

RESL CUSTOMER EXPORT CONTROL AGREEMENT

It is the Radiological and Environmental Sciences Laboratory's (RESL) policy to conduct business in accordance with all applicable U.S. export control laws and regulations. It is also RESL's policy that its Customers comply with U.S. export control laws and regulations. Therefore, Customer agrees to the following:

1. Because products, technical data, and technical assistance (i.e., services) provided to Customer by RESL may be subject to U.S. export control laws and regulations, (i) transactions with certain persons and companies and (ii) the export or reexport of certain types and levels of products, technical data, and services are prohibited or restricted.
2. Customer acknowledges that it is responsible for its own compliance with U.S. export control laws and regulations. Customer further agrees that it assumes the responsibility to obtain all necessary U.S. export licenses or other U.S. governmental authorizations, as well as all liability for the failure to do so.
3. Customer acknowledges that export control requirements may change and that the export or reexport of RESL products, technical data, and services without an export license or other appropriate governmental authorization may result in criminal and/or civil liability.
4. The obligations and requirements described herein shall survive the expiration or termination of any agreement or contract between RESL and Customer.

RdF41 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ADEM01	Alabama Department of Environmental Management	RdF
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	RdF
AFOH01	USAFSAM/OEA	RdF
ANLB01	Argonne National Laboratory	RdF
ANTE01	ALS Environmental - Fort Collins, CO	RdF
ARGO01	Idaho National Laboratory	RdF
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	RdF
ARSL01	ARS Aleut Analytical, LLC	RdF
CDHS01	California Department of Public Health	RdF
CESL01	Lawrence Livermore National Laboratory - EMRL	RdF
CMRC01	Carlsbad Environmental Monitoring and Research Center	RdF
COPS99	Health Canada Radiation Protection Bureau	RdF
DEHS01	Department of Environmental Health & Safety	RdF
DINL99	Departamento Ingeniería Nuclear y Mecánica de Fluidos	RdF
DLEA01	DLE Associates	RdF
ERCL01	Washington State Public Health Laboratories	RdF
EULC01	EnergySolutions, LLC	RdF
FDHE01	Florida Dept of Health Environmental Laboratory	RdF
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	RdF
FMEC99	Foods and Water Laboratories Center	RdF
GENE01	GEL Laboratories, LLC	RdF
GPCL01	Georgia Power Company Environmental Laboratory	RdF
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	RdF
HPAC99	PHE, CRCE Glasgow	RdF
HPAL01	Los Alamos National Laboratory	RdF
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	RdF
ISUP01	ISU - Department of Physics/Health Physics/EAL	RdF
JAEC99	Research Laboratories and Information Directorate	RdF
JLNN01	Jefferson Laboratory	RdF
LANL01	Los Alamos National Laboratory	RdF
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	RdF
LDRA99	Laboratori de Radiologia Ambiental-Universitat de Barcelona	RdF
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	RdF
MART01	Fluor B&W Ports Analytical Laboratory	RdF
MART03	Radioactive Material Analysis Laboratory	RdF
MNDH01	Minnesota Department of Health, Public Health Lab. Division	RdF
MSDH01	Mississippi State Dept of Health	RdF
NARL01	National Analytical Radiation Environmental Laboratory	RdF
NARL02	USEPA - NAREL - MERL	RdF
NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	RdF
NJDH01	New Jersey Dept. of Health, PHEL, ECLS	RdF
NOCS99	National Oceanography Centre, Southampton	RdF
NRLL99	Environmental Radioactivity - National Centre for Radiation Science	RdF
ODHL01	Ohio Department of Health Laboratory	RdF

ORIS01	ORISE/IEAV	RdF
OTLI01	Pace Analytical National Center for Testing & Innovation	RdF
RAVR99	Radiactividad Ambiental y Vigilancia Radiologica	RdF
RPSC01	Radiation Protection Service	RdF
SANC99	RadioAnalysis, South Africa Nuclear Energy Corp.	RdF
SEML01	SRS Environmental Monitoring Laboratory	RdF
SOUT01	Southwest Research Institute	RdF
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	RdF
TDHL01	Texas Department of State Health Services Laboratory	RdF
TELE01	Teledyne Brown Engineering - Environmental Services	RdF
TELE02	ATI Environmental, Inc., Midwest Lab	RdF
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	RdF
URSL01	UNLV Radioanalytical Services Laboratory	RdF
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	RdF
WIPH01	WI, DPH, Radiation Protection Section	RdF
WIPP01	WIPP Laboratories	RdF
WSHL01	Wisconsin State Laboratory of Hygiene	RdF
WSTP99	Cavendish Nuclear Limited	RdF
WVDP01	WVDP Environmental Laboratory	RdF
YPGA01	US Army Yuma Proving Ground / Material Analysis Lab	RdF

Laboratories Not Reporting

Lab Code	Lab Name	Matrix Code
AREV01	Framatome - CMC	RdF
ARSA01	ARS Aleut Analytical, LLC (Luckey)	RdF
ASUK99	AWE (Aldermaston)	RdF
CSSL99	Chemistry Support Services	RdF
IAEA99	International Atomic Energy Agency	RdF
QUAN01	TestAmerica St. Louis	RdF
UNTE01	UniTech-235	RdF

Study Reference Values

MAPEP-19-RdF41

Radiological Reference Date: 08/01/2019

Analyte	Ref Value	Ref Unc
Inorganic	Units: (ug/sample)	
Uranium-235	0.0565	0.0014
Uranium-238	7.7	0.2
Uranium-Total	7.8	0.2

Analyte	Ref Value	Ref Unc
Radiological	Units: (Bq/sample)	
Cesium-137	1.58	0.03
Cobalt-57	1.16	0.03
Cobalt-60	0.815	0.019
Manganese-54	1.37	0.03
Plutonium-238	0.0761	0.0015
Plutonium-239/240	0.0468	0.0011
Strontium-90	0.498	0.011
Uranium-234	0.093	0.002
Uranium-238	0.096	0.002
Zinc-65	1.06	0.02

Sample Statistical Summary

MAPEP-19-RdF41

Radiological Reference Date: 08/01/2019

Analyte	T(1)	A(2)	Grand ⁽³⁾ Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Inorganic							Units: (ug/sample)
Uranium-235	6	5			0.0565	0.0014	0.0396 - 0.0735
Uranium-238	6	5			7.7	0.2	5.4 - 10.0
Uranium-Total	9	8	7.8	0.9	7.8	0.2	5.5 - 10.1

Analyte	T(1)	A(2)	Grand ⁽³⁾ Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/sample)
Americium-241	39	35					False Positive Test
Cesium-134	54	51					False Positive Test
Cesium-137	62	59	1.56	0.15	1.58	0.03	1.11 - 2.05
Cobalt-57	62	60	1.12	0.11	1.16	0.03	0.81 - 1.51
Cobalt-60	61	60	0.788	0.074	0.815	0.019	0.571 - 1.060
Manganese-54	62	59	1.37	0.14	1.37	0.03	0.96 - 1.78
Plutonium-238	32	30	0.0750	0.0065	0.0761	0.0015	0.0533 - 0.0989
Plutonium-239/240	32	30	0.0465	0.0054	0.0468	0.0011	0.0328 - 0.0608
Strontium-90	25	22	0.471	0.060	0.498	0.011	0.349 - 0.647
Uranium-234	33	31	0.092	0.006	0.093	0.002	0.065 - 0.121
Uranium-238	34	32	0.096	0.009	0.096	0.002	0.067 - 0.125
Zinc-65	60	56	1.08	0.13	1.06	0.02	0.74 - 1.38

- Note:** (1) T = Total number of laboratories reporting analyte.
 (2) A = Number of laboratories with 'Acceptable' performance.
 (3) Mean excludes values derived as total metals and values indicated as "Not Acceptable".

Result Flags:

- A = Result acceptable Bias <=20%
- W = Result acceptable with warning 20% < Bias < 30%
- N = Result not acceptable Bias > 30%
- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

- NOT ACCEPTABLE.....RP<2%
- ACCEPTABLE.....2%<=RP<=15%
- ACCEPTABLE WITH WARNING.....15%<RP<=30%
- NOT ACCEPTABLE.....RP>30%

Flag Summary Report

MAPEP-19-RdF41

Inorganic

Analyte	A	W	RW	N
Uranium-Total	8			1
Uranium-235	5			1
Uranium-238	4	1		1

Radiological

Analyte	A	W	RW	N
Americium-241	35			4
Cesium-134	51			5
Cesium-137	56	3		3
Cobalt-57	57	3		2
Cobalt-60	57	3		1
Manganese-54	56	3		3
Plutonium-238	28	2		2
Plutonium-239/240	26	4		2
Strontium-90	18	4		3
Uranium-234	31			2
Uranium-238	31	1		2
Zinc-65	52	4		4



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (ADEM01) Alabama Department of Environmental Management
 1350 Coliseum Blvd.
 Montgomery, Alabama 36110

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	4.07	1.58	N		157.6	1.11 - 2.05	0.16	A
Cobalt-57	1.75	1.16	N		50.9	0.81 - 1.51	0.05	A
Cobalt-60	NR	0.815				0.571 - 1.060		
Manganese-54	0.99	1.37	W		-27.7	0.96 - 1.78	0.04	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	NR	1.06				0.74 - 1.38		

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (ADFC99) Abu Dhabi Quality and Conformity Council-Central Testing Lab
 Radiation Lab
 Abu Dhabi, - -

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	-0.19		A			False Positive Test	0.16	
Cesium-137	1.63	1.58	A		3.2	1.11 - 2.05	0.07	A
Cobalt-57	1.20	1.16	A		3.4	0.81 - 1.51	0.04	A
Cobalt-60	0.77	0.815	A		-5.5	0.571 - 1.060	0.06	A
Manganese-54	1.34	1.37	A		-2.2	0.96 - 1.78	0.07	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.16	1.06	A		9.4	0.74 - 1.38	0.10	A

Radiological Reference Date: August 1, 2019

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Uncertainty Flags:

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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(AFOH01) USAFSAM/OEA

2510 Fifth Street, Area B

Wright-Patterson AFB, OH 45433-7913

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00010		A			False Positive Test	0.00014	
Cesium-134	-0.027		A			False Positive Test	0.025	
Cesium-137	1.497	1.58	A		-5.3	1.11 - 2.05	0.045	A
Cobalt-57	1.045	1.16	A		-9.9	0.81 - 1.51	0.025	A
Cobalt-60	0.823	0.815	A		1.0	0.571 - 1.060	0.041	A
Manganese-54	1.246	1.37	A		-9.1	0.96 - 1.78	0.042	A
Plutonium-238	0.0726	0.0761	A		-4.6	0.0533 - 0.0989	0.0050	A
Plutonium-239/240	0.0440	0.0468	A		-6.0	0.0328 - 0.0608	0.0034	A
Strontium-90	0.438	0.498	A		-12.0	0.349 - 0.647	0.021	A
Uranium-234	0.0872	0.093	A		-6.2	0.065 - 0.121	0.0054	A
Uranium-238	0.0856	0.096	A		-10.8	0.067 - 0.125	0.0053	A
Zinc-65	1.033	1.06	A		-2.5	0.74 - 1.38	0.053	A

Radiological Reference Date: August 1, 2019

Result Flags:

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NR = Not Reported

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NOT ACCEPTABLE.....RP<2%

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ACCEPTABLE WITH WARNING.....15% < RP <= 30%

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Notes:

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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (ANLB01) Argonne National Laboratory
 9700 S. Cass Ave
 Argonne, IL 60439

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0003		A			False Positive Test	0.001	
Cesium-134	-0.03		A			False Positive Test	0.03	
Cesium-137	1.60	1.58	A		1.3	1.11 - 2.05	0.04	A
Cobalt-57	1.12	1.16	A		-3.4	0.81 - 1.51	0.06	A
Cobalt-60	0.80	0.815	A		-1.8	0.571 - 1.060	0.03	A
Manganese-54	1.46	1.37	A		6.6	0.96 - 1.78	0.04	A
Plutonium-238	0.077	0.0761	A		1.2	0.0533 - 0.0989	0.011	A
Plutonium-239/240	0.052	0.0468	A		11.1	0.0328 - 0.0608	0.009	W
Strontium-90	0.48	0.498	A		-3.6	0.349 - 0.647	0.050	A
Uranium-234	0.082	0.093	A		-11.8	0.065 - 0.121	0.006	A
Uranium-238	0.082	0.096	A		-14.6	0.067 - 0.125	0.006	A
Zinc-65	1.14	1.06	A		7.5	0.74 - 1.38	0.07	A

Radiological Reference Date: August 1, 2019

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Notes:

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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (ANTE01) ALS Environmental - Fort Collins, CO
 225 Commerce Drive
 Fort Collins, CO 80524-1416

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.003		A			False Positive Test	0.003	
Cesium-134	0.143		A			False Positive Test	0.143	
Cesium-137	1.45	1.58	A		-8.2	1.11 - 2.05	0.10	A
Cobalt-57	1.07	1.16	A		-7.8	0.81 - 1.51	0.07	A
Cobalt-60	0.741	0.815	A		-9.1	0.571 - 1.060	0.059	A
Manganese-54	1.25	1.37	A		-8.8	0.96 - 1.78	0.10	A
Plutonium-238	0.074	0.0761	A		-2.8	0.0533 - 0.0989	0.007	A
Plutonium-239/240	0.047	0.0468	A		0.4	0.0328 - 0.0608	0.005	A
Strontium-90	0.471	0.498	A		-5.4	0.349 - 0.647	0.056	A
Uranium-234	0.089	0.093	A		-4.3	0.065 - 0.121	0.009	A
Uranium-238	0.090	0.096	A		-6.3	0.067 - 0.125	0.009	A
Zinc-65	0.969	1.06	A		-8.6	0.74 - 1.38	0.129	A

Radiological Reference Date: August 1, 2019

Result Flags:

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W = Result acceptable with warning 20% < Bias < 30%

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ACCEPTABLE.....2%<=RP<=15%

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Notes:

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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(ARGO01) Idaho National Laboratory
 INL, Materials and Fuels Complex
 Idaho Falls, ID 83415

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	0.062		A			False Positive Test	0.062	
Cesium-137	1.41	1.58	A		-10.8	1.11 - 2.05	0.05	A
Cobalt-57	1.21	1.16	A		4.3	0.81 - 1.51	0.05	A
Cobalt-60	0.758	0.815	A		-7.0	0.571 - 1.060	0.031	A
Manganese-54	1.36	1.37	A		-0.7	0.96 - 1.78	0.06	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.06	1.06	A		0.0	0.74 - 1.38	0.07	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

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RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(ARPL01) Analytical Support Operations - Radiochemical Processing Lab

PO Box 999

Richland, WA 99354

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0015		A			False Positive Test	0.0009	
Cesium-134	0.001		A			False Positive Test	0.030	
Cesium-137	1.550	1.58	A		-1.9	1.11 - 2.05	0.017	N
Cobalt-57	1.096	1.16	A		-5.5	0.81 - 1.51	0.039	A
Cobalt-60	0.820	0.815	A		0.6	0.571 - 1.060	0.016	N
Manganese-54	1.355	1.37	A		-1.1	0.96 - 1.78	0.037	A
Plutonium-238	0.0745	0.0761	A		-2.1	0.0533 - 0.0989	0.0034	A
Plutonium-239/240	0.0458	0.0468	A		-2.1	0.0328 - 0.0608	0.0025	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	0.0955	0.093	A		2.7	0.065 - 0.121	0.0039	A
Uranium-238	0.0966	0.096	A		0.6	0.067 - 0.125	0.0039	A
Zinc-65	1.062	1.06	A		0.2	0.74 - 1.38	0.051	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(ARSL01) ARS Aleut Analytical, LLC

2609 North River Road

Port Allen, LA 70767

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.002		A			False Positive Test	.002	
Cesium-134	-.0408		A			False Positive Test	.023	
Cesium-137	1.543	1.58	A		-2.3	1.11 - 2.05	.085	A
Cobalt-57	1.104	1.16	A		-4.8	0.81 - 1.51	.061	A
Cobalt-60	.861	0.815	A		5.6	0.571 - 1.060	.051	A
Manganese-54	1.440	1.37	A		5.1	0.96 - 1.78	.098	A
Plutonium-238	.076	0.0761	A		-0.1	0.0533 - 0.0989	.008	A
Plutonium-239/240	.044	0.0468	A		-6.0	0.0328 - 0.0608	.005	A
Strontium-90	.503	0.498	A		1.0	0.349 - 0.647	.054	A
Uranium-234	.091	0.093	A		-2.2	0.065 - 0.121	.008	A
Uranium-238	.086	0.096	A		-10.4	0.067 - 0.125	.008	A
Zinc-65	1.128	1.06	A		6.4	0.74 - 1.38	.141	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (CDHS01) California Department of Public Health
 Drinking Water & Radiation Lab.
 Richmond, CA 94804-6403

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00105		A			False Positive Test	0.00129	
Cesium-134	0.00168		A			False Positive Test	0.011	
Cesium-137	1.65	1.58	A		4.4	1.11 - 2.05	0.0452	A
Cobalt-57	1.18	1.16	A		1.7	0.81 - 1.51	0.0235	N
Cobalt-60	0.825	0.815	A		1.2	0.571 - 1.060	0.0225	A
Manganese-54	1.51	1.37	A		10.2	0.96 - 1.78	0.0417	A
Plutonium-238	0.0807	0.0761	A		6.0	0.0533 - 0.0989	0.00482	A
Plutonium-239/240	0.0438	0.0468	A		-6.4	0.0328 - 0.0608	0.00374	A
Strontium-90	0.3268	0.498	N		-34.4	0.349 - 0.647	0.0953	W
Uranium-234	0.0907	0.093	A		-2.5	0.065 - 0.121	0.00168	N
Uranium-238	0.0936	0.096	A		-2.5	0.067 - 0.125	0.00620	A
Zinc-65	1.10	1.06	A		3.8	0.74 - 1.38	0.0577	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (CESL01) Lawrence Livermore National Laboratory - EMRL
 7000 East Avenue
 Livermore, CA 94551

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	-1.76E-02		A			False Positive Test	8.16E-02	
Cesium-137	1.66E+00	1.58	A		5.1	1.11 - 2.05	1.31E-01	A
Cobalt-57	1.20E+00	1.16	A		3.4	0.81 - 1.51	6.20E-02	A
Cobalt-60	8.39E-01	0.815	A		2.9	0.571 - 1.060	6.66E-02	A
Manganese-54	1.36E+00	1.37	A		-0.7	0.96 - 1.78	1.15E-01	A
Plutonium-238	7.46E-02	0.0761	A		-2.0	0.0533 - 0.0989	3.67E-03	A
Plutonium-239/240	4.81E-02	0.0468	A		2.8	0.0328 - 0.0608	2.44E-03	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.04E+00	1.06	A		-1.9	0.74 - 1.38	1.69E-01	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (CMRC01) Carlsbad Environmental Monitoring and Research Center
 1400 University Dr.
 Carlsbad, NM 88220

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	3.04E-04		A			False Positive Test	1.57E-04	
Cesium-134	8.87E-03		A			False Positive Test	3.70E-02	
Cesium-137	1.72E+00	1.58	A		8.9	1.11 - 2.05	7.33E-02	A
Cobalt-57	1.19E+00	1.16	A		2.6	0.81 - 1.51	4.77E-02	A
Cobalt-60	8.23E-01	0.815	A		1.0	0.571 - 1.060	4.05E-02	A
Manganese-54	1.41E+00	1.37	A		2.9	0.96 - 1.78	7.07E-02	A
Plutonium-238	7.40E-02	0.0761	A		-2.8	0.0533 - 0.0989	5.20E-03	A
Plutonium-239/240	4.53E-02	0.0468	A		-3.2	0.0328 - 0.0608	3.38E-03	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	9.24E-02	0.093	A		-0.6	0.065 - 0.121	7.41E-03	A
Uranium-238	9.16E-02	0.096	A		-4.6	0.067 - 0.125	7.36E-03	A
Zinc-65	1.26E+00	1.06	A		18.9	0.74 - 1.38	1.29E-01	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (COPS99) Health Canada Radiation Protection Bureau
 2720 Riverside drive
 Ottawa, Ontario K1A0K9

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.015		A			False Positive Test	0.1	
Cesium-134	-0.48		A			False Positive Test	0.5	
Cesium-137	1.53	1.58	A		-3.2	1.11 - 2.05	0.059	A
Cobalt-57	1.17	1.16	A		0.9	0.81 - 1.51	0.027	A
Cobalt-60	0.807	0.815	A		-1.0	0.571 - 1.060	0.02	A
Manganese-54	1.45	1.37	A		5.8	0.96 - 1.78	0.069	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.05	1.06	A		-0.9	0.74 - 1.38	0.068	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (DEHS01) Department of Environmental Health & Safety
 North Carolina State Univ.
 Raleigh, NC 27695-8007

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	0.03		A			False Positive Test	0.05	
Cesium-137	1.42	1.58	A		-10.1	1.11 - 2.05	0.02	N
Cobalt-57	1.24	1.16	A		6.9	0.81 - 1.51	0.01	N
Cobalt-60	0.70	0.815	A		-14.1	0.571 - 1.060	0.02	A
Manganese-54	1.49	1.37	A		8.8	0.96 - 1.78	0.02	N
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.49	1.06	N		40.6	0.74 - 1.38	0.06	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (DINL99) Departamento Ingeniería Nuclear y Mecánica de Fluidos
 Escuela de Ingeniería de Bilbao
 Bilbao, Vizcaya 48013

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00086		A			False Positive Test	0.00086	
Cesium-134	0.018		A			False Positive Test	0.018	
Cesium-137	1.52	1.58	A		-3.8	1.11 - 2.05	0.081	A
Cobalt-57	1.09	1.16	A		-6.0	0.81 - 1.51	0.058	A
Cobalt-60	0.767	0.815	A		-5.9	0.571 - 1.060	0.041	A
Manganese-54	1.31	1.37	A		-4.4	0.96 - 1.78	0.070	A
Plutonium-238	0.077	0.0761	A		1.2	0.0533 - 0.0989	0.0048	A
Plutonium-239/240	0.048	0.0468	A		2.6	0.0328 - 0.0608	0.0034	A
Strontium-90	0.395	0.498	W		-20.7	0.349 - 0.647	0.023	A
Uranium-234	0.0963	0.093	A		3.5	0.065 - 0.121	0.0060	A
Uranium-238	0.0955	0.096	A		-0.5	0.067 - 0.125	0.0060	A
Zinc-65	1.06	1.06	A		0.0	0.74 - 1.38	0.059	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(DLEA01) DLE Associates
730 Alfred Nobel Drive
Hercules, CA 94547

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	0.01		A			False Positive Test	0.01	
Cesium-137	1.36	1.58	A		-13.9	1.11 - 2.05	0.02	N
Cobalt-57	0.92	1.16	W		-20.7	0.81 - 1.51	0.08	A
Cobalt-60	0.73	0.815	A		-10.4	0.571 - 1.060	0.02	A
Manganese-54	1.19	1.37	A		-13.1	0.96 - 1.78	0.02	N
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.82	1.06	W		-22.6	0.74 - 1.38	0.04	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150th Street
 Shoreline, WA 98155-9701

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0564	0.0565	A		-0.2	0.0396 - 0.0735	0.0016	A
Uranium-238	9.29	7.7	W		20.6	5.4 - 10.0	0.04	N
Uranium-Total	9.35	7.8	A		19.9	5.5 - 10.1	0.04	N

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00126		A			False Positive Test	0.00094	
Cesium-134	-0.0377		N	(29)		False Positive Test	0.0094	
Cesium-137	1.60	1.58	A		1.3	1.11 - 2.05	0.13	A
Cobalt-57	1.31	1.16	A		12.9	0.81 - 1.51	0.03	A
Cobalt-60	0.818	0.815	A		0.4	0.571 - 1.060	0.017	A
Manganese-54	1.37	1.37	A		0.0	0.96 - 1.78	0.12	A
Plutonium-238	0.0796	0.0761	A		4.6	0.0533 - 0.0989	0.0064	A
Plutonium-239/240	0.0466	0.0468	A		-0.4	0.0328 - 0.0608	0.0049	A
Strontium-90	0.485	0.498	A		-2.6	0.349 - 0.647	0.040	A
Uranium-234	0.102	0.093	A		9.7	0.065 - 0.121	0.008	A
Uranium-238	0.0951	0.096	A		-0.9	0.067 - 0.125	0.0079	A
Zinc-65	1.25	1.06	A		17.9	0.74 - 1.38	0.05	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(EULC01) EnergySolutions, LLC

I-80, Exit 49

Clive, UT 84029

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-.658		A			False Positive Test	.473	
Cesium-134	.247		A			False Positive Test	.198	
Cesium-137	1.84556	1.58	A		16.8	1.11 - 2.05	.235468	A
Cobalt-57	1.30684	1.16	A		12.7	0.81 - 1.51	.21941	W
Cobalt-60	.81548	0.815	A		0.1	0.571 - 1.060	.059348	A
Manganese-54	1.60136	1.37	A		16.9	0.96 - 1.78	.187146	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.20546	1.06	A		13.7	0.74 - 1.38	.141044	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (FDHE01) Florida Dept of Health Environmental Laboratory
 PO Box 680069
 Orlando, FL 32868-0069

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.047		A			False Positive Test	0.264	
Cesium-134	0.030		A			False Positive Test	0.098	
Cesium-137	1.642	1.58	A		3.9	1.11 - 2.05	0.072	A
Cobalt-57	1.128	1.16	A		-2.8	0.81 - 1.51	0.033	A
Cobalt-60	0.898	0.815	A		10.2	0.571 - 1.060	0.054	A
Manganese-54	1.448	1.37	A		5.7	0.96 - 1.78	0.059	A
Plutonium-238	0.077	0.0761	A		1.2	0.0533 - 0.0989	0.005	A
Plutonium-239/240	0.045	0.0468	A		-3.8	0.0328 - 0.0608	0.004	A
Strontium-90	0.556	0.498	A		11.6	0.349 - 0.647	0.043	A
Uranium-234	0.087	0.093	A		-6.5	0.065 - 0.121	0.006	A
Uranium-238	0.095	0.096	A		-1.0	0.067 - 0.125	0.006	A
Zinc-65	1.142	1.06	A		7.7	0.74 - 1.38	0.088	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab
 PO Box 680069
 Orlando, FL 32868-0069

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.007		A			False Positive Test	0.029	
Cesium-134	0.024		A			False Positive Test	0.04	
Cesium-137	1.531	1.58	A		-3.1	1.11 - 2.05	0.051	A
Cobalt-57	1.118	1.16	A		-3.6	0.81 - 1.51	0.022	N
Cobalt-60	0.767	0.815	A		-5.9	0.571 - 1.060	0.04	A
Manganese-54	1.358	1.37	A		-0.9	0.96 - 1.78	0.082	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	0.103	0.096	A		7.3	0.067 - 0.125	0.103	N
Zinc-65	1.116	1.06	A		5.3	0.74 - 1.38	0.072	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (FMCEC99) Foods and Water Laboratories Center
 Ministry of Regional Municipalities and Water Resources
 Muscat, seeb 111

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	4.99	1.58	N		215.8	1.11 - 2.05	0.1	A
Cobalt-57	3.81	1.16	N		228.4	0.81 - 1.51	0.05	N
Cobalt-60	2.06	0.815	N		152.8	0.571 - 1.060	0.07	A
Manganese-54	4.06	1.37	N		196.4	0.96 - 1.78	0.09	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	2.92	1.06	N		175.5	0.74 - 1.38	0.12	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(GENE01) GEL Laboratories, LLC

2040 Savage Road

Charleston, SC 29407

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0565	0.0565	A		0.0	0.0396 - 0.0735	0.00378	A
Uranium-238	7.84	7.7	A		1.8	5.4 - 10.0	0.523	A
Uranium-Total	7.9	7.8	A		1.3	5.5 - 10.1	0.526	A

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00106		A			False Positive Test	4.62E-4	
Cesium-134	8.00E-4		A			False Positive Test	0.0254	
Cesium-137	1.63	1.58	A		3.2	1.11 - 2.05	0.0971	A
Cobalt-57	1.23	1.16	A		6.0	0.81 - 1.51	0.0684	A
Cobalt-60	0.783	0.815	A		-3.9	0.571 - 1.060	0.0767	A
Manganese-54	1.35	1.37	A		-1.5	0.96 - 1.78	0.0906	A
Plutonium-238	0.0755	0.0761	A		-0.8	0.0533 - 0.0989	4.69E-3	A
Plutonium-239/240	0.0485	0.0468	A		3.6	0.0328 - 0.0608	3.28E-3	A
Strontium-90	0.442	0.498	A		-11.2	0.349 - 0.647	0.0635	A
Uranium-234	0.0965	0.093	A		3.8	0.065 - 0.121	5.31E-3	A
Uranium-238	0.0935	0.096	A		-2.6	0.067 - 0.125	5.15E-3	A
Zinc-65	1.09	1.06	A		2.8	0.74 - 1.38	0.139	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (GPCL01) Georgia Power Company Environmental Laboratory
 2480 Maner Road
 Atlanta, GA 30339

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	1.551	1.58	A		-1.8	1.11 - 2.05	0.17	A
Cobalt-57	1.046	1.16	A		-9.8	0.81 - 1.51	0.11	A
Cobalt-60	0.753	0.815	A		-7.6	0.571 - 1.060	0.092	A
Manganese-54	1.381	1.37	A		0.8	0.96 - 1.78	0.17	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.995	1.06	A		-6.1	0.74 - 1.38	0.23	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(HECR01) SC Dept. Health and Environmental Control Radiological Laboratory
 8231 Parklane Road
 Columbia, SC 29223

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	0.08296		A			False Positive Test	0.2192	
Cesium-137	1.723	1.58	A		9.1	1.11 - 2.05	0.2444	A
Cobalt-57	1.080	1.16	A		-6.9	0.81 - 1.51	0.1527	A
Cobalt-60	0.8298	0.815	A		1.8	0.571 - 1.060	0.1235	A
Manganese-54	1.466	1.37	A		7.0	0.96 - 1.78	0.2394	W
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.9210	1.06	A		-13.1	0.74 - 1.38	0.3661	N

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(HPAC99) PHE, CRCE Glasgow

155 Hardgate Road

Glasgow, Scotland G514LS

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0002		A			False Positive Test	0.0001	
Cesium-134	-0.146		A			False Positive Test	0.1	
Cesium-137	1.91	1.58	W		20.9	1.11 - 2.05	0.13	A
Cobalt-57	1.27	1.16	A		9.5	0.81 - 1.51	0.08	A
Cobalt-60	0.96	0.815	A		17.8	0.571 - 1.060	0.06	A
Manganese-54	1.54	1.37	A		12.4	0.96 - 1.78	0.10	A
Plutonium-238	0.087	0.0761	A		14.3	0.0533 - 0.0989	0.005	A
Plutonium-239/240	0.052	0.0468	A		11.1	0.0328 - 0.0608	0.003	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	0.0870	0.093	A		-6.5	0.065 - 0.121	0.005	A
Uranium-238	0.0895	0.096	A		-6.8	0.067 - 0.125	0.005	A
Zinc-65	1.2	1.06	A		13.2	0.74 - 1.38	1.2	N

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (HPAL01) Los Alamos National Laboratory
 Milan Gadd, MS G761
 Los Alamos, NM 87545-1663

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.03		A			False Positive Test	0.05	
Cesium-134	-0.01		A			False Positive Test	0.15	
Cesium-137	1.72	1.58	A		8.9	1.11 - 2.05	0.12	A
Cobalt-57	1.18	1.16	A		1.7	0.81 - 1.51	0.07	A
Cobalt-60	1.00	0.815	W		22.7	0.571 - 1.060	0.09	A
Manganese-54	1.62	1.37	A		18.2	0.96 - 1.78	0.13	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.33	1.06	W		25.5	0.74 - 1.38	0.17	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(IEMA01) Illinois Emergency Management Agency Radiochemistry Laboratory
 1301 Knotts St.
 Springfield, IL 62703

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	7.78	7.8	A		-0.3	5.5 - 10.1	0.61	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00090		A			False Positive Test	0.00034	
Cesium-134	-0.027		A			False Positive Test	0.030	
Cesium-137	1.484	1.58	A		-6.1	1.11 - 2.05	0.060	A
Cobalt-57	1.067	1.16	A		-8.0	0.81 - 1.51	0.027	A
Cobalt-60	0.740	0.815	A		-9.2	0.571 - 1.060	0.039	A
Manganese-54	1.256	1.37	A		-8.3	0.96 - 1.78	0.059	A
Plutonium-238	0.0771	0.0761	A		1.3	0.0533 - 0.0989	0.0035	A
Plutonium-239/240	0.0483	0.0468	A		3.2	0.0328 - 0.0608	0.0025	A
Strontium-90	0.418	0.498	A		-16.1	0.349 - 0.647	0.041	A
Uranium-234	0.0885	0.093	A		-4.8	0.065 - 0.121	0.0033	A
Uranium-238	0.0874	0.096	A		-9.0	0.067 - 0.125	0.0033	A
Zinc-65	1.12	1.06	A		5.7	0.74 - 1.38	0.11	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (ISUP01) ISU - Department of Physics/Health Physics/EAL
 785 S. 8th Ave, Rm 120
 Pocatello, ID 83209-8106

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	-0.03		A			False Positive Test	0.02	
Cesium-137	1.61	1.58	A		1.9	1.11 - 2.05	0.11	A
Cobalt-57	1.15	1.16	A		-0.9	0.81 - 1.51	0.07	A
Cobalt-60	0.80	0.815	A		-1.8	0.571 - 1.060	0.06	A
Manganese-54	1.40	1.37	A		2.2	0.96 - 1.78	0.11	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.00	1.06	A		-5.7	0.74 - 1.38	0.11	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (JAEC99) Research Laboratories and Information Directorate
 Jordan Atomic Energy Commission
 Amman, Jordan 70 (11934)

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	1.42	1.58	A		-10.1	1.11 - 2.05	0.09	A
Cobalt-57	1.02	1.16	A		-12.1	0.81 - 1.51	0.05	A
Cobalt-60	0.70	0.815	A		-14.1	0.571 - 1.060	0.04	A
Manganese-54	1.27	1.37	A		-7.3	0.96 - 1.78	0.08	A
Plutonium-238	0.109	0.0761	N		43.2	0.0533 - 0.0989	0.0078	A
Plutonium-239/240	0.038	0.0468	A		-18.8	0.0328 - 0.0608	0.0036	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	0.079	0.093	A		-15.1	0.065 - 0.121	0.0076	A
Uranium-238	0.092	0.096	A		-4.2	0.067 - 0.125	0.0081	A
Zinc-65	0.86	1.06	A		-18.9	0.74 - 1.38	0.09	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(JLNN01) Jefferson Laboratory

111 Hadron Drive

Newport News, VA 23606

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.023			A		False Positive Test	0.024	
Cesium-134	-0.200		N	(29)		False Positive Test	0.053	
Cesium-137	1.45	1.58	A		-8.2	1.11 - 2.05	0.053	A
Cobalt-57	1.39	1.16	A		19.8	0.81 - 1.51	0.220	W
Cobalt-60	0.753	0.815	A		-7.6	0.571 - 1.060	0.032	A
Manganese-54	1.27	1.37	A		-7.3	0.96 - 1.78	0.057	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.18	1.06	A		11.3	0.74 - 1.38	0.077	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (LANL01) Los Alamos National Laboratory
 Mail Stop J514
 Los Alamos, NM 87545

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR		N	(11)		False Positive Test		
Cesium-137	1.60	1.58	A		1.3	1.11 - 2.05	0.10	A
Cobalt-57	1.13	1.16	A		-2.6	0.81 - 1.51	0.07	A
Cobalt-60	0.80	0.815	A		-1.8	0.571 - 1.060	0.06	A
Manganese-54	1.45	1.37	A		5.8	0.96 - 1.78	0.07	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	NR	1.06				0.74 - 1.38		

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (LAWR01) LAWRENCE BERKELEY NATIONAL LABORATORY
 1 CYCLOTRON RD.
 BERKELEY, CA 94720

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	.05077		A			False Positive Test	.03139	
Cesium-137	1.421	1.58	A		-10.1	1.11 - 2.05	.05618	A
Cobalt-57	1.041	1.16	A		-10.3	0.81 - 1.51	.03519	A
Cobalt-60	.7543	0.815	A		-7.4	0.571 - 1.060	.0526	A
Manganese-54	1.274	1.37	A		-7.0	0.96 - 1.78	.05976	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	.9596	1.06	A		-9.5	0.74 - 1.38	.1022	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(LDRA99) Laboratori de Radiologia Ambiental-Universitat de Barcelona

Facultat de Química

Barcelona, Catalunya 08028

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0001		A			False Positive Test	0.0004	
Cesium-134	0.0002		A			False Positive Test	0.001	
Cesium-137	1.66	1.58	A		5.1	1.11 - 2.05	0.16	A
Cobalt-57	1.21	1.16	A		4.3	0.81 - 1.51	0.06	A
Cobalt-60	0.80	0.815	A		-1.8	0.571 - 1.060	0.03	A
Manganese-54	1.46	1.37	A		6.6	0.96 - 1.78	0.14	A
Plutonium-238	0.073	0.0761	A		-4.1	0.0533 - 0.0989	0.003	A
Plutonium-239/240	0.0439	0.0468	A		-6.2	0.0328 - 0.0608	0.0019	A
Strontium-90	0.540	0.498	A		8.4	0.349 - 0.647	0.021	A
Uranium-234	0.091	0.093	A		-2.2	0.065 - 0.121	0.003	A
Uranium-238	0.096	0.096	A		0.0	0.067 - 0.125	0.003	A
Zinc-65	1.18	1.06	A		11.3	0.74 - 1.38	0.13	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (LOCK03) Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory
 INL/Battelle Energy Alliance, LLC
 Idaho Falls, ID 83415-7111

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	-0.011		A			False Positive Test	0.026	
Cesium-137	1.498	1.58	A		-5.2	1.11 - 2.05	0.116	A
Cobalt-57	1.087	1.16	A		-6.3	0.81 - 1.51	0.065	A
Cobalt-60	0.755	0.815	A		-7.4	0.571 - 1.060	0.070	A
Manganese-54	1.402	1.37	A		2.3	0.96 - 1.78	0.112	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.154	1.06	A		8.9	0.74 - 1.38	0.120	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (MART01) Fluor B&W Ports Analytical Laboratory
 Lab COC, Bldg. X-710, Rm 222
 Piketon, OH 45661-

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00177		A			False Positive Test	0.00116	
Cesium-134	-0.04753		A			False Positive Test	0.02622	
Cesium-137	1.537	1.58	A		-2.7	1.11 - 2.05	0.09223	A
Cobalt-57	1.088	1.16	A		-6.2	0.81 - 1.51	0.03850	A
Cobalt-60	0.8186	0.815	A		0.4	0.571 - 1.060	0.06664	A
Manganese-54	1.388	1.37	A		1.3	0.96 - 1.78	0.1381	A
Plutonium-238	0.07463	0.0761	A		-1.9	0.0533 - 0.0989	0.007148	A
Plutonium-239/240	0.04079	0.0468	A		-12.8	0.0328 - 0.0608	0.004807	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	0.09351	0.093	A		0.5	0.065 - 0.121	0.009148	A
Uranium-238	0.09062	0.096	A		-5.6	0.067 - 0.125	0.009413	A
Zinc-65	0.9256	1.06	A		-12.7	0.74 - 1.38	0.1880	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (MART03) Radioactive Material Analysis Laboratory
 ORNL
 Oak Ridge, TN 37830

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0009		A			False Positive Test	0.0036	
Cesium-134	0.04		A			False Positive Test	0.05	
Cesium-137	1.70	1.58	A		7.6	1.11 - 2.05	0.13	A
Cobalt-57	1.19	1.16	A		2.6	0.81 - 1.51	0.06	A
Cobalt-60	0.85	0.815	A		4.3	0.571 - 1.060	0.068	A
Manganese-54	1.55	1.37	A		13.1	0.96 - 1.78	0.093	A
Plutonium-238	0.10	0.0761	N		31.4	0.0533 - 0.0989	0.026	W
Plutonium-239/240	0.057	0.0468	W		21.8	0.0328 - 0.0608	0.013	W
Strontium-90	0.508	0.498	A		2.0	0.349 - 0.647	0.066	A
Uranium-234	0.14	0.093	N		50.5	0.065 - 0.121	0.023	W
Uranium-238	0.14	0.096	N		45.8	0.067 - 0.125	0.024	W
Zinc-65	1.23	1.06	A		16.0	0.74 - 1.38	0.15	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(MNDH01) Minnesota Department of Health, Public Health Lab. Division
 601 Robert St. N.
 St. Paul, MN 55155

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR		N	(11)		False Positive Test		
Cesium-137	1.7488	1.58	A		10.7	1.11 - 2.05	.05186	A
Cobalt-57	1.3163	1.16	A		13.5	0.81 - 1.51	.02867	A
Cobalt-60	.77121	0.815	A		-5.4	0.571 - 1.060	.02911	A
Manganese-54	1.4735	1.37	A		7.6	0.96 - 1.78	.05124	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.1515	1.06	A		8.6	0.74 - 1.38	.07319	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (MSDH01) Mississippi State Dept of Health
 Radiological Environmental Laboratory
 Jackson, MS 39216

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0538		A			False Positive Test	0.432	
Cesium-134	0.037		A			False Positive Test	0.062	
Cesium-137	1.43	1.58	A		-9.5	1.11 - 2.05	0.13	A
Cobalt-57	1.12	1.16	A		-3.4	0.81 - 1.51	0.07	A
Cobalt-60	0.86	0.815	A		5.5	0.571 - 1.060	0.08	A
Manganese-54	1.35	1.37	A		-1.5	0.96 - 1.78	0.12	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.19	1.06	A		12.3	0.74 - 1.38	0.21	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (NARL01) National Analytical Radiation Environmental Laboratory
 540 S. Morris Ave.
 Montgomery, AL 36115-2601

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00102		A			False Positive Test	0.000899	
Cesium-134	-0.0141		A			False Positive Test	0.0115	
Cesium-137	1.61	1.58	A		1.9	1.11 - 2.05	0.0907	A
Cobalt-57	1.07	1.16	A		-7.8	0.81 - 1.51	0.0591	A
Cobalt-60	0.713	0.815	A		-12.5	0.571 - 1.060	0.0414	A
Manganese-54	1.43	1.37	A		4.4	0.96 - 1.78	0.0820	A
Plutonium-238	0.0680	0.0761	A		-10.6	0.0533 - 0.0989	0.00698	A
Plutonium-239/240	0.0465	0.0468	A		-0.6	0.0328 - 0.0608	0.00544	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	0.0942	0.093	A		1.3	0.065 - 0.121	0.00884	A
Uranium-238	0.0941	0.096	A		-2.0	0.067 - 0.125	0.00884	A
Zinc-65	1.20	1.06	A		13.2	0.74 - 1.38	0.0801	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(NARL02) USEPA - NAREL - MERL

540 S Morris Ave

Montgomery, AL 36115

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	-0.0230		A			False Positive Test	0.0360	
Cesium-137	1.61	1.58	A		1.9	1.11 - 2.05	0.0710	A
Cobalt-57	1.09	1.16	A		-6.0	0.81 - 1.51	0.0310	A
Cobalt-60	0.871	0.815	A		6.9	0.571 - 1.060	0.0460	A
Manganese-54	1.40	1.37	A		2.2	0.96 - 1.78	0.0720	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.07	1.06	A		0.9	0.74 - 1.38	0.0900	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (NESI01) BWXT-Radioisotope & Analytical Chemistry Laboratory
 Lynchburg Technology Center
 Lynchburg, VA 24504-5447

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.002		A			False Positive Test	0.001	
Cesium-134	-0.207		N	(29)		False Positive Test	0.068	
Cesium-137	1.53	1.58	A		-3.2	1.11 - 2.05	0.093	A
Cobalt-57	1.11	1.16	A		-4.3	0.81 - 1.51	0.058	A
Cobalt-60	0.756	0.815	A		-7.2	0.571 - 1.060	0.074	A
Manganese-54	1.28	1.37	A		-6.6	0.96 - 1.78	0.100	A
Plutonium-238	0.077	0.0761	A		1.2	0.0533 - 0.0989	0.005	A
Plutonium-239/240	0.042	0.0468	A		-10.3	0.0328 - 0.0608	0.004	A
Strontium-90	0.535	0.498	A		7.4	0.349 - 0.647	0.044	A
Uranium-234	0.085	0.093	A		-8.6	0.065 - 0.121	0.006	A
Uranium-238	0.108	0.096	A		12.5	0.067 - 0.125	0.007	A
Zinc-65	0.884	1.06	A		-16.6	0.74 - 1.38	0.146	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (NJDH01) New Jersey Dept. of Health, PHEL, ECLS
 3 Schwarzkopf Drive
 West Trenton, NJ 08628

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.04		A			False Positive Test	0.14	
Cesium-134	0.014		A			False Positive Test	0.031	
Cesium-137	1.39	1.58	A		-12.0	1.11 - 2.05	0.17	A
Cobalt-57	1.02	1.16	A		-12.1	0.81 - 1.51	0.21	W
Cobalt-60	0.728	0.815	A		-10.7	0.571 - 1.060	0.074	A
Manganese-54	1.23	1.37	A		-10.2	0.96 - 1.78	0.16	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.933	1.06	A		-12.0	0.74 - 1.38	0.099	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (NOCS99) National Oceanography Centre, Southampton
 GAU-Radioanalytical
 Southampton, Hampshire SO14 3ZH

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.015		N	(1)		False Positive Test	0.001	
Cesium-134	0.06		A			False Positive Test	0.31	
Cesium-137	1.36	1.58	A		-13.9	1.11 - 2.05	0.04	A
Cobalt-57	0.96	1.16	A		-17.2	0.81 - 1.51	0.04	A
Cobalt-60	0.71	0.815	A		-12.9	0.571 - 1.060	0.02	A
Manganese-54	1.17	1.37	A		-14.6	0.96 - 1.78	0.04	A
Plutonium-238	0.072	0.0761	A		-5.4	0.0533 - 0.0989	0.004	A
Plutonium-239/240	0.041	0.0468	A		-12.4	0.0328 - 0.0608	0.002	A
Strontium-90	0.48	0.498	A		-3.6	0.349 - 0.647	0.06	A
Uranium-234	0.090	0.093	A		-3.2	0.065 - 0.121	0.005	A
Uranium-238	0.090	0.096	A		-6.3	0.067 - 0.125	0.005	A
Zinc-65	0.94	1.06	A		-11.3	0.74 - 1.38	0.05	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(NRL99) Environmental Radioactivity - National Centre for Radiation Science

PO Box 29181

Christchurch, Christchurch 8540

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	1.82	1.58	A		15.2	1.11 - 2.05	0.11	A
Cobalt-57	1.294	1.16	A		11.6	0.81 - 1.51	0.085	A
Cobalt-60	0.887	0.815	A		8.8	0.571 - 1.060	0.061	A
Manganese-54	1.60	1.37	A		16.8	0.96 - 1.78	0.10	A
Plutonium-238	0.0781	0.0761	A		2.6	0.0533 - 0.0989	0.0045	A
Plutonium-239/240	0.0484	0.0468	A		3.4	0.0328 - 0.0608	.0032	A
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	0.0923	0.093	A		-0.8	0.065 - 0.121	0.0041	A
Uranium-238	0.0944	0.096	A		-1.7	0.067 - 0.125	0.0041	A
Zinc-65	1.242	1.06	A		17.2	0.74 - 1.38	0.085	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (ODHL01) Ohio Department of Health Laboratory
 8995 E Main Street
 Reynoldsburg, OH 43068

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	0.00637		A			False Positive Test	0.00350	
Cesium-137	1.45	1.58	A		-8.2	1.11 - 2.05	0.0902	A
Cobalt-57	1.06	1.16	A		-8.6	0.81 - 1.51	0.0754	A
Cobalt-60	0.731	0.815	A		-10.3	0.571 - 1.060	0.0268	A
Manganese-54	1.23	1.37	A		-10.2	0.96 - 1.78	0.0778	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.929	1.06	A		-12.4	0.74 - 1.38	0.0525	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(ORIS01) ORISE/IEAV

PO Box 117

Oak Ridge, TN 37831-0117

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.107	0.0565	N		89.4	0.0396 - 0.0735	0.004	A
Uranium-238	14.79	7.7	N		92.1	5.4 - 10.0	0.48	A
Uranium-Total	14.90	7.8	N		91.0	5.5 - 10.1	0.48	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.0003		A			False Positive Test	0.0002	
Cesium-134	-0.011		A			False Positive Test	0.045	
Cesium-137	1.605	1.58	A		1.6	1.11 - 2.05	0.073	A
Cobalt-57	1.051	1.16	A		-9.4	0.81 - 1.51	0.038	A
Cobalt-60	0.802	0.815	A		-1.6	0.571 - 1.060	0.052	A
Manganese-54	1.398	1.37	A		2.0	0.96 - 1.78	0.065	A
Plutonium-238	0.075	0.0761	A		-1.4	0.0533 - 0.0989	0.004	A
Plutonium-239/240	0.043	0.0468	A		-8.1	0.0328 - 0.0608	0.003	A
Strontium-90	0.471	0.498	A		-5.4	0.349 - 0.647	0.015	A
Uranium-234	0.096	0.093	A		3.2	0.065 - 0.121	0.005	A
Uranium-238	0.100	0.096	A		4.2	0.067 - 0.125	0.006	A
Zinc-65	1.033	1.06	A		-2.5	0.74 - 1.38	0.085	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (OTLI01) Pace Analytical National Center for Testing & Innovation
 12065 Lebanon Road
 Mt. Juliet, TN 37122

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	6.89	7.8	A		-11.7	5.5 - 10.1	0.1	N

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.01		A			False Positive Test	0.008	
Cesium-134	-.01		A			False Positive Test	0.034	
Cesium-137	1.68	1.58	A		6.3	1.11 - 2.05	0.375	W
Cobalt-57	1.16	1.16	A		0.0	0.81 - 1.51	0.188	W
Cobalt-60	0.875	0.815	A		7.4	0.571 - 1.060	0.148	W
Manganese-54	1.48	1.37	A		8.0	0.96 - 1.78	0.31	W
Plutonium-238	0.063	0.0761	A		-17.2	0.0533 - 0.0989	0.01	W
Plutonium-239/240	0.027	0.0468	N		-42.3	0.0328 - 0.0608	0.007	W
Strontium-90	0.453	0.498	A		-9.0	0.349 - 0.647	0.075	W
Uranium-234	0.092	0.093	A		-1.1	0.065 - 0.121	0.028	N
Uranium-238	0.123	0.096	W		28.1	0.067 - 0.125	0.031	W
Zinc-65	1.24	1.06	A		17.0	0.74 - 1.38	0.29	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (RAVR99) Radiactividad Ambiental y Vigilancia Radiologica
 CIEMAT (Ed 70 P2 D11)
 Madrid, Madrid 28040

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	6.6	7.8	A		-15.4	5.5 - 10.1	0.2	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00077		N	(1)		False Positive Test	0.00010	
Cesium-134	0.027		A			False Positive Test	0.035	
Cesium-137	1.95	1.58	W		23.4	1.11 - 2.05	0.13	A
Cobalt-57	1.328	1.16	A		14.5	0.81 - 1.51	0.070	A
Cobalt-60	0.923	0.815	A		13.3	0.571 - 1.060	0.046	A
Manganese-54	1.74	1.37	W		27.0	0.96 - 1.78	0.13	A
Plutonium-238	0.0706	0.0761	A		-7.2	0.0533 - 0.0989	0.0036	A
Plutonium-239/240	0.0412	0.0468	A		-12.0	0.0328 - 0.0608	0.0026	A
Strontium-90	0.435	0.498	A		-12.7	0.349 - 0.647	0.010	A
Uranium-234	0.085	0.093	A		-8.6	0.065 - 0.121	0.014	W
Uranium-238	0.095	0.096	A		-1.0	0.067 - 0.125	0.015	W
Zinc-65	1.33	1.06	W		25.5	0.74 - 1.38	0.13	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(RPSC01) Radiation Protection Service

Ontario Ministry of Labour

Weston, Ontario M9P 3T1

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	1.31	1.58	A		-17.1	1.11 - 2.05	0.17	A
Cobalt-57	1.05	1.16	A		-9.5	0.81 - 1.51	0.21	W
Cobalt-60	0.71	0.815	A		-12.9	0.571 - 1.060	0.07	A
Manganese-54	1.13	1.37	A		-17.5	0.96 - 1.78	0.12	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.72	1.06	N		-32.1	0.74 - 1.38	0.1	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (SANC99) RadioAnalysis, South Africa Nuclear Energy Corp.
 Sample Receipt Gate 1
 Pretoria, Gauteng 0001

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	0.032		A			False Positive Test	0.032	
Cesium-137	1.12	1.58	W		-29.1	1.11 - 2.05	0.07	A
Cobalt-57	0.887	1.16	W		-23.5	0.81 - 1.51	0.065	A
Cobalt-60	0.627	0.815	W		-23.1	0.571 - 1.060	0.021	A
Manganese-54	0.985	1.37	W		-28.1	0.96 - 1.78	0.061	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.738	1.06	N		-30.4	0.74 - 1.38	0.050	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (SEML01) SRS Environmental Monitoring Laboratory
 Bldg 735-B
 Aiken, SC 29808

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00047		A			False Positive Test	0.00019	
Cesium-134	-0.050		A			False Positive Test	0.050	
Cesium-137	1.640	1.58	A		3.8	1.11 - 2.05	0.084	A
Cobalt-57	1.188	1.16	A		2.4	0.81 - 1.51	0.054	A
Cobalt-60	0.816	0.815	A		0.1	0.571 - 1.060	0.045	A
Manganese-54	1.483	1.37	A		8.2	0.96 - 1.78	0.075	A
Plutonium-238	0.0747	0.0761	A		-1.8	0.0533 - 0.0989	0.0055	A
Plutonium-239/240	0.0464	0.0468	A		-0.9	0.0328 - 0.0608	0.0036	A
Strontium-90	0.432	0.498	A		-13.3	0.349 - 0.647	0.069	W
Uranium-234	0.089	0.093	A		-4.3	0.065 - 0.121	0.006	A
Uranium-238	0.093	0.096	A		-3.1	0.067 - 0.125	0.006	A
Zinc-65	1.12	1.06	A		5.7	0.74 - 1.38	0.10	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (SOUT01) Southwest Research Institute
 6220 Culebra Rd.
 San Antonio, TX 78228-0510

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0574	0.0565	A		1.6	0.0396 - 0.0735	0.00407	A
Uranium-238	7.81	7.7	A		1.4	5.4 - 10.0	0.527	A
Uranium-Total	7.87	7.8	A		0.9	5.5 - 10.1	0.531	A

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00141		A			False Positive Test	0.00141	
Cesium-134	-0.0266		A			False Positive Test	0.0131	
Cesium-137	1.53	1.58	A		-3.2	1.11 - 2.05	0.121	A
Cobalt-57	1.13	1.16	A		-2.6	0.81 - 1.51	0.0304	A
Cobalt-60	0.848	0.815	A		4.0	0.571 - 1.060	0.0253	A
Manganese-54	1.49	1.37	A		8.8	0.96 - 1.78	0.0844	A
Plutonium-238	0.0800	0.0761	A		5.1	0.0533 - 0.0989	0.00811	A
Plutonium-239/240	0.0581	0.0468	W		24.1	0.0328 - 0.0608	0.00656	A
Strontium-90	0.393	0.498	W		-21.1	0.349 - 0.647	0.0637	W
Uranium-234	0.0944	0.093	A		1.5	0.065 - 0.121	0.00889	A
Uranium-238	0.0967	0.096	A		0.7	0.067 - 0.125	0.00904	A
Zinc-65	1.23	1.06	A		16.0	0.74 - 1.38	0.0656	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(SRPD01) Sandia National Laboratories, Radiation Protection Sample Diagnostics

PO Box 5800, MS1103

Albuquerque, NM 87185-1103

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.000470		N	(1)		False Positive Test	0.000121	
Cesium-134	-0.00972		A			False Positive Test	0.0231	
Cesium-137	1.37	1.58	A		-13.3	1.11 - 2.05	0.0481	A
Cobalt-57	0.991	1.16	A		-14.6	0.81 - 1.51	0.0298	A
Cobalt-60	0.682	0.815	A		-16.3	0.571 - 1.060	0.0387	A
Manganese-54	1.25	1.37	A		-8.8	0.96 - 1.78	0.0451	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	0.887	1.06	A		-16.3	0.74 - 1.38	0.0602	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (TDHL01) Texas Department of State Health Services Laboratory
 1100 W 49th Street
 Austin, TX 78756

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0031		A			False Positive Test	0.0033	
Cesium-134	-0.010		A			False Positive Test	0.053	
Cesium-137	1.430	1.58	A		-9.5	1.11 - 2.05	0.049	A
Cobalt-57	1.000	1.16	A		-13.8	0.81 - 1.51	0.027	A
Cobalt-60	0.732	0.815	A		-10.2	0.571 - 1.060	0.024	A
Manganese-54	1.313	1.37	A		-4.2	0.96 - 1.78	0.045	A
Plutonium-238	0.0700	0.0761	A		-8.0	0.0533 - 0.0989	0.0080	A
Plutonium-239/240	0.0531	0.0468	A		13.5	0.0328 - 0.0608	0.0066	A
Strontium-90	0.463	0.498	A		-7.0	0.349 - 0.647	0.021	A
Uranium-234	0.0833	0.093	A		-10.4	0.065 - 0.121	0.0093	A
Uranium-238	0.115	0.096	A		19.8	0.067 - 0.125	0.012	A
Zinc-65	0.961	1.06	A		-9.3	0.74 - 1.38	0.054	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (TELE01) Teledyne Brown Engineering - Environmental Services
 2508 Quality Lane
 Knoxville, TN 37931-6819

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	NR	1.58				1.11 - 2.05		
Cobalt-57	NR	1.16				0.81 - 1.51		
Cobalt-60	NR	0.815				0.571 - 1.060		
Manganese-54	NR	1.37				0.96 - 1.78		
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	.0966	0.093	A		3.9	0.065 - 0.121	.0167	W
Uranium-238	.0852	0.096	A		-11.3	0.067 - 0.125	.0155	W
Zinc-65	NR	1.06				0.74 - 1.38		

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (TELE02) ATI Environmental, Inc., Midwest Lab
 700 Landwehr Road
 Northbrook, IL 60062-

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	0.002		A			False Positive Test	0.018	
Cesium-137	1.57	1.58	A		-0.6	1.11 - 2.05	0.08	A
Cobalt-57	1.07	1.16	A		-7.8	0.81 - 1.51	0.04	A
Cobalt-60	0.77	0.815	A		-5.5	0.571 - 1.060	0.05	A
Manganese-54	1.40	1.37	A		2.2	0.96 - 1.78	0.07	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.08	1.06	A		1.9	0.74 - 1.38	0.10	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY
 601 SCARBORO RD
 OAK RIDGE, TN 37830-

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	-0.0003		A			False Positive Test	.074	
Cesium-137	1.035	1.58	N		-34.5	1.11 - 2.05	.175	W
Cobalt-57	.813	1.16	W		-29.9	0.81 - 1.51	.110	A
Cobalt-60	.593	0.815	W		-27.2	0.571 - 1.060	.132	W
Manganese-54	.894	1.37	N		-34.7	0.96 - 1.78	.347	N
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	.642	0.498	W		28.9	0.349 - 0.647	.032	A
Uranium-234	.093	0.093	A		0.0	0.065 - 0.121	.021	W
Uranium-238	.104	0.096	A		8.3	0.067 - 0.125	0.020	W
Zinc-65	.827	1.06	W		-22.0	0.74 - 1.38	.379	N

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (URSL01) UNLV Radioanalytical Services Laboratory
 Campus Mail Stop 453037
 Las Vegas, NV 89154-3037

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-2.92E-02		A			False Positive Test	1.22E-01	
Cesium-134	3.03E-02		A			False Positive Test	2.27E-01	
Cesium-137	1.32E+00	1.58	A		-16.5	1.11 - 2.05	5.28E-02	A
Cobalt-57	1.02E+00	1.16	A		-12.1	0.81 - 1.51	6.58E-02	A
Cobalt-60	6.65E-01	0.815	A		-18.4	0.571 - 1.060	4.20E-02	A
Manganese-54	1.21E+00	1.37	A		-11.7	0.96 - 1.78	4.50E-02	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	9.24E-01	1.06	A		-12.8	0.74 - 1.38	8.50E-02	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH
 1638 Roseytown Road
 Greensburg, PA 15601

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.004		A			False Positive Test	0.006	
Cesium-134	-0.0271		A			False Positive Test	0.0243	
Cesium-137	1.592	1.58	A		0.8	1.11 - 2.05	0.1156	A
Cobalt-57	1.214	1.16	A		4.7	0.81 - 1.51	0.0856	A
Cobalt-60	0.8029	0.815	A		-1.5	0.571 - 1.060	0.0664	A
Manganese-54	1.375	1.37	A		0.4	0.96 - 1.78	0.1148	A
Plutonium-238	0.096	0.0761	W		26.2	0.0533 - 0.0989	0.022	W
Plutonium-239/240	0.057	0.0468	W		21.8	0.0328 - 0.0608	0.015	W
Strontium-90	0.326	0.498	N		-34.5	0.349 - 0.647	0.058	W
Uranium-234	0.093	0.093	A		0.0	0.065 - 0.121	0.019	W
Uranium-238	0.098	0.096	A		2.1	0.067 - 0.125	0.02	W
Zinc-65	1.138	1.06	A		7.4	0.74 - 1.38	0.1459	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (WIPH01) WI, DPH, Radiation Protection Section
 1 West Wilson Street
 Madison, WI 53701

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.002		A			False Positive Test	.052	
Cesium-134	.093		A			False Positive Test	.097	
Cesium-137	1.535	1.58	A		-2.8	1.11 - 2.05	.049	A
Cobalt-57	1.155	1.16	A		-0.4	0.81 - 1.51	.033	A
Cobalt-60	.890	0.815	A		9.2	0.571 - 1.060	.028	A
Manganese-54	1.424	1.37	A		3.9	0.96 - 1.78	.050	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.233	1.06	A		16.3	0.74 - 1.38	.089	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(WIPP01) WIPP Laboratories

1400 University Drive

Carlsbad, NM 88220

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.000385		A			False Positive Test	.000268	
Cesium-134	.00214		A			False Positive Test	.00842	
Cesium-137	1.55	1.58	A		-1.9	1.11 - 2.05	.0537	A
Cobalt-57	1.14	1.16	A		-1.7	0.81 - 1.51	.0350	A
Cobalt-60	.766	0.815	A		-6.0	0.571 - 1.060	.0314	A
Manganese-54	1.32	1.37	A		-3.7	0.96 - 1.78	.0393	A
Plutonium-238	.0715	0.0761	A		-6.0	0.0533 - 0.0989	.00315	A
Plutonium-239/240	.0452	0.0468	A		-3.4	0.0328 - 0.0608	.00245	A
Strontium-90	.383	0.498	W		-23.1	0.349 - 0.647	.0223	A
Uranium-234	.0954	0.093	A		2.6	0.065 - 0.121	.0115	A
Uranium-238	.100	0.096	A		4.2	0.067 - 0.125	.0120	A
Zinc-65	1.06	1.06	A		0.0	0.74 - 1.38	.0487	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (WSHL01) Wisconsin State Laboratory of Hygiene
 2601 Agriculture Drive
 Madison, WI 53718

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.0019		A			False Positive Test	0.0018	
Cesium-134	0.00345		A			False Positive Test	0.0162	
Cesium-137	1.69	1.58	A		7.0	1.11 - 2.05	0.0537	A
Cobalt-57	1.15	1.16	A		-0.9	0.81 - 1.51	0.0317	A
Cobalt-60	0.798	0.815	A		-2.1	0.571 - 1.060	0.0454	A
Manganese-54	1.41	1.37	A		2.9	0.96 - 1.78	0.0614	A
Plutonium-238	0.0595	0.0761	W		-21.8	0.0533 - 0.0989	0.0110	W
Plutonium-239/240	0.0666	0.0468	N		42.3	0.0328 - 0.0608	0.0104	W
Strontium-90	0.1707757	0.498	N		-65.7	0.349 - 0.647	0.25	N
Uranium-234	0.009980	0.093	N		-89.3	0.065 - 0.121	0.000864	A
Uranium-238	0.009922	0.096	N		-89.7	0.067 - 0.125	0.000844	A
Zinc-65	1.07	1.06	A		0.9	0.74 - 1.38	0.0819	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% <RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41

(WSTP99) Cavendish Nuclear Limited

Greson Court

Cumbria, UK CA24 3HZ

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.062	0.0565	A		9.7	0.0396 - 0.0735	0.008	A
Uranium-238	8.49	7.7	A		10.3	5.4 - 10.0	0.84	A
Uranium-Total	8.51	7.8	A		9.1	5.5 - 10.1	0.36	A

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0016		N	(1)		False Positive Test	0.0005	
Cesium-134	-0.007		A			False Positive Test	0.02	
Cesium-137	1.70	1.58	A		7.6	1.11 - 2.05	0.14	A
Cobalt-57	1.09	1.16	A		-6.0	0.81 - 1.51	0.05	A
Cobalt-60	0.74	0.815	A		-9.2	0.571 - 1.060	0.05	A
Manganese-54	14.51	1.37	N		959.1	0.96 - 1.78	0.09	N
Plutonium-238	0.07	0.0761	A		-8.0	0.0533 - 0.0989	0.01	A
Plutonium-239/240	0.035	0.0468	W		-25.2	0.0328 - 0.0608	0.007	W
Strontium-90	0.44	0.498	A		-11.6	0.349 - 0.647	0.08	W
Uranium-234	0.11	0.093	A		18.3	0.065 - 0.121	0.03	W
Uranium-238	0.106	0.096	A		10.4	0.067 - 0.125	0.011	A
Zinc-65	1.12	1.06	A		5.7	0.74 - 1.38	0.07	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (WVDP01) WVDP Environmental Laboratory
 10282 Rock Springs Road
 West Valley, NY 14171

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0565				0.0396 - 0.0735		
Uranium-238	NR	7.7				5.4 - 10.0		
Uranium-Total	NR	7.8				5.5 - 10.1		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	-0.0258		A			False Positive Test	0.0294	
Cesium-137	1.43	1.58	A		-9.5	1.11 - 2.05	0.0688	A
Cobalt-57	1.09	1.16	A		-6.0	0.81 - 1.51	0.0472	A
Cobalt-60	0.739	0.815	A		-9.3	0.571 - 1.060	0.0320	A
Manganese-54	1.38	1.37	A		0.7	0.96 - 1.78	0.0671	A
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	1.08	1.06	A		1.9	0.74 - 1.38	0.0955	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

Notes:

(1) = False Positive

(11) = False Positive Test, Result Not Reported

(29) = Statistically significant negative value at 3 standard deviations



Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-19-RdF41
 (YPGA01) US Army Yuma Proving Ground / Material Analysis Lab
 301 C. Street
 Yuma, AZ 85365

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.052	0.0565	A		-8.0	0.0396 - 0.0735	0.03	N
Uranium-238	7.25	7.7	A		-5.8	5.4 - 10.0	0.3	A
Uranium-Total	7.3	7.8	A		-6.4	5.5 - 10.1	0.3	A

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR					False Positive Test		
Cesium-134	NR					False Positive Test		
Cesium-137	NR	1.58				1.11 - 2.05		
Cobalt-57	NR	1.16				0.81 - 1.51		
Cobalt-60	NR	0.815				0.571 - 1.060		
Manganese-54	NR	1.37				0.96 - 1.78		
Plutonium-238	NR	0.0761				0.0533 - 0.0989		
Plutonium-239/240	NR	0.0468				0.0328 - 0.0608		
Strontium-90	NR	0.498				0.349 - 0.647		
Uranium-234	NR	0.093				0.065 - 0.121		
Uranium-238	NR	0.096				0.067 - 0.125		
Zinc-65	NR	1.06				0.74 - 1.38		

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

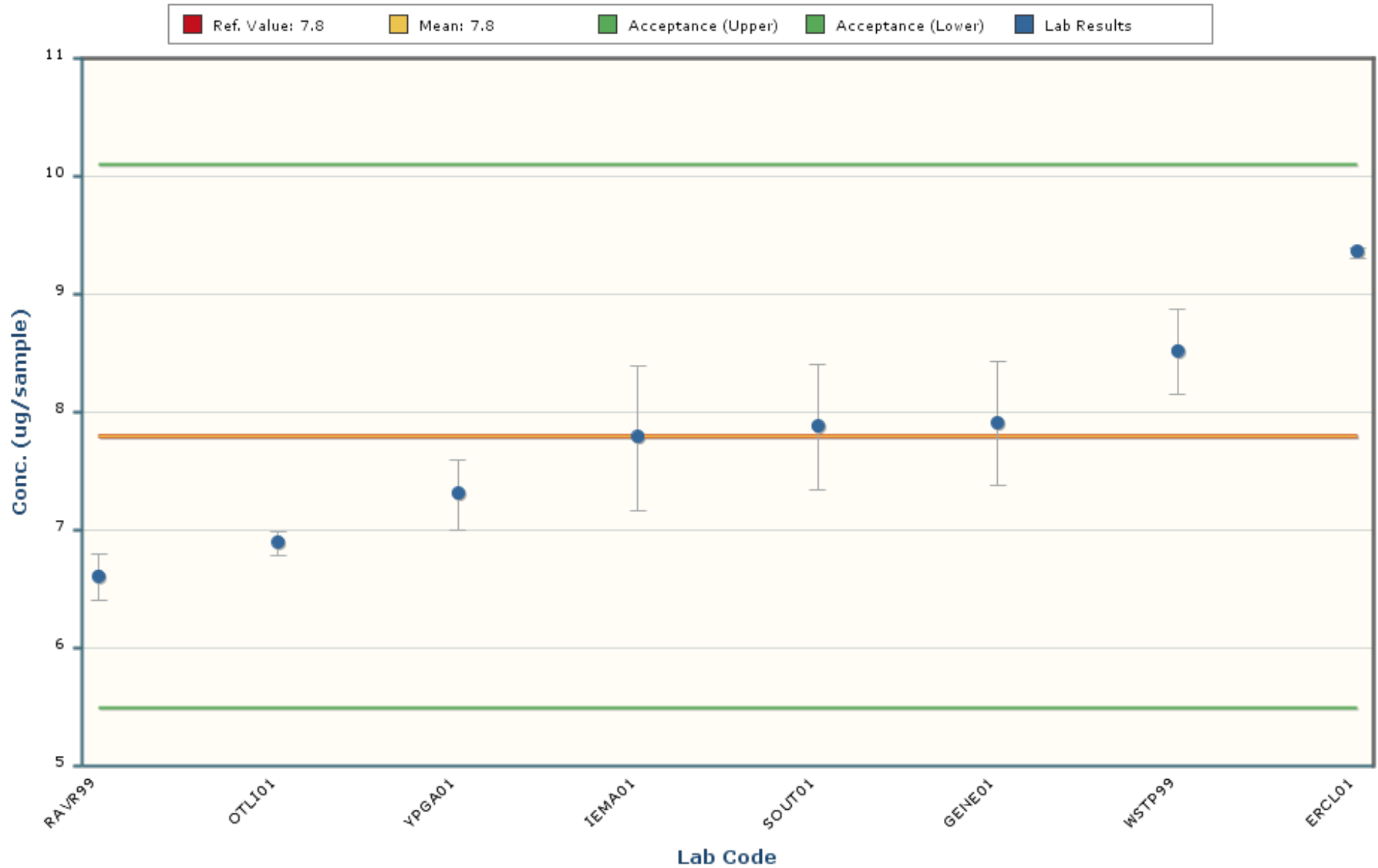
Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
ACCEPTABLE WITH WARNING.....15%<RP<=30%								
NOT ACCEPTABLE.....RP>30%								

Notes:

- (1) = False Positive
- (11) = False Positive Test, Result Not Reported
- (29) = Statistically significant negative value at 3 standard deviations

Uranium-Total

MAPEP-19-RdF41



Notes:

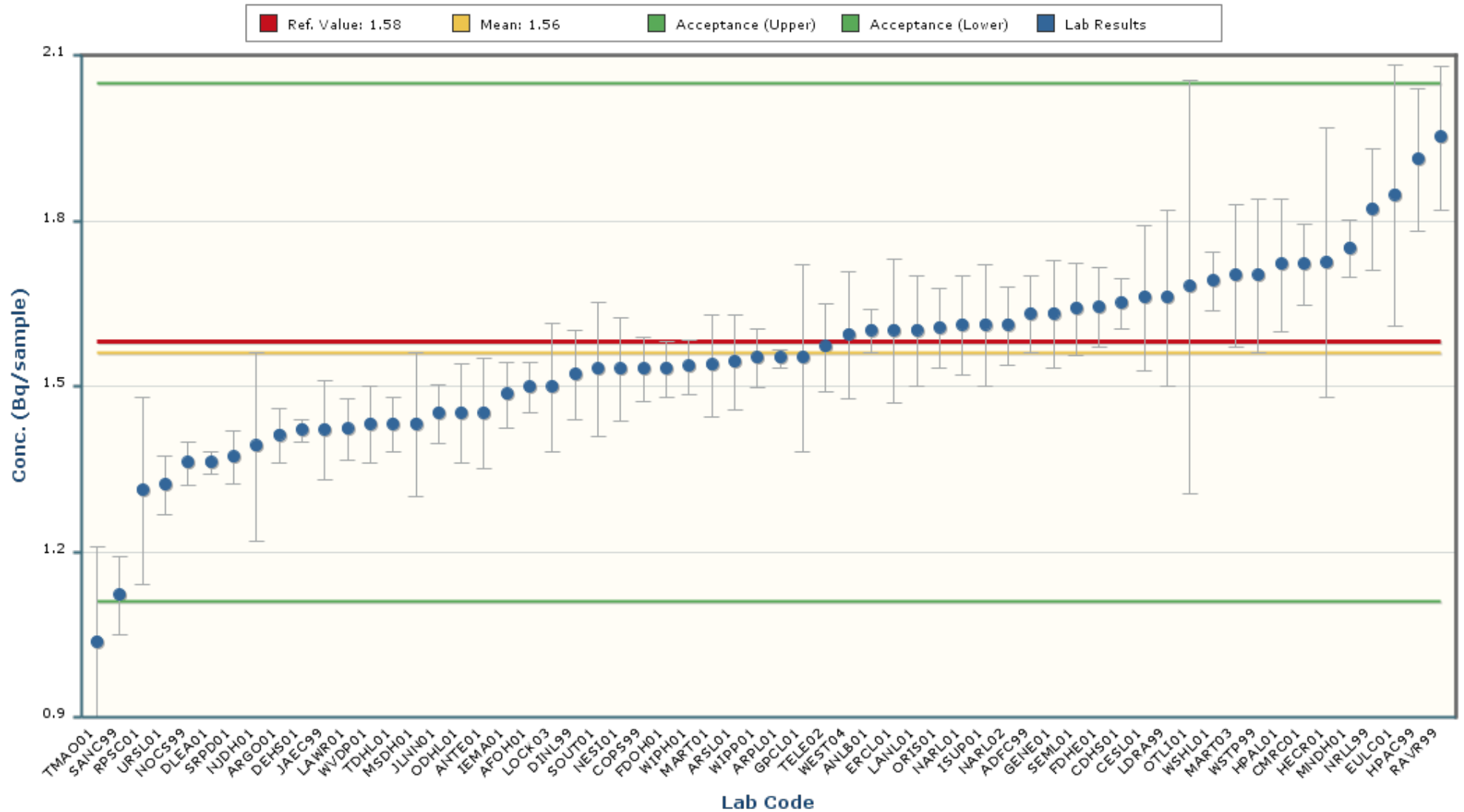
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 3.4 and 12.2 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at \pm one standard deviation.

Cesium-137

MAPEP-19-RdF41



Notes:

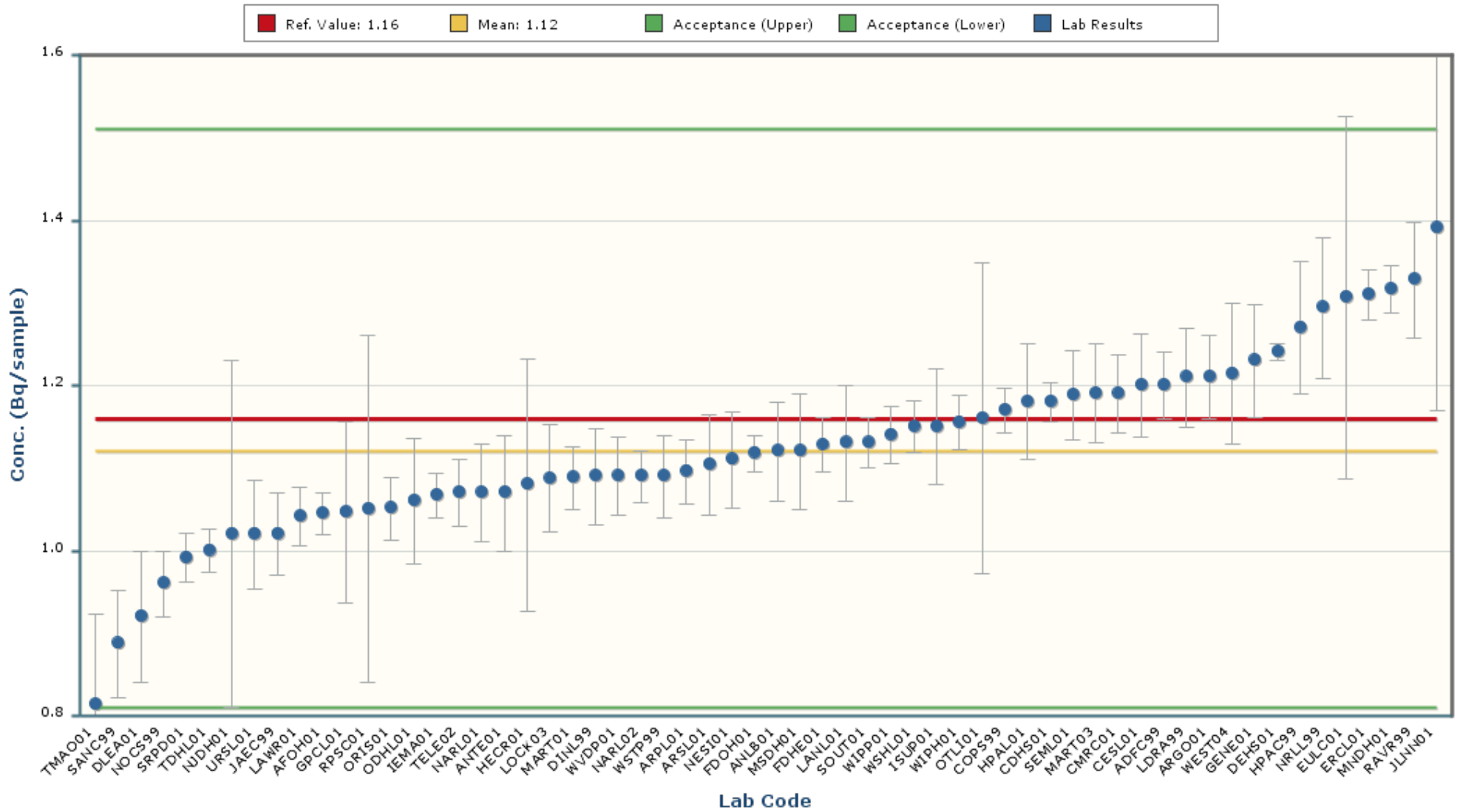
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.81 and 2.31 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at \pm one standard deviation.

Cobalt-57

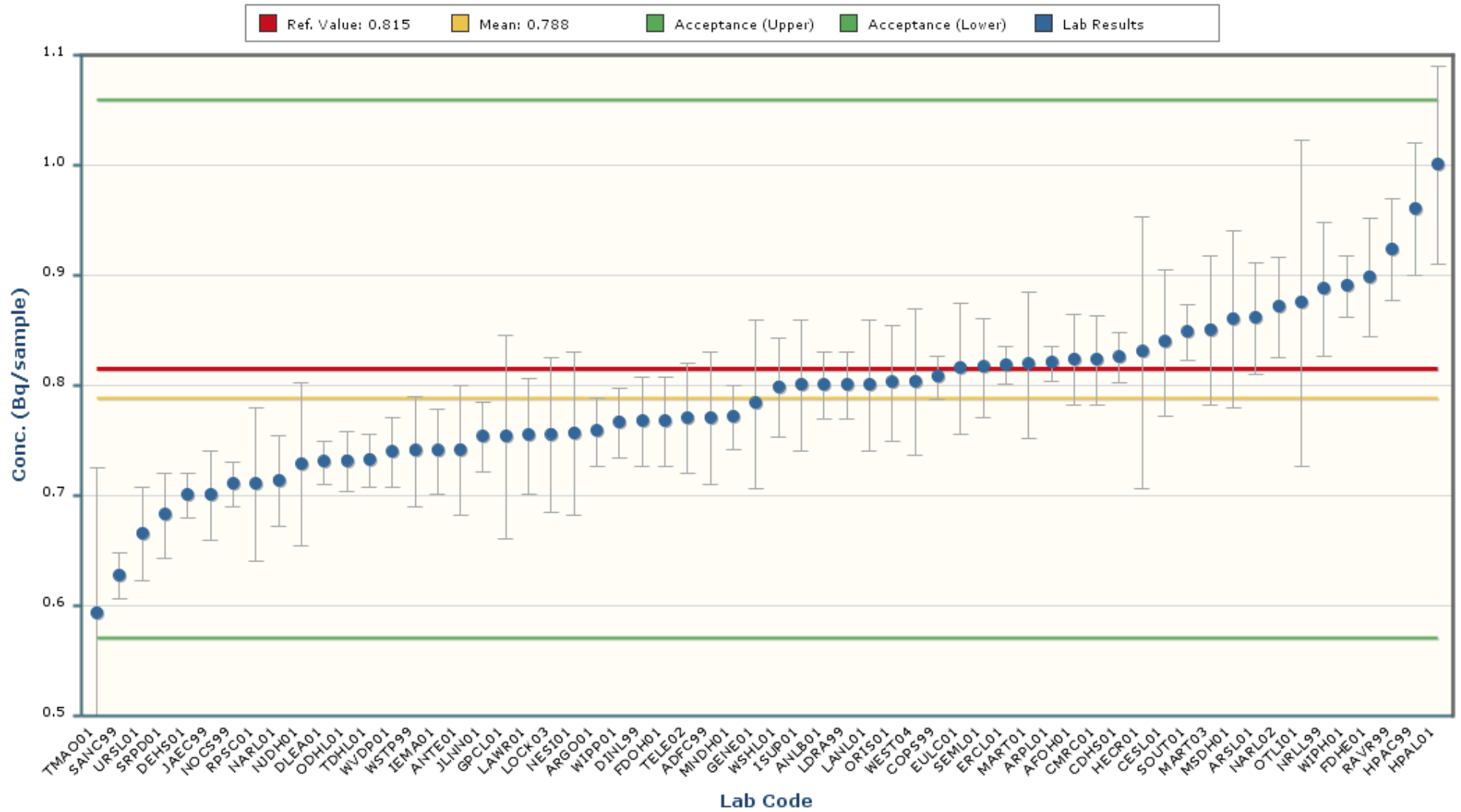
MAPEP-19-RdF41



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.58 and 1.67 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at \pm one standard deviation.

Cobalt-60

MAPEP-19-RdF41



Notes:

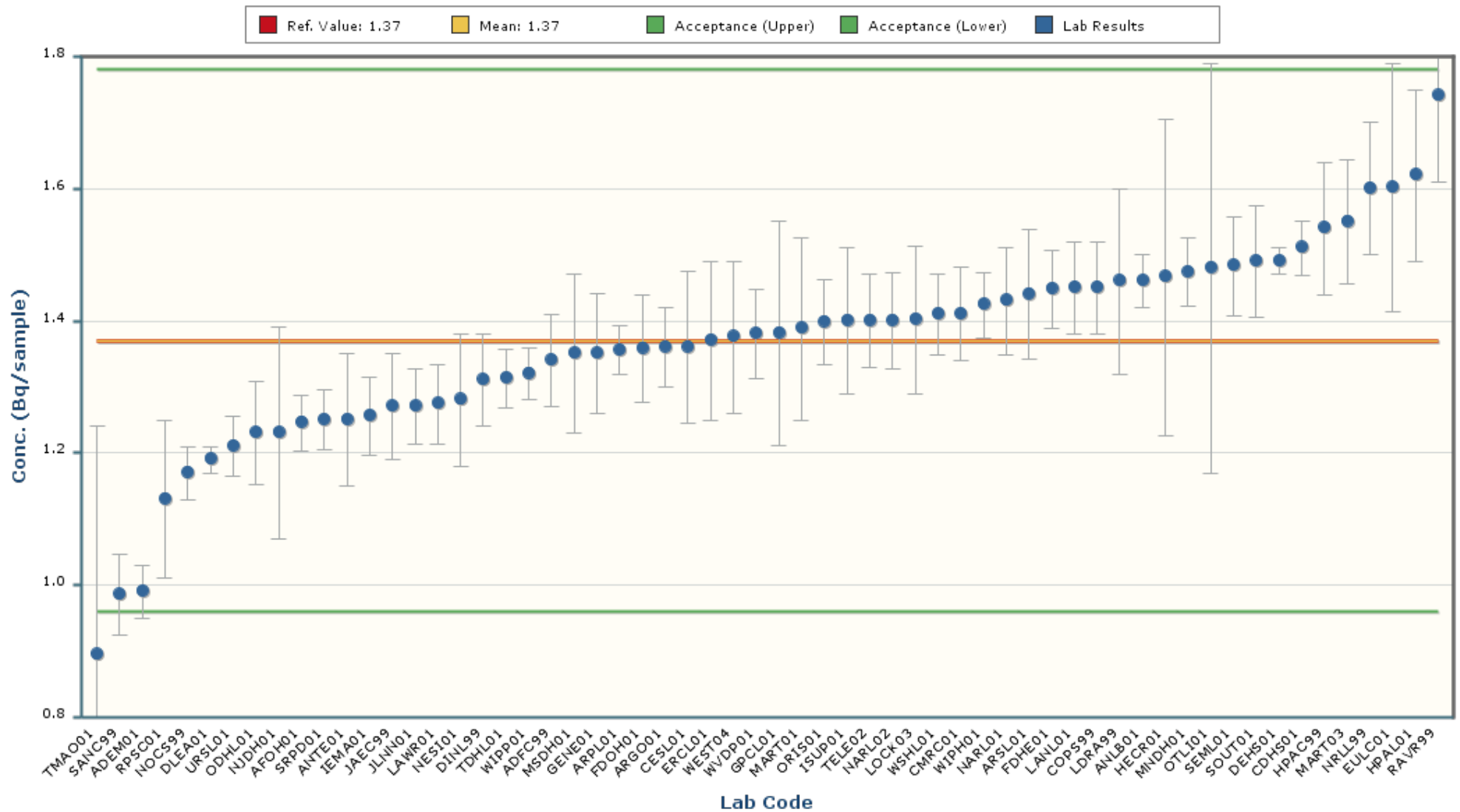
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.416 and 1.160 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at \pm one standard deviation.

Manganese-54

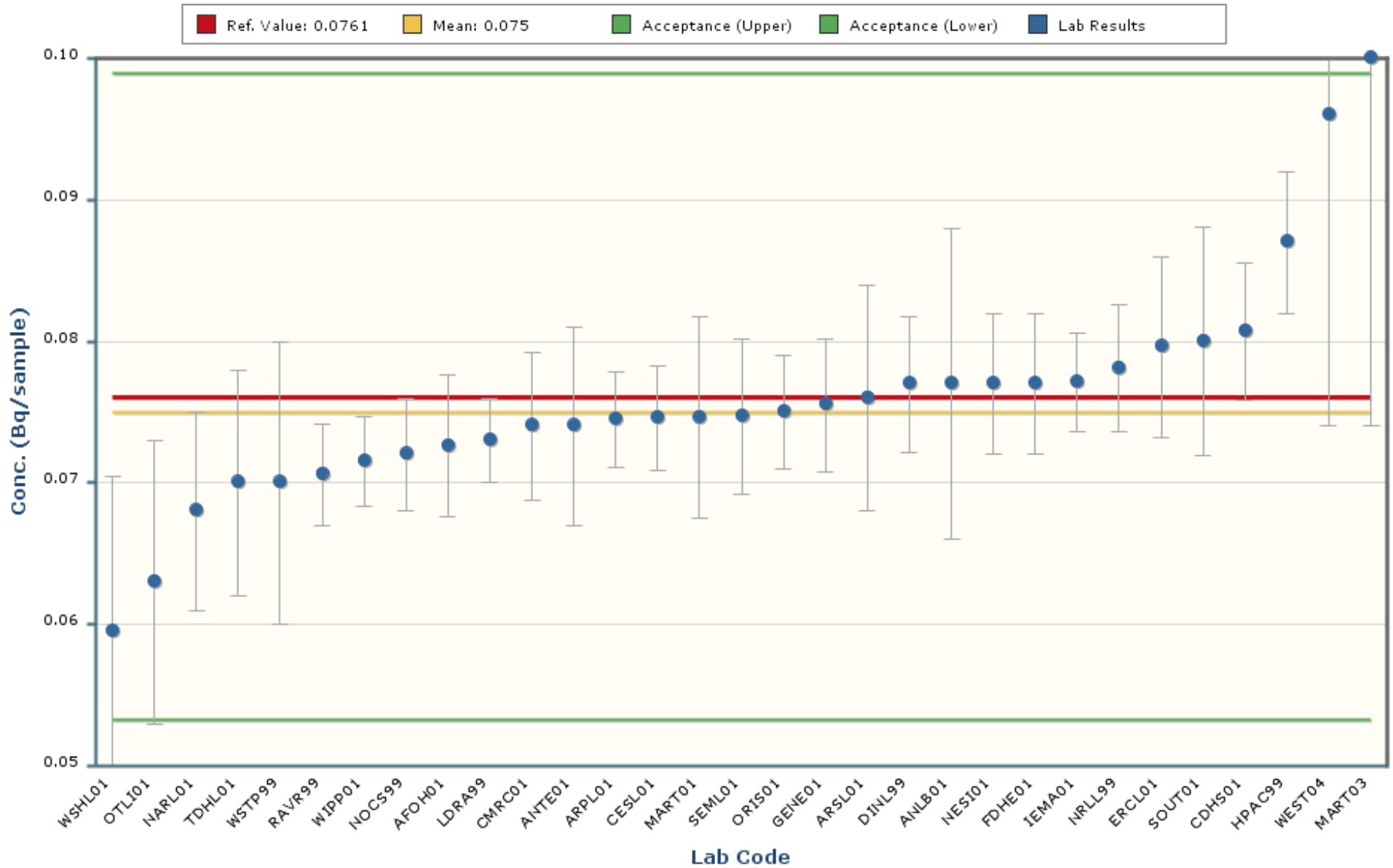
MAPEP-19-RdF41



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.68 and 2.06 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at \pm one standard deviation.

Plutonium-238

MAPEP-19-RdF41



Notes:

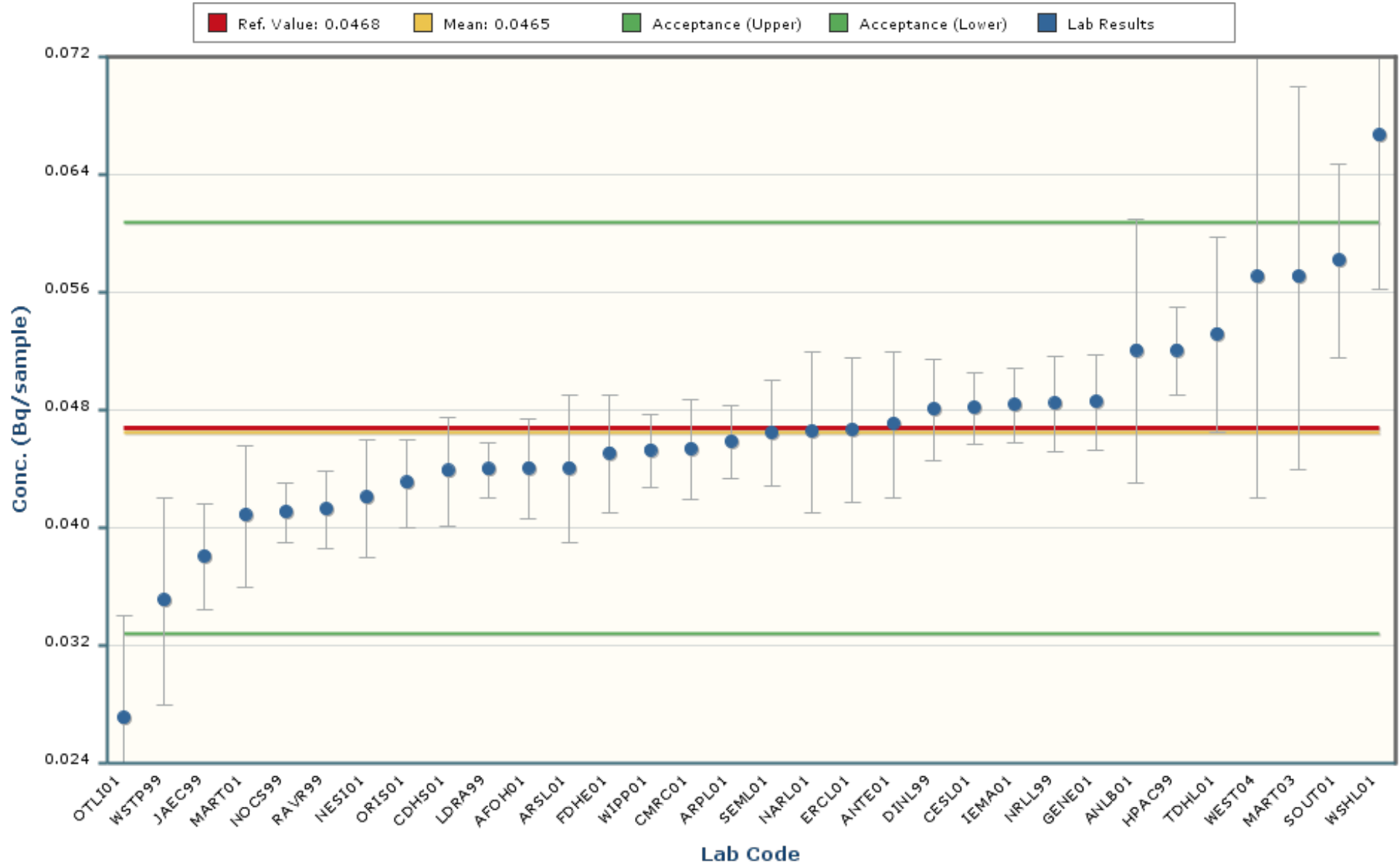
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.0424 and 0.1076 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at ± 1 standard deviation.

Plutonium-239/240

MAPEP-19-RdF41



Notes:

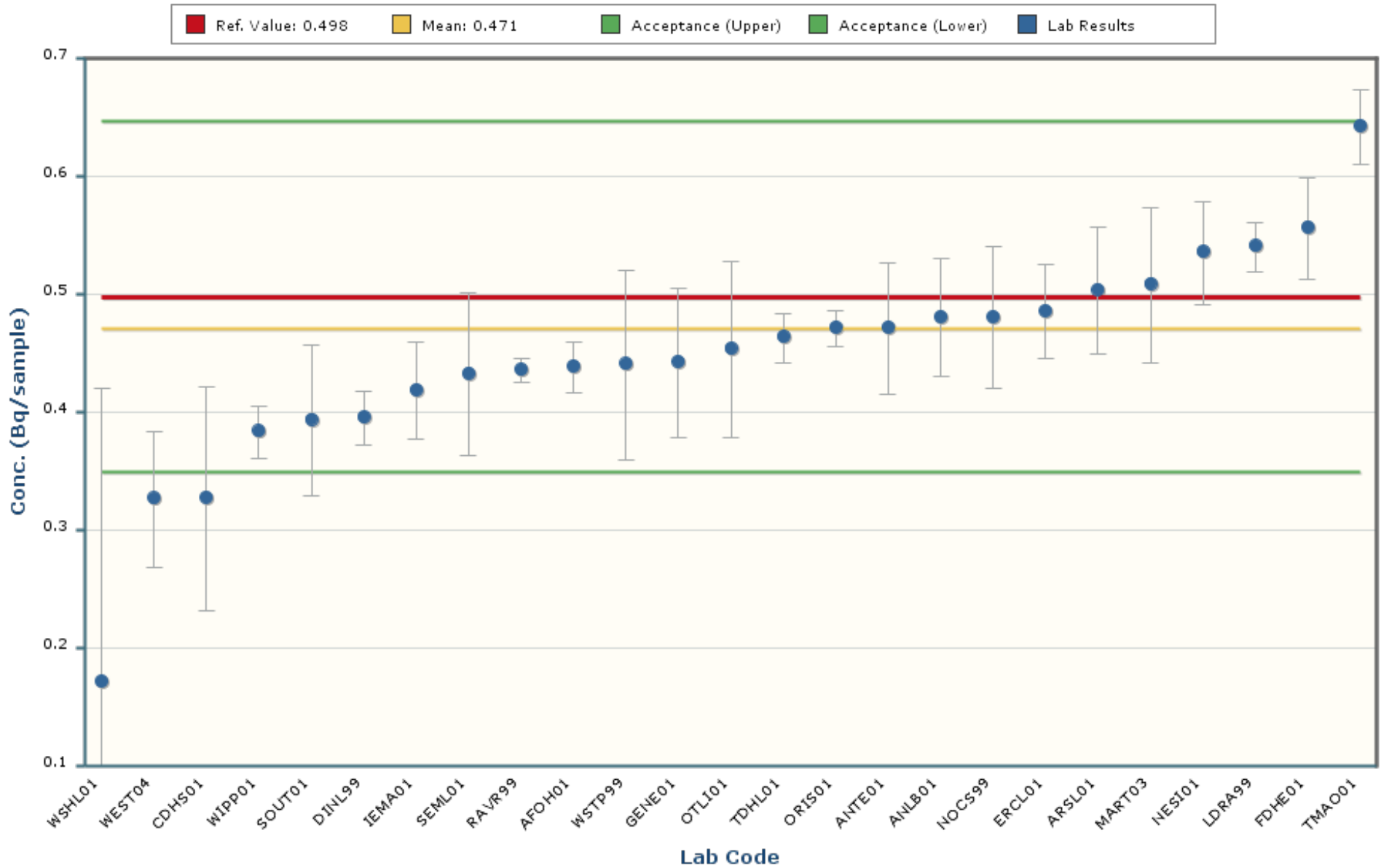
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.0197 and 0.0733 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at ± 1 standard deviation.

Strontium-90

MAPEP-19-RdF41



Notes:

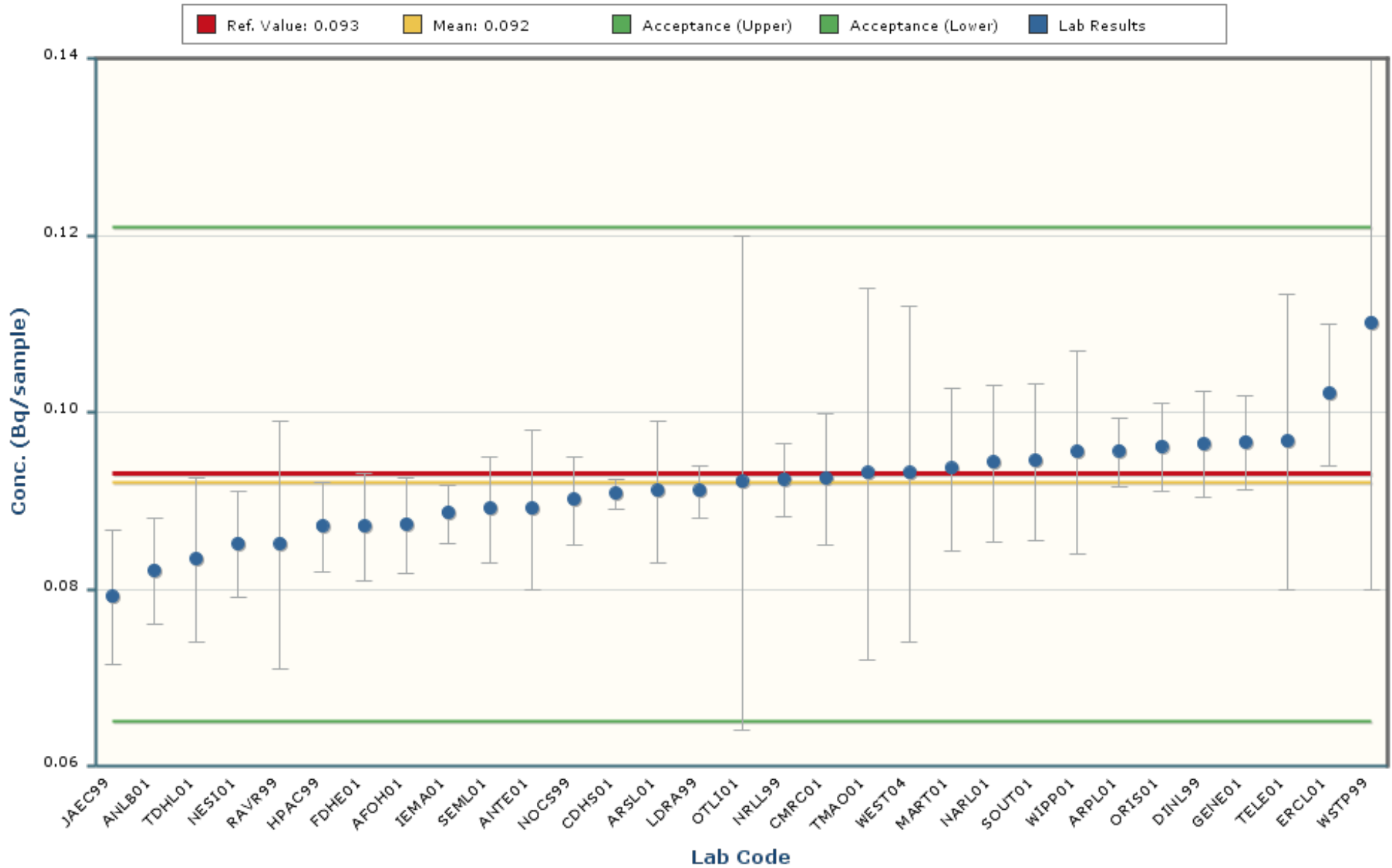
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.169 and 0.773 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at \pm one standard deviation.

Uranium-234

MAPEP-19-RdF41



Notes:

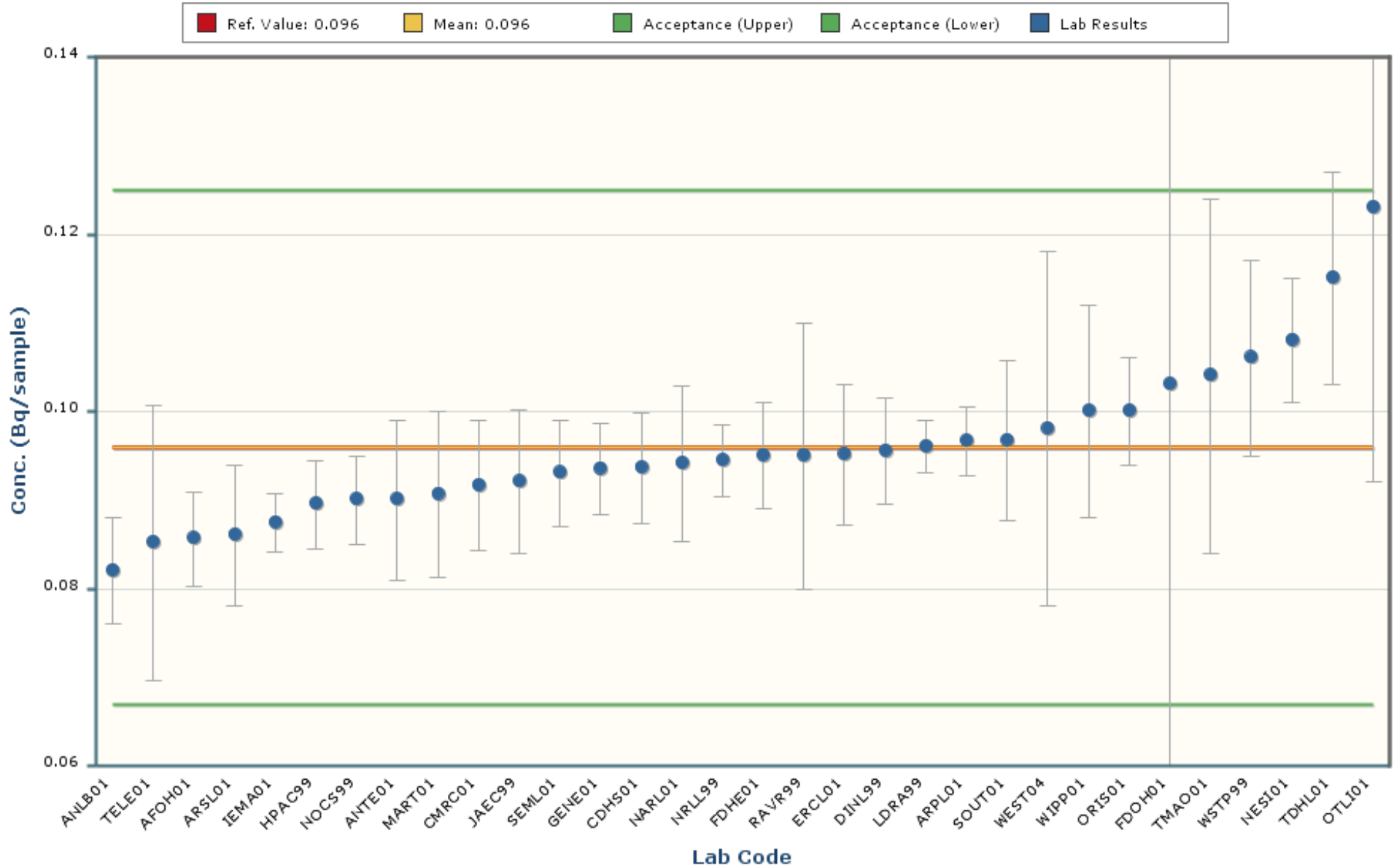
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.061 and 0.122 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at ± 1 standard deviation.

Uranium-238

MAPEP-19-RdF41



Notes:

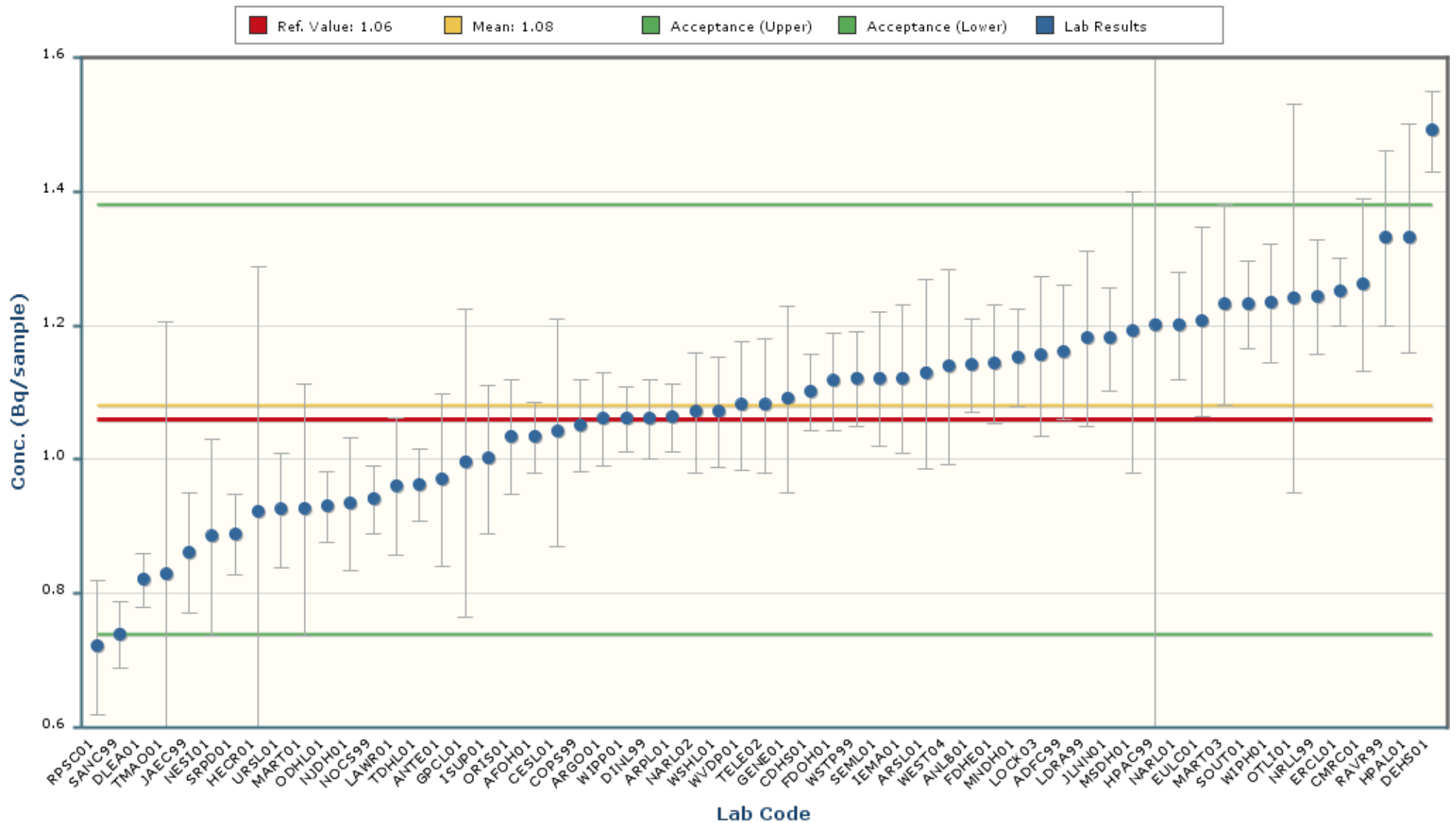
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.053 and 0.139 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at \pm one standard deviation.

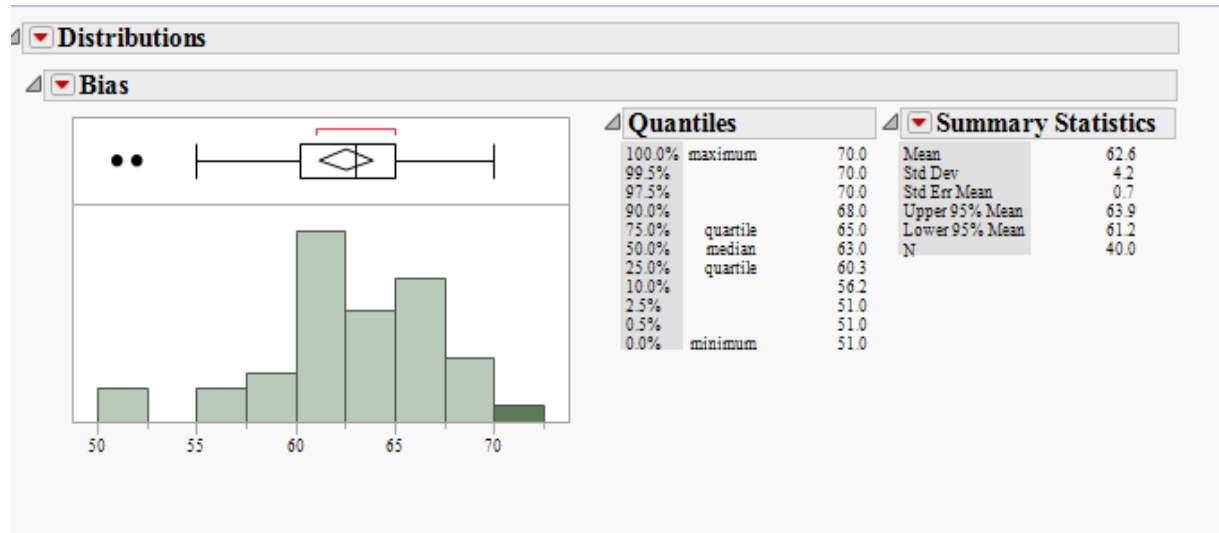
Zinc-65

MAPEP-19-RdF41



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.45 and 1.71 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± 1 standard deviation.

The intent of the distribution graphs contained within this report is to graphically demonstrate to users how % Bias data within the current MAPEP Series appears when examined by matrix, by analyte, by method of sample preparation or by method of detection. Biases greater than +/- 100% have been screened from the data. The box plot of the bias data points and the mean visually illustrate the breadth of the distribution and where potential outliers in the distribution might lie. The statistics for the distribution plot are provided adjacent to the Bias plot. In some cases, N becomes very small and thus developed statistics may not accurately reflect estimates of the population if N were a significantly larger value.

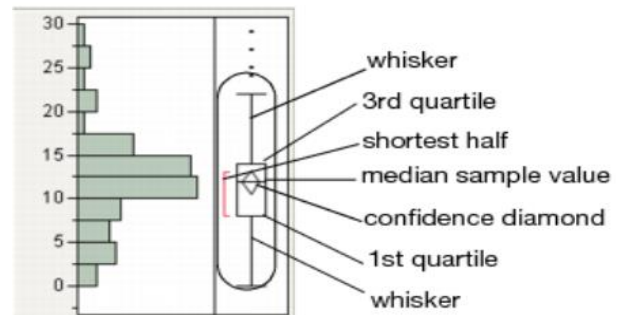


Outlier Box Plot

The BLACK small vertical line inside the small rectangle at the top of the data distribution graph is the median of the population of the bias shown for that analyte in the matrix. The confidence diamond contains the mean and the upper and lower 95% of the mean. If you drew a line through the middle of the diamond, you would have the mean. The top and bottom points of the diamond represent the upper and lower 95% of the mean. The ends of the box represent the 25th and 75th quantiles, also expressed as 1st and 3rd quartile. The difference between the 1st and 3rd quartiles is called the interquartile range. Each box has lines that extend from each end, sometimes called whiskers. The whiskers extend from the ends of the box to the outermost data point that falls within the distances computed as follows:

3rd quartile + 1.5*(interquartile range)

1st quartile - 1.5*(interquartile range)

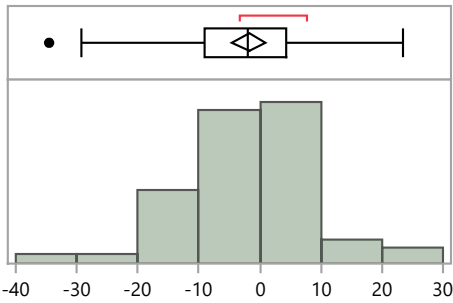


If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

RdF Distribution by Detection Method

Distributions Analyte_Detection=Cesium-137 Gamma Spectrometry

Bias



Quantiles

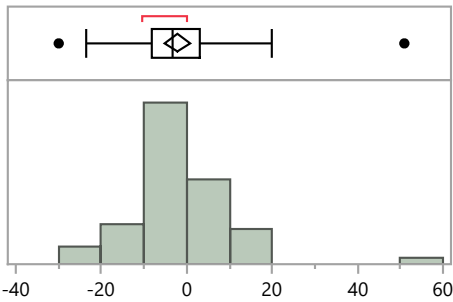
100.0%	maximum	23.4
99.5%		23.4
97.5%		22.1
90.0%		9.1
75.0%	quartile	4.3
50.0%	median	-1.9
25.0%	quartile	-9.2
10.0%		-13.8
2.5%		-31.7
0.5%		-34.5
0.0%	minimum	-34.5

Summary Statistics

Mean	-1.8
Std Dev	10.4
Std Err Mean	1.3
Upper 95% Mean	0.9
Lower 95% Mean	-4.5
N	60.0

Distributions Analyte_Detection=Cobalt-57 Gamma Spectrometry

Bias



Quantiles

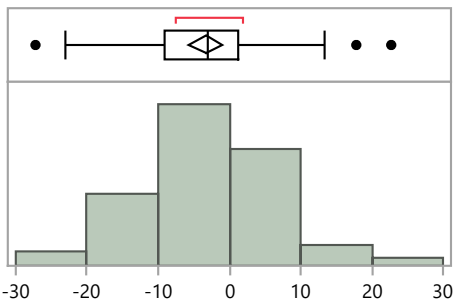
100.0%	maximum	50.9
99.5%		50.9
97.5%		33.8
90.0%		12.5
75.0%	quartile	3.0
50.0%	median	-3.4
25.0%	quartile	-8.3
10.0%		-13.5
2.5%		-26.4
0.5%		-29.9
0.0%	minimum	-29.9

Summary Statistics

Mean	-2.2
Std Dev	11.6
Std Err Mean	1.5
Upper 95% Mean	0.8
Lower 95% Mean	-5.2
N	61.0

Distributions Analyte_Detection=Cobalt-60 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	22.7
99.5%		22.7
97.5%		20.1
90.0%		8.7
75.0%	quartile	1.2
50.0%	median	-3.0
25.0%	quartile	-9.2
10.0%		-14.0
2.5%		-25.0
0.5%		-27.2
0.0%	minimum	-27.2

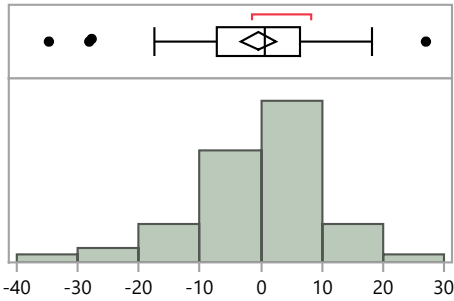
Summary Statistics

Mean	-3.3
Std Dev	9.1
Std Err Mean	1.2
Upper 95% Mean	-1.0
Lower 95% Mean	-5.7
N	60.0

RdF Distribution by Detection Method

Distributions Analyte_Detection=Manganese-54 Gamma Spectrometry

Bias



Quantiles

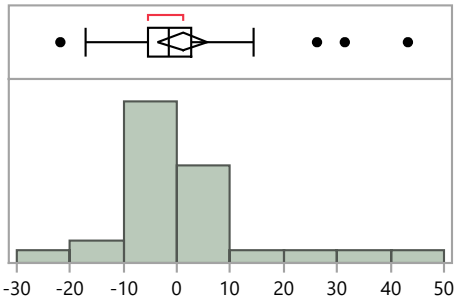
100.0%	maximum	27.0
99.5%		27.0
97.5%		22.4
90.0%		12.2
75.0%	quartile	6.4
50.0%	median	0.8
25.0%	quartile	-7.2
10.0%		-13.0
2.5%		-31.2
0.5%		-34.7
0.0%	minimum	-34.7

Summary Statistics

Mean	-0.4
Std Dev	11.0
Std Err Mean	1.4
Upper 95% Mean	2.4
Lower 95% Mean	-3.3
N	60.0

Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

Bias



Quantiles

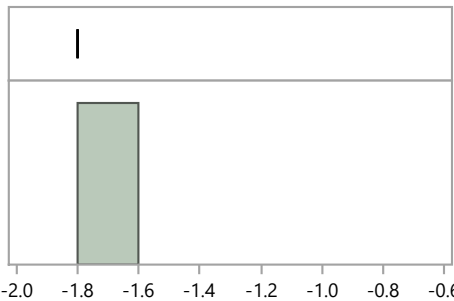
100.0%	maximum	43.2
99.5%		43.2
97.5%		43.2
90.0%		23.8
75.0%	quartile	2.6
50.0%	median	-1.4
25.0%	quartile	-5.4
10.0%		-10.1
2.5%		-21.8
0.5%		-21.8
0.0%	minimum	-21.8

Summary Statistics

Mean	1.1
Std Dev	12.9
Std Err Mean	2.3
Upper 95% Mean	5.8
Lower 95% Mean	-3.7
N	31.0

Distributions Analyte_Detection=Plutonium-238 Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	-1.8
99.5%		-1.8
97.5%		-1.8
90.0%		-1.8
75.0%	quartile	-1.8
50.0%	median	-1.8
25.0%	quartile	-1.8
10.0%		-1.8
2.5%		-1.8
0.5%		-1.8
0.0%	minimum	-1.8

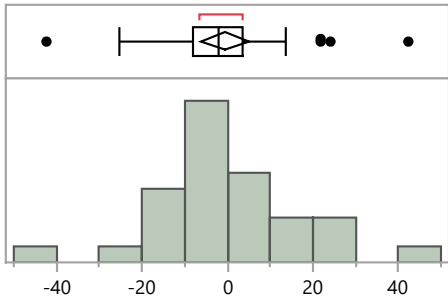
Summary Statistics

Mean	-1.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF Distribution by Detection Method

Distributions Analyte_Detection=Plutonium-239/240 Alpha Spectrometry

Bias



Quantiles

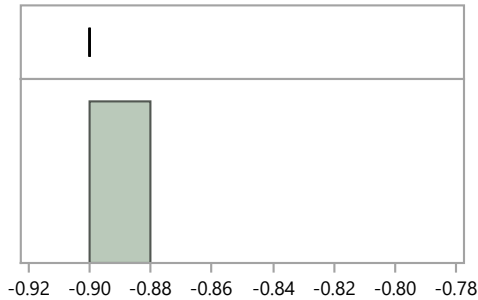
100.0%	maximum	42.3
99.5%		42.3
97.5%		42.3
90.0%		21.8
75.0%	quartile	3.6
50.0%	median	-2.1
25.0%	quartile	-8.1
10.0%		-17.6
2.5%		-42.3
0.5%		-42.3
0.0%	minimum	-42.3

Summary Statistics

Mean	-0.6
Std Dev	15.7
Std Err Mean	2.8
Upper 95% Mean	5.2
Lower 95% Mean	-6.3
N	31.0

Distributions Analyte_Detection=Plutonium-239/240 Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

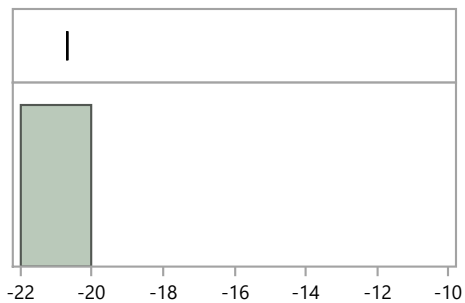
100.0%	maximum	-0.9
99.5%		-0.9
97.5%		-0.9
90.0%		-0.9
75.0%	quartile	-0.9
50.0%	median	-0.9
25.0%	quartile	-0.9
10.0%		-0.9
2.5%		-0.9
0.5%		-0.9
0.0%	minimum	-0.9

Summary Statistics

Mean	-0.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Strontium-90 Alpha Spectrometry

Bias



Quantiles

100.0%	maximum	-20.7
99.5%		-20.7
97.5%		-20.7
90.0%		-20.7
75.0%	quartile	-20.7
50.0%	median	-20.7
25.0%	quartile	-20.7
10.0%		-20.7
2.5%		-20.7
0.5%		-20.7
0.0%	minimum	-20.7

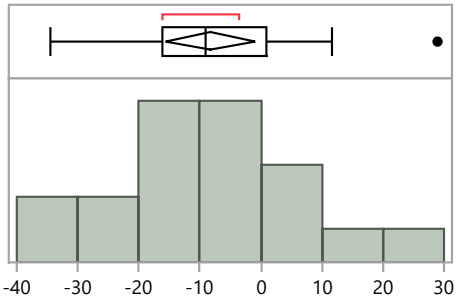
Summary Statistics

Mean	-20.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF Distribution by Detection Method

Distributions Analyte_Detection=Strontium-90 Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

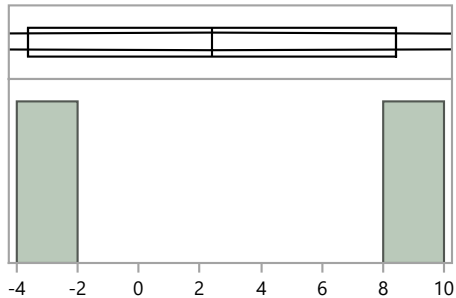
100.0%	maximum	28.9
99.5%		28.9
97.5%		28.9
90.0%		11.6
75.0%	quartile	1.0
50.0%	median	-9.0
25.0%	quartile	-16.1
10.0%		-34.4
2.5%		-34.5
0.5%		-34.5
0.0%	minimum	-34.5

Summary Statistics

Mean	-8.3
Std Dev	15.2
Std Err Mean	3.5
Upper 95% Mean	-1.0
Lower 95% Mean	-15.6
N	19.0

Distributions Analyte_Detection=Strontium-90 Beta Counting - liquid scintillation counter

Bias



Quantiles

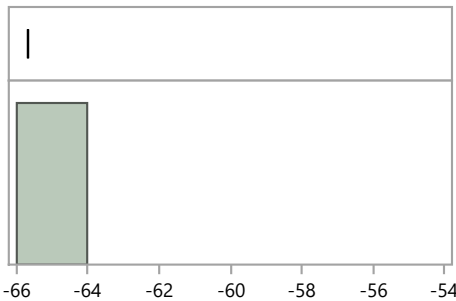
100.0%	maximum	8.4
99.5%		8.4
97.5%		8.4
90.0%		8.4
75.0%	quartile	8.4
50.0%	median	2.4
25.0%	quartile	-3.6
10.0%		-3.6
2.5%		-3.6
0.5%		-3.6
0.0%	minimum	-3.6

Summary Statistics

Mean	2.4
Std Dev	8.5
Std Err Mean	6.0
Upper 95% Mean	78.6
Lower 95% Mean	-73.8
N	2.0

Distributions Analyte_Detection=Strontium-90 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	-65.7
99.5%		-65.7
97.5%		-65.7
90.0%		-65.7
75.0%	quartile	-65.7
50.0%	median	-65.7
25.0%	quartile	-65.7
10.0%		-65.7
2.5%		-65.7
0.5%		-65.7
0.0%	minimum	-65.7

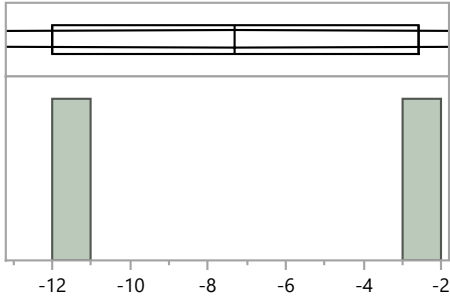
Summary Statistics

Mean	-65.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF Distribution by Detection Method

Distributions Analyte_Detection=Strontium-90 Gross Alpha/Beta - 2 pi gas flow proportional counter

Bias



Quantiles

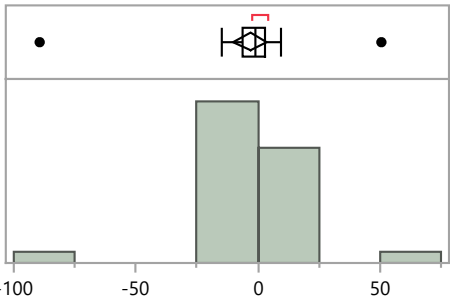
100.0%	maximum	-2.6
99.5%		-2.6
97.5%		-2.6
90.0%		-2.6
75.0%	quartile	-2.6
50.0%	median	-7.3
25.0%	quartile	-12.0
10.0%		-12.0
2.5%		-12.0
0.5%		-12.0
0.0%	minimum	-12.0

Summary Statistics

Mean	-7.3
Std Dev	6.6
Std Err Mean	4.7
Upper 95% Mean	52.4
Lower 95% Mean	-67.0
N	2.0

Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

Bias



Quantiles

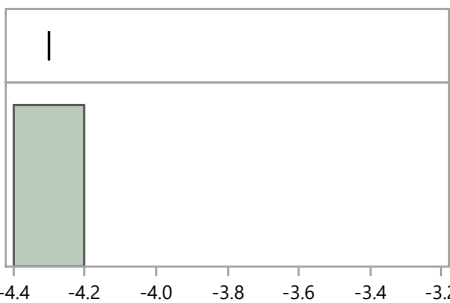
100.0%	maximum	50.5
99.5%		50.5
97.5%		50.5
90.0%		3.9
75.0%	quartile	2.6
50.0%	median	-1.1
25.0%	quartile	-6.5
10.0%		-11.5
2.5%		-89.3
0.5%		-89.3
0.0%	minimum	-89.3

Summary Statistics

Mean	-3.3
Std Dev	19.3
Std Err Mean	3.5
Upper 95% Mean	3.8
Lower 95% Mean	-10.4
N	31.0

Distributions Analyte_Detection=Uranium-234 Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	-4.3
99.5%		-4.3
97.5%		-4.3
90.0%		-4.3
75.0%	quartile	-4.3
50.0%	median	-4.3
25.0%	quartile	-4.3
10.0%		-4.3
2.5%		-4.3
0.5%		-4.3
0.0%	minimum	-4.3

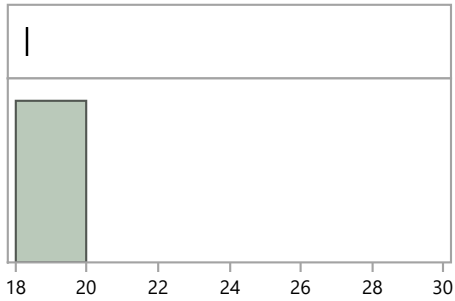
Summary Statistics

Mean	-4.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF Distribution by Detection Method

Distributions Analyte_Detection=Uranium-234 Inductively Coupled Plasma Mass Spectrometry

Bias



Quantiles

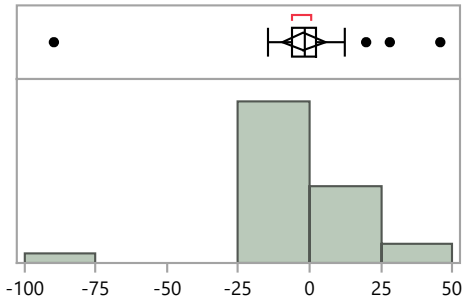
100.0%	maximum	18.3
99.5%		18.3
97.5%		18.3
90.0%		18.3
75.0%	quartile	18.3
50.0%	median	18.3
25.0%	quartile	18.3
10.0%		18.3
2.5%		18.3
0.5%		18.3
0.0%	minimum	18.3

Summary Statistics

Mean	18.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

Bias



Quantiles

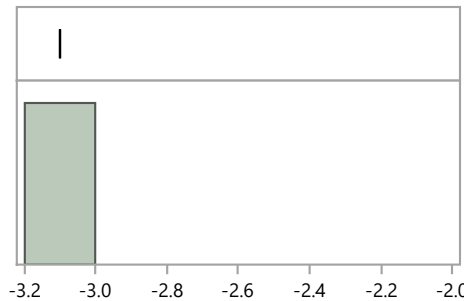
100.0%	maximum	45.8
99.5%		45.8
97.5%		45.8
90.0%		18.3
75.0%	quartile	2.1
50.0%	median	-1.7
25.0%	quartile	-6.3
10.0%		-11.2
2.5%		-89.7
0.5%		-89.7
0.0%	minimum	-89.7

Summary Statistics

Mean	-2.1
Std Dev	20.3
Std Err Mean	3.6
Upper 95% Mean	5.3
Lower 95% Mean	-9.5
N	31.0

Distributions Analyte_Detection=Uranium-238 Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	-3.1
99.5%		-3.1
97.5%		-3.1
90.0%		-3.1
75.0%	quartile	-3.1
50.0%	median	-3.1
25.0%	quartile	-3.1
10.0%		-3.1
2.5%		-3.1
0.5%		-3.1
0.0%	minimum	-3.1

Summary Statistics

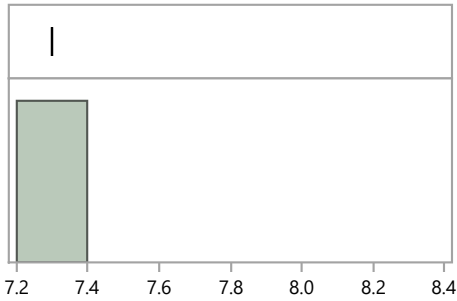
Mean	-3.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF41 Distribution by Detection Method

RdF Distribution by Detection Method

Distributions Analyte_Detection=Uranium-238 Gamma Spectrometry

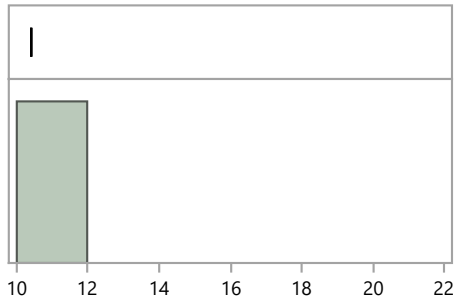
Bias



Quantiles			Summary Statistics	
100.0%	maximum	7.3	Mean	7.3
99.5%		7.3	Std Dev	.
97.5%		7.3	Std Err Mean	.
90.0%		7.3	Upper 95% Mean	.
75.0%	quartile	7.3	Lower 95% Mean	.
50.0%	median	7.3	N	1.0
25.0%	quartile	7.3		
10.0%		7.3		
2.5%		7.3		
0.5%		7.3		
0.0%	minimum	7.3		

Distributions Analyte_Detection=Uranium-238 Inductively Coupled Plasma Mass Spectrometry

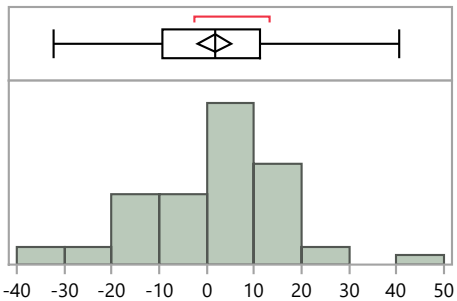
Bias



Quantiles			Summary Statistics	
100.0%	maximum	10.4	Mean	10.4
99.5%		10.4	Std Dev	.
97.5%		10.4	Std Err Mean	.
90.0%		10.4	Upper 95% Mean	.
75.0%	quartile	10.4	Lower 95% Mean	.
50.0%	median	10.4	N	1.0
25.0%	quartile	10.4		
10.0%		10.4		
2.5%		10.4		
0.5%		10.4		
0.0%	minimum	10.4		

Distributions Analyte_Detection=Zinc-65 Gamma Spectrometry

Bias



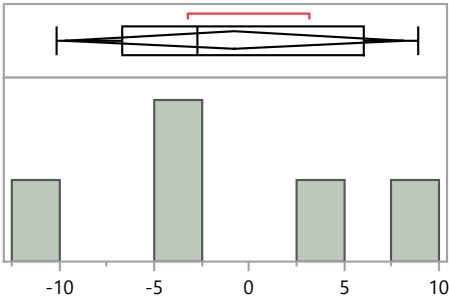
Quantiles			Summary Statistics	
100.0%	maximum	40.6	Mean	1.6
99.5%		40.6	Std Dev	14.1
97.5%		33.1	Std Err Mean	1.8
90.0%		17.2	Upper 95% Mean	5.3
75.0%	quartile	11.3	Lower 95% Mean	-2.0
50.0%	median	1.9	N	59.0
25.0%	quartile	-9.3		
10.0%		-16.6		
2.5%		-31.3		
0.5%		-32.1		
0.0%	minimum	-32.1		

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Cesium-137 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

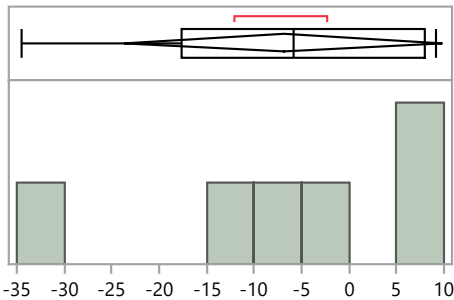
Bias



Quantiles			Summary Statistics	
100.0%	maximum	8.9	Mean	-0.8
99.5%		8.9	Std Dev	7.2
97.5%		8.9	Std Err Mean	3.2
90.0%		8.9	Upper 95% Mean	8.1
75.0%	quartile	6.1	Lower 95% Mean	-9.7
50.0%	median	-2.7	N	5.0
25.0%	quartile	-6.7		
10.0%		-10.1		
2.5%		-10.1		
0.5%		-10.1		
0.0%	minimum	-10.1		

Distributions Analyte_Method=Cesium-137 EPA 901.1, Gamma Emitting, 600/4-80-032

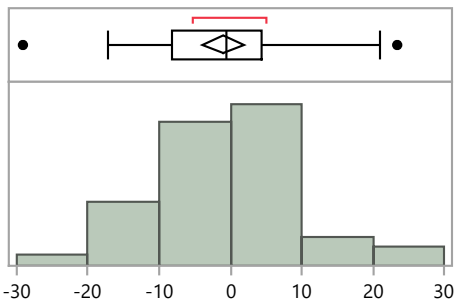
Bias



Quantiles			Summary Statistics	
100.0%	maximum	9.1	Mean	-6.9
99.5%		9.1	Std Dev	16.0
97.5%		9.1	Std Err Mean	6.5
90.0%		9.1	Upper 95% Mean	9.9
75.0%	quartile	8.0	Lower 95% Mean	-23.7
50.0%	median	-5.9	N	6.0
25.0%	quartile	-17.6		
10.0%		-34.5		
2.5%		-34.5		
0.5%		-34.5		
0.0%	minimum	-34.5		

Distributions Analyte_Method=Cesium-137 No preparation - analyzed as received

Bias



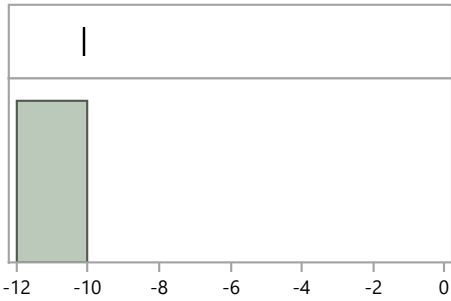
Quantiles			Summary Statistics	
100.0%	maximum	23.4	Mean	-1.1
99.5%		23.4	Std Dev	10.0
97.5%		22.9	Std Err Mean	1.5
90.0%		11.6	Upper 95% Mean	1.9
75.0%	quartile	4.4	Lower 95% Mean	-4.0
50.0%	median	-0.6	N	47.0
25.0%	quartile	-8.2		
10.0%		-13.9		
2.5%		-26.7		
0.5%		-29.1		
0.0%	minimum	-29.1		

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Cesium-137 Other

Bias



Quantiles

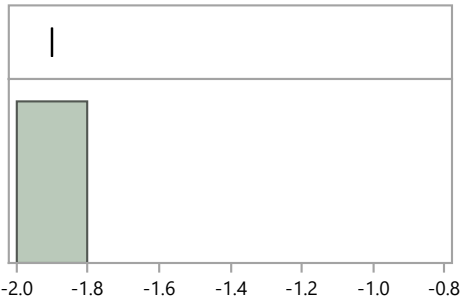
100.0%	maximum	-10.1
99.5%		-10.1
97.5%		-10.1
90.0%		-10.1
75.0%	quartile	-10.1
50.0%	median	-10.1
25.0%	quartile	-10.1
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

Summary Statistics

Mean	-10.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cesium-137 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

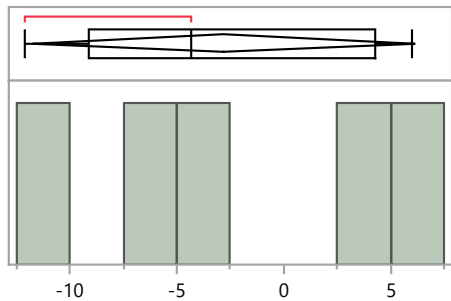
100.0%	maximum	-1.9
99.5%		-1.9
97.5%		-1.9
90.0%		-1.9
75.0%	quartile	-1.9
50.0%	median	-1.9
25.0%	quartile	-1.9
10.0%		-1.9
2.5%		-1.9
0.5%		-1.9
0.0%	minimum	-1.9

Summary Statistics

Mean	-1.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cobalt-57 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

100.0%	maximum	6.0
99.5%		6.0
97.5%		6.0
90.0%		6.0
75.0%	quartile	4.3
50.0%	median	-4.3
25.0%	quartile	-9.2
10.0%		-12.1
2.5%		-12.1
0.5%		-12.1
0.0%	minimum	-12.1

Summary Statistics

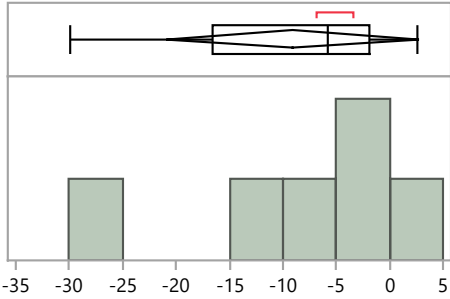
Mean	-2.8
Std Dev	7.2
Std Err Mean	3.2
Upper 95% Mean	6.1
Lower 95% Mean	-11.7
N	5.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Cobalt-57 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

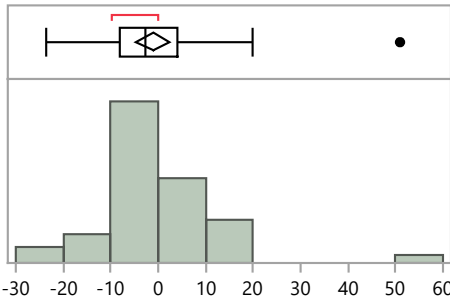
100.0%	maximum	2.6
99.5%		2.6
97.5%		2.6
90.0%		2.6
75.0%	quartile	-1.9
50.0%	median	-5.9
25.0%	quartile	-16.6
10.0%		-29.9
2.5%		-29.9
0.5%		-29.9
0.0%	minimum	-29.9

Summary Statistics

Mean	-9.1
Std Dev	11.3
Std Err Mean	4.6
Upper 95% Mean	2.7
Lower 95% Mean	-20.9
N	6.0

Distributions Analyte_Method=Cobalt-57 No preparation - analyzed as received

Bias



Quantiles

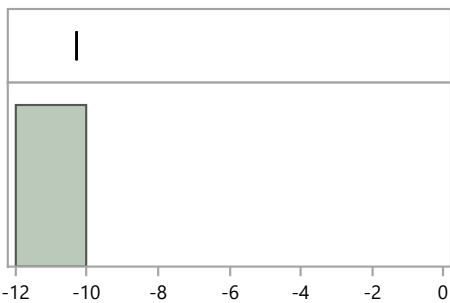
100.0%	maximum	50.9
99.5%		50.9
97.5%		43.9
90.0%		13.0
75.0%	quartile	4.1
50.0%	median	-2.6
25.0%	quartile	-8.0
10.0%		-13.9
2.5%		-22.9
0.5%		-23.5
0.0%	minimum	-23.5

Summary Statistics

Mean	-1.1
Std Dev	12.0
Std Err Mean	1.7
Upper 95% Mean	2.4
Lower 95% Mean	-4.5
N	48.0

Distributions Analyte_Method=Cobalt-57 Other

Bias



Quantiles

100.0%	maximum	-10.3
99.5%		-10.3
97.5%		-10.3
90.0%		-10.3
75.0%	quartile	-10.3
50.0%	median	-10.3
25.0%	quartile	-10.3
10.0%		-10.3
2.5%		-10.3
0.5%		-10.3
0.0%	minimum	-10.3

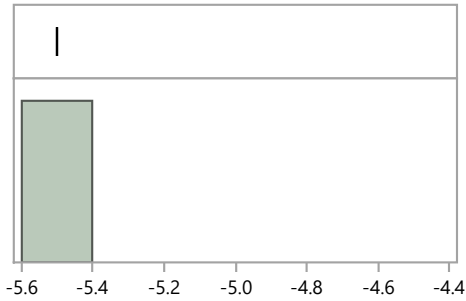
Summary Statistics

Mean	-10.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF Distribution by Prep Method

Distributions Analyte_Method=Cobalt-57 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

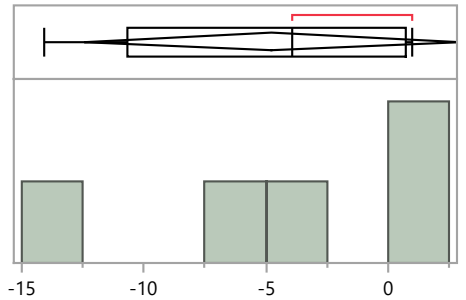
100.0%	maximum	-5.5
99.5%		-5.5
97.5%		-5.5
90.0%		-5.5
75.0%	quartile	-5.5
50.0%	median	-5.5
25.0%	quartile	-5.5
10.0%		-5.5
2.5%		-5.5
0.5%		-5.5
0.0%	minimum	-5.5

Summary Statistics

Mean	-5.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cobalt-60 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

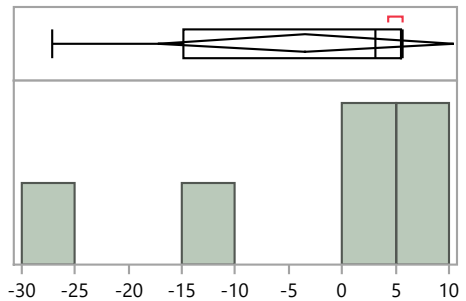
100.0%	maximum	1.0
99.5%		1.0
97.5%		1.0
90.0%		1.0
75.0%	quartile	0.7
50.0%	median	-3.9
25.0%	quartile	-10.7
10.0%		-14.1
2.5%		-14.1
0.5%		-14.1
0.0%	minimum	-14.1

Summary Statistics

Mean	-4.8
Std Dev	6.2
Std Err Mean	2.8
Upper 95% Mean	2.9
Lower 95% Mean	-12.5
N	5.0

Distributions Analyte_Method=Cobalt-60 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

100.0%	maximum	5.6
99.5%		5.6
97.5%		5.6
90.0%		5.6
75.0%	quartile	5.5
50.0%	median	3.1
25.0%	quartile	-14.8
10.0%		-27.2
2.5%		-27.2
0.5%		-27.2
0.0%	minimum	-27.2

Summary Statistics

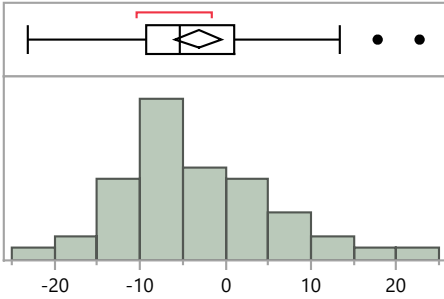
Mean	-3.5
Std Dev	13.2
Std Err Mean	5.4
Upper 95% Mean	10.4
Lower 95% Mean	-17.3
N	6.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Cobalt-60 No preparation - analyzed as received

Bias



Quantiles

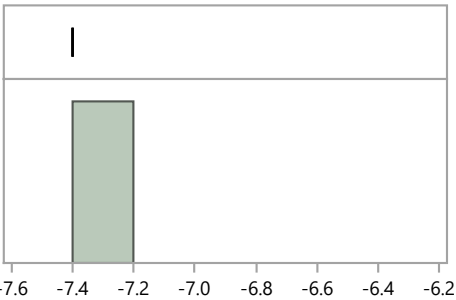
100.0%	maximum	22.7
99.5%		22.7
97.5%		21.7
90.0%		9.4
75.0%	quartile	1.0
50.0%	median	-5.4
25.0%	quartile	-9.2
10.0%		-13.1
2.5%		-22.2
0.5%		-23.1
0.0%	minimum	-23.1

Summary Statistics

Mean	-3.2
Std Dev	9.2
Std Err Mean	1.3
Upper 95% Mean	-0.5
Lower 95% Mean	-5.9
N	47.0

Distributions Analyte_Method=Cobalt-60 Other

Bias



Quantiles

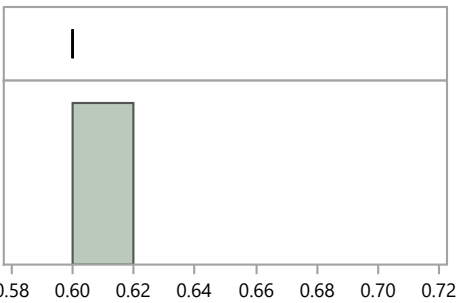
100.0%	maximum	-7.4
99.5%		-7.4
97.5%		-7.4
90.0%		-7.4
75.0%	quartile	-7.4
50.0%	median	-7.4
25.0%	quartile	-7.4
10.0%		-7.4
2.5%		-7.4
0.5%		-7.4
0.0%	minimum	-7.4

Summary Statistics

Mean	-7.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cobalt-60 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	0.6
99.5%		0.6
97.5%		0.6
90.0%		0.6
75.0%	quartile	0.6
50.0%	median	0.6
25.0%	quartile	0.6
10.0%		0.6
2.5%		0.6
0.5%		0.6
0.0%	minimum	0.6

Summary Statistics

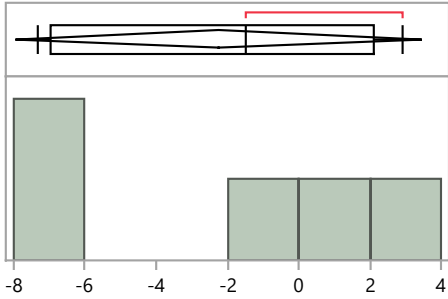
Mean	0.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Manganese-54 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

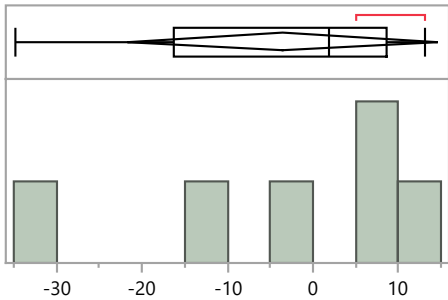
100.0%	maximum	2.9
99.5%		2.9
97.5%		2.9
90.0%		2.9
75.0%	quartile	2.1
50.0%	median	-1.5
25.0%	quartile	-7.0
10.0%		-7.3
2.5%		-7.3
0.5%		-7.3
0.0%	minimum	-7.3

Summary Statistics

Mean	-2.2
Std Dev	4.6
Std Err Mean	2.1
Upper 95% Mean	3.5
Lower 95% Mean	-7.9
N	5.0

Distributions Analyte_Method=Manganese-54 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

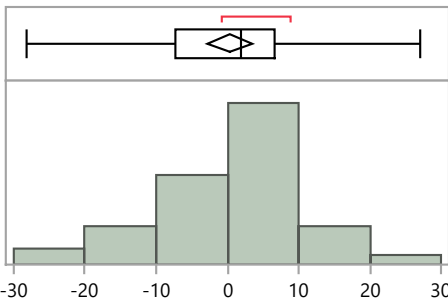
100.0%	maximum	13.1
99.5%		13.1
97.5%		13.1
90.0%		13.1
75.0%	quartile	8.5
50.0%	median	1.8
25.0%	quartile	-16.3
10.0%		-34.7
2.5%		-34.7
0.5%		-34.7
0.0%	minimum	-34.7

Summary Statistics

Mean	-3.5
Std Dev	17.2
Std Err Mean	7.0
Upper 95% Mean	14.5
Lower 95% Mean	-21.6
N	6.0

Distributions Analyte_Method=Manganese-54 No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	27.0
99.5%		27.0
97.5%		25.2
90.0%		13.3
75.0%	quartile	6.6
50.0%	median	2.0
25.0%	quartile	-7.3
10.0%		-13.4
2.5%		-28.0
0.5%		-28.1
0.0%	minimum	-28.1

Summary Statistics

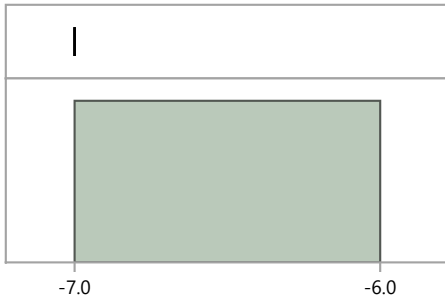
Mean	0.3
Std Dev	10.8
Std Err Mean	1.6
Upper 95% Mean	3.5
Lower 95% Mean	-2.8
N	47.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Manganese-54 Other

Bias



Quantiles

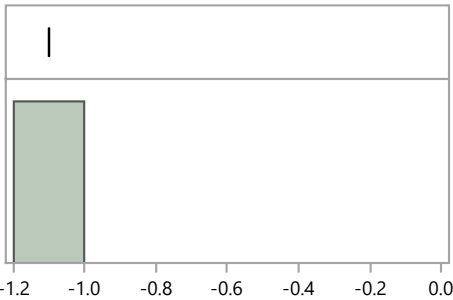
100.0%	maximum	-7.0
99.5%		-7.0
97.5%		-7.0
90.0%		-7.0
75.0%	quartile	-7.0
50.0%	median	-7.0
25.0%	quartile	-7.0
10.0%		-7.0
2.5%		-7.0
0.5%		-7.0
0.0%	minimum	-7.0

Summary Statistics

Mean	-7.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Manganese-54 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

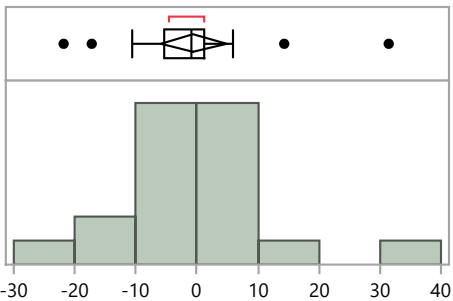
100.0%	maximum	-1.1
99.5%		-1.1
97.5%		-1.1
90.0%		-1.1
75.0%	quartile	-1.1
50.0%	median	-1.1
25.0%	quartile	-1.1
10.0%		-1.1
2.5%		-1.1
0.5%		-1.1
0.0%	minimum	-1.1

Summary Statistics

Mean	-1.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

100.0%	maximum	31.4
99.5%		31.4
97.5%		31.4
90.0%		14.3
75.0%	quartile	1.3
50.0%	median	-0.8
25.0%	quartile	-5.4
10.0%		-17.2
2.5%		-21.8
0.5%		-21.8
0.0%	minimum	-21.8

Summary Statistics

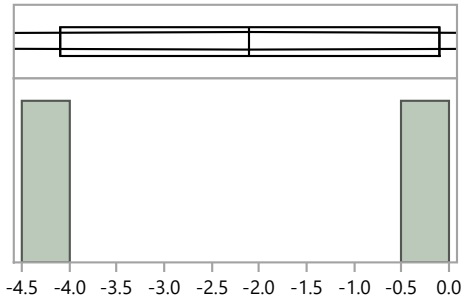
Mean	-0.5
Std Dev	11.2
Std Err Mean	2.6
Upper 95% Mean	4.8
Lower 95% Mean	-5.9
N	19.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

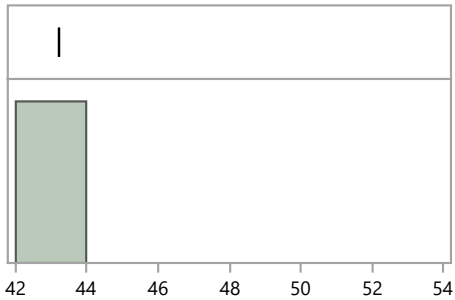
100.0%	maximum	-0.1
99.5%		-0.1
97.5%		-0.1
90.0%		-0.1
75.0%	quartile	-0.1
50.0%	median	-2.1
25.0%	quartile	-4.1
10.0%		-4.1
2.5%		-4.1
0.5%		-4.1
0.0%	minimum	-4.1

Summary Statistics

Mean	-2.1
Std Dev	2.8
Std Err Mean	2.0
Upper 95% Mean	23.3
Lower 95% Mean	-27.5
N	2.0

Distributions Analyte_Method=Plutonium-238 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

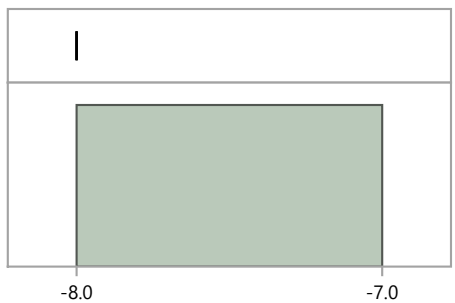
100.0%	maximum	43.2
99.5%		43.2
97.5%		43.2
90.0%		43.2
75.0%	quartile	43.2
50.0%	median	43.2
25.0%	quartile	43.2
10.0%		43.2
2.5%		43.2
0.5%		43.2
0.0%	minimum	43.2

Summary Statistics

Mean	43.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	-8.0
99.5%		-8.0
97.5%		-8.0
90.0%		-8.0
75.0%	quartile	-8.0
50.0%	median	-8.0
25.0%	quartile	-8.0
10.0%		-8.0
2.5%		-8.0
0.5%		-8.0
0.0%	minimum	-8.0

Summary Statistics

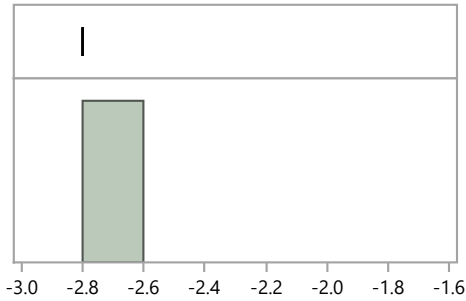
Mean	-8.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Other

Bias



Quantiles

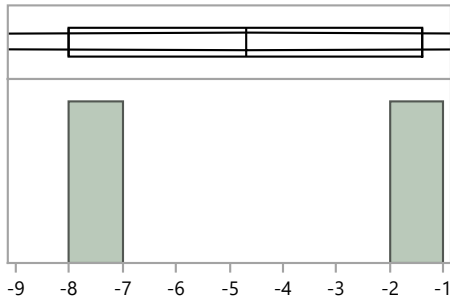
100.0%	maximum	-2.8
99.5%		-2.8
97.5%		-2.8
90.0%		-2.8
75.0%	quartile	-2.8
50.0%	median	-2.8
25.0%	quartile	-2.8
10.0%		-2.8
2.5%		-2.8
0.5%		-2.8
0.0%	minimum	-2.8

Summary Statistics

Mean	-2.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Total dissolution by fusion

Bias



Quantiles

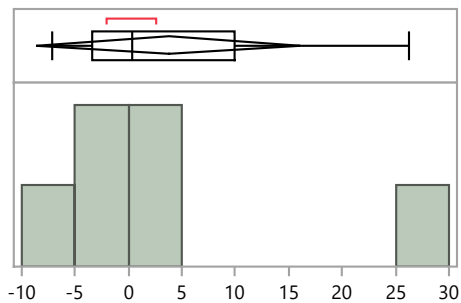
100.0%	maximum	-1.4
99.5%		-1.4
97.5%		-1.4
90.0%		-1.4
75.0%	quartile	-1.4
50.0%	median	-4.7
25.0%	quartile	-8.0
10.0%		-8.0
2.5%		-8.0
0.5%		-8.0
0.0%	minimum	-8.0

Summary Statistics

Mean	-4.7
Std Dev	4.7
Std Err Mean	3.3
Upper 95% Mean	37.2
Lower 95% Mean	-46.6
N	2.0

Distributions Analyte_Method=Plutonium-238 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	26.2
99.5%		26.2
97.5%		26.2
90.0%		26.2
75.0%	quartile	10.0
50.0%	median	0.4
25.0%	quartile	-3.4
10.0%		-7.2
2.5%		-7.2
0.5%		-7.2
0.0%	minimum	-7.2

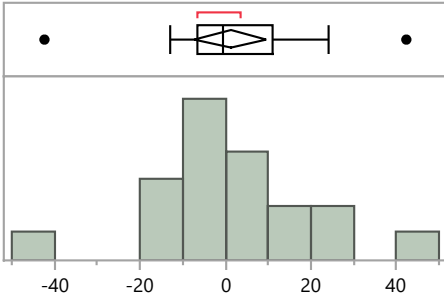
Summary Statistics

Mean	3.7
Std Dev	11.8
Std Err Mean	4.8
Upper 95% Mean	16.1
Lower 95% Mean	-8.6
N	6.0

RdF Distribution by Prep Method

Distributions Analyte_Method=Plutonium-239/240 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

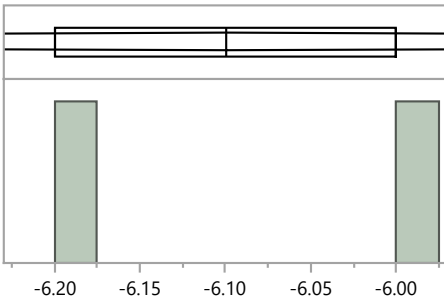
100.0%	maximum	42.3
99.5%		42.3
97.5%		42.3
90.0%		24.1
75.0%	quartile	11.1
50.0%	median	-0.6
25.0%	quartile	-6.4
10.0%		-12.8
2.5%		-42.3
0.5%		-42.3
0.0%	minimum	-42.3

Summary Statistics

Mean	1.1
Std Dev	17.4
Std Err Mean	4.0
Upper 95% Mean	9.5
Lower 95% Mean	-7.2
N	19.0

Distributions Analyte_Method=Plutonium-239/240 Acid leaching without hydrofluoric acid

Bias



Quantiles

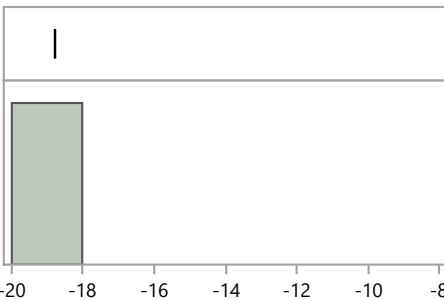
100.0%	maximum	-6.0
99.5%		-6.0
97.5%		-6.0
90.0%		-6.0
75.0%	quartile	-6.0
50.0%	median	-6.1
25.0%	quartile	-6.2
10.0%		-6.2
2.5%		-6.2
0.5%		-6.2
0.0%	minimum	-6.2

Summary Statistics

Mean	-6.1
Std Dev	0.1
Std Err Mean	0.1
Upper 95% Mean	-4.8
Lower 95% Mean	-7.4
N	2.0

Distributions Analyte_Method=Plutonium-239/240 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

100.0%	maximum	-18.8
99.5%		-18.8
97.5%		-18.8
90.0%		-18.8
75.0%	quartile	-18.8
50.0%	median	-18.8
25.0%	quartile	-18.8
10.0%		-18.8
2.5%		-18.8
0.5%		-18.8
0.0%	minimum	-18.8

Summary Statistics

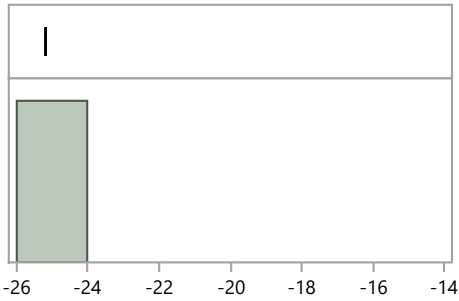
Mean	-18.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Plutonium-239/240 No preparation - analyzed as received

Bias



Quantiles

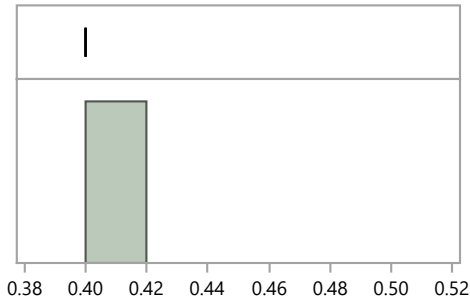
100.0%	maximum	-25.2
99.5%		-25.2
97.5%		-25.2
90.0%		-25.2
75.0%	quartile	-25.2
50.0%	median	-25.2
25.0%	quartile	-25.2
10.0%		-25.2
2.5%		-25.2
0.5%		-25.2
0.0%	minimum	-25.2

Summary Statistics

Mean	-25.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-239/240 Other

Bias



Quantiles

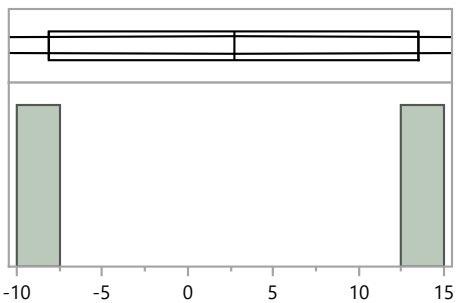
100.0%	maximum	0.4
99.5%		0.4
97.5%		0.4
90.0%		0.4
75.0%	quartile	0.4
50.0%	median	0.4
25.0%	quartile	0.4
10.0%		0.4
2.5%		0.4
0.5%		0.4
0.0%	minimum	0.4

Summary Statistics

Mean	0.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-239/240 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	13.5
99.5%		13.5
97.5%		13.5
90.0%		13.5
75.0%	quartile	13.5
50.0%	median	2.7
25.0%	quartile	-8.1
10.0%		-8.1
2.5%		-8.1
0.5%		-8.1
0.0%	minimum	-8.1

Summary Statistics

Mean	2.7
Std Dev	15.3
Std Err Mean	10.8
Upper 95% Mean	139.9
Lower 95% Mean	-134.5
N	2.0

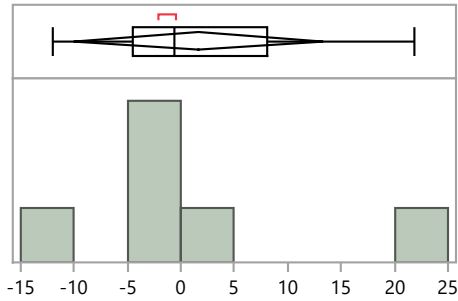
RdF41 Distribution by Preparation Method



RdF Distribution by Prep Method

Distributions Analyte_Method=Plutonium-239/240 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

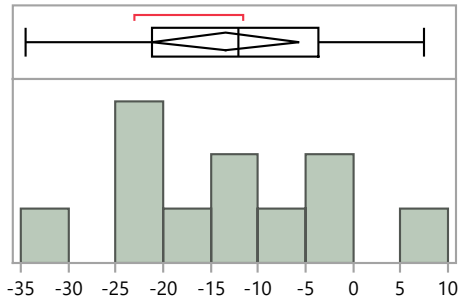
100.0%	maximum	21.8
99.5%		21.8
97.5%		21.8
90.0%		21.8
75.0%	quartile	8.0
50.0%	median	-0.7
25.0%	quartile	-4.6
10.0%		-12.0
2.5%		-12.0
0.5%		-12.0
0.0%	minimum	-12.0

Summary Statistics

Mean	1.6
Std Dev	11.1
Std Err Mean	4.5
Upper 95% Mean	13.3
Lower 95% Mean	-10.1
N	6.0

Distributions Analyte_Method=Strontium-90 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

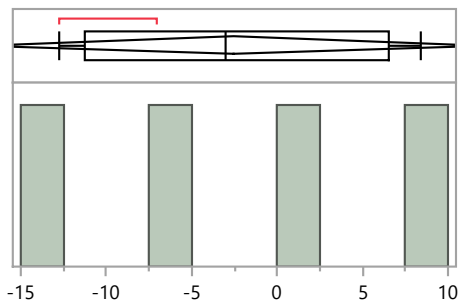
100.0%	maximum	7.4
99.5%		7.4
97.5%		7.4
90.0%		5.2
75.0%	quartile	-3.6
50.0%	median	-12.0
25.0%	quartile	-21.1
10.0%		-32.1
2.5%		-34.4
0.5%		-34.4
0.0%	minimum	-34.4

Summary Statistics

Mean	-13.4
Std Dev	11.4
Std Err Mean	3.4
Upper 95% Mean	-5.8
Lower 95% Mean	-21.1
N	11.0

Distributions Analyte_Method=Strontium-90 Acid leaching without hydrofluoric acid

Bias



Quantiles

100.0%	maximum	8.4
99.5%		8.4
97.5%		8.4
90.0%		8.4
75.0%	quartile	6.6
50.0%	median	-3.0
25.0%	quartile	-11.3
10.0%		-12.7
2.5%		-12.7
0.5%		-12.7
0.0%	minimum	-12.7

Summary Statistics

Mean	-2.6
Std Dev	9.2
Std Err Mean	4.6
Upper 95% Mean	12.1
Lower 95% Mean	-17.3
N	4.0

RdF41 Distribution by Preparation Method

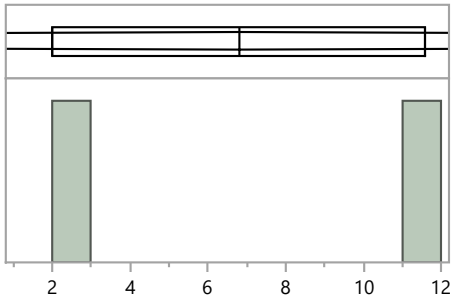


RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 EPA 905, Radioactive Strontium, 600/4-80-032

Bias



Quantiles

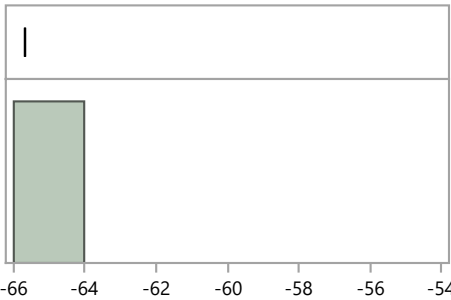
100.0%	maximum	11.6
99.5%		11.6
97.5%		11.6
90.0%		11.6
75.0%	quartile	11.6
50.0%	median	6.8
25.0%	quartile	2.0
10.0%		2.0
2.5%		2.0
0.5%		2.0
0.0%	minimum	2.0

Summary Statistics

Mean	6.8
Std Dev	6.8
Std Err Mean	4.8
Upper 95% Mean	67.8
Lower 95% Mean	-54.2
N	2.0

Distributions Analyte_Method=Strontium-90 No preparation - analyzed as received

Bias



Quantiles

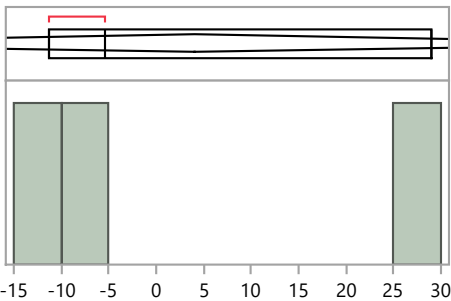
100.0%	maximum	-65.7
99.5%		-65.7
97.5%		-65.7
90.0%		-65.7
75.0%	quartile	-65.7
50.0%	median	-65.7
25.0%	quartile	-65.7
10.0%		-65.7
2.5%		-65.7
0.5%		-65.7
0.0%	minimum	-65.7

Summary Statistics

Mean	-65.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Strontium-90 Other

Bias



Quantiles

100.0%	maximum	28.9
99.5%		28.9
97.5%		28.9
90.0%		28.9
75.0%	quartile	28.9
50.0%	median	-5.4
25.0%	quartile	-11.2
10.0%		-11.2
2.5%		-11.2
0.5%		-11.2
0.0%	minimum	-11.2

Summary Statistics

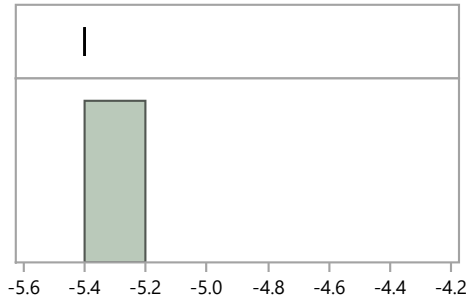
Mean	4.1
Std Dev	21.7
Std Err Mean	12.5
Upper 95% Mean	57.9
Lower 95% Mean	-49.7
N	3.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Total dissolution by fusion

Bias



Quantiles

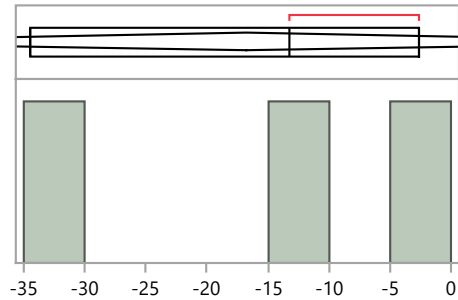
100.0%	maximum	-5.4
99.5%		-5.4
97.5%		-5.4
90.0%		-5.4
75.0%	quartile	-5.4
50.0%	median	-5.4
25.0%	quartile	-5.4
10.0%		-5.4
2.5%		-5.4
0.5%		-5.4
0.0%	minimum	-5.4

Summary Statistics

Mean	-5.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Strontium-90 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

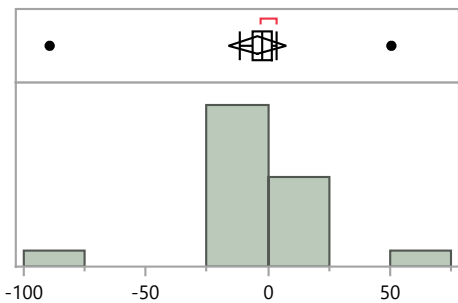
100.0%	maximum	-2.6
99.5%		-2.6
97.5%		-2.6
90.0%		-2.6
75.0%	quartile	-2.6
50.0%	median	-13.3
25.0%	quartile	-34.5
10.0%		-34.5
2.5%		-34.5
0.5%		-34.5
0.0%	minimum	-34.5

Summary Statistics

Mean	-16.8
Std Dev	16.2
Std Err Mean	9.4
Upper 95% Mean	23.5
Lower 95% Mean	-57.1
N	3.0

Distributions Analyte_Method=Uranium-234 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

100.0%	maximum	50.5
99.5%		50.5
97.5%		50.5
90.0%		3.8
75.0%	quartile	1.5
50.0%	median	-2.5
25.0%	quartile	-6.5
10.0%		-11.8
2.5%		-89.3
0.5%		-89.3
0.0%	minimum	-89.3

Summary Statistics

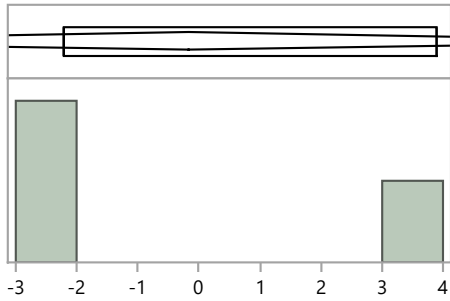
Mean	-4.5
Std Dev	24.3
Std Err Mean	5.6
Upper 95% Mean	7.2
Lower 95% Mean	-16.2
N	19.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Acid leaching without hydrofluoric acid

Bias



Quantiles

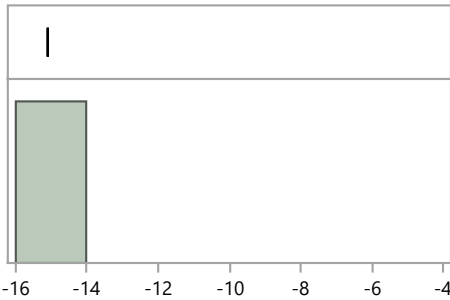
100.0%	maximum	3.9
99.5%		3.9
97.5%		3.9
90.0%		3.9
75.0%	quartile	3.9
50.0%	median	-2.2
25.0%	quartile	-2.2
10.0%		-2.2
2.5%		-2.2
0.5%		-2.2
0.0%	minimum	-2.2

Summary Statistics

Mean	-0.2
Std Dev	3.5
Std Err Mean	2.0
Upper 95% Mean	8.6
Lower 95% Mean	-8.9
N	3.0

Distributions Analyte_Method=Uranium-234 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

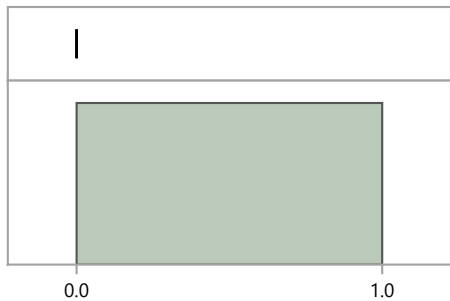
100.0%	maximum	-15.1
99.5%		-15.1
97.5%		-15.1
90.0%		-15.1
75.0%	quartile	-15.1
50.0%	median	-15.1
25.0%	quartile	-15.1
10.0%		-15.1
2.5%		-15.1
0.5%		-15.1
0.0%	minimum	-15.1

Summary Statistics

Mean	-15.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 EPA 908, Uranium-Radiochemical Method, 600/4/80-032

Bias



Quantiles

100.0%	maximum	0.0
99.5%		0.0
97.5%		0.0
90.0%		0.0
75.0%	quartile	0.0
50.0%	median	0.0
25.0%	quartile	0.0
10.0%		0.0
2.5%		0.0
0.5%		0.0
0.0%	minimum	0.0

Summary Statistics

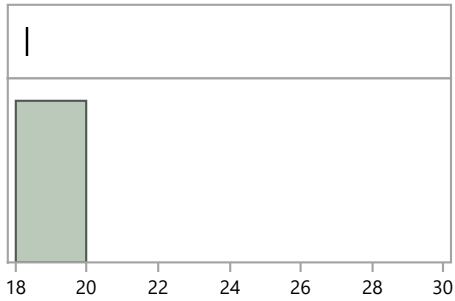
Mean	0.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 No preparation - analyzed as received

Bias



Quantiles

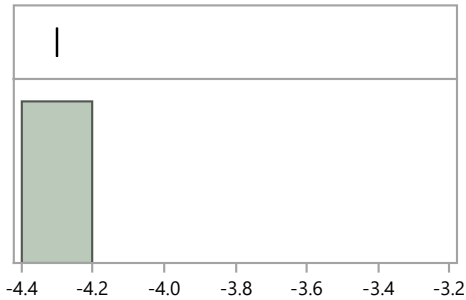
100.0%	maximum	18.3
99.5%		18.3
97.5%		18.3
90.0%		18.3
75.0%	quartile	18.3
50.0%	median	18.3
25.0%	quartile	18.3
10.0%		18.3
2.5%		18.3
0.5%		18.3
0.0%	minimum	18.3

Summary Statistics

Mean	18.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Other

Bias



Quantiles

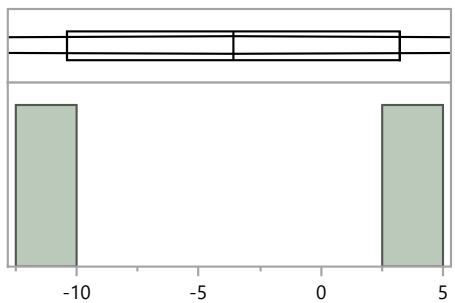
100.0%	maximum	-4.3
99.5%		-4.3
97.5%		-4.3
90.0%		-4.3
75.0%	quartile	-4.3
50.0%	median	-4.3
25.0%	quartile	-4.3
10.0%		-4.3
2.5%		-4.3
0.5%		-4.3
0.0%	minimum	-4.3

Summary Statistics

Mean	-4.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	3.2
99.5%		3.2
97.5%		3.2
90.0%		3.2
75.0%	quartile	3.2
50.0%	median	-3.6
25.0%	quartile	-10.4
10.0%		-10.4
2.5%		-10.4
0.5%		-10.4
0.0%	minimum	-10.4

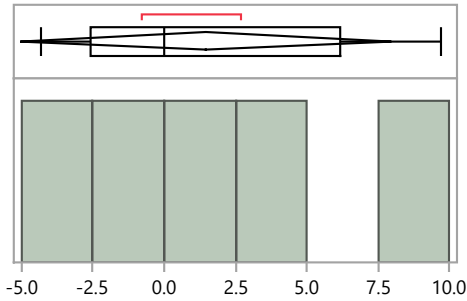
Summary Statistics

Mean	-3.6
Std Dev	9.6
Std Err Mean	6.8
Upper 95% Mean	82.8
Lower 95% Mean	-90.0
N	2.0

RdF Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

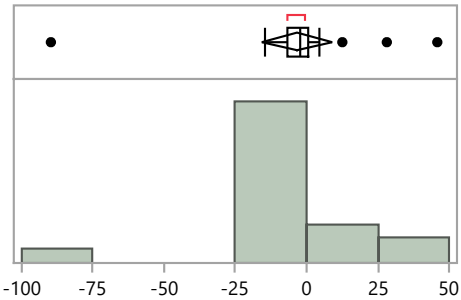
100.0%	maximum	9.7
99.5%		9.7
97.5%		9.7
90.0%		9.7
75.0%	quartile	6.2
50.0%	median	0.0
25.0%	quartile	-2.6
10.0%		-4.3
2.5%		-4.3
0.5%		-4.3
0.0%	minimum	-4.3

Summary Statistics

Mean	1.5
Std Dev	5.2
Std Err Mean	2.3
Upper 95% Mean	8.0
Lower 95% Mean	-5.0
N	5.0

Distributions Analyte_Method=Uranium-238 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

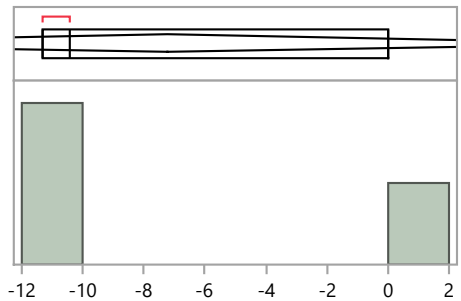
100.0%	maximum	45.8
99.5%		45.8
97.5%		45.8
90.0%		28.1
75.0%	quartile	0.7
50.0%	median	-2.5
25.0%	quartile	-6.8
10.0%		-14.6
2.5%		-89.7
0.5%		-89.7
0.0%	minimum	-89.7

Summary Statistics

Mean	-3.5
Std Dev	25.2
Std Err Mean	5.8
Upper 95% Mean	8.7
Lower 95% Mean	-15.6
N	19.0

Distributions Analyte_Method=Uranium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

100.0%	maximum	0.0
99.5%		0.0
97.5%		0.0
90.0%		0.0
75.0%	quartile	0.0
50.0%	median	-10.4
25.0%	quartile	-11.3
10.0%		-11.3
2.5%		-11.3
0.5%		-11.3
0.0%	minimum	-11.3

Summary Statistics

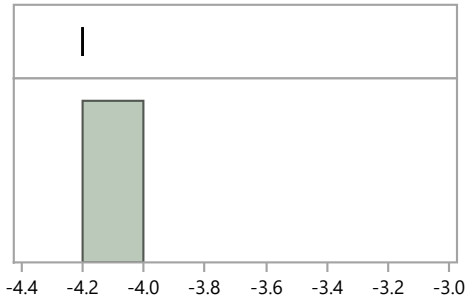
Mean	-7.2
Std Dev	6.3
Std Err Mean	3.6
Upper 95% Mean	8.4
Lower 95% Mean	-22.8
N	3.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

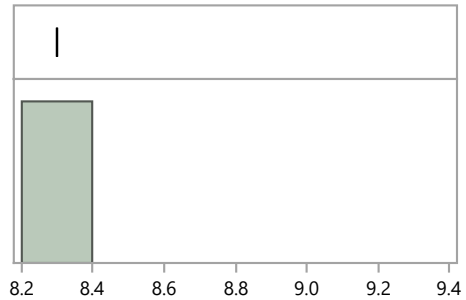
100.0%	maximum	-4.2
99.5%		-4.2
97.5%		-4.2
90.0%		-4.2
75.0%	quartile	-4.2
50.0%	median	-4.2
25.0%	quartile	-4.2
10.0%		-4.2
2.5%		-4.2
0.5%		-4.2
0.0%	minimum	-4.2

Summary Statistics

Mean	-4.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 EPA 908, Uranium-Radiochemical Method, 600/4/80-032

Bias



Quantiles

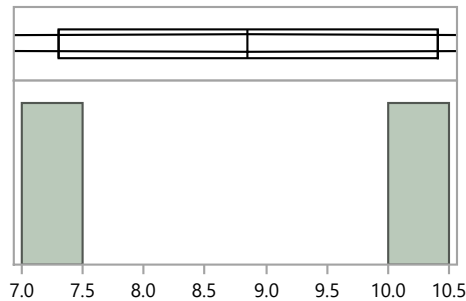
100.0%	maximum	8.3
99.5%		8.3
97.5%		8.3
90.0%		8.3
75.0%	quartile	8.3
50.0%	median	8.3
25.0%	quartile	8.3
10.0%		8.3
2.5%		8.3
0.5%		8.3
0.0%	minimum	8.3

Summary Statistics

Mean	8.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	10.4
99.5%		10.4
97.5%		10.4
90.0%		10.4
75.0%	quartile	10.4
50.0%	median	8.9
25.0%	quartile	7.3
10.0%		7.3
2.5%		7.3
0.5%		7.3
0.0%	minimum	7.3

Summary Statistics

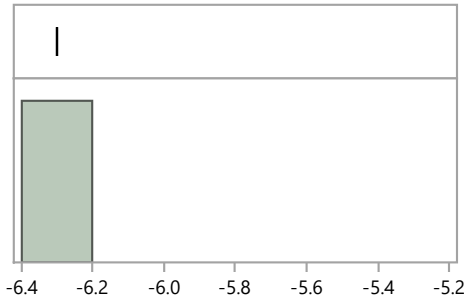
Mean	8.9
Std Dev	2.2
Std Err Mean	1.6
Upper 95% Mean	28.5
Lower 95% Mean	-10.8
N	2.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 Other

Bias



Quantiles

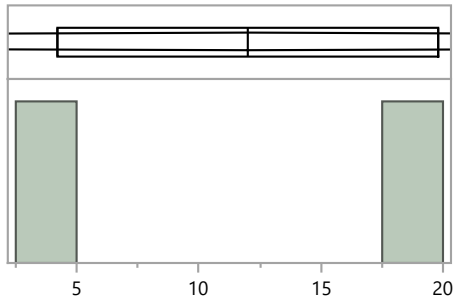
100.0%	maximum	-6.3
99.5%		-6.3
97.5%		-6.3
90.0%		-6.3
75.0%	quartile	-6.3
50.0%	median	-6.3
25.0%	quartile	-6.3
10.0%		-6.3
2.5%		-6.3
0.5%		-6.3
0.0%	minimum	-6.3

Summary Statistics

Mean	-6.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 Total dissolution by fusion

Bias



Quantiles

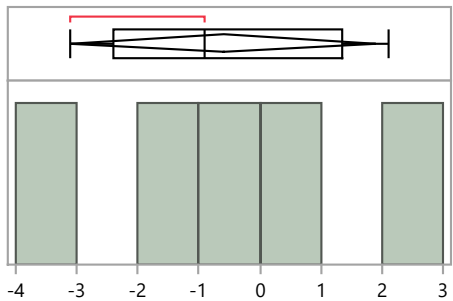
100.0%	maximum	19.8
99.5%		19.8
97.5%		19.8
90.0%		19.8
75.0%	quartile	19.8
50.0%	median	12.0
25.0%	quartile	4.2
10.0%		4.2
2.5%		4.2
0.5%		4.2
0.0%	minimum	4.2

Summary Statistics

Mean	12.0
Std Dev	11.0
Std Err Mean	7.8
Upper 95% Mean	111.1
Lower 95% Mean	-87.1
N	2.0

Distributions Analyte_Method=Uranium-238 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		2.1
75.0%	quartile	1.4
50.0%	median	-0.9
25.0%	quartile	-2.4
10.0%		-3.1
2.5%		-3.1
0.5%		-3.1
0.0%	minimum	-3.1

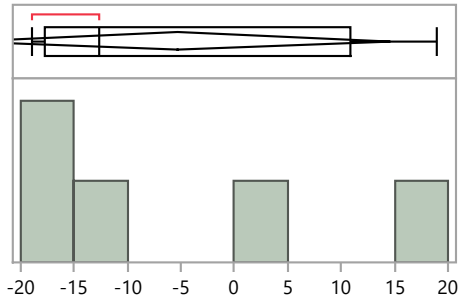
Summary Statistics

Mean	-0.6
Std Dev	2.0
Std Err Mean	0.9
Upper 95% Mean	1.9
Lower 95% Mean	-3.1
N	5.0

RdF Distribution by Prep Method

Distributions Analyte_Method=Zinc-65 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

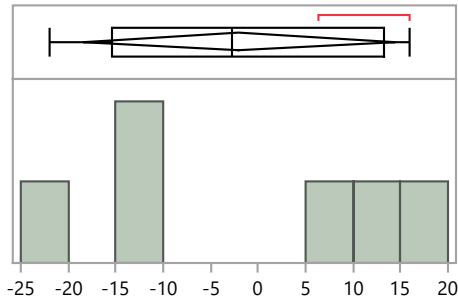
100.0%	maximum	18.9
99.5%		18.9
97.5%		18.9
90.0%		18.9
75.0%	quartile	10.9
50.0%	median	-12.7
25.0%	quartile	-17.8
10.0%		-18.9
2.5%		-18.9
0.5%		-18.9
0.0%	minimum	-18.9

Summary Statistics

Mean	-5.3
Std Dev	16.0
Std Err Mean	7.1
Upper 95% Mean	14.5
Lower 95% Mean	-25.1
N	5.0

Distributions Analyte_Method=Zinc-65 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

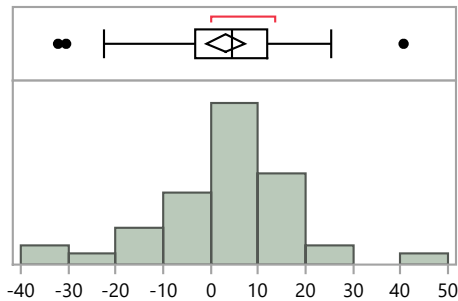
100.0%	maximum	16.0
99.5%		16.0
97.5%		16.0
90.0%		16.0
75.0%	quartile	13.2
50.0%	median	-2.8
25.0%	quartile	-15.3
10.0%		-22.0
2.5%		-22.0
0.5%		-22.0
0.0%	minimum	-22.0

Summary Statistics

Mean	-2.1
Std Dev	15.6
Std Err Mean	6.4
Upper 95% Mean	14.3
Lower 95% Mean	-18.5
N	6.0

Distributions Analyte_Method=Zinc-65 No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	40.6
99.5%		40.6
97.5%		38.0
90.0%		17.4
75.0%	quartile	11.8
50.0%	median	4.6
25.0%	quartile	-3.3
10.0%		-13.9
2.5%		-31.8
0.5%		-32.1
0.0%	minimum	-32.1

Summary Statistics

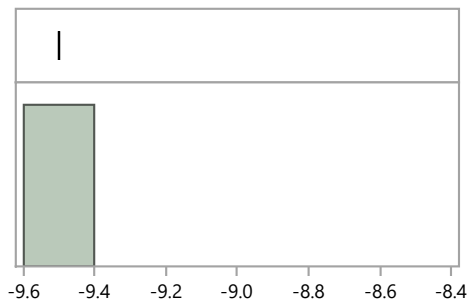
Mean	3.1
Std Dev	13.9
Std Err Mean	2.0
Upper 95% Mean	7.3
Lower 95% Mean	-1.0
N	46.0

RdF41 Distribution by Preparation Method

RdF Distribution by Prep Method

Distributions Analyte_Method=Zinc-65 Other

Bias



Quantiles

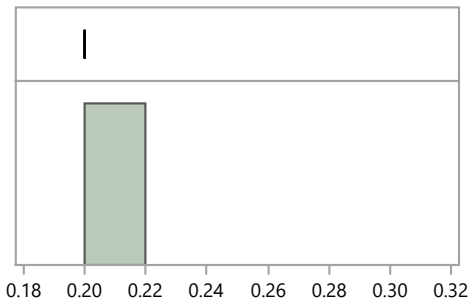
100.0%	maximum	-9.5
99.5%		-9.5
97.5%		-9.5
90.0%		-9.5
75.0%	quartile	-9.5
50.0%	median	-9.5
25.0%	quartile	-9.5
10.0%		-9.5
2.5%		-9.5
0.5%		-9.5
0.0%	minimum	-9.5

Summary Statistics

Mean	-9.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Zinc-65 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	0.2
99.5%		0.2
97.5%		0.2
90.0%		0.2
75.0%	quartile	0.2
50.0%	median	0.2
25.0%	quartile	0.2
10.0%		0.2
2.5%		0.2
0.5%		0.2
0.0%	minimum	0.2

Summary Statistics

Mean	0.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0