/27/18 12:14	1

Client Sample ID: AES-FB-062518

Lab Sample ID: 400-155625-4

Date Collected: 06/25/18 15:20

Matrix: Water

Date Received: 06/27/18 09:16

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.153	U	0.136	0.137	1.00	0.197	pCi/L	07/03/18 13:38	07/26/18 07:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*07/03/18 13:38*	*07/26/18 07:40*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.294	U	0.239	0.240	1.00	0.377	pCi/L	07/03/18 14:46	07/25/18 13:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:53*	*1*
Y Carrier	*83.4*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:53*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.447**		0.275	0.276	5.00	0.377	pCi/L		07/27/18 12:14	1

Client Sample ID: AES-MW4-062618 Lab Sample ID: 400-155625-5

Date Collected: 06/26/18 10:15 **Matrix: Water**
Date Received: 06/27/18 09:16

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.125	U	0.130	0.130	1.00	0.196	pCi/L	07/03/18 13:38	07/26/18 06:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*07/03/18 13:38*	*07/26/18 06:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.216	U	0.218	0.219	1.00	0.355	pCi/L	07/03/18 14:46	07/25/18 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:49*	*1*
Y Carrier	*86.4*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:49*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.341	U	0.254	0.255	5.00	0.355	pCi/L		07/27/18 12:14	1

Client Sample ID: AES-MW4-DUP-062618

Lab Sample ID: 400-155625-6

Date Collected: 06/26/18 11:35
Matrix: Water
Date Received: 06/27/18 09:16

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0764	U	0.103	0.103	1.00	0.171	pCi/L	07/03/18 13:38	07/26/18 06:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*07/03/18 13:38*	*07/26/18 06:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0890	U	0.243	0.243	1.00	0.420	pCi/L	07/03/18 14:46	07/25/18 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:49*	*1*
Y Carrier	*77.0*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:49*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.165	U	0.264	0.264	5.00	0.420	pCi/L		07/27/18 12:14	1

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-2

Client Sample ID: AES-MW5-062618
Date Collected: 06/26/18 11:40
Date Received: 06/27/18 09:16

Lab Sample ID: 400-155625-7
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.155	U	0.121	0.122	1.00	0.158	pCi/L	07/03/18 13:38	07/26/18 07:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*110*		*40 - 110*	*07/03/18 13:38*	*07/26/18 07:38*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.170	U	0.184	0.185	1.00	0.301	pCi/L	07/03/18 14:46	07/25/18 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*110*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:49*	*1*
Y Carrier	*87.5*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:49*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.326**		0.220	0.222	5.00	0.301	pCi/L		07/27/18 12:14	1

Client Sample ID: AES-FB-062618

Lab Sample ID: 400-155625-8

Date Collected: 06/26/18 13:00

Matrix: Water

Date Received: 06/27/18 09:16

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.123	U	0.152	0.152	1.00	0.249	pCi/L	07/03/18 13:38	07/26/18 07:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*07/03/18 13:38*	*07/26/18 07:38*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0987	U	0.215	0.215	1.00	0.368	pCi/L	07/03/18 14:46	07/25/18 13:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:52*	*1*
Y Carrier	*93.8*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.222	U	0.263	0.263	5.00	0.368	pCi/L		07/27/18 12:14	1

Client: DNA-Environment, LLC	TestAmerica Job ID: 400-155625-2
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Qualifiers

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Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-2

Client Sample ID: AES-MW1-062518

Lab Sample ID: 400-155625-1
Date Collected: 06/25/18 08:45
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378088	07/26/18 07:38	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	377909	07/25/18 16:14	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Client Sample ID: AES-MW2-062518

Lab Sample ID: 400-155625-2
Date Collected: 06/25/18 11:05
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378088	07/26/18 07:38	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	377909	07/25/18 13:52	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Client Sample ID: AES-MW3-062518

Lab Sample ID: 400-155625-3
Date Collected: 06/25/18 14:20
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378089	07/26/18 07:39	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	377909	07/25/18 13:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Client Sample ID: AES-FB-062518

Lab Sample ID: 400-155625-4
Date Collected: 06/25/18 15:20
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378089	07/26/18 07:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	378024	07/25/18 13:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-2

Client Sample ID: AES-MW4-062618

Lab Sample ID: 400-155625-5

Date Collected: 06/26/18 10:15
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378091	07/26/18 06:11	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	377791	07/25/18 13:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Client Sample ID: AES-MW4-DUP-062618

Lab Sample ID: 400-155625-6

Date Collected: 06/26/18 11:35
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378091	07/26/18 06:11	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	377791	07/25/18 13:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Client Sample ID: AES-MW5-062618

Lab Sample ID: 400-155625-7

Date Collected: 06/26/18 11:40
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378088	07/26/18 07:38	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	377791	07/25/18 13:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Client Sample ID: AES-FB-062618

Lab Sample ID: 400-155625-8

Date Collected: 06/26/18 13:00
Matrix: Water
Date Received: 06/27/18 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			373841	07/03/18 13:38	JLC	TAL SL
Total/NA	Analysis	9315		1	378088	07/26/18 07:38	CDR	TAL SL
Total/NA	Prep	PrecSep_0			373853	07/03/18 14:46	JLC	TAL SL
Total/NA	Analysis	9320		1	377909	07/25/18 13:52	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	378337	07/27/18 12:14	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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Prep Batch: 373841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	PrecSep-21	
400-155625-2	AES-MW2-062518	Total/NA	Water	PrecSep-21	
400-155625-3	AES-MW3-062518	Total/NA	Water	PrecSep-21	
400-155625-4	AES-FB-062518	Total/NA	Water	PrecSep-21	
400-155625-5	AES-MW4-062618	Total/NA	Water	PrecSep-21	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	PrecSep-21	
400-155625-7	AES-MW5-062618	Total/NA	Water	PrecSep-21	
400-155625-8	AES-FB-062618	Total/NA	Water	PrecSep-21	
MB 160-373841/19-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-373841/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-155625-1 MS	AES-MW1-062518	Total/NA	Water	PrecSep-21	
400-155625-1 MSD	AES-MW1-062518	Total/NA	Water	PrecSep-21	

Prep Batch: 373853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155625-1	AES-MW1-062518	Total/NA	Water	PrecSep_0	
400-155625-2	AES-MW2-062518	Total/NA	Water	PrecSep_0	
400-155625-3	AES-MW3-062518	Total/NA	Water	PrecSep_0	
400-155625-4	AES-FB-062518	Total/NA	Water	PrecSep_0	
400-155625-5	AES-MW4-062618	Total/NA	Water	PrecSep_0	
400-155625-6	AES-MW4-DUP-062618	Total/NA	Water	PrecSep_0	
400-155625-7	AES-MW5-062618	Total/NA	Water	PrecSep_0	
400-155625-8	AES-FB-062618	Total/NA	Water	PrecSep_0	
MB 160-373853/19-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-373853/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-155625-1 MS	AES-MW1-062518	Total/NA	Water	PrecSep_0	
400-155625-1 MSD	AES-MW1-062518	Total/NA	Water	PrecSep_0	

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-155625-2

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-373841/19-A
Matrix: Water
Analysis Batch: 378089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373841

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1026	U	0.120	0.121	1.00	0.194	pCi/L	07/03/18 13:38	07/26/18 07:40	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*07/03/18 13:38*	*07/26/18 07:40*	*1*

Lab Sample ID: LCS 160-373841/1-A
Matrix: Water
Analysis Batch: 378089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373841

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.770		1.20	1.00	0.187	pCi/L	86	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.8*		*40 - 110*

Lab Sample ID: 400-155625-1 MS
Matrix: Water
Analysis Batch: 378088

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA
Prep Batch: 373841

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	0.124	U	11.4	10.12		1.26	1.00	0.232	pCi/L	88	75 - 138

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*90.3*		*40 - 110*

Lab Sample ID: 400-155625-1 MSD
Matrix: Water
Analysis Batch: 378088

Client Sample ID: AES-MW1-062518
Prep Type: Total/NA
Prep Batch: 373841

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.124	U	11.4	9.830		1.23	1.00	0.227	pCi/L	85	75 - 138	0.12	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*90.3*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-373853/19-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 378024 — **Prep Batch: 373853**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.01872	U	0.200	0.200	1.00	0.356	pCi/L	07/03/18 14:46	07/25/18 13:53	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:53*	*1*
Y Carrier	*86.7*		*40 - 110*	*07/03/18 14:46*	*07/25/18 13:53*	*1*

Lab Sample ID: LCS 160-373853/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 377791 — **Prep Batch: 373853**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	8.12	8.604		0.999	1.00	0.363	pCi/L	106	56 - 140

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.8*		*40 - 110*
Y Carrier	*89.3*		*40 - 110*

Lab Sample ID: 400-155625-1 MS — **Client Sample ID: AES-MW1-062518**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 377909 — **Prep Batch: 373853**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	-0.0693	U	8.12	9.130		1.07	1.00	0.369	pCi/L	113	45 - 150

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*90.3*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

Lab Sample ID: 400-155625-1 MSD — **Client Sample ID: AES-MW1-062518**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 377909 — **Prep Batch: 373853**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	-0.0693	U	8.11	8.867		1.05	1.00	0.364	pCi/L	109	45 - 150	0.12	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*90.3*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

400-155625 COC

TestAmerica — THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: VICENTE PEREZ	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-75000-29494.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: eric.lang@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC	2nd SAMPLER: WILLIAM RODRIGUEZ			Job #:
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:			
City: Guaynabo	TAT Requested (days): 10 DAYS (REGULAR TAT)			
State, Zip: PR, 00969-5375				
Phone: 787-209-6386	PO #: 555			
Email: alberto.melendez@dnaenv.com	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 40008317			
Site: AES Puerto Rico LP, Guayama, PR	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, SM2540C - TDS, SM2320B - Alkalinity	6020 - Total Metals, 7470A - Total Mercury	Total Number of containers	Special Instructions/Note:
				Preservation Code:			D	N	D		
AES-MW1-062518	6-25-18	0845	G	Water	N		X	X	X	3	⊛pH = 7.13
AES-MW1-062518 MS	↓	0955	↓	Water	↓	Y	X	X	X	3	
AES-MW1-062518 MSD	↓	1045	↓	Water	↓	Y	X	X	X	3	
AES-MW2-062518	↓	1105	↓	Water	↓		X	X	X	3	pH = 6.84
AES-MW3-062518	↓	1420	↓	Water	↓		X	X	X	3	pH = 7.23
AES-FB-062518	↓	1520	↓	Water	↓		X	X	X	3	
AES-MW4-062618	6-26-18	1015	↓	Water	↓		X	X	X	3	pH = 7.27
AES-MW4-DUP-062618	↓	1135	↓	Water	↓		X	X	X	3	
AES-MW5-062618	↓	1140	↓	Water	↓		X	X	X	3	pH = 6.72
AES-FB-062618	↓	1300	↓	Water	↓		X	X	X	3	
				Water							⊛ FIELD pH

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL IV

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: [signature]	Date/Time: 06-26-18 1645	Company: DNA	Received by: [signature]	Date/Time: 6/27/18 0916	Company: TA PEN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.6°C, 2.8°C IR7

Ver: 08/04/2016

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-181650.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eric.lang@testamericainc.com	State of Origin: Puerto Rico	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Florida		Job #: 400-155625-2
Address: 13715 Rider Trail North,	Due Date Requested: 7/26/2018			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR GW Monitoring, AES Puerto Rico, LP	Project #: 40008317			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC/ Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
AES-MW1-062518 (400-155625-1)	6/25/18	08:45 Atlantic		Water			X	X	X	1	
AES-MW1-062518 (400-155625-1MS)	6/25/18	09:55 Atlantic	MS	Water			X	X	X	1	
AES-MW1-062518 (400-155625-1MSD)	6/25/18	10:45 Atlantic	MSD	Water			X	X	X	1	
AES-MW2-062518 (400-155625-2)	6/25/18	11:05 Atlantic		Water			X	X	X	1	
AES-MW3-062518 (400-155625-3)	6/25/18	14:20 Atlantic		Water			X	X	X	1	
AES-FB-062518 (400-155625-4)	6/25/18	15:20 Atlantic		Water			X	X	X	1	
AES-MW4-062618 (400-155625-5)	6/26/18	10:15 Atlantic		Water			X	X	X	1	
AES-MW4-DUP-062618 (400-155625-6)	6/26/18	11:35 Atlantic		Water			X	X	X	1	
AES-MW5-062618 (400-155625-7)	6/26/18	11:40 Atlantic		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out 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/tests/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 complicance to TestAmerica Laboratories, Inc.

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

Empty Kit Relinquished by:	Date:		Time:	Method of Shipment:	
Relinquished by:	Date/Time: 6/27/18 1630	Company: TA Pen	Received by: Nicholas Brenn	Date/Time: 6-28-18 0900	Company: TASTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 09/20/2016

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-181650.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: eric.lang@testamericainc.com	State of Origin: Puerto Rico	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Florida		Job #: 400-155625-2
Address: 13715 Rider Trail North, .	**Due Date Requested:** 7/26/2018			
City: Earth City	**TAT Requested (days):**			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR GW Monitoring, AES Puerto Rico, LP	Project #: 40008317			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA

M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC/ Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
AES-FB-062618 (400-155625-8)	6/26/18	13:00 Atlantic		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) | Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 6/27/18 1630	Company: TA PR	Received by: Nicholas Shew	Date/Time: 6-28-18 0900	Company: TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-155625-2

Login Number: 155625
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	26.8C Rads
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC

TestAmerica Job ID: 400-155625-2

Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18 *
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-18 *
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18 *
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-18 *

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
TestAmerica Job ID: 400-155625-2
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
Nevada	State Program	9	MO000542018-1	07-31-18 *
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18 *
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18 *
Texas	NELAP	6	T104704193-17-11	07-31-18 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18 *
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-18 *
West Virginia DEP	State Program	3	381	08-31-18 *

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-160114-1
Client Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
10/19/2018 4:10:02 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

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

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

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

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Table of Contents

Job ID: 400-160114-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-160114-1

Comments
No additional comments.

Receipt
The samples were received on 10/4/2018 9:06 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt time was 1.3 C.

Metals
Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-100118 (400-160114-1), AES-MW2-100118 (400-160114-2), AES-MW3-100118 (400-160114-3), AES-MW4-100218 (400-160114-4), AES-MW4-DUP-100218 (400-160114-5) and AES-MW5-100218 (400-160114-6). 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.

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

General Chemistry
Method(s) SM 2540C: The original Total Dissolved Solids (TDS) result for sample AES-FB-100218 (400-160114-8) was unexpectedly high for a Field Blank. The sample was reanalyzed for TDS past the holding time. Both the original and reanalysis results are reported.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-100118 (400-160114-1), AES-MW1-100118 (400-160114-1[MS]), AES-MW1-100118 (400-160114-1[MSD]), AES-MW2-100118 (400-160114-2), AES-MW3-100118 (400-160114-3), AES-MW4-100218 (400-160114-4), AES-MW4-DUP-100218 (400-160114-5) and AES-MW5-100218 (400-160114-6). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-100118 (400-160114-1), AES-MW1-100118 (400-160114-1[MS]), AES-MW1-100118 (400-160114-1[MSD]), AES-MW3-100118 (400-160114-3), AES-MW4-100218 (400-160114-4), AES-MW4-DUP-100218 (400-160114-5) and AES-MW5-100218 (400-160114-6). 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.

Detection Summary

Client: DNA-Environment, LLC
TestAmerica Job ID: 400-160114-1
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Client Sample ID: AES-MW1-100118 Lab Sample ID: 400-160114-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.032		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.24		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00050	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Magnesium	49		0.13	0.032	mg/L	5		6020	Total Recoverable
Potassium	0.87		0.25	0.11	mg/L	5		6020	Total Recoverable
Selenium	0.015		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	120		1.3	0.63	mg/L	25		6020	Total Recoverable
Sodium - DL	300		1.3	0.84	mg/L	25		6020	Total Recoverable
Alkalinity, Total	430		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	430		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1300		10	6.8	mg/L	1		SM 2540C	Total/NA
Chloride	200		40	28	mg/L	20		SM 4500 Cl- E	Total/NA
Fluoride	0.69		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	400		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	7.33				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-100118 Lab Sample ID: 400-160114-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.13		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.16		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00058	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0014	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Magnesium	54		0.13	0.032	mg/L	5		6020	Total Recoverable
Potassium	0.79		0.25	0.11	mg/L	5		6020	Total Recoverable
Sodium	96		0.25	0.17	mg/L	5		6020	Total Recoverable
Calcium - DL	110		1.3	0.63	mg/L	25		6020	Total Recoverable
Alkalinity, Total	550		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	550		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	690		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	85		10	7.0	mg/L	5		SM 4500 Cl- E	Total/NA
Fluoride	0.67		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	7.04				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-100118 Lab Sample ID: 400-160114-3

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW3-100118 (Continued) Lab Sample ID: 400-160114-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0024		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.19		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.0		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0031		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.021		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.22		0.015	0.00085	mg/L	5		6020	Total Recoverable
Potassium	46		0.25	0.11	mg/L	5		6020	Total Recoverable
Selenium	0.23		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	330		2.5	1.3	mg/L	50		6020	Total Recoverable
Magnesium - DL	430		1.3	0.32	mg/L	50		6020	Total Recoverable
Sodium - DL2	4000		250	170	mg/L	5000		6020	Total Recoverable
Alkalinity, Total	520		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	520		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	13000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	4700		200	140	mg/L	100		SM 4500 Cl- E	Total/NA
Fluoride	1.6		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	3300		500	140	mg/L	100		SM 4500 SO4 E	Total/NA
Field pH	7.43				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-100218 Lab Sample ID: 400-160114-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0031		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.035		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00057	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0016	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.38		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Magnesium	64		0.13	0.032	mg/L	5		6020	Total Recoverable
Molybdenum	0.74		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0043		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	2.6		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	280		2.5	1.3	mg/L	50		6020	Total Recoverable
Potassium - DL	980		2.5	1.1	mg/L	50		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

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

Client Sample ID: AES-MW4-100218 (Continued) Lab Sample ID: 400-160114-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium - DL2	6000		250	170	mg/L	5000		6020	Total Recoverable
Alkalinity, Total	840		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	840		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	21000		250	170	mg/L	1		SM 2540C	Total/NA
Chloride	5600		400	280	mg/L	200		SM 4500 Cl- E	Total/NA
Fluoride	1.0		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	6000		1500	420	mg/L	300		SM 4500 SO4 E	Total/NA
Field pH	7.41				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-100218 Lab Sample ID: 400-160114-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0027		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.036		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00051	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0016	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.34		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Magnesium	62		0.13	0.032	mg/L	5		6020	Total Recoverable
Molybdenum	0.76		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0048		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	2.6		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	250		2.5	1.3	mg/L	50		6020	Total Recoverable
Potassium - DL	950		2.5	1.1	mg/L	50		6020	Total Recoverable
Sodium - DL2	6300		250	170	mg/L	5000		6020	Total Recoverable
Alkalinity, Total	840		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	840		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	22000		250	170	mg/L	1		SM 2540C	Total/NA
Chloride	5300		400	280	mg/L	200		SM 4500 Cl- E	Total/NA
Fluoride	1.0		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	6200		1500	420	mg/L	300		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-MW5-100218 Lab Sample ID: 400-160114-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0088		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.032		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.39		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0030		0.0025	0.00040	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

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

Client Sample ID: AES-MW5-100218 (Continued) — Lab Sample ID: 400-160114-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.0038	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0053	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Potassium	7.1		0.25	0.11	mg/L	5		6020	Total Recoverable
Selenium	0.00046	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	710		5.0	2.5	mg/L	100		6020	Total Recoverable
Magnesium - DL	380		2.5	0.64	mg/L	100		6020	Total Recoverable
Sodium - DL	2100		5.0	3.4	mg/L	100		6020	Total Recoverable
Alkalinity, Total	490		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	490		1.0	0.98	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	10000		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	3700		180	130	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	0.50		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2200		400	110	mg/L	80		SM 4500 SO4 E	Total/NA
Field pH	6.73				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-100118 — Lab Sample ID: 400-160114-7

No Detections.

Client Sample ID: AES-FB-100218 — Lab Sample ID: 400-160114-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	26		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-1

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2320B	Alkalinity	SM	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

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 PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-160114-1	AES-MW1-100118	Water	10/01/18 09:25	10/04/18 09:06
400-160114-2	AES-MW2-100118	Water	10/01/18 11:37	10/04/18 09:06
400-160114-3	AES-MW3-100118	Water	10/01/18 14:12	10/04/18 09:06
400-160114-4	AES-MW4-100218	Water	10/02/18 10:11	10/04/18 09:06
400-160114-5	AES-MW4-DUP-100218	Water	10/02/18 10:37	10/04/18 09:06
400-160114-6	AES-MW5-100218	Water	10/02/18 12:17	10/04/18 09:06
400-160114-7	AES-FB-100118	Water	10/01/18 14:40	10/04/18 09:06
400-160114-8	AES-FB-100218	Water	10/02/18 12:43	10/04/18 09:06

Client Sample ID: AES-MW1-100118 | **Lab Sample ID: 400-160114-1**
Date Collected: 10/01/18 09:25 | **Matrix: Water**
Date Received: 10/04/18 09:06

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 17:17	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 17:17	5
Barium	**0.032**		0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 17:17	5
Boron	**0.24**		0.050	0.021	mg/L		10/09/18 09:58	10/09/18 17:17	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 17:17	5
Cobalt	**0.00050**	**J**	0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 17:17	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 17:17	5
Magnesium	**49**		0.13	0.032	mg/L		10/09/18 09:58	10/09/18 17:17	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 17:17	5
Potassium	**0.87**		0.25	0.11	mg/L		10/09/18 09:58	10/09/18 17:17	5
Selenium	**0.015**		0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 17:17	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**120**		1.3	0.63	mg/L		10/09/18 09:58	10/09/18 19:49	25
Sodium	**300**		1.3	0.84	mg/L		10/09/18 09:58	10/09/18 19:49	25

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**430**		1.0	0.98	mg/L			10/05/18 15:08	1
Bicarbonate Alkalinity as CaCO3	**430**		1.0	0.98	mg/L			10/05/18 15:08	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/05/18 15:08	1
Total Dissolved Solids	**1300**		10	6.8	mg/L			10/05/18 18:25	1
Chloride	**200**		40	28	mg/L			10/11/18 10:37	20
Fluoride	**0.69**		0.10	0.032	mg/L			10/12/18 15:18	1
Sulfate	**400**		100	28	mg/L			10/11/18 15:05	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.33**				SU			10/01/18 09:25	1

Client Sample ID: AES-MW2-100118
Date Collected: 10/01/18 11:37
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-2
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 18:12	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 18:12	5
Barium	**0.13**		0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 18:12	5
Boron	**0.16**		0.050	0.021	mg/L		10/09/18 09:58	10/09/18 18:12	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 18:12	5
Cobalt	**0.00058**	**J**	0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 18:12	5
Lithium	**0.0014**	**J**	0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 18:12	5
Magnesium	**54**		0.13	0.032	mg/L		10/09/18 09:58	10/09/18 18:12	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 18:12	5
Potassium	**0.79**		0.25	0.11	mg/L		10/09/18 09:58	10/09/18 18:12	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 18:12	5
Sodium	**96**		0.25	0.17	mg/L		10/09/18 09:58	10/09/18 18:12	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		1.3	0.63	mg/L		10/09/18 09:58	10/09/18 19:54	25

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**550**		1.0	0.98	mg/L			10/05/18 15:45	1
Bicarbonate Alkalinity as CaCO3	**550**		1.0	0.98	mg/L			10/05/18 15:45	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/05/18 15:45	1
Total Dissolved Solids	**690**		5.0	3.4	mg/L			10/05/18 18:25	1
Chloride	**85**		10	7.0	mg/L			10/11/18 10:40	5
Fluoride	**0.67**		0.10	0.032	mg/L			10/12/18 15:24	1
Sulfate	**15**		5.0	1.4	mg/L			10/11/18 14:54	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.04**				SU			10/01/18 11:37	1

Client Sample ID: AES-MW3-100118
Date Collected: 10/01/18 14:12
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-3
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 18:17	5
Arsenic	**0.0024**		0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 18:17	5
Barium	**0.19**		0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 18:17	5
Boron	**1.0**		0.050	0.021	mg/L		10/09/18 09:58	10/09/18 18:17	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 18:17	5
Cobalt	**0.0031**		0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 18:17	5
Lithium	**0.021**		0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 18:17	5
Molybdenum	**0.22**		0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 18:17	5
Potassium	**46**		0.25	0.11	mg/L		10/09/18 09:58	10/09/18 18:17	5
Selenium	**0.23**		0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 18:17	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**330**		2.5	1.3	mg/L		10/09/18 09:58	10/09/18 19:36	50
Magnesium	**430**		1.3	0.32	mg/L		10/09/18 09:58	10/09/18 19:36	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**4000**		250	170	mg/L		10/09/18 09:58	10/09/18 20:20	5000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**520**		1.0	0.98	mg/L			10/05/18 15:54	1
Bicarbonate Alkalinity as CaCO3	**520**		1.0	0.98	mg/L			10/05/18 15:54	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/05/18 15:54	1
Total Dissolved Solids	**13000**		130	85	mg/L			10/05/18 18:25	1
Chloride	**4700**		200	140	mg/L			10/11/18 10:53	100
Fluoride	**1.6**		0.10	0.032	mg/L			10/12/18 15:27	1
Sulfate	**3300**		500	140	mg/L			10/11/18 15:34	100

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.43**				SU			10/01/18 14:12	1

Client Sample ID: AES-MW4-100218 Lab Sample ID: 400-160114-4

Date Collected: 10/02/18 10:11 **Matrix: Water**
Date Received: 10/04/18 09:06

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 18:21	5
Arsenic	**0.0031**		0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 18:21	5
Barium	**0.035**		0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 18:21	5
Cadmium	**0.00057**	**J**	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 18:21	5
Cobalt	**0.0016**	**J**	0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 18:21	5
Lithium	**0.38**		0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 18:21	5
Magnesium	**64**		0.13	0.032	mg/L		10/09/18 09:58	10/09/18 18:21	5
Molybdenum	**0.74**		0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 18:21	5
Selenium	**0.0043**		0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 18:21	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**2.6**		0.50	0.21	mg/L		10/09/18 09:58	10/09/18 19:41	50
Calcium	**280**		2.5	1.3	mg/L		10/09/18 09:58	10/09/18 19:41	50
Potassium	**980**		2.5	1.1	mg/L		10/09/18 09:58	10/09/18 19:41	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**6000**		250	170	mg/L		10/09/18 09:58	10/09/18 20:25	5000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**840**		1.0	0.98	mg/L			10/08/18 14:38	1
Bicarbonate Alkalinity as CaCO3	**840**		1.0	0.98	mg/L			10/08/18 14:38	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/08/18 14:38	1
Total Dissolved Solids	**21000**		250	170	mg/L			10/06/18 18:12	1
Chloride	**5600**		400	280	mg/L			10/11/18 10:53	200
Fluoride	**1.0**		0.10	0.032	mg/L			10/12/18 15:29	1
Sulfate	**6000**		1500	420	mg/L			10/11/18 15:16	300

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.41**				SU			10/02/18 10:11	1

Client Sample ID: AES-MW4-DUP-100218

Lab Sample ID: 400-160114-5

Date Collected: 10/02/18 10:37

Matrix: Water

Date Received: 10/04/18 09:06

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 18:26	5
Arsenic	**0.0027**		0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 18:26	5
Barium	**0.036**		0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 18:26	5
Cadmium	**0.00051**	**J**	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 18:26	5
Cobalt	**0.0016**	**J**	0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 18:26	5
Lithium	**0.34**		0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 18:26	5
Magnesium	**62**		0.13	0.032	mg/L		10/09/18 09:58	10/09/18 18:26	5
Molybdenum	**0.76**		0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 18:26	5
Selenium	**0.0048**		0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 18:26	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**2.6**		0.50	0.21	mg/L		10/09/18 09:58	10/09/18 19:45	50
Calcium	**250**		2.5	1.3	mg/L		10/09/18 09:58	10/09/18 19:45	50
Potassium	**950**		2.5	1.1	mg/L		10/09/18 09:58	10/09/18 19:45	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**6300**		250	170	mg/L		10/09/18 09:58	10/09/18 20:29	5000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**840**		1.0	0.98	mg/L			10/08/18 14:49	1
Bicarbonate Alkalinity as CaCO3	**840**		1.0	0.98	mg/L			10/08/18 14:49	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/08/18 14:49	1
Total Dissolved Solids	**22000**		250	170	mg/L			10/06/18 18:12	1
Chloride	**5300**		400	280	mg/L			10/11/18 10:53	200
Fluoride	**1.0**		0.10	0.032	mg/L			10/12/18 15:32	1
Sulfate	**6200**		1500	420	mg/L			10/11/18 15:16	300

Client Sample ID: AES-MW5-100218 Lab Sample ID: 400-160114-6

Date Collected: 10/02/18 12:17 **Matrix: Water**
Date Received: 10/04/18 09:06

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 18:30	5
Arsenic	0.0088		0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 18:30	5
Barium	0.032		0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 18:30	5
Boron	0.39		0.050	0.021	mg/L		10/09/18 09:58	10/09/18 18:30	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 18:30	5
Cobalt	0.0030		0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 18:30	5
Lithium	0.0038	J	0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 18:30	5
Molybdenum	0.0053	J	0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 18:30	5
Potassium	7.1		0.25	0.11	mg/L		10/09/18 09:58	10/09/18 18:30	5
Selenium	0.00046	J	0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 18:30	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	710		5.0	2.5	mg/L		10/09/18 09:58	10/09/18 20:16	100
Magnesium	380		2.5	0.64	mg/L		10/09/18 09:58	10/09/18 20:16	100
Sodium	2100		5.0	3.4	mg/L		10/09/18 09:58	10/09/18 20:16	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	490		1.0	0.98	mg/L			10/08/18 14:57	1
Bicarbonate Alkalinity as CaCO3	490		1.0	0.98	mg/L			10/08/18 14:57	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/08/18 14:57	1
Total Dissolved Solids	10000		50	34	mg/L			10/06/18 18:12	1
Chloride	3700		180	130	mg/L			10/11/18 11:23	90
Fluoride	0.50		0.10	0.032	mg/L			10/12/18 15:34	1
Sulfate	2200		400	110	mg/L			10/11/18 15:27	80

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.73				SU			10/02/18 12:17	1

Client Sample ID: AES-FB-100118

Lab Sample ID: 400-160114-7

Date Collected: 10/01/18 14:40

Matrix: Water

Date Received: 10/04/18 09:06

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 18:03	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 18:03	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 18:03	5
Boron	0.021	U	0.050	0.021	mg/L		10/09/18 09:58	10/09/18 18:03	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 18:03	5
Calcium	0.13	U	0.25	0.13	mg/L		10/09/18 09:58	10/09/18 18:03	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 18:03	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 18:03	5
Magnesium	0.032	U	0.13	0.032	mg/L		10/09/18 09:58	10/09/18 18:03	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 18:03	5
Potassium	0.11	U	0.25	0.11	mg/L		10/09/18 09:58	10/09/18 18:03	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 18:03	5
Sodium	0.17	U	0.25	0.17	mg/L		10/09/18 09:58	10/09/18 18:03	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			10/05/18 15:59	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/05/18 15:59	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/05/18 15:59	1
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/05/18 18:25	1
Chloride	1.4	U	2.0	1.4	mg/L			10/11/18 10:03	1
Fluoride	0.032	U	0.10	0.032	mg/L			10/12/18 15:38	1
Sulfate	1.4	U	5.0	1.4	mg/L			10/11/18 14:59	1

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-1

Client Sample ID: AES-FB-100218

Date Collected: 10/02/18 12:43
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-8
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 18:08	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 18:08	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 18:08	5
Boron	0.021	U	0.050	0.021	mg/L		10/09/18 09:58	10/09/18 18:08	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 18:08	5
Calcium	0.13	U	0.25	0.13	mg/L		10/09/18 09:58	10/09/18 18:08	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 18:08	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 18:08	5
Magnesium	0.032	U	0.13	0.032	mg/L		10/09/18 09:58	10/09/18 18:08	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 18:08	5
Potassium	0.11	U	0.25	0.11	mg/L		10/09/18 09:58	10/09/18 18:08	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 18:08	5
Sodium	0.17	U	0.25	0.17	mg/L		10/09/18 09:58	10/09/18 18:08	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			10/08/18 15:24	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/08/18 15:24	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/08/18 15:24	1
Total Dissolved Solids	**26**		5.0	3.4	mg/L			10/06/18 18:12	1
Chloride	1.4	U	2.0	1.4	mg/L			10/11/18 10:10	1
Fluoride	0.032	U	0.10	0.032	mg/L			10/12/18 15:41	1
Sulfate	1.4	U	5.0	1.4	mg/L			10/11/18 14:59	1

General Chemistry - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U H	5.0	3.4	mg/L			10/15/18 16:53	1

Qualifiers

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.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
H	Sample was prepped or analyzed beyond the specified holding time
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.
¤	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)

Client Sample ID: AES-MW1-100118 Lab Sample ID: 400-160114-1

Date Collected: 10/01/18 09:25 **Matrix: Water**
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 17:17	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	25	414822	10/09/18 19:49	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414310	10/05/18 15:08	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414346	10/05/18 18:25	DEK	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		20	414995	10/11/18 10:37	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:18	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	415038	10/11/18 15:05	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	414899	10/01/18 09:25	ERM	TAL PEN

Client Sample ID: AES-MW2-100118 Lab Sample ID: 400-160114-2

Date Collected: 10/01/18 11:37 **Matrix: Water**
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 18:12	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	25	414822	10/09/18 19:54	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414310	10/05/18 15:45	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414346	10/05/18 18:25	DEK	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		5	414995	10/11/18 10:40	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415038	10/11/18 14:54	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	414899	10/01/18 11:37	ERM	TAL PEN

Client Sample ID: AES-MW3-100118 Lab Sample ID: 400-160114-3

Date Collected: 10/01/18 14:12 **Matrix: Water**
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 18:17	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	50	414822	10/09/18 19:36	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL2		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL2	5000	414822	10/09/18 20:20	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414310	10/05/18 15:54	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414346	10/05/18 18:25	DEK	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		100	414995	10/11/18 10:53	RRC	TAL PEN

Client Sample ID: AES-MW3-100118
Lab Sample ID: 400-160114-3
Date Collected: 10/01/18 14:12
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:27	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		100	415038	10/11/18 15:34	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	414899	10/01/18 14:12	ERM	TAL PEN

Client Sample ID: AES-MW4-100218
Lab Sample ID: 400-160114-4
Date Collected: 10/02/18 10:11
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 18:21	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	50	414822	10/09/18 19:41	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL2		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL2	5000	414822	10/09/18 20:25	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414585	10/08/18 14:38	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414386	10/06/18 18:12	DEK	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		200	414995	10/11/18 10:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:29	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		300	415038	10/11/18 15:16	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	415383	10/02/18 10:11	ERM	TAL PEN

Client Sample ID: AES-MW4-DUP-100218
Lab Sample ID: 400-160114-5
Date Collected: 10/02/18 10:37
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 18:26	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	50	414822	10/09/18 19:45	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL2		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL2	5000	414822	10/09/18 20:29	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414585	10/08/18 14:49	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414386	10/06/18 18:12	DEK	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		200	414995	10/11/18 10:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:32	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		300	415038	10/11/18 15:16	RRC	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-1

Client Sample ID: AES-MW5-100218
Date Collected: 10/02/18 12:17
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 18:30	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020	DL	100	414822	10/09/18 20:16	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414585	10/08/18 14:57	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414386	10/06/18 18:12	DEK	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	414995	10/11/18 11:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:34	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		80	415038	10/11/18 15:27	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	415383	10/02/18 12:17	ERM	TAL PEN

Client Sample ID: AES-FB-100118
Date Collected: 10/01/18 14:40
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 18:03	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414310	10/05/18 15:59	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414346	10/05/18 18:25	DEK	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	414995	10/11/18 10:03	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:38	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415038	10/11/18 14:59	RRC	TAL PEN

Client Sample ID: AES-FB-100218
Date Collected: 10/02/18 12:43
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			414651	10/09/18 09:58	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	414822	10/09/18 18:08	DRE	TAL PEN
Total/NA	Analysis	SM 2320B		1	414585	10/08/18 15:24	BAB	TAL PEN
Total/NA	Analysis	SM 2540C		1	414386	10/06/18 18:12	DEK	TAL PEN
Total/NA	Analysis	SM 2540C	RA	1	415521	10/15/18 16:53	CLB	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	414995	10/11/18 10:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415221	10/12/18 15:41	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415038	10/11/18 14:59	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 414651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1 - DL	AES-MW1-100118	Total Recoverable	Water	3005A	
400-160114-1	AES-MW1-100118	Total Recoverable	Water	3005A	
400-160114-2	AES-MW2-100118	Total Recoverable	Water	3005A	
400-160114-2 - DL	AES-MW2-100118	Total Recoverable	Water	3005A	
400-160114-3	AES-MW3-100118	Total Recoverable	Water	3005A	
400-160114-3 - DL2	AES-MW3-100118	Total Recoverable	Water	3005A	
400-160114-3 - DL	AES-MW3-100118	Total Recoverable	Water	3005A	
400-160114-4	AES-MW4-100218	Total Recoverable	Water	3005A	
400-160114-4 - DL2	AES-MW4-100218	Total Recoverable	Water	3005A	
400-160114-4 - DL	AES-MW4-100218	Total Recoverable	Water	3005A	
400-160114-5 - DL	AES-MW4-DUP-100218	Total Recoverable	Water	3005A	
400-160114-5	AES-MW4-DUP-100218	Total Recoverable	Water	3005A	
400-160114-5 - DL2	AES-MW4-DUP-100218	Total Recoverable	Water	3005A	
400-160114-6 - DL	AES-MW5-100218	Total Recoverable	Water	3005A	
400-160114-6	AES-MW5-100218	Total Recoverable	Water	3005A	
400-160114-7	AES-FB-100118	Total Recoverable	Water	3005A	
400-160114-8	AES-FB-100218	Total Recoverable	Water	3005A	
MB 400-414651/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-414651/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-160114-1 MS	AES-MW1-100118	Total Recoverable	Water	3005A	
400-160114-1 MSD	AES-MW1-100118	Total Recoverable	Water	3005A	

Analysis Batch: 414822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total Recoverable	Water	6020	414651
400-160114-1 - DL	AES-MW1-100118	Total Recoverable	Water	6020	414651
400-160114-2	AES-MW2-100118	Total Recoverable	Water	6020	414651
400-160114-2 - DL	AES-MW2-100118	Total Recoverable	Water	6020	414651
400-160114-3	AES-MW3-100118	Total Recoverable	Water	6020	414651
400-160114-3 - DL	AES-MW3-100118	Total Recoverable	Water	6020	414651
400-160114-3 - DL2	AES-MW3-100118	Total Recoverable	Water	6020	414651
400-160114-4	AES-MW4-100218	Total Recoverable	Water	6020	414651
400-160114-4 - DL	AES-MW4-100218	Total Recoverable	Water	6020	414651
400-160114-4 - DL2	AES-MW4-100218	Total Recoverable	Water	6020	414651
400-160114-5	AES-MW4-DUP-100218	Total Recoverable	Water	6020	414651
400-160114-5 - DL	AES-MW4-DUP-100218	Total Recoverable	Water	6020	414651
400-160114-5 - DL2	AES-MW4-DUP-100218	Total Recoverable	Water	6020	414651
400-160114-6	AES-MW5-100218	Total Recoverable	Water	6020	414651
400-160114-6 - DL	AES-MW5-100218	Total Recoverable	Water	6020	414651
400-160114-7	AES-FB-100118	Total Recoverable	Water	6020	414651
400-160114-8	AES-FB-100218	Total Recoverable	Water	6020	414651
MB 400-414651/1-A ^5	Method Blank	Total Recoverable	Water	6020	414651
LCS 400-414651/2-A	Lab Control Sample	Total Recoverable	Water	6020	414651
400-160114-1 MS	AES-MW1-100118	Total Recoverable	Water	6020	414651
400-160114-1 MSD	AES-MW1-100118	Total Recoverable	Water	6020	414651

General Chemistry

Analysis Batch: 414310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	SM 2320B	
400-160114-2	AES-MW2-100118	Total/NA	Water	SM 2320B	
400-160114-3	AES-MW3-100118	Total/NA	Water	SM 2320B	
400-160114-7	AES-FB-100118	Total/NA	Water	SM 2320B	
MB 400-414310/4	Method Blank	Total/NA	Water	SM 2320B	
LCS 400-414310/5	Lab Control Sample	Total/NA	Water	SM 2320B	
400-160114-1 DU	AES-MW1-100118	Total/NA	Water	SM 2320B	

Analysis Batch: 414346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	SM 2540C	
400-160114-2	AES-MW2-100118	Total/NA	Water	SM 2540C	
400-160114-3	AES-MW3-100118	Total/NA	Water	SM 2540C	
400-160114-7	AES-FB-100118	Total/NA	Water	SM 2540C	
MB 400-414346/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-414346/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-160114-2 DU	AES-MW2-100118	Total/NA	Water	SM 2540C	

Analysis Batch: 414386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-4	AES-MW4-100218	Total/NA	Water	SM 2540C	
400-160114-5	AES-MW4-DUP-100218	Total/NA	Water	SM 2540C	
400-160114-6	AES-MW5-100218	Total/NA	Water	SM 2540C	
400-160114-8	AES-FB-100218	Total/NA	Water	SM 2540C	
MB 400-414386/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-414386/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 414585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-4	AES-MW4-100218	Total/NA	Water	SM 2320B	
400-160114-5	AES-MW4-DUP-100218	Total/NA	Water	SM 2320B	
400-160114-6	AES-MW5-100218	Total/NA	Water	SM 2320B	
400-160114-8	AES-FB-100218	Total/NA	Water	SM 2320B	
MB 400-414585/4	Method Blank	Total/NA	Water	SM 2320B	
LCS 400-414585/5	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 414995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	SM 4500 Cl- E	
400-160114-2	AES-MW2-100118	Total/NA	Water	SM 4500 Cl- E	
400-160114-3	AES-MW3-100118	Total/NA	Water	SM 4500 Cl- E	
400-160114-4	AES-MW4-100218	Total/NA	Water	SM 4500 Cl- E	
400-160114-5	AES-MW4-DUP-100218	Total/NA	Water	SM 4500 Cl- E	
400-160114-6	AES-MW5-100218	Total/NA	Water	SM 4500 Cl- E	
400-160114-7	AES-FB-100118	Total/NA	Water	SM 4500 Cl- E	
400-160114-8	AES-FB-100218	Total/NA	Water	SM 4500 Cl- E	
MB 400-414995/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-414995/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-414995/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-160114-1 MS	AES-MW1-100118	Total/NA	Water	SM 4500 Cl- E	
400-160114-1 MSD	AES-MW1-100118	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 415038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	SM 4500 SO4 E	
400-160114-2	AES-MW2-100118	Total/NA	Water	SM 4500 SO4 E	
400-160114-3	AES-MW3-100118	Total/NA	Water	SM 4500 SO4 E	
400-160114-4	AES-MW4-100218	Total/NA	Water	SM 4500 SO4 E	
400-160114-5	AES-MW4-DUP-100218	Total/NA	Water	SM 4500 SO4 E	
400-160114-6	AES-MW5-100218	Total/NA	Water	SM 4500 SO4 E	
400-160114-7	AES-FB-100118	Total/NA	Water	SM 4500 SO4 E	
400-160114-8	AES-FB-100218	Total/NA	Water	SM 4500 SO4 E	
MB 400-415038/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-415038/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-415038/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-160114-1 MS	AES-MW1-100118	Total/NA	Water	SM 4500 SO4 E	
400-160114-1 MSD	AES-MW1-100118	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 415221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	SM 4500 F C	
400-160114-2	AES-MW2-100118	Total/NA	Water	SM 4500 F C	
400-160114-3	AES-MW3-100118	Total/NA	Water	SM 4500 F C	
400-160114-4	AES-MW4-100218	Total/NA	Water	SM 4500 F C	
400-160114-5	AES-MW4-DUP-100218	Total/NA	Water	SM 4500 F C	
400-160114-6	AES-MW5-100218	Total/NA	Water	SM 4500 F C	
400-160114-7	AES-FB-100118	Total/NA	Water	SM 4500 F C	
400-160114-8	AES-FB-100218	Total/NA	Water	SM 4500 F C	
MB 400-415221/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-415221/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-160114-1 MS	AES-MW1-100118	Total/NA	Water	SM 4500 F C	
400-160114-1 MSD	AES-MW1-100118	Total/NA	Water	SM 4500 F C	

Analysis Batch: 415521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-8 - RA	AES-FB-100218	Total/NA	Water	SM 2540C	
MB 400-415521/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-415521/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 414899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	Field Sampling	
400-160114-2	AES-MW2-100118	Total/NA	Water	Field Sampling	
400-160114-3	AES-MW3-100118	Total/NA	Water	Field Sampling	

Analysis Batch: 415383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-4	AES-MW4-100218	Total/NA	Water	Field Sampling	
400-160114-6	AES-MW5-100218	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-414651/1-A ^5
Matrix: Water
Analysis Batch: 414822

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 414651

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/09/18 09:58	10/09/18 16:59	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/09/18 09:58	10/09/18 16:59	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/09/18 09:58	10/09/18 16:59	5
Boron	0.021	U	0.050	0.021	mg/L		10/09/18 09:58	10/09/18 16:59	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/09/18 09:58	10/09/18 16:59	5
Calcium	0.13	U	0.25	0.13	mg/L		10/09/18 09:58	10/09/18 16:59	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/09/18 09:58	10/09/18 16:59	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/09/18 09:58	10/09/18 16:59	5
Magnesium	0.032	U	0.13	0.032	mg/L		10/09/18 09:58	10/09/18 16:59	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/09/18 09:58	10/09/18 16:59	5
Potassium	0.11	U	0.25	0.11	mg/L		10/09/18 09:58	10/09/18 16:59	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/09/18 09:58	10/09/18 16:59	5
Sodium	0.17	U	0.25	0.17	mg/L		10/09/18 09:58	10/09/18 16:59	5

Lab Sample ID: LCS 400-414651/2-A
Matrix: Water
Analysis Batch: 414822

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 414651

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0500		mg/L		100	80 - 120
Arsenic	0.0500	0.0480		mg/L		96	80 - 120
Barium	0.0500	0.0490		mg/L		98	80 - 120
Boron	0.100	0.102		mg/L		102	80 - 120
Cadmium	0.0500	0.0496		mg/L		99	80 - 120
Calcium	5.00	5.25		mg/L		105	80 - 120
Cobalt	0.0500	0.0521		mg/L		104	80 - 120
Lithium	0.0500	0.0526		mg/L		105	80 - 120
Magnesium	5.00	5.39		mg/L		108	80 - 120
Molybdenum	0.0500	0.0465		mg/L		93	80 - 120
Potassium	5.00	5.27		mg/L		105	80 - 120
Selenium	0.0500	0.0499		mg/L		100	80 - 120
Sodium	5.00	5.43		mg/L		109	80 - 120

Lab Sample ID: 400-160114-1 MS
Matrix: Water
Analysis Batch: 414822

Client Sample ID: AES-MW1-100118
Prep Type: Total Recoverable
Prep Batch: 414651

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0543		mg/L		109	75 - 125
Arsenic	0.00046	U	0.0500	0.0520		mg/L		104	75 - 125
Barium	0.032		0.0500	0.0816		mg/L		100	75 - 125
Boron	0.24		0.100	0.363		mg/L		121	75 - 125
Cadmium	0.00034	U	0.0500	0.0507		mg/L		101	75 - 125
Calcium	120	E	5.00	123	E 4	mg/L		68	75 - 125
Cobalt	0.00050	J	0.0500	0.0511		mg/L		101	75 - 125
Lithium	0.0011	U	0.0500	0.0556		mg/L		111	75 - 125
Magnesium	49		5.00	54.1	4	mg/L		93	75 - 125
Molybdenum	0.00085	U	0.0500	0.0510		mg/L		102	75 - 125

QC Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-160114-1 MS
Matrix: Water
Analysis Batch: 414822

Client Sample ID: AES-MW1-100118
Prep Type: Total Recoverable
Prep Batch: 414651

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	0.87		5.00	6.28		mg/L		108	75 - 125
Selenium	0.015		0.0500	0.0687		mg/L		107	75 - 125
Sodium	320	E	5.00	326	E 4	mg/L		25	75 - 125

Lab Sample ID: 400-160114-1 MSD
Matrix: Water
Analysis Batch: 414822

Client Sample ID: AES-MW1-100118
Prep Type: Total Recoverable
Prep Batch: 414651

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0533		mg/L		107	75 - 125	2	20
Arsenic	0.00046	U	0.0500	0.0523		mg/L		105	75 - 125	1	20
Barium	0.032		0.0500	0.0826		mg/L		102	75 - 125	1	20
Boron	0.24		0.100	0.361		mg/L		119	75 - 125	0	20
Cadmium	0.00034	U	0.0500	0.0521		mg/L		104	75 - 125	3	20
Calcium	120	E	5.00	122	E 4	mg/L		58	75 - 125	0	20
Cobalt	0.00050	J	0.0500	0.0517		mg/L		102	75 - 125	1	20
Lithium	0.0011	U	0.0500	0.0556		mg/L		111	75 - 125	0	20
Magnesium	49		5.00	54.7	4	mg/L		104	75 - 125	1	20
Molybdenum	0.00085	U	0.0500	0.0495		mg/L		99	75 - 125	3	20
Potassium	0.87		5.00	6.34		mg/L		109	75 - 125	1	20
Selenium	0.015		0.0500	0.0673		mg/L		104	75 - 125	2	20
Sodium	320	E	5.00	326	E 4	mg/L		32	75 - 125	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 400-414310/4
Matrix: Water
Analysis Batch: 414310

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			10/05/18 13:31	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/05/18 13:31	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/05/18 13:31	1

Lab Sample ID: LCS 400-414310/5
Matrix: Water
Analysis Batch: 414310

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	105		mg/L		105	80 - 120

Lab Sample ID: 400-160114-1 DU
Matrix: Water
Analysis Batch: 414310

Client Sample ID: AES-MW1-100118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity, Total	430		432		mg/L		0.1	20
Bicarbonate Alkalinity as CaCO3	430		432		mg/L		0.1	20
Carbonate Alkalinity as CaCO3	0.98	U	0.98	U	mg/L		NC	20

Lab Sample ID: MB 400-414585/4
Matrix: Water
Analysis Batch: 414585

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	0.98	U	1.0	0.98	mg/L			10/08/18 12:55	1
Bicarbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/08/18 12:55	1
Carbonate Alkalinity as CaCO3	0.98	U	1.0	0.98	mg/L			10/08/18 12:55	1

Lab Sample ID: LCS 400-414585/5
Matrix: Water
Analysis Batch: 414585

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	109		mg/L		109	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-414346/1
Matrix: Water
Analysis Batch: 414346

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/05/18 18:25	1

Lab Sample ID: LCS 400-414346/2
Matrix: Water
Analysis Batch: 414346

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	282		mg/L		96	78 - 122

Lab Sample ID: 400-160114-2 DU
Matrix: Water
Analysis Batch: 414346

Client Sample ID: AES-MW2-100118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	690		688		mg/L		0.3	5

Lab Sample ID: MB 400-414386/1
Matrix: Water
Analysis Batch: 414386

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/06/18 18:12	1

Lab Sample ID: LCS 400-414386/2
Matrix: Water
Analysis Batch: 414386

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	308		mg/L		105	78 - 122

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 400-415521/1
Matrix: Water
Analysis Batch: 415521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/15/18 16:53	1

Lab Sample ID: LCS 400-415521/2
Matrix: Water
Analysis Batch: 415521

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	308		mg/L		105	78 - 122

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-414995/6
Matrix: Water
Analysis Batch: 414995

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.4	U	2.0	1.4	mg/L			10/11/18 10:00	1

Lab Sample ID: LCS 400-414995/7
Matrix: Water
Analysis Batch: 414995

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.3		mg/L		108	90 - 110

Lab Sample ID: MRL 400-414995/3
Matrix: Water
Analysis Batch: 414995

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.13		mg/L		107	50 - 150

Lab Sample ID: 400-160114-1 MS
Matrix: Water
Analysis Batch: 414995

Client Sample ID: AES-MW1-100118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	200		10.0	198	4	mg/L		23	73 - 120

Lab Sample ID: 400-160114-1 MSD
Matrix: Water
Analysis Batch: 414995

Client Sample ID: AES-MW1-100118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	200		10.0	195	4	mg/L		-6	73 - 120	2	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-415221/3 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415221

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/12/18 15:07	1

Lab Sample ID: LCS 400-415221/4 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415221

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.02		mg/L		101	90 - 110

Lab Sample ID: 400-160114-1 MS **Client Sample ID: AES-MW1-100118**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415221

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.69		1.00	1.72		mg/L		103	75 - 125

Lab Sample ID: 400-160114-1 MSD **Client Sample ID: AES-MW1-100118**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415221

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.69		1.00	1.72		mg/L		103	75 - 125	0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-415038/6 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415038

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			10/11/18 14:47	1

Lab Sample ID: LCS 400-415038/7 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415038

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.5		mg/L		103	90 - 110

Lab Sample ID: MRL 400-415038/3 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415038

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.69	J	mg/L		74	50 - 150

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: 400-160114-1 MS **Client Sample ID: AES-MW1-100118**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415038

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	400		10.0	392	4	mg/L		-114	77 - 128		

Lab Sample ID: 400-160114-1 MSD **Client Sample ID: AES-MW1-100118**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 415038

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	400		10.0	392	4	mg/L		-108	77 - 128	0	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: VICENTE PEREZ	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-77350-30175.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: eric.lang@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested: BY THURSDAY 10-11-2018			
City: Guaynabo	TAT Requested (days): COMPLETE ALL GEN. CHEMISTRY AND TOTAL METAL ANALYSES BY 10-11-2018			
State, Zip: PR, 00969-5375				
Phone: 787-209-6386	PO #: 555			
Email: alberto.melendez@dnaenv.com	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 40008317			
Site: AES Puerto Rico LP, Guayama, PR	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

400-160114 COC

Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, SM2540C - TDS, SM2320B - Alkalinity	6020 - Total Metals (Sb, As, Ba, B, Cd, Ca, Co, Li, Mo, Se, Na, K, Mg)	Total Number of containers	Special Instructions/Note:
					Preservation Code:			D	N	D		
AES-MW1-100118		10-01-18	0925	G	Water	N		X	X	X	3	*pH = 7.33
AES-MW1-100118	MS		0948	G	Water	N	Y	X	X	X	3	
AES-MW1-100118	MSD		1006	G	Water	N	Y	X	X	X	3	
AES-MW2-100118			1137	G	Water	N		X	X	X	3	pH = 7.04
AES-MW3-100118			1412	G	Water	N		X	X	X	3	pH = 7.43
AES-MW4-100218		10-02-18	1011	G	Water	N		X	X	X	3	pH = 7.41
AES-MW4-DUP-100218			1037	G	Water	N		X	X	X	3	
AES-MW5-100218			1217	G	Water	N		X	X	X	3	pH = 6.73
AES-FB-100118		10-01-18	1440	G	Water	N		X	X	X	3	
AES-FB-100218		10-02-18	1243	G	Water	N		X	X	X	3	
												*FIELD pH

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify): LEVEL IV

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:
Relinquished by: [signature]	Date/Time: 10-02-18/1500	Company: DNA	Received by: [signature]	Date/Time: 10.4.18 906	Company: TAPEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 26.2°C 1.3°C IR7		

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-160114-1

Login Number: 160114
List Number: 1
Creator: Ott, Tina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	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	1.3°C IR7
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC TestAmerica Job ID: 400-160114-1
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-16	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-160114-2
Client Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
3/1/2019 11:15:26 AM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

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

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

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

Table of Contents

Job ID: 400-160114-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-160114-2

Receipt
The samples arrived in good condition and properly preserved.

Comments
The samples were originally analyzed and reported as Lab Samples ID 400-160114-1 through 400-160114-8. Although all Quality Control measurements seemed to have met the method requirements, there appeared to be a high bias to both the Radium 226 and Radium 228 results. Data evaluation by the laboratory identified a potential source for the Radium 226 bias as a Barium-carrier laboratory reagent found to have an impurity of Radium 226, and the increased signal was mathematically corrected in accordance with USEPA and Laboratory procedures. To confirm the apparent high bias in the original analyses, all samples were reanalyzed for Radium 226 and Radium 228 within the samples' holding time. Reanalyzed samples were reported as Lab Samples ID 400-160114-9 through 400-160114-16. All Quality Control measurements for the reanalysis met the method requirements. Both sets of results are reported.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-160114-1	AES-MW1-100118	Water	10/01/18 09:25	10/04/18 09:06
400-160114-2	AES-MW2-100118	Water	10/01/18 11:37	10/04/18 09:06
400-160114-3	AES-MW3-100118	Water	10/01/18 14:12	10/04/18 09:06
400-160114-4	AES-MW4-100218	Water	10/02/18 10:11	10/04/18 09:06
400-160114-5	AES-MW4-DUP-100218	Water	10/02/18 10:37	10/04/18 09:06
400-160114-6	AES-MW5-100218	Water	10/02/18 12:17	10/04/18 09:06
400-160114-7	AES-FB-100118	Water	10/01/18 14:40	10/04/18 09:06
400-160114-8	AES-FB-100218	Water	10/02/18 12:43	10/04/18 09:06
400-160114-9	AES-MW1-100118 RA	Water	10/01/18 09:25	10/04/18 09:06
400-160114-10	AES-MW2-100118 RA	Water	10/01/18 11:37	10/04/18 09:06
400-160114-11	AES-MW3-100118 RA	Water	10/01/18 14:12	10/04/18 09:06
400-160114-12	AES-MW4-100218 RA	Water	10/02/18 10:11	10/04/18 09:06
400-160114-13	AES-MW4-DUP-100218 RA	Water	10/02/18 10:37	10/04/18 09:06
400-160114-14	AES-MW5-100218 RA	Water	10/02/18 12:17	10/04/18 09:06
400-160114-15	AES-FB-100118 RA	Water	10/01/18 14:40	10/04/18 09:06
400-160114-16	AES-FB-100218 RA	Water	10/02/18 12:43	10/04/18 09:06

Client Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-2

Client Sample ID: AES-MW1-100118

Date Collected: 10/01/18 09:25
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.183		0.144	0.145	1.00	0.180	pCi/L	10/08/18 14:07	10/30/18 06:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*10/08/18 14:07*	*10/30/18 06:28*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.375		0.243	0.245	1.00	0.373	pCi/L	10/08/18 14:42	10/22/18 09:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:34*	*1*
Y Carrier	*84.5*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:34*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.558		0.282	0.285	5.00	0.373	pCi/L		10/31/18 13:24	1

Client Sample ID: AES-MW2-100118

Lab Sample ID: 400-160114-2
Date Collected: 10/01/18 11:37
Matrix: Water
Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0227	U	0.113	0.113	1.00	0.169	pCi/L	10/08/18 14:07	10/30/18 06:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/08/18 14:07*	*10/30/18 06:28*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.06**		0.293	0.308	1.00	0.364	pCi/L	10/08/18 14:42	10/22/18 09:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*
Y Carrier	*82.2*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.03**		0.314	0.328	5.00	0.364	pCi/L		10/31/18 13:24	1

Client Sample ID: AES-MW3-100118
Date Collected: 10/01/18 14:12
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-3
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.135	U	0.132	0.132	1.00	0.167	pCi/L	10/08/18 14:07	10/30/18 06:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*10/08/18 14:07*	*10/30/18 06:29*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.62**		0.330	0.362	1.00	0.363	pCi/L	10/08/18 14:42	10/22/18 09:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*
Y Carrier	*82.2*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.75**		0.355	0.385	5.00	0.363	pCi/L		10/31/18 13:24	1

Client: DNA-Environment, LLC TestAmerica Job ID: 400-160114-2
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Client Sample ID: AES-MW4-100218 Lab Sample ID: 400-160114-4

Date Collected: 10/02/18 10:11 **Matrix: Water**
Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0401	U	0.119	0.119	1.00	0.164	pCi/L	10/08/18 14:07	10/30/18 06:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/08/18 14:07*	*10/30/18 06:29*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.153	U	0.211	0.211	1.00	0.352	pCi/L	10/08/18 14:42	10/22/18 09:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*
Y Carrier	*80.7*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.193	U	0.242	0.242	5.00	0.352	pCi/L		10/31/18 13:24	1

Client Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-2

Client Sample ID: AES-MW4-DUP-100218

Date Collected: 10/02/18 10:37
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.121	U	0.125	0.125	1.00	0.157	pCi/L	10/08/18 14:07	10/30/18 06:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*10/08/18 14:07*	*10/30/18 06:29*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.710**		0.236	0.245	1.00	0.303	pCi/L	10/08/18 14:42	10/22/18 09:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*
Y Carrier	*83.4*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:36*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.831**		0.267	0.275	5.00	0.303	pCi/L		10/31/18 13:24	1

Client Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-2

Client Sample ID: AES-MW5-100218

Date Collected: 10/02/18 12:17
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-6
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00393	U	0.118	0.118	1.00	0.173	pCi/L	10/08/18 14:07	10/30/18 06:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/08/18 14:07*	*10/30/18 06:29*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.452**		0.238	0.241	1.00	0.350	pCi/L	10/08/18 14:42	10/22/18 09:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:37*	*1*
Y Carrier	*85.2*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:37*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.448**		0.266	0.268	5.00	0.350	pCi/L		10/31/18 13:24	1

Client Sample ID: AES-FB-100118 | **Lab Sample ID: 400-160114-7**
Date Collected: 10/01/18 14:40 | **Matrix: Water**
Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0319	U	0.123	0.123	1.00	0.175	pCi/L	10/08/18 14:07	10/30/18 08:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*10/08/18 14:07*	*10/30/18 08:14*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.474**		0.241	0.245	1.00	0.345	pCi/L	10/08/18 14:42	10/22/18 09:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:37*	*1*
Y Carrier	*77.4*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:37*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.505**		0.271	0.274	5.00	0.345	pCi/L		10/31/18 13:24	1

Client Sample ID: AES-FB-100218

Lab Sample ID: 400-160114-8

Date Collected: 10/02/18 12:43

Matrix: Water

Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0696	U	0.126	0.126	1.00	0.171	pCi/L	10/08/18 14:07	10/30/18 08:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/08/18 14:07*	*10/30/18 08:15*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.306	U	0.241	0.242	1.00	0.381	pCi/L	10/08/18 14:42	10/22/18 09:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:37*	*1*
Y Carrier	*84.9*		*40 - 110*	*10/08/18 14:42*	*10/22/18 09:37*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.376	U	0.272	0.273	5.00	0.381	pCi/L		10/31/18 13:24	1

Client: DNA-Environment, LLC | TestAmerica Job ID: 400-160114-2
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Client Sample ID: AES-MW1-100118 RA | **Lab Sample ID: 400-160114-9**
Date Collected: 10/01/18 09:25 | **Matrix: Water**
Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0712	U	0.0676	0.0679	1.00	0.103	pCi/L	01/02/19 12:08	01/24/19 05:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.424**		0.275	0.278	1.00	0.421	pCi/L	01/02/19 12:25	01/07/19 08:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*
Y Carrier	*82.6*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.495**		0.283	0.286	5.00	0.421	pCi/L		01/28/19 10:07	1

Client Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-2

Client Sample ID: AES-MW2-100118 RA

Date Collected: 10/01/18 11:37
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-10

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0236	U	0.0445	0.0446	1.00	0.110	pCi/L	01/02/19 12:08	01/24/19 05:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.344	U	0.266	0.268	1.00	0.418	pCi/L	01/02/19 12:25	01/07/19 08:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*
Y Carrier	*81.5*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.321	U	0.270	0.272	5.00	0.418	pCi/L		01/28/19 10:07	1

Client Sample ID: AES-MW3-100118 RA
Lab Sample ID: 400-160114-11
Date Collected: 10/01/18 14:12
Matrix: Water
Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0877	U	0.0671	0.0675	1.00	0.0926	pCi/L	01/02/19 12:08	01/24/19 05:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.423	U	0.291	0.294	1.00	0.452	pCi/L	01/02/19 12:25	01/07/19 08:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*
Y Carrier	*80.4*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.511**		0.299	0.302	5.00	0.452	pCi/L		01/28/19 10:07	1

Client Sample ID: AES-MW4-100218 RA
Date Collected: 10/02/18 10:11
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-12
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0877	U	0.0653	0.0657	1.00	0.0887	pCi/L	01/02/19 12:08	01/24/19 05:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0169	U	0.207	0.207	1.00	0.379	pCi/L	01/02/19 12:25	01/07/19 08:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*
Y Carrier	*82.2*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0708	U	0.217	0.217	5.00	0.379	pCi/L		01/28/19 10:07	1

Client Sample ID: AES-MW4-DUP-100218 RA
Date Collected: 10/02/18 10:37
Date Received: 10/04/18 09:06

Lab Sample ID: 400-160114-13
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00614	U	0.0453	0.0453	1.00	0.0941	pCi/L	01/02/19 12:08	01/24/19 05:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:56*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.162	U	0.253	0.254	1.00	0.428	pCi/L	01/02/19 12:25	01/07/19 08:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*
Y Carrier	*80.0*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:16*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.168	U	0.257	0.258	5.00	0.428	pCi/L		01/28/19 10:07	1

Client Sample ID: AES-MW5-100218 RA

Lab Sample ID: 400-160114-14

Date Collected: 10/02/18 12:17

Matrix: Water

Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0348	U	0.0503	0.0504	1.00	0.0858	pCi/L	01/02/19 12:08	01/24/19 05:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0745	U	0.239	0.240	1.00	0.440	pCi/L	01/02/19 12:25	01/07/19 08:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:17*	*1*
Y Carrier	*87.5*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:17*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0397	U	0.244	0.245	5.00	0.440	pCi/L		01/28/19 10:07	1

Client Sample ID: AES-FB-100118 RA　　Lab Sample ID: 400-160114-15

Date Collected: 10/01/18 14:40　　**Matrix: Water**
Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0415	U	0.0566	0.0567	1.00	0.0951	pCi/L	01/02/19 12:08	01/24/19 05:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0128	U	0.220	0.220	1.00	0.402	pCi/L	01/02/19 12:25	01/07/19 08:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:17*	*1*
Y Carrier	*81.5*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:17*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0287	U	0.227	0.227	5.00	0.402	pCi/L		01/28/19 10:07	1

Client Sample ID: AES-FB-100218 RA

Lab Sample ID: 400-160114-16

Date Collected: 10/02/18 12:43
Matrix: Water
Date Received: 10/04/18 09:06

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0251	U	0.0535	0.0535	1.00	0.0976	pCi/L	01/02/19 12:08	01/24/19 05:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.185	U	0.260	0.261	1.00	0.435	pCi/L	01/02/19 12:25	01/07/19 08:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:17*	*1*
Y Carrier	*81.5*		*40 - 110*	*01/02/19 12:25*	*01/07/19 08:17*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.210	U	0.265	0.266	5.00	0.435	pCi/L		01/28/19 10:07	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	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)

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

Client Sample ID: AES-MW1-100118
Lab Sample ID: 400-160114-1
Date Collected: 10/01/18 09:25
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 06:28	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396644	10/22/18 09:34	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-MW2-100118
Lab Sample ID: 400-160114-2
Date Collected: 10/01/18 11:37
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 06:28	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396629	10/22/18 09:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-MW3-100118
Lab Sample ID: 400-160114-3
Date Collected: 10/01/18 14:12
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 06:29	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396629	10/22/18 09:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-MW4-100218
Lab Sample ID: 400-160114-4
Date Collected: 10/02/18 10:11
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 06:29	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396629	10/22/18 09:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-MW4-DUP-100218 Lab Sample ID: 400-160114-5

Date Collected: 10/02/18 10:37 **Matrix: Water**
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 06:29	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396629	10/22/18 09:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-MW5-100218 Lab Sample ID: 400-160114-6

Date Collected: 10/02/18 12:17 **Matrix: Water**
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 06:29	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396629	10/22/18 09:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-FB-100118 Lab Sample ID: 400-160114-7

Date Collected: 10/01/18 14:40 **Matrix: Water**
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 08:14	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396629	10/22/18 09:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-FB-100218 Lab Sample ID: 400-160114-8

Date Collected: 10/02/18 12:43 **Matrix: Water**
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			393732	10/08/18 14:07	JLC	TAL SL
Total/NA	Analysis	9315		1	398233	10/30/18 08:15	CDR	TAL SL
Total/NA	Prep	PrecSep_0			393737	10/08/18 14:42	JLC	TAL SL
Total/NA	Analysis	9320		1	396645	10/22/18 09:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	398556	10/31/18 13:24	RTM	TAL SL

Client Sample ID: AES-MW1-100118 RA

Lab Sample ID: 400-160114-9

Date Collected: 10/01/18 09:25
Date Received: 10/04/18 09:06

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412025	01/24/19 05:56	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409218	01/07/19 08:16	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Client Sample ID: AES-MW2-100118 RA

Lab Sample ID: 400-160114-10

Date Collected: 10/01/18 11:37
Date Received: 10/04/18 09:06

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412025	01/24/19 05:56	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409218	01/07/19 08:16	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Client Sample ID: AES-MW3-100118 RA

Lab Sample ID: 400-160114-11

Date Collected: 10/01/18 14:12
Date Received: 10/04/18 09:06

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412025	01/24/19 05:56	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409218	01/07/19 08:16	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Client Sample ID: AES-MW4-100218 RA

Lab Sample ID: 400-160114-12

Date Collected: 10/02/18 10:11
Date Received: 10/04/18 09:06

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412025	01/24/19 05:56	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409218	01/07/19 08:16	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Client Sample ID: AES-MW4-DUP-100218 RA
Lab Sample ID: 400-160114-13
Date Collected: 10/02/18 10:37
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412025	01/24/19 05:56	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409218	01/07/19 08:16	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Client Sample ID: AES-MW5-100218 RA
Lab Sample ID: 400-160114-14
Date Collected: 10/02/18 12:17
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412025	01/24/19 05:57	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409200	01/07/19 08:17	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Client Sample ID: AES-FB-100118 RA
Lab Sample ID: 400-160114-15
Date Collected: 10/01/18 14:40
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412025	01/24/19 05:57	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409200	01/07/19 08:17	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Client Sample ID: AES-FB-100218 RA
Lab Sample ID: 400-160114-16
Date Collected: 10/02/18 12:43
Matrix: Water
Date Received: 10/04/18 09:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			409274	01/02/19 12:08	RTM	TAL SL
Total/NA	Analysis	9315		1	412024	01/24/19 05:57	KLS	TAL SL
Total/NA	Prep	PrecSep_0			408489	01/02/19 12:25	SJC	TAL SL
Total/NA	Analysis	9320		1	409200	01/07/19 08:17	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412629	01/28/19 10:07	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Rad

Prep Batch: 393732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	PrecSep-21	
400-160114-2	AES-MW2-100118	Total/NA	Water	PrecSep-21	
400-160114-3	AES-MW3-100118	Total/NA	Water	PrecSep-21	
400-160114-4	AES-MW4-100218	Total/NA	Water	PrecSep-21	
400-160114-5	AES-MW4-DUP-100218	Total/NA	Water	PrecSep-21	
400-160114-6	AES-MW5-100218	Total/NA	Water	PrecSep-21	
400-160114-7	AES-FB-100118	Total/NA	Water	PrecSep-21	
400-160114-8	AES-FB-100218	Total/NA	Water	PrecSep-21	
MB 160-393732/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-393732/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-160114-1 MS	AES-MW1-100118	Total/NA	Water	PrecSep-21	
400-160114-1 MSD	AES-MW1-100118	Total/NA	Water	PrecSep-21	

Prep Batch: 393737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-1	AES-MW1-100118	Total/NA	Water	PrecSep_0	
400-160114-2	AES-MW2-100118	Total/NA	Water	PrecSep_0	
400-160114-3	AES-MW3-100118	Total/NA	Water	PrecSep_0	
400-160114-4	AES-MW4-100218	Total/NA	Water	PrecSep_0	
400-160114-5	AES-MW4-DUP-100218	Total/NA	Water	PrecSep_0	
400-160114-6	AES-MW5-100218	Total/NA	Water	PrecSep_0	
400-160114-7	AES-FB-100118	Total/NA	Water	PrecSep_0	
400-160114-8	AES-FB-100218	Total/NA	Water	PrecSep_0	
MB 160-393737/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-393737/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-160114-1 MS	AES-MW1-100118	Total/NA	Water	PrecSep_0	
400-160114-1 MSD	AES-MW1-100118	Total/NA	Water	PrecSep_0	

Prep Batch: 408489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-9	AES-MW1-100118 RA	Total/NA	Water	PrecSep_0	
400-160114-10	AES-MW2-100118 RA	Total/NA	Water	PrecSep_0	
400-160114-11	AES-MW3-100118 RA	Total/NA	Water	PrecSep_0	
400-160114-12	AES-MW4-100218 RA	Total/NA	Water	PrecSep_0	
400-160114-13	AES-MW4-DUP-100218 RA	Total/NA	Water	PrecSep_0	
400-160114-14	AES-MW5-100218 RA	Total/NA	Water	PrecSep_0	
400-160114-15	AES-FB-100118 RA	Total/NA	Water	PrecSep_0	
400-160114-16	AES-FB-100218 RA	Total/NA	Water	PrecSep_0	
MB 160-408489/12-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-408489/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-160114-9 MS	AES-MW1-100118 RA	Total/NA	Water	PrecSep_0	
400-160114-9 MSD	AES-MW1-100118 RA	Total/NA	Water	PrecSep_0	

Prep Batch: 409274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-9	AES-MW1-100118 RA	Total/NA	Water	PrecSep-21	
400-160114-10	AES-MW2-100118 RA	Total/NA	Water	PrecSep-21	
400-160114-11	AES-MW3-100118 RA	Total/NA	Water	PrecSep-21	
400-160114-12	AES-MW4-100218 RA	Total/NA	Water	PrecSep-21	
400-160114-13	AES-MW4-DUP-100218 RA	Total/NA	Water	PrecSep-21	
400-160114-14	AES-MW5-100218 RA	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 409274 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-160114-15	AES-FB-100118 RA	Total/NA	Water	PrecSep-21	
400-160114-16	AES-FB-100218 RA	Total/NA	Water	PrecSep-21	
MB 160-409274/12-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-409274/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-160114-9 MS	AES-MW1-100118 RA	Total/NA	Water	PrecSep-21	
400-160114-9 MSD	AES-MW1-100118 RA	Total/NA	Water	PrecSep-21	

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

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-393732/22-A
Matrix: Water
Analysis Batch: 398255

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 393732

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03040	U	0.112	0.112	1.00	0.156	pCi/L	10/08/18 14:07	10/30/18 08:17	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*10/08/18 14:07*	*10/30/18 08:17*	*1*

Lab Sample ID: LCS 160-393732/1-A
Matrix: Water
Analysis Batch: 398233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 393732

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	12.15		1.27	1.00	0.176	pCi/L	107	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: 400-160114-1 MS
Matrix: Water
Analysis Batch: 398233

Client Sample ID: AES-MW1-100118
Prep Type: Total/NA
Prep Batch: 393732

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	0.183		11.4	12.38		1.29	1.00	0.182	pCi/L	107	75 - 138

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*95.0*		*40 - 110*

Lab Sample ID: 400-160114-1 MSD
Matrix: Water
Analysis Batch: 398233

Client Sample ID: AES-MW1-100118
Prep Type: Total/NA
Prep Batch: 393732

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.183		11.4	12.33		1.28	1.00	0.167	pCi/L	107	75 - 138	0.02	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.7*		*40 - 110*

Lab Sample ID: MB 160-409274/12-A
Matrix: Water
Analysis Batch: 412024

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 409274

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03533	U	0.0375	0.0376	1.00	0.105	pCi/L	01/02/19 12:08	01/24/19 05:57	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-409274/12-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 412024
Prep Batch: 409274

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*01/02/19 12:08*	*01/24/19 05:57*	*1*

Lab Sample ID: LCS 160-409274/1-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 412025
Prep Batch: 409274

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	12.00		1.25	1.00	0.127	pCi/L	79	68 - 137

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.4*		*40 - 110*

Lab Sample ID: 400-160114-9 MS
Client Sample ID: AES-MW1-100118 RA
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 412025
Prep Batch: 409274

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	0.0712	U	15.1	14.29		1.45	1.00	0.0916	pCi/L	94	75 - 138

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*100*		*40 - 110*

Lab Sample ID: 400-160114-9 MSD
Client Sample ID: AES-MW1-100118 RA
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 412025
Prep Batch: 409274

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0712	U	15.1	14.04		1.43	1.00	0.101	pCi/L	92	75 - 138	0.09	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*97.3*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-393737/22-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 396645
Prep Batch: 393737

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1914	U	0.218	0.219	1.00	0.359	pCi/L	10/08/18 14:42	10/22/18 09:46	1

Client: DNA-Environment, LLC TestAmerica Job ID: 400-160114-2
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-393737/22-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 396645 **Prep Batch: 393737**

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110	10/08/18 14:42	10/22/18 09:46	1
Y Carrier	83.4		40 - 110	10/08/18 14:42	10/22/18 09:46	1

Lab Sample ID: LCS 160-393737/1-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 396644 **Prep Batch: 393737**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			10.9	10.79		1.22	1.00	0.354	pCi/L	99	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	80.7		40 - 110

Lab Sample ID: 400-160114-1 MS **Client Sample ID: AES-MW1-100118**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 396629 **Prep Batch: 393737**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.375		10.9	12.72		1.41	1.00	0.386	pCi/L	114	45 - 150		

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	95.0		40 - 110
Y Carrier	81.1		40 - 110

Lab Sample ID: 400-160114-1 MSD **Client Sample ID: AES-MW1-100118**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 396629 **Prep Batch: 393737**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.375		10.9	13.12		1.46	1.00	0.390	pCi/L	117	45 - 150	0.14	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	94.7		40 - 110
Y Carrier	77.8		40 - 110

Lab Sample ID: MB 160-408489/12-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 409200 **Prep Batch: 408489**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.05313	U	0.236	0.236	1.00	0.416	pCi/L	01/02/19 12:25	01/07/19 08:18	1

Client: DNA-Environment, LLC
Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

TestAmerica Job ID: 400-160114-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-408489/12-A
Matrix: Water
Analysis Batch: 409200

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 408489

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110	01/02/19 12:25	01/07/19 08:18	1
Y Carrier	82.2		40 - 110	01/02/19 12:25	01/07/19 08:18	1

Lab Sample ID: LCS 160-408489/1-A
Matrix: Water
Analysis Batch: 409218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 408489

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.1	13.34		1.51	1.00	0.439	pCi/L	110	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.4		40 - 110
Y Carrier	83.4		40 - 110

Lab Sample ID: 400-160114-9 MS
Matrix: Water
Analysis Batch: 409218

Client Sample ID: AES-MW1-100118 RA
Prep Type: Total/NA
Prep Batch: 408489

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.424		12.1	12.02		1.38	1.00	0.409	pCi/L	96	45 - 150		

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	100		40 - 110
Y Carrier	80.7		40 - 110

Lab Sample ID: 400-160114-9 MSD
Matrix: Water
Analysis Batch: 409218

Client Sample ID: AES-MW1-100118 RA
Prep Type: Total/NA
Prep Batch: 408489

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.424		12.1	11.94		1.39	1.00	0.475	pCi/L	95	45 - 150	0.03	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	97.3		40 - 110
Y Carrier	77.4		40 - 110

TestAmerica Pensacola
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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: Alberto Melendez	Sampler: VICENTE PEREZ	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-77350-30175.1
Company: DNA-Environment, LLC	Phone: 787-209-6386	E-Mail: eric.lang@testamericainc.com		Page: Page 1 of 1
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested: BY THURSDAY 10-11-2018			Job #:
City: Guaynabo	TAT Requested (days): COMPLETE ALL GEN CHEMISTRY AND TOTAL METAL ANALYSES BY 10-11-2018			
State, Zip: PR, 00969-5375				
Phone: 787-209-6386	PO #: 555			
Email: alberto.melendez@dnaenv.com	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 40008317			
Site: AES Puerto Rico LP, Guayama, PR	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

400-160114 COC

Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, SM2540C - TDS, SM2320B - Alkalinity	6020 - Total Metals (Sb, As, Ba, B, Cd, Ca, Co, Li, Mo, Se, Na, K, Mg)	Total Number of containers	Special Instructions/Note:
				Preservation Code:				D	N	D		
AES-MW1-100118		10-01-18	0925	G	Water	N		X	X	X	3	*pH = 7.33
AES-MW1-100118	MS		0948	G	Water	N	Y	X	X	X	3	
AES-MW1-100118	MSD		1006	G	Water	N	Y	X	X	X	3	
AES-MW2-100118			1137	G	Water	N		X	X	X	3	pH = 7.04
AES-MW3-100118			1412	G	Water	N		X	X	X	3	pH = 7.43
AES-MW4-100218		10-02-18	1011	G	Water	N		X	X	X	3	pH = 7.41
AES-MW4-DUP-100218			1037	G	Water	N		X	X	X	3	
AES-MW5-100218			1217	G	Water	N		X	X	X	3	pH = 6.73
AES-FB-100118		10-01-18	1440	G	Water	N		X	X	X	3	
AES-FB-100218		10-02-18	1243	G	Water	N		X	X	X	3	
												* FIELD pH

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify): LEVEL IV

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 10-02-18/1500	Company: DNA	Received by: [signature]	Date/Time: 10.4.18 906	Company: TAPEN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 26.2°C 1.3°C IR 7

Ver: 08/04/2016

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-191228.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eric.lang@testamericainc.com	State of Origin: Puerto Rico	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Florida		Job #: 400-160114-2
Address: 13715 Rider Trail North,	Due Date Requested: 11/1/2018			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR GW Monitoring, AES Puerto Rico, LP	Project #: 40008317			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC/ Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
AES-MW1-100118 (400-160114-1)	10/1/18	09:25 Atlantic		Water			X	X	X	1	
AES-MW1-100118 (400-160114-1MS)	10/1/18	09:48 Atlantic	MS	Water			X	X	X	1	
AES-MW1-100118 (400-160114-1MSD)	10/1/18	10:06 Atlantic	MSD	Water			X	X	X	1	
AES-MW2-100118 (400-160114-2)	10/1/18	11:37 Atlantic		Water			X	X	X	1	
AES-MW3- 100118 (400-160114-3)	10/1/18	14:12 Atlantic		Water			X	X	X	1	
AES-MW4-100218 (400-160114-4)	10/2/18	10:11 Atlantic		Water			X	X	X	1	
AES-MW4-DUP-100218 (400-160114-5)	10/2/18	10:37 Atlantic		Water			X	X	X	1	
AES-MW5-100218 (400-160114-6)	10/2/18	12:17 Atlantic		Water			X	X	X	1	
AES-FB-100118 (400-160114-7)	10/1/18	14:40 Atlantic		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out 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/tests/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 complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 10/5/18 1630	Company: TA PEN	Received by: Michael Heum	Date/Time: 10-6-18 0840	Company: TA StL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 09/20/2016

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving	Sampler:	Lab PM: Lang, Eric A.	Carrier Tracking No(s):	COC No: 400-191228.2
	Phone:	E-Mail: eric.lang@testamericainc.com	State of Origin: Puerto Rico	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Florida		Job #: 400-160114-2
Address: 13715 Rider Trail North,	Due Date Requested: 11/1/2018			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR GW Monitoring, AES Puerto Rico, LP	Project #: 40008317			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC/ Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
AES-FB-100218 (400-160114-8)	10/2/18	12:43 Atlantic		Water			X	X	X	1	

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
Other:

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/5/18 1630	Company: TA PEN	Received by: Michael [illegible]	Date/Time: 10-6-18 0840	Company: TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-160114-2

Login Number: 160114
List Number: 1
Creator: Ott, Tina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	26.2°C Rads
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 <6mm (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: DNA-Environment, LLC

Job Number: 400-160114-2

Login Number: 160114
List Number: 2
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis
List Creation: 01/02/19 11:04 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
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.	N/A	
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.	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC

TestAmerica Job ID: 400-160114-2

Project/Site: CCR GW Monitoring, AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-19
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	07-31-19

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	90125	12-31-18 *
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19

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

Laboratory: TestAmerica St. Louis (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
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19 *
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

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

APPENDIX B
Field Data Sheets

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Guayama
DATE: 6/25/18
WEATHER: Sunny

CONSULTING FIRM: DNA
FIELD PERSONNEL: A. Melendez, W. Rodriguez, R. Diaz,

MONITOR WELL #: MW-1
WELL PERMIT #:
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:

PUMP INTAKE DEPTH: _______ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 9.08 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
8:10			7.10	NA	3.763	NA	68.0	NA	1.92	NA	5.70	NA	29.45	NA	92	9.10
8:15			7.11		3.758		63.0		1.23		5.54		29.44		112	9.10
8:20			7.13		3.751		55.0		0.75		3.77		29.43		117	9.11
8:25			7.13		3.742		47.5		.67		2.86		29.44		117	9.12
8:30			7.12		3.734		39.0		.59		2.93		29.47		117	9.12
8:35			7.13		3.724		31.4		.57		2.35		29.49		117	9.12
8:40			7.13		3.712		25.0		.54		2.50		29.47		117	9.12

COMMENTS: Sample @ 8:45 pH: 7.13

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Guayama
DATE: 6/25/18
WEATHER: Sunny

CONSULTING FIRM: DNA
FIELD PERSONNEL: A. Nelander, U. Perez, W. Rodriguez, R. Diaz

MONITOR WELL #: MW-2
WELL PERMIT #:
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:

PUMP INTAKE DEPTH: ______ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 9.80 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
10:00			6.90	NA	2.129	NA	71	NA	2.32	NA	3.15	NA	29.54	NA	120	9.80
10:05			6.88		2.087		~~6.89~~ -10.8		1.02		2.68		29.52		120	9.81
10:10			6.88		2.084		-18.4		.96		1.76		29.45		110	9.80
10:15			6.87		2.079		-27.6		.85		1.85		29.43		110	9.81
10:20			6.85		2.078		-34.7		.83		2.02		29.43		110	9.81
10:25			6.87		2.078		-39.3		.82		1.40		29.47		110	9.81
10:30			6.86		2.075		-45.1		.82		1.72		29.44		110	9.81
10:35			6.85		2.076		-50.2		.83		1.56		29.44		110	9.81
10:40			6.85		2.074		-50.0		.87		1.89		29.43		110	9.81
10:45			6.84		2.072		-48.7		.84		1.79		29.44		110	9.81

COMMENTS: Sample @ 11:05 PH: 6.84

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF

SITE: AES-Guayama

DATE: 6/25/18

WEATHER:

CONSULTING FIRM: DNA

FIELD PERSONNEL: A. Melendez, V. Perez, W. Rodriguez, R. Diaz

MONITOR WELL #: MW-3

WELL PERMIT #:

WELL DEPTH:

WELL DIAMETER: 2 Inches

SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):

BACKGROUND:

BENEATH OUTER CAP:

BENEATH INNER CAP:

PUMP INTAKE DEPTH: ______ ft below TOC

DEPTH TO WATER BEFORE PUMP INSTALLATION: 12.86 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:30			7.30	NA	47.14	NA	23.0	NA	.93	NA	4.42	NA	31.13	NA	112	13.14
13:35			7.35		46.69		5.5		1.01		5.75		31.19		112	13.10
13:40			7.34		45.38		-4.7		.52		4.68		31.11		112	13.13
13:45			7.32		43.61		-15.1		.55		5.02		31.08		112	13.13
13:50			7.31		41.27		-25.0		.52		5.00		31.00		112	13.14
13:55			7.29		38.54		-32.5		.51		3.62		30.97		112	13.15
14:00			7.26		35.92		-37.5		.51		3.39		30.98		112	13.15
14:05			7.25		33.91		-40.7		.49		3.69		31.00		112	13.15
14:10			7.23		31.96		-46.8		.52		2.86		30.92		112	13.13

COMMENTS: Sample @ 14:20 pH: 7.23

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 2

SITE: AES-Guayama
DATE: 6/26/18
WEATHER: Sunny

CONSULTING FIRM: DYA
FIELD PERSONNEL: A. Helander, V. Perez, W. Rodriguez, R. Diaz

MONITOR WELL #: MW-4
WELL PERMIT #:
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:

PUMP INTAKE DEPTH: ______ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.0 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
8:30			7.12	NA	64.11	NA	-25.5	NA	.88	NA	33.30	NA	31.86	NA	112	13.30
8:35			7.12		64.46		-39.6		.82		22.25		31.81		112	13.32
8:40			7.13		64.51		-42.7		.53		23.71		31.85		112	13.34
8:45			7.14		64.48		-47.1		.49		24.21		31.90		112	13.35
8:50			7.16		64.37		-46.3		.47		22.76		32.05		112	13.38
8:55			7.16		64.34		-56.2		.46		30.47		32.13		112	13.39
9:00			7.17		64.28		-62.3		.50		25.23		32.00		96	13.36
9:05			7.18		64.12		-63.4		.52		22.94		31.86		96	13.35
9:10			7.19		64.11		-60.2		.51		22.75		31.94		96	13.35
9:15			7.20		64.03		-51.9		.52		20.46		31.99		96	13.34
9:20			7.20		63.93		-63.3		.52		22.57		31.87		102	13.31

COMMENTS:

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 2 OF 2

SITE: AES-Guayama
DATE: 6/26/18
WEATHER:

CONSULTING FIRM: DNA
FIELD PERSONNEL: A. Melendez, V. Perez, W. Rodriguez, R. Diaz

MONITOR WELL #: MW-4
WELL PERMIT #:
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:

PUMP INTAKE DEPTH: ______ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.00 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:25			7.21	NA	63.82	NA	-59.2	NA	.63	NA	19.30	NA	32.03	NA	102	13.36
9:30			7.22		63.80		-66.8		.54		17.47		32.11		102	13.37
9:35			7.23		63.78		-65.7		.53		18.24		32.14		102	13.38
9:40			7.23		63.74		-60.0		.52		14.47		32.18		102	13.38
9:45			7.24		63.65		-61.3		.49		17.08		3.232		102	13.38
9:50			7.25		63.58		-66.0		.49		14.83		32.45		102	13.36
9:55			7.24		63.55		-68.4		.50		14.39		32.44		102	13.36
10:00			7.25		63.51		-72.0		.49		16.11		32.42		102	13.36
10:05			7.26		63.42		-68.6		.50		13.07		32.39		102	13.36
10:10			7.27		63.37		65.1		.48		13.61		32.45		102	13.36

COMMENTS: Sample @ 10:15 pH: 7.27

***INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity**

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES-Guayama
DATE: 6/26/18
WEATHER:

CONSULTING FIRM: DNA
FIELD PERSONNEL: A. Melendez, V. Perez, W. Rodriguez, R. Díaz

MONITOR WELL #: MW-5 WELL DEPTH: SCREENED/OPEN INTERVAL:
WELL PERMIT #: WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND: BENEATH OUTER CAP: BENEATH INNER CAP:

PUMP INTAKE DEPTH: ______ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.22 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
10:45			6.79	NA	22.52	NA	4.1	NA	2.78	NA	8.33	NA	29.78	NA	110	13.38
10:50			6.74		22.36		2.6		1.72		8.46		29.76		110	13.34
10:55			6.75		22.27		3.3		1.45		6.61		29.73		110	13.34
11:00			6.74		22.17		2.7		1.20		5.14		29.72		110	13.34
11:05			6.73		22.05		1.9		1.09		5.40		29.67		110	13.34
11:10			6.73		21.95		.04		1.08		4.81		29.58		110	13.35
11:15			6.73		21.89		-.4		1.04		6.19		29.63		110	13.35
11:20			6.73		21.84		-.2		1.02		5.41		29.72		110	13.35
11:25			6.72		21.78		-.9		1.04		6.40		29.70		110	13.35
11:30			6.72		21.76		-1.1		1.03		5.43		29.70		110	13.36
11:35			6.72		21.72		-1.6		1.00		6.81		29.70		110	13.36

COMMENTS: Field Blank opened at 10:40
Sample @ 11:40 pH: 6.72

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 6/25/18 Technician: R. Diaz

Instrument Serial Number:________ Software Revision:________ Cable Model Number:________

Temperature Reading________ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y N Color of Membrane Blue Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.493	1.413
ORP	246	240
DO	96.1	101.1

True Barometric Pressure at time of calibration 30.27

	Pre Cal		
pH 7	6.79	pH mV value -19.0	Range 0 mV ± 50 mV
pH 4	4.05	pH mV value 120.4	Range +165 to +180 from 7 buffer mV value
pH 10	10.04	pH mV value -161.2	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
1st point (1 mg/L) ________ NH4 mV value______ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)________ NH4 mV value______ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
1st point (1 mg/L) ________ NO3 mV value______ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)________ NO3 mV value______ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
1st point (10 mg/L) ________ Cl mV value ______ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)________ Cl mV value ______ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant ________ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) ________ (Membrane dependent, see DO Cal Tips)

pH Slope ________ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal ________

7:30 Turbidity Meter was calibrated with the following buffers: 0.02, 10.00, 1000 NTU Exp. date Apr 2019 Lot. 70411

Date of Calibration: 6/26/18 Technician: R. Diaz

Instrument Serial Number:________ Software Revision:________ Cable Model Number:________

Temperature Reading________ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y N Color of Membrane Blue Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.410	1.413
ORP	231.8	240.0
DO	102.7	101.0

True Barometric Pressure at time of calibration ________

	Pre Cal		
pH 7	7.18	pH mV value -27.8	Range 0 mV ± 50 mV
pH 4	3.83	pH mV value 122.0	Range +165 to +180 from 7 buffer mV value
pH 10	9.91	pH mV value -172.8	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium

1st point (1 mg/L) ________ NH4 mV value______ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)________ NH4 mV value______ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate

1st point (1 mg/L) ________ NO3 mV value______ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)________ NO3 mV value______ Range: 90 to 130 mV < 1 mg/L mV value

Chloride

1st point (10 mg/L) ________ Cl mV value ______ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)________ Cl mV value ______ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant ________ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) ________ (Membrane dependent, see DO Cal Tips)

pH Slope ________ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal ________

7:35 Turbidity Meter was calibrated with The following buffers: 1.02, 10.00, 1000 NTU Exp. date Apr 2019 Lot 70411

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Guayama
DATE: 10/01/18
WEATHER: Sunny

CONSULTING FIRM: DNA
FIELD PERSONNEL: A. Melendez, V. Perez, R. Diaz

MONITOR WELL #: MW-1 WELL DEPTH: 25.13 SCREENED/OPEN INTERVAL:
WELL PERMIT #: WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:

PUMP INTAKE DEPTH: ______ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 10.67 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
8:52			7.31	NA	3.360	NA	34.3	NA	1.60	NA	35.48	NA	29.52	NA	150	10.70
8:57			7.31		3.345		28.0		1.01		28.07		29.55		150	10.70
9:02			7.32		3.341		28.7		.91		25.09		29.55		150	10.70
9:07			7.32		3.335		27.8		.85		21.06		29.59		150	10.73
9:12			7.33		3.328		27.2		.81		10.85		29.58		150	10.72
9:17			7.33		3.320		25.9		.83		9.13		29.64		150	10.72
9:22			7.33		3.302		27.3		.83		5.64		29.58		150	10.72
9:27																
9:32																

COMMENTS: Sample @ 9:25 / MS @ 9:48 / MSD @ 10:06
pH: 7.33

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Guayama
DATE: 10/01/18
WEATHER: Sunny

CONSULTING FIRM: DNA.
FIELD PERSONNEL: A. Melendez, V. Perez, R. Diaz

MONITOR WELL #: MW-2
WELL PERMIT #: ___
WELL DEPTH: 22.91
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL: ___

PID/FID READINGS (ppm):
BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___

PUMP INTAKE DEPTH: ~~22.91~~ 20 ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 10.70 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
~~[illegible]~~			~~7.18~~	~~NA~~	~~1.~~	~~NA~~	~~[illegible]~~	~~NA~~		~~NA~~		~~NA~~		~~NA~~	~~160~~	
11:14			7.11		1.919		-3.4		1.57		6.65		29.83		160	10.71
11:19			7.10		1.910		5.7		1.35		3.08		29.64		160	10.71
11:24			7.06		1.909		12.7		1.29		1.42		29.59		160	10.72
11:29			7.05		1.910		18.2		1.30		1.19		29.64		160	10.72
11:34			7.04		1.911		20.7		1.31		1.35		29.65		160	10.72
~~11:39~~																

COMMENTS: Sample @ 11:37
pH @ 7.04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Guayama

DATE: 10/01/18

WEATHER: Sunny

CONSULTING FIRM: DNA

FIELD PERSONNEL: A. Melendez / V. Perez / R. Díaz

MONITOR WELL #: MW-3

WELL PERMIT #:

WELL DEPTH: 27.03

WELL DIAMETER: 2" Inches

SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):

BACKGROUND:

BENEATH OUTER CAP:

BENEATH INNER CAP:

PUMP INTAKE DEPTH: ______ ft below TOC

DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.18 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:30			7.89	NA	31.42	NA	52.4	NA	1.58	NA	4.45	NA	31.44	NA	160	13.18
13:35			7.66		37.97		43.3		1.12		6.15		31.54		160	13.18
13:40			7.54		42.94		33.3		.87		8.98		31.46		160	13.53
13:45			7.52		42.43		23.4		.77		9.55		31.55		136	13.48
13:50			7.50		41.00		17.1		.75		10.22		31.59		136	13.47
13:55			7.48		38.32		10.7		.77		6.56		31.64		136	13.48
14:00			7.46		36.35		5.2		.80		4.01		31.60		136	13.47
14:05			7.44		34.33		.5		.82		4.34		31.56		136	13.47
14:10			7.43		32.57		-2.1		.84		2.30		31.54		136	13.45

COMMENTS: Sample @ 14:12
PH: 7.43

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 2

SITE: AES-Guayama
DATE: 10/02/18
WEATHER: Sunny

CONSULTING FIRM: DNA
FIELD PERSONNEL: A. Melendez / V. Perez / R. Diaz

MONITOR WELL #: MW-4
WELL PERMIT #: N/A
WELL DEPTH: 28.62'
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL: N/A

PID/FID READINGS (ppm):
BACKGROUND: N/A
BENEATH OUTER CAP: N/A
BENEATH INNER CAP: N/A

PUMP INTAKE DEPTH: N/A ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.40 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
8:53			7.29	NA	47.81	NA	-108.4	NA	1.16	NA	30.47	NA	32.97	NA	132	13.63
8:58			7.30		47.75		-113.4		.78		30.99		32.91		132	13.64
9:03			7.31		47.63		-117.9		.67		20.95		32.90		132	13.65
9:08			7.32		47.48		-112.3		.64		20.38		32.99		132	13.69
9:13			7.33		47.39		-111.8		.67		24.28		33.12		132	13.73
9:18			7.34		47.23		-116.6		.69		22.41		33.22		132	13.76
9:23			7.35		46.99		-118.1		.72		22.05		33.30		132	13.77
9:28			7.36		46.74		-112.8		.74		20.43		33.34		132	13.79
9:33			7.37		46.56		-121.3		.77		19.63		33.31		113	13.73
9:38			7.37		46.39		-121.7		.80		20.33		33.19		113	13.70
9:43			7.38		46.28		-123.7		.81		20.41		33.11		113	13.72

COMMENTS:

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 2 OF 2

SITE: AES-Guayana
DATE: 10/04/18
WEATHER: Sunny

CONSULTING FIRM: DNA
FIELD PERSONNEL: A. Melendez / V. Perez / R. Diaz

MONITOR WELL #: MW-4
WELL PERMIT #: N/A
WELL DEPTH: 28.62
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL: N/A

PID/FID READINGS (ppm):
BACKGROUND: N/A
BENEATH OUTER CAP: N/A
BENEATH INNER CAP: N/A

PUMP INTAKE DEPTH: N/A ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.40 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:48			7.39	NA	46.15	NA	-119.1	NA	.83	NA	20.20	NA	33.22	NA	113	13.74
9:53			7.38		46.03		-122.4		.84		18.33		33.25		113	13.72
9:58			7.40		45.99		-125.4		.85		17.77		33.40		113	13.74
10:03			7.41		45.85		-~~1~~23.9		.85		17.28 (17.28)		33.45		113	13.75

COMMENTS: Sample @ 10:11 / Dup @ 10:37
pH: 7.41

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

GeoEnviroTech, Inc.

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES-Guayama

DATE: 10/02/18

WEATHER: Sunny

CONSULTING FIRM: DNA

FIELD PERSONNEL: A.Melendez/V.Perez/R.Diaz

MONITOR WELL #: MW-5

WELL PERMIT #: N/A

WELL DEPTH: 27.20'

WELL DIAMETER: 2 Inches

SCREENED/OPEN INTERVAL: N/A

PID/FID READINGS (ppm):

BACKGROUND: N/A

BENEATH OUTER CAP: N/A

BENEATH INNER CAP: N/A

PUMP INTAKE DEPTH: N/A ft below TOC

DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.72 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
11:34			6.79	NA	24.89	NA	-54.2	NA	2.00	NA	53.52	NA	30.01	NA	149	13.87
11:39			6.78		24.74		-47.4		1.39		27.14		29.99		141	13.86
11:44			6.78		24.70		-42.4		1.33		19.70		29.91		141	13.87
11:49			6.78		24.61		-39.9		1.33		16.77		29.91		141	13.87
11:54			6.77		24.50		-40.3		1.34		14.67		29.92		141	13.87
11:59			6.75		24.39		-35.9		1.38		12.38		29.93		141	13.87
12:04			6.75		24.28		-33.8		1.39		10.63		29.91		141	13.87
12:09			6.73		24.22		-32.7		1.39		9.08		29.90		141	13.87
12:14			6.73		24.11		-32.1		1.42		8.25		29.85		141	13.87

COMMENTS: Sample @ 12:17
pH: 6.73

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 10/01/18 Technician: R. Diaz

Instrument Serial Number: YSI 556MPS Software Revision:________ Cable Model Number: N/A

Temperature Reading 27.80 °C Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y N Color of Membrane Blue Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	.913	1.409
ORP	247.6	240
DO	103.0	100.6

True Barometric Pressure at time of calibration 30.13

	Pre Cal			
pH 7 (6.69)	6.69	pH mV value -8.0	Range 0 mV ± 50 mV
pH 4	4.31	pH mV value 123.9	Range +165 to +180 from 7 buffer mV value
pH 10	9.93	pH mV value -136.4	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium

1st point (1 mg/L) ________ NH4 mV value______ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_______ NH4 mV value______ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate

1st point (1 mg/L) ________ NO3 mV value______ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_______ NO3 mV value______ Range: 90 to 130 mV < 1 mg/L mV value

Chloride

1st point (10 mg/L) ________ Cl mV value ______ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_______ Cl mV value ______ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant __________ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) __________ (Membrane dependent, see DO Cal Tips)

pH Slope __________ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal __________

Turbidimeter Calibrated @ 7:35A
CalKit Lot 70411 Exp Apr 2019 : .02/10.00/1000 NTU

Date of Calibration: 10/02/18 Technician: B. Diaz

Instrument Serial Number: [illegible] Software Revision:________ Cable Model Number:________

Temperature Reading 28.11 Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y N Color of Membrane Blue Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.303	1.412
ORP	278.1	240.1
DO	100.5	100.4

True Barometric Pressure at time of calibration 30.12

	Pre Cal		
pH 7	7.21	pH mV value -15.2	Range 0 mV ± 50 mV
pH 4	3.80	pH mV value 125.7	Range +165 to +180 from 7 buffer mV value
pH 10	10.12	pH mV value -161.2	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium

1st point (1 mg/L) ________ NH4 mV value______ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)________ NH4 mV value______ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate

1st point (1 mg/L) ________ NO3 mV value______ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)________ NO3 mV value______ Range: 90 to 130 mV < 1 mg/L mV value

Chloride

1st point (10 mg/L) ________ Cl mV value ______ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)________ Cl mV value ______ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant ________ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) ________ (Membrane dependent, see DO Cal Tips)

pH Slope ________ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal ________

APPENDIX C
Statistical Analysis Reports

Statistical Evaluation through June 2018 Data: Comparison of Lower Confidence Limits to Groundwater Protection Standards
CCR Groundwater Monitoring Program, AES Puerto Rico LP, Guayama, Puerto Rico

Monitoring Well ID[1]	Comparison Criteria	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium 226 + 228 Combined (pCi/L)
	GWPS (greater of MCL, USEPA Amendments Level, or Site Background)	**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
	MCL	0.006	0.010	2	0.004	0.005	0.1		4.0			0.002		0.05	0.002	5
	USEPA Amendments to the National Minimum Criteria*							0.006		0.015	0.040		0.100			
	Site Background Level**	0.0025	0.0014	0.11	0.0025	0.0025	0.0039	0.0025	0.6889	0.0013	0.005	0.0002	0.015	0.0074	0.0005	0.8484
	Through Monitoring Date[2]	**Lower Confidence Limit[3]**														
MW-3	26-Jun-2018	0.0012	0.002496	0.222	0.0025	0.00042	0.0024	0.0022207	1.82	0.0013	0.0056	0.0002	**0.1912**	**0.1299**	0.0005	0.3119
MW-4	26-Jun-2018	0.0012	0.002917	0.04881	0.0025	0.00034	0.0012	0.0016	0.6118	0.00036	**0.7138**	0.0002	**0.4**	0.006473	0.0005	0.216
MW-5	26-Jun-2018	0.0025	0.003071	0.03432	0.0025	0.0025	0.0025	0.003095	0.4252	0.0013	0.003543	0.0002	0.0045	0.004477	0.0005	0.3209

Notes:
mg/L = milligrams per Liter
pCi/L = picocuries per Liter
GWPS = Groundwater Protection Standard
MCL = USEPA Maximum Contaminant Level
*USEPA Amendments (CCR-Rule Specified Criteria); Federal Register/Vol. 83, No. 146/Monday, July 30, 2018/Rules and Regulations.
** Site background levels for each constituent were computed through October 17, 2017 data based on the Upper Tolerance Limit (UTL), with 95% Coverage and 95% Confidence, of the pooled groundwater data from upgradient wells MW-1 and MW-2.
[1]Downgradient Monitoring Well Identification
[2]Includes groundwater results from the initial date of the CCR groundwater monitoring program through June 26, 2018.
[3]Lower Confidence Limit (LCL): 95% Parametric LCL for normal or transformed-normal distributions. Otherwise, for Nonparametric LCL, the confidence level was set based on the number of available observations.
Values in bold font and gray shading indicate a Lower Confidence Limit exceeding the corresponding GWPS.

Table 4. Groundwater Protection Standards, Site Background Levels and Statistical Evaluation of Lower Confidence Limits
CCR Groundwater Monitoring Program, AES Puerto Rico LP, Guayama, Puerto Rico

Monitoring Well ID[1]	Comparison Criteria	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium 226 + 228 Combined (pCi/L)
	GWPS (greater of MCL, USEPA Amendments Level, or Site Background)	**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
	MCL	0.006	0.010	2	0.004	0.005	0.1		4.0			0.002		0.05	0.002	5
	USEPA Amendments to the National Minimum Criteria*							0.006		0.015	0.040		0.100			
	Site Background Level**	0.0025	0.0014	0.1599	0.0025	0.0025	0.0039	0.0025	0.7506	0.0013	0.005	0.0002	0.015	0.02271	0.0005	0.8265
	Through Monitoring Date[2]	**Lower Confidence Limit[3]**														
MW-3	2-Oct-2018	0.0012	0.002483	0.2171	0.0025	0.00042	0.0024	0.002295	1.784	0.0013	0.0056	0.0002	**0.1949**	**0.1417**	0.0005	0.3297
MW-4	2-Oct-2018	0.0012	0.002947	0.04589	0.0025	0.00034	0.0012	0.0016	0.53	0.00036	**0.6523**	0.0002	**0.4**	0.00613	0.0005	0.1934
MW-5	2-Oct-2018	0.0025	0.003404	0.03396	0.0025	0.0025	0.0025	0.003081	0.4334	0.0013	0.003269	0.0002	0.0046	0.003715	0.0005	0.2499

Notes:
mg/L = milligrams per Liter
pCi/L = picocuries per Liter
GWPS = Groundwater Protection Standard
MCL = USEPA Maximum Contaminant Level
*USEPA Amendments to the National Minimum Criteria (Phase One, Part One), Disposal of Coal Combustion Residuals from Electric Utilities; effective August 29, 2018.
** Site background levels for each constituent were computed based on the Upper Tolerance Limit (UTL), with 95% Coverage and 95% Confidence, of the pooled groundwater data from upgradient wells MW-1 and MW-2.

[1]Downgradient Monitoring Well Identification

[2]Includes groundwater results from ten groundwater monitoring events conducted from the initial date of CCR groundwater monitoring program to October 2, 2018.

[3]Lower Confidence Limit (LCL): 95% Parametric LCL for normal or transformed-normal distributions. Otherwise, for Nonparametric LCL, the confidence level was set based on the number of available observations.
Values in bold font and gray shading indicate a Lower Confidence Limit exceeding the corresponding GWPS.