

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.

RdV49 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ADEM01	Alabama Department of Environmental Management	RdV
ARSL01	ARS	RdV
ASUK99	AWE (Aldermaston)	RdV
CDHS01	California Department of Public Health	RdV
CMRC01	Carlsbad Environmental Monitoring and Research Center	RdV
CSSL99	Chemistry Support Services	RdV
DINL99	Departamento Ingeniería Energética	RdV
ERCL01	Washington State Public Health Laboratories	RdV
ERHD99	National Monitoring Section, Radiation Protection Bureau, Health Canada	RdV
FDHE01	Florida Dept of Health Environmental Laboratory	RdV
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	RdV
GENE01	GEL Laboratories, LLC	RdV
GPCL01	Georgia Power Company Environmental Laboratory	RdV
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	RdV
HPAC99	UKHSA, RCE Glasgow	RdV
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	RdV
ISUE01	ISU Environmental Monitoring Laboratory	RdV
ISUP01	ISU - Department of Physics/Health Physics/EAL	RdV
JAEC99	Research Laboratories and Information Directorate	RdV
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	RdV
MSDH01	Mississippi State Dept of Health	RdV
NARL01	National Analytical Radiation Environmental Laboratory	RdV
NJDH01	New Jersey Dept. of Health, ECLS	RdV
NOCS99	National Oceanography Centre, Southampton	RdV
ODHL01	Ohio Department of Health Laboratory	RdV
RAVR99	Radiactividad Ambiental y Vigilancia Radiologica	RdV
SANC99	RadioAnalysis, South Africa Nuclear Energy Corp.	RdV
SEML01	SRS Environmental Monitoring Laboratory	RdV
SOUT01	Southwest Research Institute	RdV
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	RdV
TDHL01	Texas Department of State Health Services Laboratory	RdV
TELE01	Teledyne Brown Engineering - Environmental Services	RdV
TELE02	Microbac Laboratories Inc. - Northbrook	RdV
TMAO01	EBERLINE Analytical Corporation	RdV
UNTE01	UniTech-235	RdV
WIPH01	WI, DPH, Radiation Protection Section	RdV
WIPP01	WIPP Laboratories	RdV
WSHL01	Wisconsin State Laboratory of Hygiene	RdV
WSTP99	Cavendish Nuclear Limited	RdV

Laboratories Not Reporting

Lab Code	Lab Name	Matrix Code
AMEC99	Jacobs Clean Energy Limited - Analytical Services	RdV
IAEA99	International Atomic Energy Agency	RdV
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	RdV
MDPH01	MDPH-Radiation Control Program	RdV
NNRL99	National Nuclear Regulator	RdV
NSPH01	Nevada State Public Health Laboratory	RdV
STRL01	South Texas Project Radiological Laboratory	RdV

Study Reference Values

MAPEP-23-RdV49

Radiological Reference Date: 08/01/2023

Analyte	Ref Value	Ref Unc
Inorganic	Units: (ug/sample)	
Uranium-235	0.0523	0.0015
Uranium-238	7.4	0.3
Uranium-Total	7.5	0.3
Uranium-Total (Lg Veg)	10.8	0.5

Analyte	Ref Value	Ref Unc
Radiological	Units: (Bq/sample)	
Americium-241	0.131	0.002
Cesium-134	4.98	0.10
Cobalt-57	4.24	0.09
Cobalt-60	2.79	0.06
Manganese-54	2.56	0.05
Plutonium-238	0.186	0.003
Plutonium-239/240	0.184	0.003
Strontium-90	1.17	0.02
Uranium-234	0.091	0.004
Uranium-234 (Lg Veg)	0.131	0.006
Uranium-238	0.092	0.004
Uranium-238 (Lg Veg)	0.133	0.006

Sample Statistical Summary

MAPEP-23-RdV49

Radiological Reference Date: 08/01/2023

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (ug/sample)
Inorganic							
Uranium-235	2	2			0.0523	0.0015	0.0366 - 0.0680
Uranium-238	2	2			7.4	0.3	5.2 - 9.6
Uranium-Total	2	2			7.5	0.3	5.3 - 9.8

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (Bq/sample)
Radiological							
Americium-241	23	18	0.130	0.014	0.131	0.002	0.092 - 0.170
Cesium-134	37	36	4.76	0.47	4.98	0.10	3.49 - 6.47
Cesium-137	36	35					False Positive Test
Cobalt-57	37	36	4.27	0.45	4.24	0.09	2.97 - 5.51
Cobalt-60	38	36	2.72	0.29	2.79	0.06	1.95 - 3.63
Manganese-54	37	35	2.61	0.23	2.56	0.05	1.79 - 3.33
Plutonium-238	21	16	0.181	0.017	0.186	0.003	0.130 - 0.242
Plutonium-239/240	21	16	0.178	0.018	0.184	0.003	0.129 - 0.239
Strontium-90	21	16	1.09	0.17	1.17	0.02	0.82 - 1.52
Uranium-234	19	15	0.088	0.009	0.091	0.004	0.064 - 0.118
Uranium-238	20	15	0.089	0.006	0.092	0.004	0.064 - 0.120
Zinc-65	35	34					False Positive Test

- 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, from large vegetation sample size and values indicated as "Not Acceptable".
 - (4) Uranium Reference values shown for small vegetation sample size only.

Results 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%
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- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Flag Summary Report

MAPEP-23-RdV49

Inorganic

Analyte	A	W	RW	N
Uranium-Total	2			
Uranium-235	2			
Uranium-238	2			

Radiological

Analyte	A	W	RW	N
Americium-241	17	1		5
Cesium-134	33	3		1
Cesium-137	35			1
Cobalt-57	34	2		1
Cobalt-60	34	2		2
Manganese-54	33	2		2
Plutonium-238	15	1		5
Plutonium-239/240	15	1		5
Strontium-90	12	4		5
Uranium-234	12	3		4
Uranium-238	12	3		5
Zinc-65	34			2



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

Laboratory Results For MAPEP-23-RdV49
 (ADEM01) Alabama Department of Environmental Management
 1350 Coliseum Blvd.
 Montgomery, AL 36110

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	4.7700	4.98	A		-4.2	3.49 - 6.47	0.135	A
Cesium-137	NR					False Positive Test		
Cobalt-57	4.9300	4.24	A		16.3	2.97 - 5.51	0.129	A
Cobalt-60	2.7900	2.79	A		0.0	1.95 - 3.63	0.0934	A
Manganese-54	2.9900	2.56	A		16.8	1.79 - 3.33	0.130	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	NR		N	(11)		False Positive Test		

Radiological Reference Date: August 1, 2023

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- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

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Notes:

(11) = False Positive Test, Result Not Reported



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

Laboratory Results For MAPEP-23-RdV49

(ARSL01) ARS
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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.124	0.131	A		-5.3	0.092 - 0.170	0.011	A
Cesium-134	4.757	4.98	A		-4.5	3.49 - 6.47	0.174	A
Cesium-137	0.048		A			False Positive Test	0.045	
Cobalt-57	4.508	4.24	A		6.3	2.97 - 5.51	0.179	A
Cobalt-60	2.861	2.79	A		2.5	1.95 - 3.63	0.080	A
Manganese-54	2.729	2.56	A		6.6	1.79 - 3.33	0.121	A
Plutonium-238	0.199	0.186	A		7.0	0.130 - 0.242	0.017	A
Plutonium-239/240	0.213	0.184	A		15.8	0.129 - 0.239	0.018	A
Strontium-90	1.413	1.17	W		20.8	0.82 - 1.52	0.119	A
Uranium-234	0.080	0.091	A		-12.1	0.064 - 0.118	0.008	A
Uranium-238	0.098	0.092	A		6.5	0.064 - 0.120	0.009	A
Zinc-65	-0.168		A			False Positive Test	0.154	

Radiological Reference Date: August 1, 2023

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- NR = Not Reported

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Notes:



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

Laboratory Results For MAPEP-23-RdV49

(ASUK99) AWE (Aldermaston)

A38.1 AWE

Reading, Berkshire RG7 4PR

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	NR	4.98				3.49 - 6.47		
Cesium-137	NR					False Positive Test		
Cobalt-57	NR	4.24				2.97 - 5.51		
Cobalt-60	NR	2.79				1.95 - 3.63		
Manganese-54	NR	2.56				1.79 - 3.33		
Plutonium-238	0.144	0.186	W		-22.6	0.130 - 0.242	0.019	A
Plutonium-239/240	0.140	0.184	W		-23.9	0.129 - 0.239	0.019	A
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	0.079	0.091	A		-13.2	0.064 - 0.118	0.011	A
Uranium-238	0.005	0.092	N		-94.6	0.064 - 0.120	0.00081	W
Zinc-65	NR					False Positive Test		

Radiological Reference Date: August 1, 2023

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Uncertainty Flags:

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Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.120	0.131	A		-8.4	0.092 - 0.170	0.00513	A
Cesium-134	5.09	4.98	A		2.2	3.49 - 6.47	0.134	A
Cesium-137	0.0128		A			False Positive Test	0.0451	
Cobalt-57	4.63	4.24	A		9.2	2.97 - 5.51	0.0964	A
Cobalt-60	2.89	2.79	A		3.6	1.95 - 3.63	0.0609	A
Manganese-54	2.79	2.56	A		9.0	1.79 - 3.33	0.0838	A
Plutonium-238	0.198	0.186	A		6.5	0.130 - 0.242	0.00987	A
Plutonium-239/240	0.179	0.184	A		-2.7	0.129 - 0.239	0.00951	A
Strontium-90	1.07	1.17	A		-8.5	0.82 - 1.52	0.0418	A
Uranium-234	0.0881	0.091	A		-3.2	0.064 - 0.118	0.00541	A
Uranium-238	0.0832	0.092	A		-9.6	0.064 - 0.120	0.00514	A
Zinc-65	0.0143		A			False Positive Test	0.108	

Radiological Reference Date: August 1, 2023

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Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	NR	4.98				3.49 - 6.47		
Cesium-137	2.69E-02		A			False Positive Test	2.68E+00	
Cobalt-57	NR	4.24				2.97 - 5.51		
Cobalt-60	1.56E+02	2.79	N		5491.4	1.95 - 3.63	4.48E+00	A
Manganese-54	NR	2.56				1.79 - 3.33		
Plutonium-238	1.84E+01	0.186	N		9792.5	0.130 - 0.242	2.04E+00	A
Plutonium-239/240	1.78E+01	0.184	N		9573.9	0.129 - 0.239	1.97E+00	A
Strontium-90	2.59E+01	1.17	N		2113.7	0.82 - 1.52	3.46E-02	N
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	NR					False Positive Test		

Radiological Reference Date: August 1, 2023

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Notes:



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

Laboratory Results For MAPEP-23-RdV49

(CSSL99) Chemistry Support Services

Dounreay

Dounreay, Caithness KW14 7TZ

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.12279	0.131	A		-6.3	0.092 - 0.170	0.0035855	A
Cesium-134	3.659	4.98	W		-26.5	3.49 - 6.47	0.63520	W
Cesium-137	0.15580		N	(1)		False Positive Test	0.027047	
Cobalt-57	3.08	4.24	W		-27.4	2.97 - 5.51	0.53469	W
Cobalt-60	2.343	2.79	A		-16.0	1.95 - 3.63	0.40674	W
Manganese-54	1.78	2.56	N		-30.5	1.79 - 3.33	0.30901	W
Plutonium-238	0.17988	0.186	A		-3.3	0.130 - 0.242	0.0055403	A
Plutonium-239/240	0.17527	0.184	A		-4.7	0.129 - 0.239	0.0052931	A
Strontium-90	1.13	1.17	A		-3.4	0.82 - 1.52	0.144	A
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.42770		N	(1)		False Positive Test	0.074249	

Radiological Reference Date: August 1, 2023

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Uncertainty Flags:

- NOT ACCEPTABLE.....RP < 2%
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 - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
 - NOT ACCEPTABLE.....RP > 30%
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Notes:

(1) = False Positive



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

Laboratory Results For MAPEP-23-RdV49
 (DINL99) Departamento Ingeniería Energética
 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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.166E-1	0.131	A		-11.0	0.092 - 0.170	5.912E-3	A
Cesium-134	4.910E+0	4.98	A		-1.4	3.49 - 6.47	2.572E-1	A
Cesium-137	9.389E-2		A			False Positive Test	9.389E-2	
Cobalt-57	4.278E+0	4.24	A		0.9	2.97 - 5.51	2.262E-1	A
Cobalt-60	2.776E+0	2.79	A		-0.5	1.95 - 3.63	1.497E-1	A
Manganese-54	2.526E+0	2.56	A		-1.3	1.79 - 3.33	1.444E-1	A
Plutonium-238	1.774E-1	0.186	A		-4.6	0.130 - 0.242	8.937E-3	A
Plutonium-239/240	1.745E-1	0.184	A		-5.2	0.129 - 0.239	8.817E-3	A
Strontium-90	1.230E+0	1.17	A		5.1	0.82 - 1.52	5.725E-2	A
Uranium-234	9.421E-2	0.131	W		-28.1	0.092 - 0.170	5.540E-3	A
Uranium-238	9.652E-2	0.133	W		-27.4	0.093 - 0.173	5.720E-3	A
Zinc-65	1.268E-1		A			False Positive Test	1.268E-1	

Radiological Reference Date: August 1, 2023

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- NOT ACCEPTABLE.....RP < 2%
 - ACCEPTABLE.....2% ≤ RP ≤ 15%
 - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
 - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0584	0.0523	A		11.7	0.0366 - 0.0680	0.0016	A
Uranium-238	8.60	7.4	A		16.2	5.2 - 9.6	0.22	A
Uranium-Total	8.65	7.5	A		15.3	5.3 - 9.8	0.22	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.137	0.131	A		4.6	0.092 - 0.170	0.013	A
Cesium-134	4.42	4.98	A		-11.2	3.49 - 6.47	0.09	A
Cesium-137	0.004		A			False Positive Test	0.032	
Cobalt-57	4.03	4.24	A		-5.0	2.97 - 5.51	0.09	A
Cobalt-60	2.59	2.79	A		-7.2	1.95 - 3.63	0.06	A
Manganese-54	2.49	2.56	A		-2.7	1.79 - 3.33	0.08	A
Plutonium-238	0.196	0.186	A		5.4	0.130 - 0.242	0.014	A
Plutonium-239/240	0.170	0.184	A		-7.6	0.129 - 0.239	0.013	A
Strontium-90	0.965	1.17	A		-17.5	0.82 - 1.52	0.060	A
Uranium-234	0.110	0.091	W		20.9	0.064 - 0.118	0.012	A
Uranium-238	0.089	0.092	A		-3.3	0.064 - 0.120	0.010	A
Zinc-65	-0.205		A			False Positive Test	0.079	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(ERHD99) National Monitoring Section, Radiation Protection Bureau, Health Canada
 775 Brookfield Road AL6302D1
 Ottawa, Ontario K1A 1C1

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0474	0.0523	A		-9.4	0.0366 - 0.0680	0.0008	N
Uranium-238	6.87	7.4	A		-7.2	5.2 - 9.6	0.14	A
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.134	0.131	A		2.3	0.092 - 0.170	0.006	A
Cesium-134	4.80	4.98	A		-3.6	3.49 - 6.47	0.24	A
Cesium-137	0.083		A			False Positive Test	0.16	
Cobalt-57	4.09	4.24	A		-3.5	2.97 - 5.51	0.20	A
Cobalt-60	2.82	2.79	A		1.1	1.95 - 3.63	0.14	A
Manganese-54	2.51	2.56	A		-2.0	1.79 - 3.33	0.15	A
Plutonium-238	0.178	0.186	A		-4.3	0.130 - 0.242	0.007	A
Plutonium-239/240	0.182	0.184	A		-1.1	0.129 - 0.239	0.007	A
Strontium-90	1.18	1.17	A		0.9	0.82 - 1.52	0.01	N
Uranium-234	0.086	0.091	A		-5.5	0.064 - 0.118	0.006	A
Uranium-238	0.087	0.092	A		-5.4	0.064 - 0.120	0.006	A
Zinc-65	0.090		A			False Positive Test	0.18	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(FDHE01) Florida Dept of Health Environmental Laboratory
 2100 All Childrens Way
 Orlando, FL 32818-5271

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.156	0.131	A		19.1	0.092 - 0.170	0.027	W
Cesium-134	4.599	4.98	A		-7.7	3.49 - 6.47	0.108	A
Cesium-137	-0.014		A			False Positive Test	0.153	
Cobalt-57	4.463	4.24	A		5.3	2.97 - 5.51	0.137	A
Cobalt-60	2.627	2.79	A		-5.8	1.95 - 3.63	0.067	A
Manganese-54	2.54	2.56	A		-0.8	1.79 - 3.33	0.097	A
Plutonium-238	0.312	0.186	N		67.7	0.130 - 0.242	0.1	N
Plutonium-239/240	0.292	0.184	N		58.7	0.129 - 0.239	0.1	N
Strontium-90	1.24	1.17	A		6.0	0.82 - 1.52	0.06	A
Uranium-234	0.123	0.091	N		35.2	0.064 - 0.118	0.05	N
Uranium-238	0.13	0.092	N		41.3	0.064 - 0.120	0.05	N
Zinc-65	0.134		A			False Positive Test	0.449	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab
 2100 All Childrens Way
 Orlando, FL 32818-5271

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.161	0.131	W		22.9	0.092 - 0.170	0.091	N
Cesium-134	4.699	4.98	A		-5.6	3.49 - 6.47	0.085	N
Cesium-137	0.016		A			False Positive Test	0.129	
Cobalt-57	4.518	4.24	A		6.6	2.97 - 5.51	0.132	A
Cobalt-60	2.762	2.79	A		-1.0	1.95 - 3.63	0.066	A
Manganese-54	2.637	2.56	A		3.0	1.79 - 3.33	0.097	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	0.16	0.133	W		20.3	0.093 - 0.173	0.853	N
Zinc-65	-0.025		A			False Positive Test	0.241	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(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	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.1290	0.131	A		-1.5	0.092 - 0.170	0.00607	A
Cesium-134	4.65	4.98	A		-6.6	3.49 - 6.47	0.228	A
Cesium-137	0.0079		A			False Positive Test	0.0405	
Cobalt-57	4.33	4.24	A		2.1	2.97 - 5.51	0.168	A
Cobalt-60	2.89	2.79	A		3.6	1.95 - 3.63	0.157	A
Manganese-54	2.82	2.56	A		10.2	1.79 - 3.33	0.154	A
Plutonium-238	0.1630	0.186	A		-12.4	0.130 - 0.242	0.011	A
Plutonium-239/240	0.1630	0.184	A		-11.4	0.129 - 0.239	0.011	A
Strontium-90	1.38	1.17	A		17.9	0.82 - 1.52	0.0548	A
Uranium-234	0.0860	0.091	A		-5.5	0.064 - 0.118	0.00465	A
Uranium-238	0.0961	0.092	A		4.5	0.064 - 0.120	0.00512	A
Zinc-65	0.0888		A			False Positive Test	0.0643	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	4.83	4.98	A		-3.0	3.49 - 6.47	0.38	A
Cesium-137	-0.004			A		False Positive Test	0.18	
Cobalt-57	4.33	4.24	A		2.1	2.97 - 5.51	0.43	A
Cobalt-60	2.59	2.79	A		-7.2	1.95 - 3.63	0.27	A
Manganese-54	2.55	2.56	A		-0.4	1.79 - 3.33	0.31	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-0.12			A		False Positive Test	0.49	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	4.145	4.98	A		-16.8	3.49 - 6.47	0.2925	A
Cesium-137	-.07881			A		False Positive Test	0.1885	
Cobalt-57	3.621	4.24	A		-14.6	2.97 - 5.51	0.2935	A
Cobalt-60	2.441	2.79	A		-12.5	1.95 - 3.63	0.2263	A
Manganese-54	2.414	2.56	A		-5.7	1.79 - 3.33	0.3208	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.2396			A		False Positive Test	0.4778	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(HPAC99) UKHSA, RCE Glasgow

155 Hardgate Road

Glasgow, Scotland G51 4LS

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.146	0.131	A		11.5	0.092 - 0.170	0.009	A
Cesium-134	4.74	4.98	A		-4.8	3.49 - 6.47	0.31	A
Cesium-137	0.24		A			False Positive Test	0.24	
Cobalt-57	3.9	4.24	A		-8.0	2.97 - 5.51	0.26	A
Cobalt-60	2.73	2.79	A		-2.2	1.95 - 3.63	0.19	A
Manganese-54	2.55	2.56	A		-0.4	1.79 - 3.33	0.19	A
Plutonium-238	0.179	0.186	A		-3.8	0.130 - 0.242	0.010	A
Plutonium-239/240	0.177	0.184	A		-3.8	0.129 - 0.239	0.010	A
Strontium-90	NR	1.17	N	(28)		0.82 - 1.52		
Uranium-234	0.153	0.131	A		16.8	0.092 - 0.170	0.009	A
Uranium-238	0.150	0.133	A		12.8	0.093 - 0.173	0.009	A
Zinc-65	0.61		A			False Positive Test	0.61	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:

(28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-23-RdV49

(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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.1251	0.131	A		-4.5	0.092 - 0.170	0.0046	A
Cesium-134	4.69	4.98	A		-5.8	3.49 - 6.47	0.09	N
Cesium-137	0.11		A			False Positive Test	0.075	
Cobalt-57	4.50	4.24	A		6.1	2.97 - 5.51	0.08	N
Cobalt-60	2.81	2.79	A		0.7	1.95 - 3.63	0.11	A
Manganese-54	2.70	2.56	A		5.5	1.79 - 3.33	0.13	A
Plutonium-238	0.1893	0.186	A		1.8	0.130 - 0.242	0.0066	A
Plutonium-239/240	0.1866	0.184	A		1.4	0.129 - 0.239	0.0065	A
Strontium-90	0.986	1.17	A		-15.7	0.82 - 1.52	0.046	A
Uranium-234	0.0918	0.091	A		0.9	0.064 - 0.118	0.0038	A
Uranium-238	0.0951	0.092	A		3.4	0.064 - 0.120	0.0039	A
Zinc-65	0.36		A			False Positive Test	0.19	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (ISUE01) ISU Environmental Monitoring Laboratory
 785 5th 8th Ave Rm B107
 Pocatello, Idaho 83209

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	4.15	4.98	A		-16.7	3.49 - 6.47	0.08	N
Cesium-137	0.07		A			False Positive Test	0.04	
Cobalt-57	3.48	4.24	A		-17.9	2.97 - 5.51	0.11	A
Cobalt-60	2.32	2.79	A		-16.8	1.95 - 3.63	0.06	A
Manganese-54	2.40	2.56	A		-6.3	1.79 - 3.33	0.10	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-0.16		A			False Positive Test	0.08	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	4.9	4.98	A		-1.6	3.49 - 6.47	0.1	A
Cesium-137	0.03		A			False Positive Test	0.04	
Cobalt-57	3.7	4.24	A		-12.7	2.97 - 5.51	0.1	A
Cobalt-60	2.4	2.79	A		-14.0	1.95 - 3.63	0.1	A
Manganese-54	2.4	2.56	A		-6.3	1.79 - 3.33	0.1	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.08		A			False Positive Test	0.1	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	5.5	4.98	A		10.4	3.49 - 6.47	0.2	A
Cesium-137	NR					False Positive Test		
Cobalt-57	4.6	4.24	A		8.5	2.97 - 5.51	0.2	A
Cobalt-60	2.9	2.79	A		3.9	1.95 - 3.63	0.1	A
Manganese-54	2.8	2.56	A		9.4	1.79 - 3.33	0.1	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	0.0798	0.091	A		-12.3	0.064 - 0.118	0.0043	A
Uranium-238	0.0827	0.092	A		-10.1	0.064 - 0.120	0.0045	A
Zinc-65	NR					False Positive Test		

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	5.23	4.98	A		5.0	3.49 - 6.47	0.26	A
Cesium-137	0.1		A			False Positive Test	0.07	
Cobalt-57	5.35	4.24	W		26.2	2.97 - 5.51	0.23	A
Cobalt-60	3.55	2.79	W		27.2	1.95 - 3.63	0.21	A
Manganese-54	3.04	2.56	A		18.8	1.79 - 3.33	0.28	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.2		A			False Positive Test	0.12	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-2.6264e+4	0.131	N		-20048955.0	0.092 - 0.170	6.308e+4	N
Cesium-134	3.3439e+4	4.98	N		671365.9	3.49 - 6.47	6.113e+3	W
Cesium-137	-4.4466e+2		A			False Positive Test	1.008e+4	
Cobalt-57	4.2211e+4	4.24	N		995442.5	2.97 - 5.51	7.322e+3	W
Cobalt-60	2.3887e+4	2.79	N		856064.9	1.95 - 3.63	6.536e+3	W
Manganese-54	1.6753e+4	2.56	N		654314.1	1.79 - 3.33	7.054e+3	N
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	3.7289e+3		A			False Positive Test	1.933e+4	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.106	0.131	A		-19.1	0.092 - 0.170	0.0087	A
Cesium-134	5.30	4.98	A		6.4	3.49 - 6.47	0.30	A
Cesium-137	-0.0458		A			False Positive Test	0.056	
Cobalt-57	4.08	4.24	A		-3.8	2.97 - 5.51	0.235	A
Cobalt-60	2.58	2.79	A		-7.5	1.95 - 3.63	0.152	A
Manganese-54	2.44	2.56	A		-4.7	1.79 - 3.33	0.154	A
Plutonium-238	0.216	0.186	A		16.1	0.130 - 0.242	0.0135	A
Plutonium-239/240	0.205	0.184	A		11.4	0.129 - 0.239	0.0130	A
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	0.092	0.091	A		1.1	0.064 - 0.118	0.00791	A
Uranium-238	0.0812	0.092	A		-11.7	0.064 - 0.120	0.0073	A
Zinc-65	-0.122		A			False Positive Test	0.137	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (NJDH01) New Jersey Dept. of Health, ECLS
 3 Schwarzkopf Drive
 Ewing, NJ 08628

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	5.4	4.98	A		8.4	3.49 - 6.47	0.4	A
Cesium-137	0.01		A			False Positive Test	0.16	
Cobalt-57	4.1	4.24	A		-3.3	2.97 - 5.51	0.3	A
Cobalt-60	3.5	2.79	W		25.4	1.95 - 3.63	0.4	A
Manganese-54	2.7	2.56	A		5.5	1.79 - 3.33	0.3	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-0.04		A			False Positive Test	0.28	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.13	0.131	A		-0.8	0.092 - 0.170	0.01	A
Cesium-134	4.48	4.98	A		-10.0	3.49 - 6.47	0.15	A
Cesium-137	0.3		A			False Positive Test	1	
Cobalt-57	4.36	4.24	A		2.8	2.97 - 5.51	0.20	A
Cobalt-60	2.87	2.79	A		2.9	1.95 - 3.63	0.12	A
Manganese-54	2.78	2.56	A		8.6	1.79 - 3.33	0.14	A
Plutonium-238	0.16	0.186	A		-14.0	0.130 - 0.242	0.01	A
Plutonium-239/240	0.15	0.184	A		-18.5	0.129 - 0.239	0.01	A
Strontium-90	1.00	1.17	A		-14.5	0.82 - 1.52	0.07	A
Uranium-234	0.077	0.091	A		-15.4	0.064 - 0.118	0.004	A
Uranium-238	0.081	0.092	A		-12.0	0.064 - 0.120	0.004	A
Zinc-65	0.8		A			False Positive Test	4	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	5.45	4.98	A		9.4	3.49 - 6.47	0.195	A
Cesium-137	0.0202			A		False Positive Test	0.0524	
Cobalt-57	4.80	4.24	A		13.2	2.97 - 5.51	0.374	A
Cobalt-60	3.01	2.79	A		7.9	1.95 - 3.63	0.116	A
Manganese-54	2.88	2.56	A		12.5	1.79 - 3.33	0.202	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.0714			A		False Positive Test	0.0524	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0821	0.131	N		-37.3	0.092 - 0.170	0.0040	A
Cesium-134	5.02	4.98	A		0.8	3.49 - 6.47	0.21	A
Cesium-137	0.1		A			False Positive Test	1.0	
Cobalt-57	4.29	4.24	A		1.2	2.97 - 5.51	0.26	A
Cobalt-60	2.820	2.79	A		1.1	1.95 - 3.63	0.096	A
Manganese-54	2.60	2.56	A		1.6	1.79 - 3.33	0.15	A
Plutonium-238	0.1175	0.186	N		-36.8	0.130 - 0.242	0.0064	A
Plutonium-239/240	0.1210	0.184	N		-34.2	0.129 - 0.239	0.0065	A
Strontium-90	0.71	1.17	N		-39.3	0.82 - 1.52	0.03	A
Uranium-234	0.0753	0.131	N		-42.5	0.092 - 0.170	0.0084	A
Uranium-238	0.080	0.133	N		-39.9	0.093 - 0.173	0.014	W
Zinc-65	0.5		A			False Positive Test	1.0	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	10.35	10.8	A		-4.2	7.6 - 14.0	1.46	A

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.02	0.131	N		-84.7	0.092 - 0.170	0.02	N
Cesium-134	5.44	4.98	A		9.2	3.49 - 6.47	0.35	A
Cesium-137	0.03		A			False Positive Test	0.03	
Cobalt-57	4.53	4.24	A		6.8	2.97 - 5.51	0.32	A
Cobalt-60	3.07	2.79	A		10.0	1.95 - 3.63	0.18	A
Manganese-54	2.74	2.56	A		7.0	1.79 - 3.33	0.17	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	1.057	1.17	A		-9.7	0.82 - 1.52	0.151	A
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.045		A			False Positive Test	0.045	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.1188	0.131	A		-9.3	0.092 - 0.170	0.0071	A
Cesium-134	4.84	4.98	A		-2.8	3.49 - 6.47	0.37	A
Cesium-137	0.17		A			False Positive Test	0.15	
Cobalt-57	3.90	4.24	A		-8.0	2.97 - 5.51	0.33	A
Cobalt-60	2.55	2.79	A		-8.6	1.95 - 3.63	0.23	A
Manganese-54	2.51	2.56	A		-2.0	1.79 - 3.33	0.27	A
Plutonium-238	0.1809	0.186	A		-2.7	0.130 - 0.242	0.0089	A
Plutonium-239/240	0.1728	0.184	A		-6.1	0.129 - 0.239	0.0086	A
Strontium-90	0.106	1.17	N		-90.9	0.82 - 1.52	0.006	A
Uranium-234	0.0881	0.091	A		-3.2	0.064 - 0.118	0.0047	A
Uranium-238	0.0895	0.092	A		-2.7	0.064 - 0.120	0.0048	A
Zinc-65	0.16		A			False Positive Test	0.23	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (SOUT01) Southwest Research Institute
 6220 Culebra Rd.
 San Antonio, TX 78238-5166

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0619	0.131	N		-52.7	0.092 - 0.170	0.00707	A
Cesium-134	4.67	4.98	A		-6.2	3.49 - 6.47	0.232	A
Cesium-137	0.196		A			False Positive Test	0.100	
Cobalt-57	4.56	4.24	A		7.5	2.97 - 5.51	0.237	A
Cobalt-60	2.81	2.79	A		0.7	1.95 - 3.63	0.182	A
Manganese-54	2.76	2.56	A		7.8	1.79 - 3.33	0.185	A
Plutonium-238	0.0774	0.186	N		-58.4	0.130 - 0.242	0.00796	A
Plutonium-239/240	0.0863	0.184	N		-53.1	0.129 - 0.239	0.00863	A
Strontium-90	0.833	1.17	W		-28.8	0.82 - 1.52	0.0807	A
Uranium-234	0.0422	0.091	N		-53.6	0.064 - 0.118	0.00507	A
Uranium-238	0.0422	0.092	N		-54.1	0.064 - 0.120	0.00507	A
Zinc-65	0.0117		A			False Positive Test	0.263	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	5.41E+00	4.98	A		8.6	3.49 - 6.47	5.45E-01	A
Cesium-137	5.76E-02			A		False Positive Test	1.14E-01	
Cobalt-57	4.61E+00	4.24	A		8.7	2.97 - 5.51	4.77E-01	A
Cobalt-60	3.03E+00	2.79	A		8.6	1.95 - 3.63	2.04E-01	A
Manganese-54	3.11E+00	2.56	W		21.5	1.79 - 3.33	2.33E-01	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-3.03E-01			A		False Positive Test	3.12E-01	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.113	0.131	A		-13.7	0.092 - 0.170	0.015	A
Cesium-134	4.59	4.98	A		-7.8	3.49 - 6.47	0.11	A
Cesium-137	0.031		A			False Positive Test	0.094	
Cobalt-57	4.57	4.24	A		7.8	2.97 - 5.51	0.14	A
Cobalt-60	2.533	2.79	A		-9.2	1.95 - 3.63	0.088	A
Manganese-54	2.34	2.56	A		-8.6	1.79 - 3.33	0.12	A
Plutonium-238	0.175	0.186	A		-5.9	0.130 - 0.242	0.021	A
Plutonium-239/240	0.170	0.184	A		-7.6	0.129 - 0.239	0.021	A
Strontium-90	0.934	1.17	W		-20.2	0.82 - 1.52	0.035	A
Uranium-234	0.168	0.131	W		28.2	0.092 - 0.170	0.019	A
Uranium-238	0.160	0.133	W		20.3	0.093 - 0.173	0.018	A
Zinc-65	0.19		A			False Positive Test	0.24	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	3.86	4.98	W		-22.5	3.49 - 6.47	.151	A
Cesium-137	.0269		A			False Positive Test	.0922	
Cobalt-57	3.88	4.24	A		-8.5	2.97 - 5.51	.157	A
Cobalt-60	2.37	2.79	A		-15.1	1.95 - 3.63	.166	A
Manganese-54	2.04	2.56	W		-20.3	1.79 - 3.33	.226	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	.957	1.17	A		-18.2	0.82 - 1.52	.0272	A
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-.514		A			False Positive Test	.243	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (TELE02) Microbac Laboratories Inc. - Northbrook
 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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	4.25	4.98	A		-14.7	3.49 - 6.47	0.14	A
Cesium-137	0.025		A			False Positive Test	0.050	
Cobalt-57	4.28	4.24	A		0.9	2.97 - 5.51	0.13	A
Cobalt-60	2.49	2.79	A		-10.8	1.95 - 3.63	0.11	A
Manganese-54	2.45	2.56	A		-4.3	1.79 - 3.33	0.16	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.058		A			False Positive Test	0.107	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (TMAO01) EBERLINE Analytical Corporation
 601 A 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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	3.947	4.98	W		-20.7	3.49 - 6.47	0.602	W
Cesium-137	-.035		A			False Positive Test	.360	
Cobalt-57	4.190	4.24	A		-1.2	2.97 - 5.51	0.611	A
Cobalt-60	2.293	2.79	A		-17.8	1.95 - 3.63	0.481	W
Manganese-54	2.363	2.56	A		-7.7	1.79 - 3.33	0.724	N
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	0.071	0.131	N		-45.8	0.092 - 0.170	.016	W
Uranium-238	.071	0.133	N		-46.6	0.093 - 0.173	.016	W
Zinc-65	-.279		A			False Positive Test	0.861	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(UNTE01) UniTech-235

178 Aldo Drive

Barnwell, SC 29812

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.131				0.092 - 0.170		
Cesium-134	4.30	4.98	A		-13.7	3.49 - 6.47	0.42	A
Cesium-137	0.02		A			False Positive Test	0.07	
Cobalt-57	4.30	4.24	A		1.4	2.97 - 5.51	0.43	A
Cobalt-60	2.65	2.79	A		-5.0	1.95 - 3.63	0.39	A
Manganese-54	2.30	2.56	A		-10.2	1.79 - 3.33	0.44	W
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	0.01		A			False Positive Test	0.06	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.057	0.131	N		-56.5	0.092 - 0.170	0.248	N
Cesium-134	4.80	4.98	A		-3.6	3.49 - 6.47	0.16	A
Cesium-137	-0.007		A			False Positive Test	0.029	
Cobalt-57	4.24	4.24	A		0.0	2.97 - 5.51	0.33	A
Cobalt-60	2.68	2.79	A		-3.9	1.95 - 3.63	0.10	A
Manganese-54	2.60	2.56	A		1.6	1.79 - 3.33	0.16	A
Plutonium-238	NR	0.186				0.130 - 0.242		
Plutonium-239/240	NR	0.184				0.129 - 0.239		
Strontium-90	NR	1.17				0.82 - 1.52		
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-0.06		A			False Positive Test	0.095	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49

(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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.34E-001	0.131	A		2.3	0.092 - 0.170	8.68E-003	A
Cesium-134	4.93E+000	4.98	A		-1.0	3.49 - 6.47	1.76E-001	A
Cesium-137	-1.52E-002		A			False Positive Test	5.77E-002	
Cobalt-57	3.90E+000	4.24	A		-8.0	2.97 - 5.51	1.15E-001	A
Cobalt-60	2.29E+000	2.79	A		-17.9	1.95 - 3.63	1.54E-001	A
Manganese-54	2.65E+000	2.56	A		3.5	1.79 - 3.33	1.62E-001	A
Plutonium-238	1.67E-001	0.186	A		-10.2	0.130 - 0.242	1.20E-002	A
Plutonium-239/240	1.83E-001	0.184	A		-0.5	0.129 - 0.239	1.32E-002	A
Strontium-90	1.11E+000	1.17	A		-5.1	0.82 - 1.52	4.70E-002	A
Uranium-234	9.39E-002	0.091	A		3.2	0.064 - 0.118	8.18E-003	A
Uranium-238	9.08E-002	0.092	A		-1.3	0.064 - 0.120	7.92E-003	A
Zinc-65	-6.88E-002		A			False Positive Test	1.67E-001	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (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	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.1315	0.131	A		0.4	0.092 - 0.170	0.0105	A
Cesium-134	4.4976	4.98	A		-9.7	3.49 - 6.47	0.1814	A
Cesium-137	0.0021		A			False Positive Test	0.0202	
Cobalt-57	3.6499	4.24	A		-13.9	2.97 - 5.51	0.1169	A
Cobalt-60	2.5311	2.79	A		-9.3	1.95 - 3.63	0.2316	A
Manganese-54	2.3593	2.56	A		-7.8	1.79 - 3.33	0.1111	A
Plutonium-238	0.1866	0.186	A		0.3	0.130 - 0.242	0.0109	A
Plutonium-239/240	0.1989	0.184	A		8.1	0.129 - 0.239	0.0113	A
Strontium-90	0.93	1.17	W		-20.5	0.82 - 1.52	0.02	A
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-.0535		A			False Positive Test	0.0527	

Radiological Reference Date: August 1, 2023

Results 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%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:



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

Laboratory Results For MAPEP-23-RdV49
 (WSTP99) Cavendish Nuclear Limited
 Greeson Court
 Cumbria, UK CA24 3HZ

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0523				0.0366 - 0.0680		
Uranium-238	NR	7.4				5.2 - 9.6		
Uranium-Total	NR	7.5				5.3 - 9.8		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.1355	0.131	A		3.4	0.092 - 0.170	0.0072	A
Cesium-134	5.47	4.98	A		9.8	3.49 - 6.47	0.28	A
Cesium-137	-0.009		A			False Positive Test	0.023	
Cobalt-57	4.98	4.24	A		17.5	2.97 - 5.51	0.17	A
Cobalt-60	2.89	2.79	A		3.6	1.95 - 3.63	0.11	A
Manganese-54	2.68	2.56	A		4.7	1.79 - 3.33	0.12	A
Plutonium-238	0.0994	0.186	N		-46.6	0.130 - 0.242	0.0047	A
Plutonium-239/240	0.1006	0.184	N		-45.3	0.129 - 0.239	0.0048	A
Strontium-90	1.59	1.17	N		35.9	0.82 - 1.52	0.11	A
Uranium-234	NR	0.091				0.064 - 0.118		
Uranium-238	NR	0.092				0.064 - 0.120		
Zinc-65	-0.035		A			False Positive Test	0.052	

Radiological Reference Date: August 1, 2023

Results 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

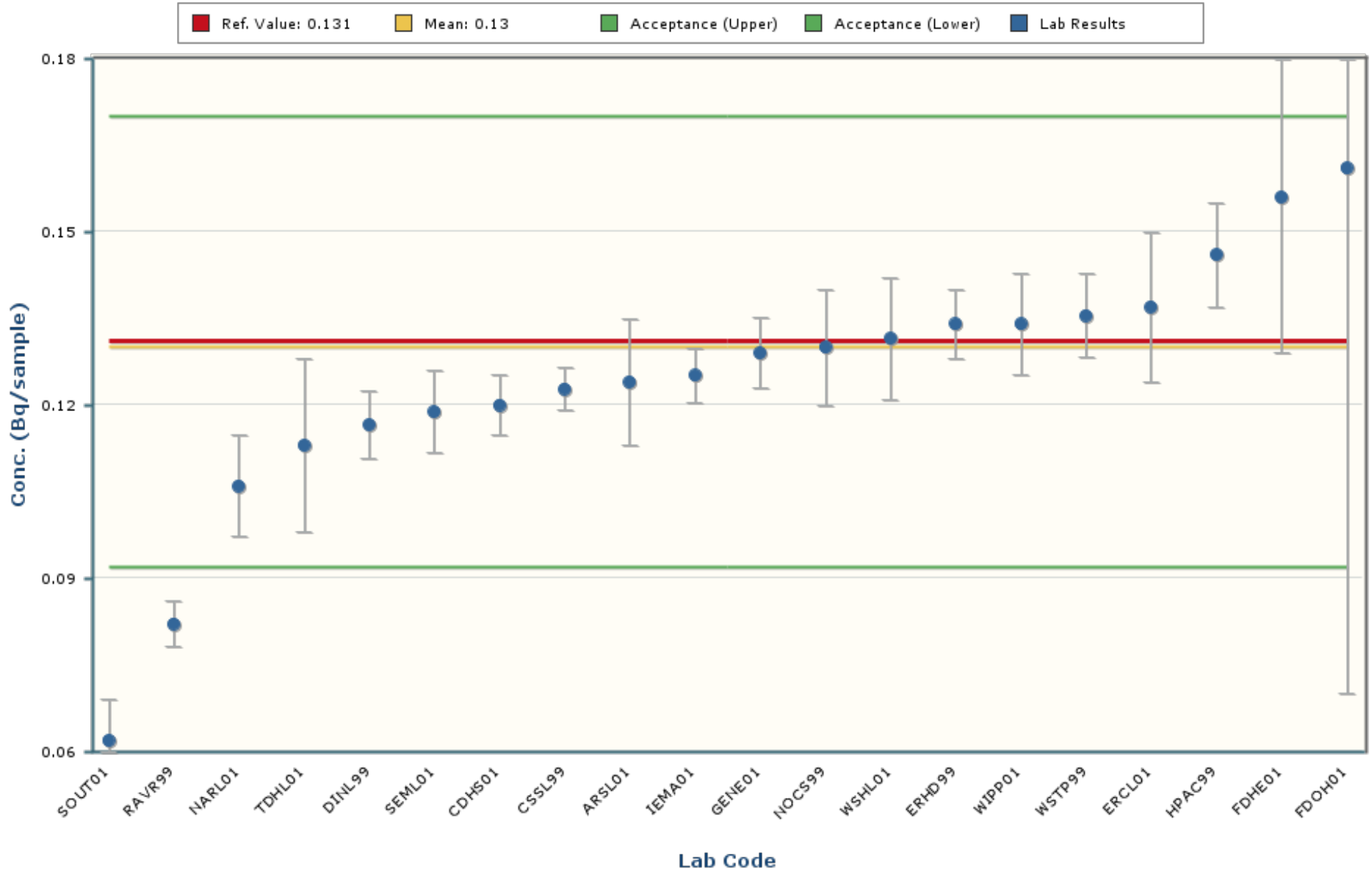
Uncertainty Flags:

- NOT ACCEPTABLE.....RP < 2%
 - ACCEPTABLE.....2% ≤ RP ≤ 15%
 - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
 - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:

Americium-241

MAPEP-23-RdV49



Notes:

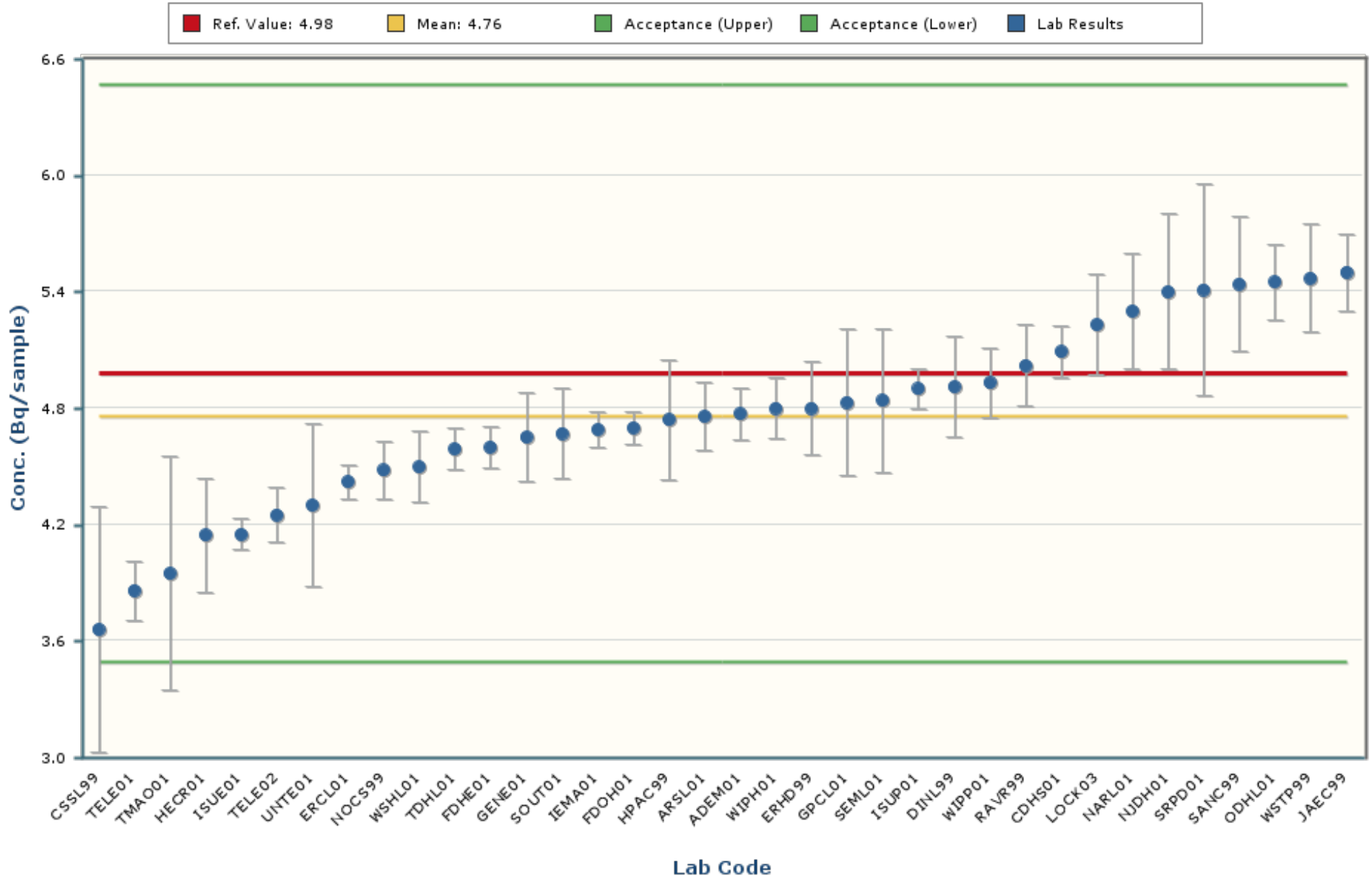
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.059 and 0.201 (± 5 Standard Deviations).

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

Cesium-134

MAPEP-23-RdV49



Notes:

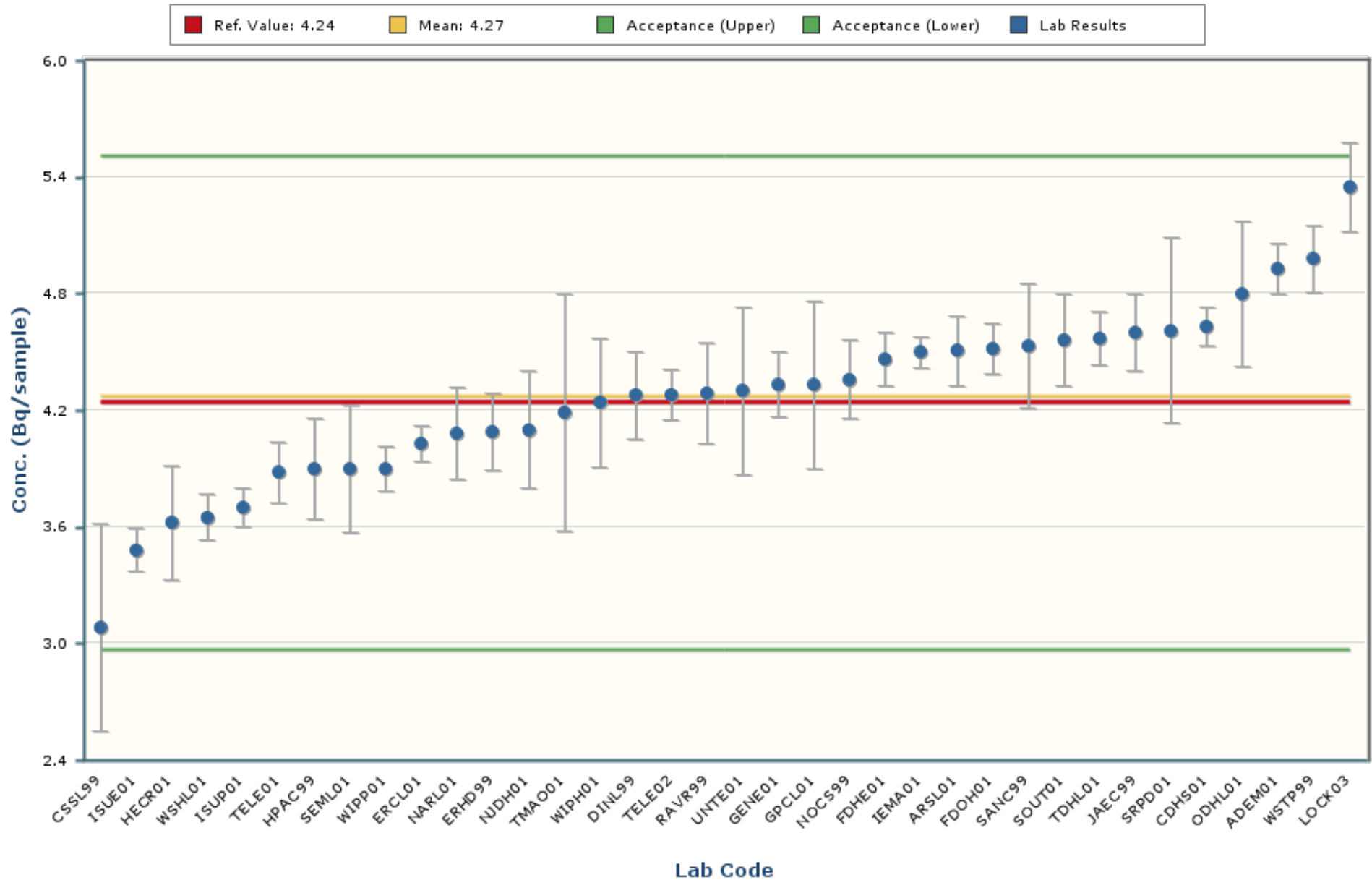
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.39 and 7.12 (± 5 Standard Deviations).

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

Cobalt-57

MAPEP-23-RdV49



Notes:

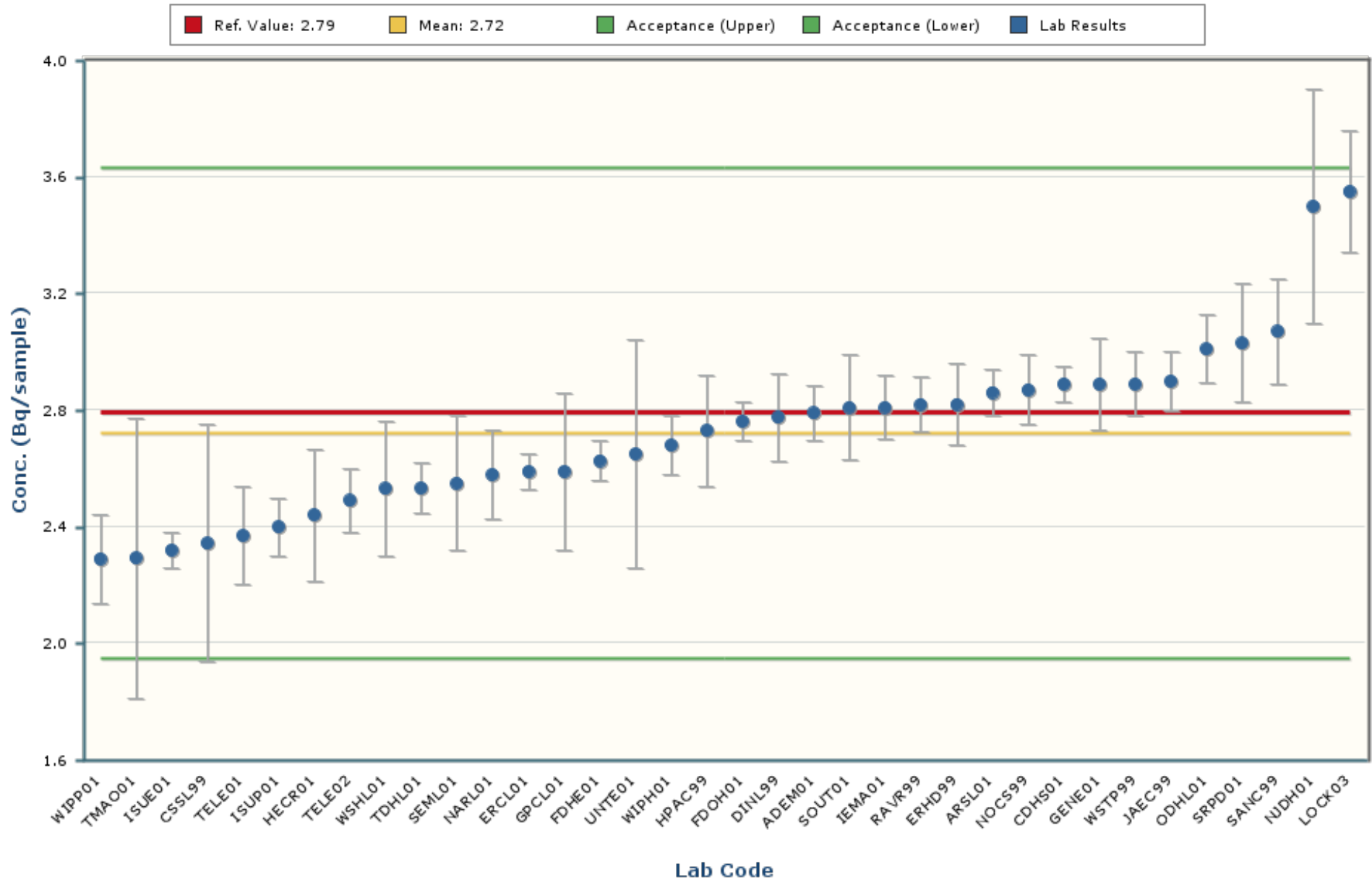
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.01 and 6.52 (± 5 Standard Deviations).

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

Cobalt-60

MAPEP-23-RdV49



Notes:

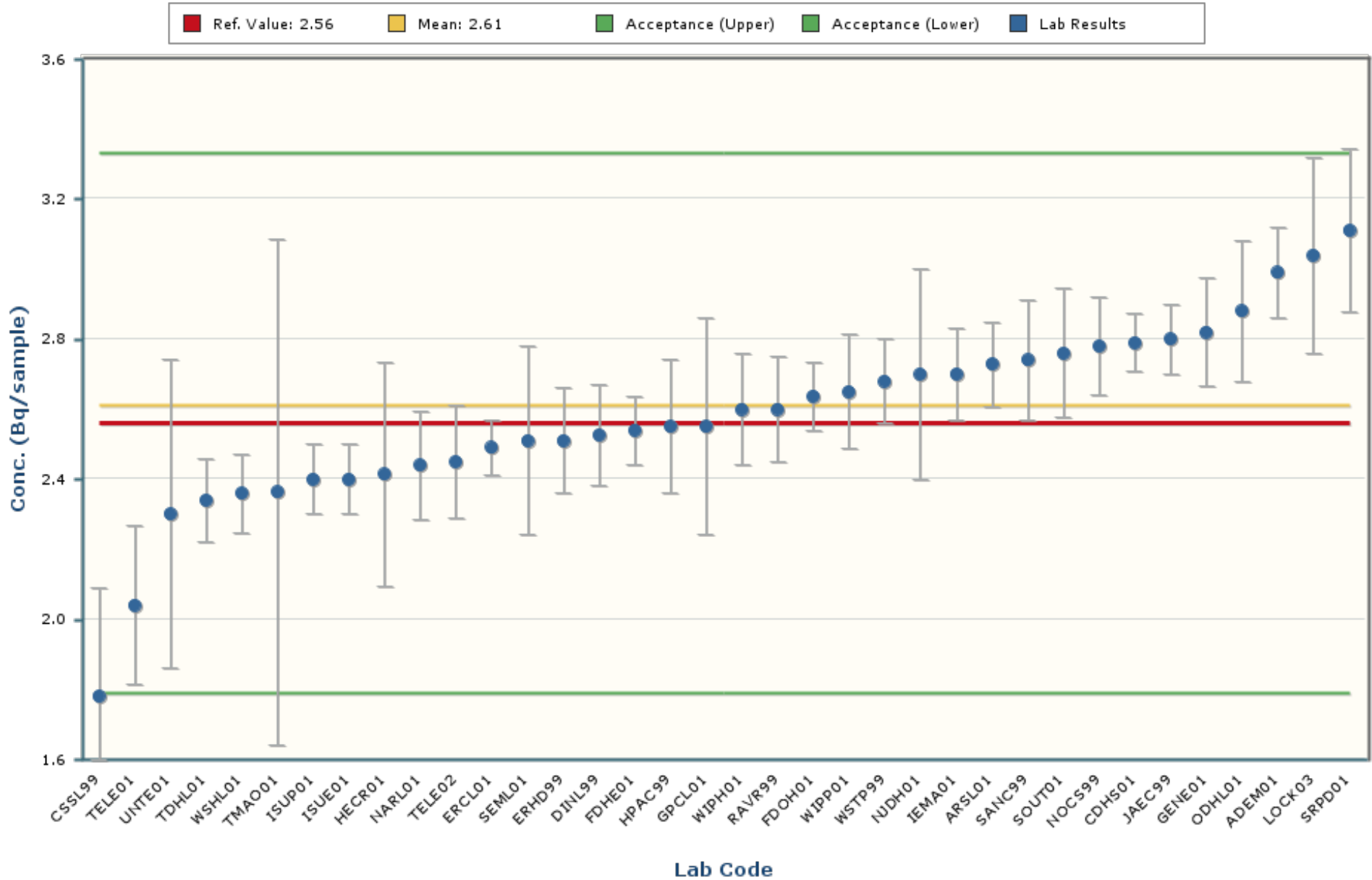
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.26 and 4.19 (± 5 Standard Deviations).

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

Manganese-54

MAPEP-23-RdV49



Notes:

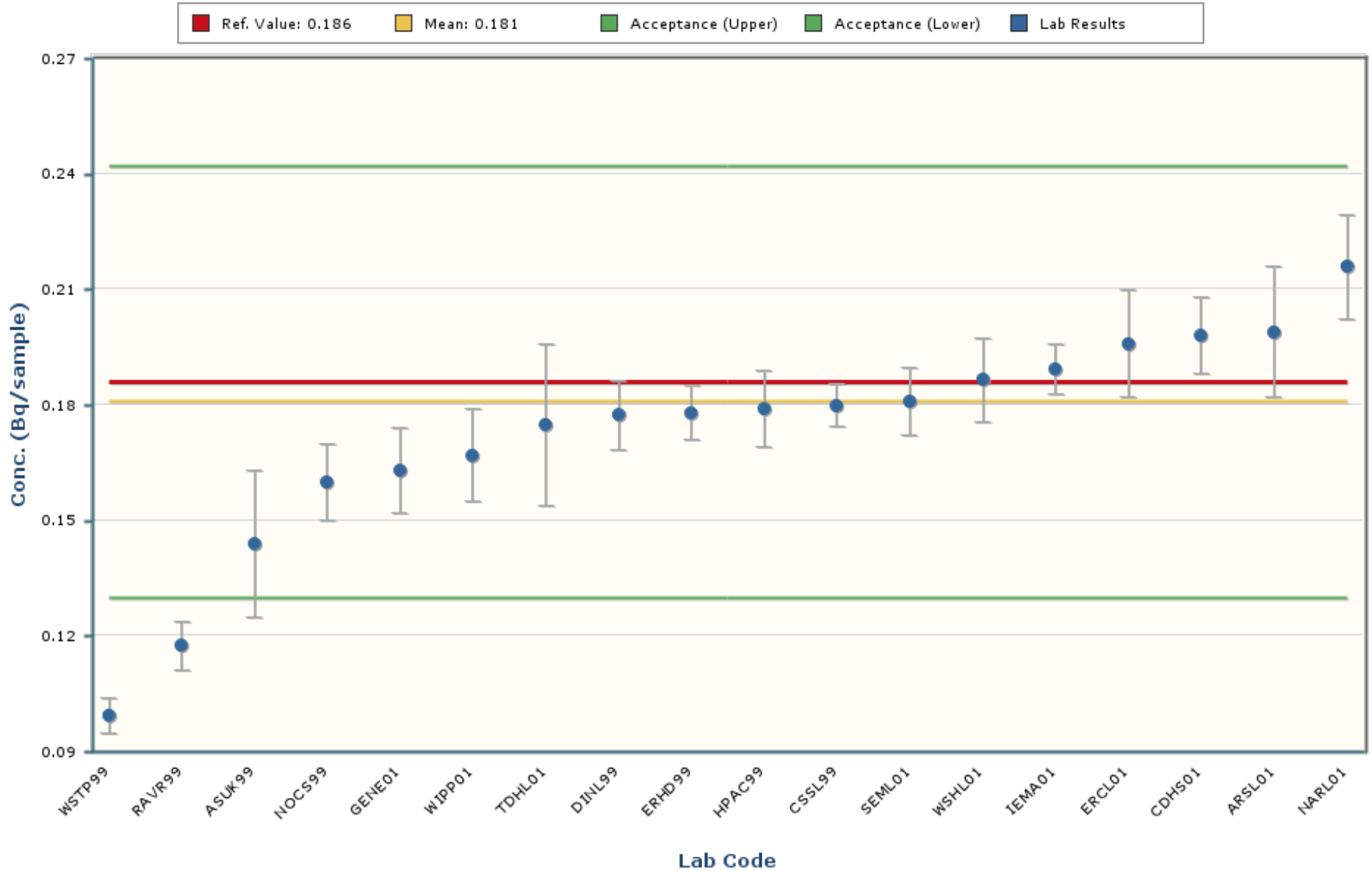
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.48 and 3.73 (± 5 Standard Deviations).

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

Plutonium-238

MAPEP-23-RdV49



Notes:

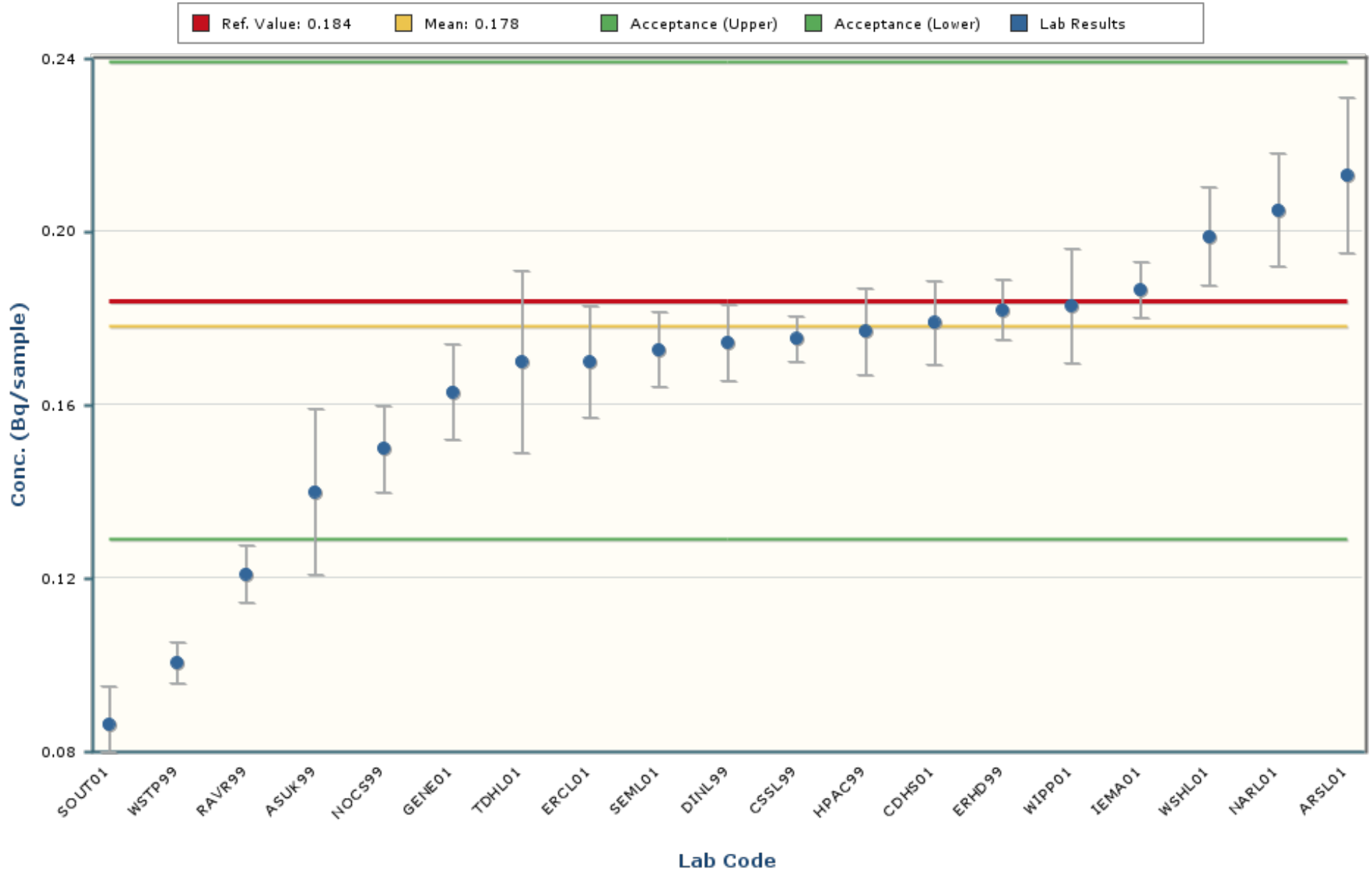
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.093 and 0.268 (± 5 Standard Deviations).

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

Plutonium-239/240

MAPEP-23-RdV49



Notes:

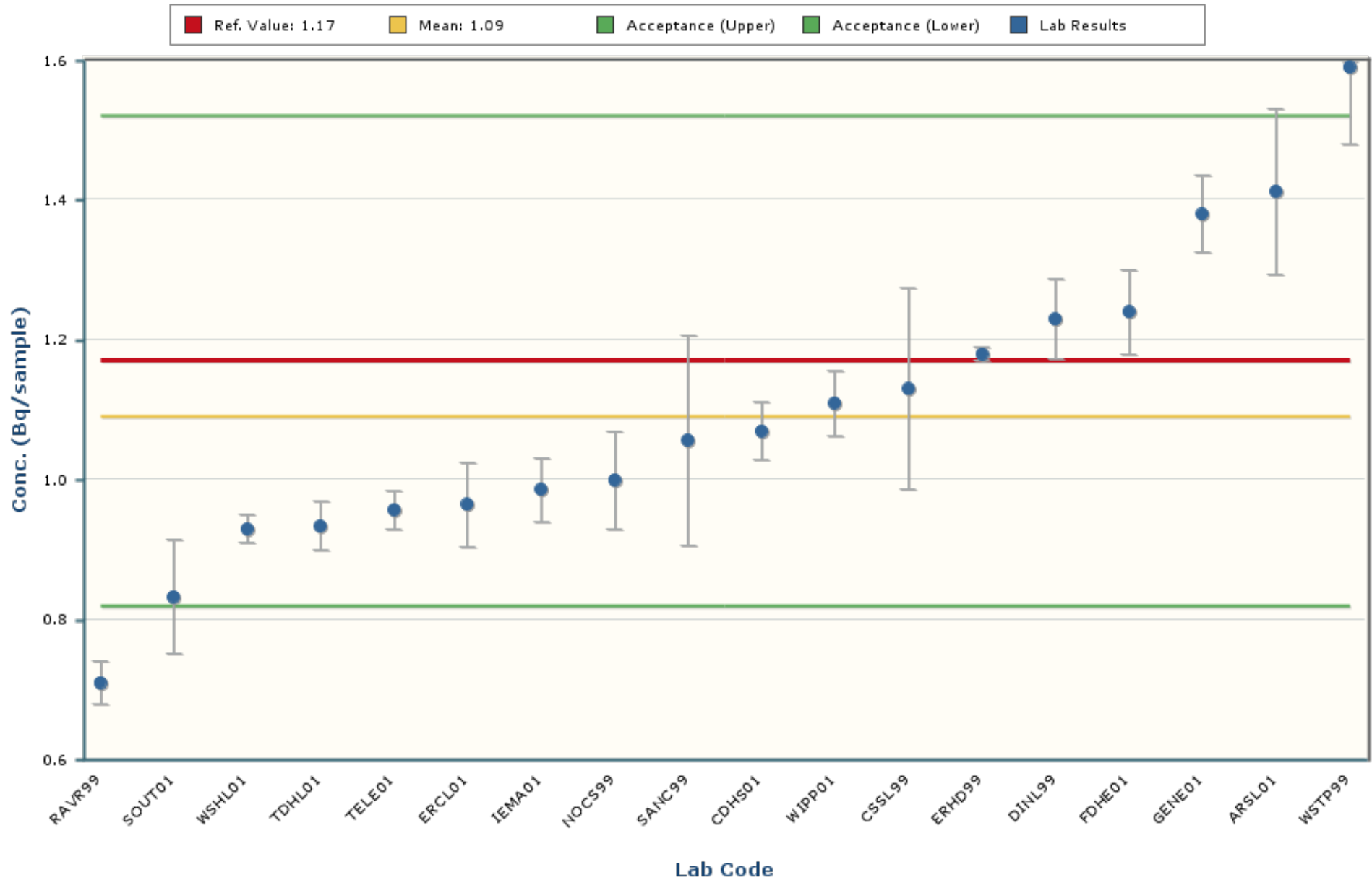
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.085 and 0.270 (± 5 Standard Deviations).

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

Strontium-90

MAPEP-23-RdV49



Notes:

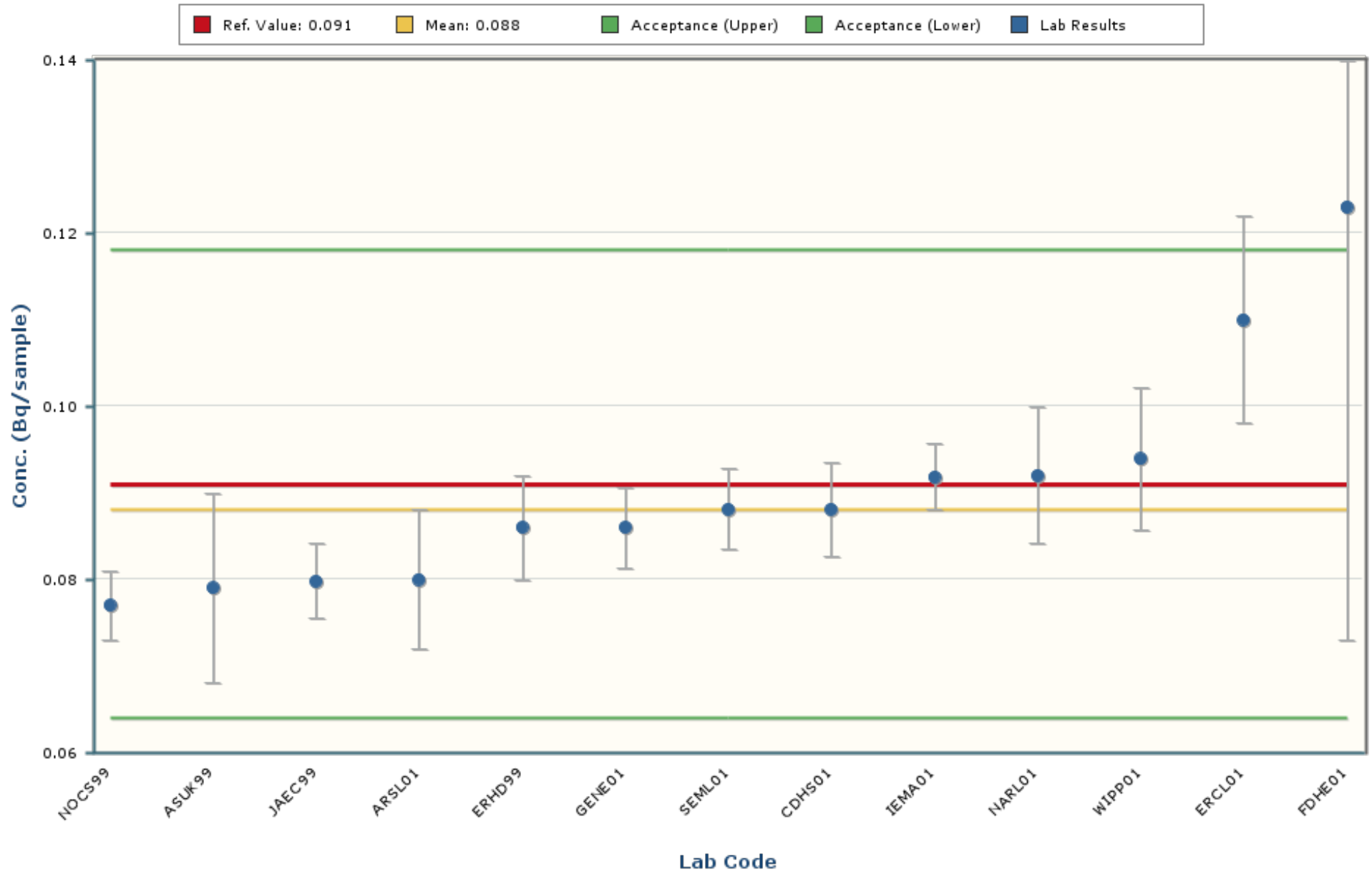
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.26 and 1.92 (± 5 Standard Deviations).

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

Uranium-234

MAPEP-23-RdV49



Notes:

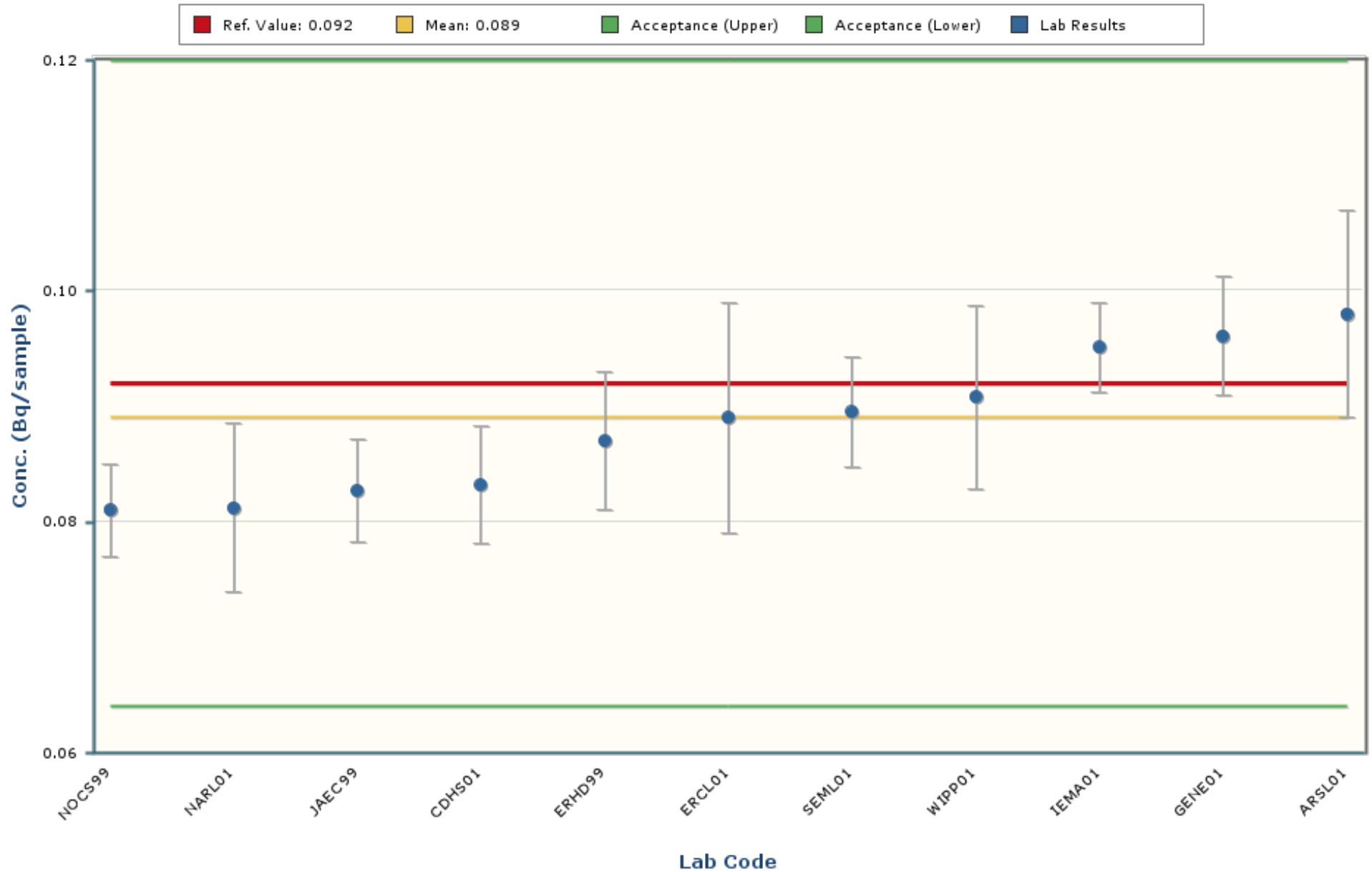
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.043 and 0.133 (± 5 Standard Deviations).

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

Uranium-238

MAPEP-23-RdV49



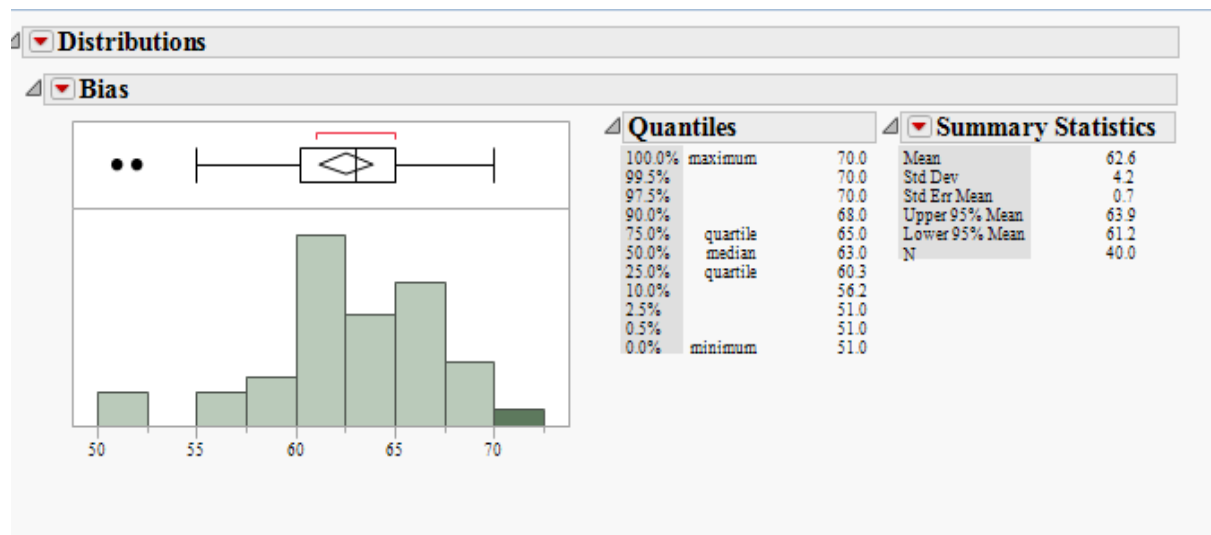
Notes:

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

The chart shows only data points with values between 0.058 and 0.119 (± 5 Standard Deviations).

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

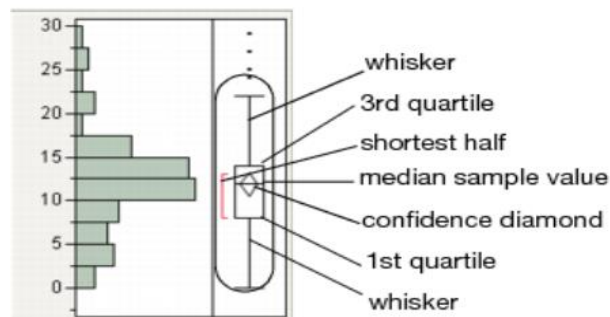


Outlier Box Plot

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)

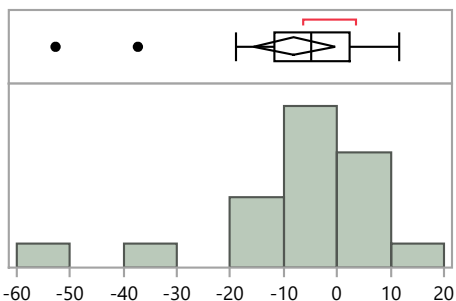


If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

RdV Distribution by Detection Method

Distributions Analyte_Detection=Americium-241 Alpha Spectrometry

Bias



Quantiles

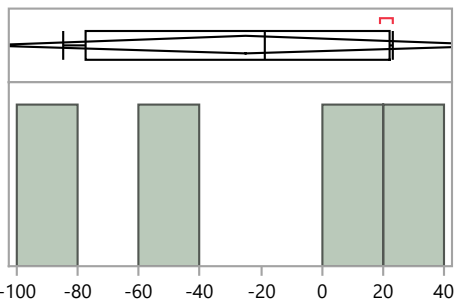
100.0%	maximum	11.5
99.5%		11.5
97.5%		11.5
90.0%		5.3
75.0%	quartile	2.3
50.0%	median	-4.9
25.0%	quartile	-11.7
10.0%		-38.8
2.5%		-52.7
0.5%		-52.7
0.0%	minimum	-52.7

Summary Statistics

Mean	-8.1
Std Dev	15.5
Std Err Mean	3.7
Upper 95% Mean	-0.4
Lower 95% Mean	-15.8
N	18.0

Distributions Analyte_Detection=Americium-241 Gamma Spectrometry

Bias



Quantiles

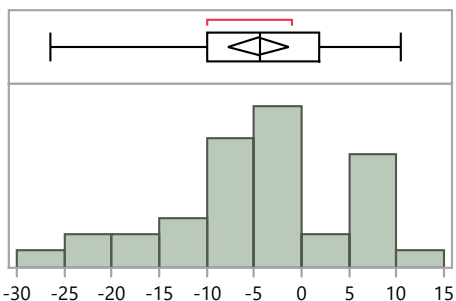
100.0%	maximum	22.9
99.5%		22.9
97.5%		22.9
90.0%		22.9
75.0%	quartile	21.9
50.0%	median	-18.7
25.0%	quartile	-77.7
10.0%		-84.7
2.5%		-84.7
0.5%		-84.7
0.0%	minimum	-84.7

Summary Statistics

Mean	-24.8
Std Dev	54.1
Std Err Mean	27.1
Upper 95% Mean	61.4
Lower 95% Mean	-111.0
N	4.0

Distributions Analyte_Detection=Cesium-134 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	10.4
99.5%		10.4
97.5%		10.4
90.0%		9.3
75.0%	quartile	1.9
50.0%	median	-4.4
25.0%	quartile	-9.9
10.0%		-18.0
2.5%		-26.5
0.5%		-26.5
0.0%	minimum	-26.5

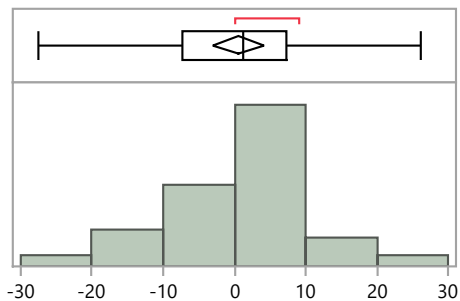
Summary Statistics

Mean	-4.5
Std Dev	9.5
Std Err Mean	1.6
Upper 95% Mean	-1.3
Lower 95% Mean	-7.7
N	36.0

RdV Distribution by Detection Method

Distributions Analyte_Detection=Cobalt-57 Gamma Spectrometry

Bias



Quantiles

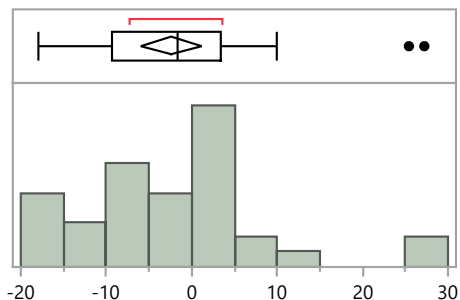
100.0%	maximum	26.2
99.5%		26.2
97.5%		26.2
90.0%		14.1
75.0%	quartile	7.3
50.0%	median	1.3
25.0%	quartile	-7.3
10.0%		-14.1
2.5%		-27.4
0.5%		-27.4
0.0%	minimum	-27.4

Summary Statistics

Mean	0.6
Std Dev	10.6
Std Err Mean	1.8
Upper 95% Mean	4.2
Lower 95% Mean	-3.0
N	36.0

Distributions Analyte_Detection=Cobalt-60 Gamma Spectrometry

Bias



Quantiles

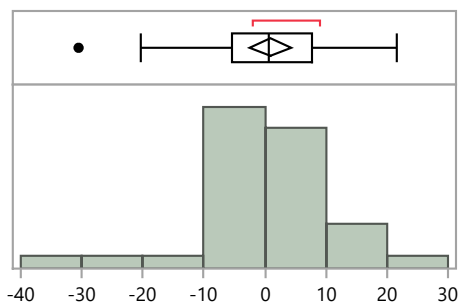
100.0%	maximum	27.2
99.5%		27.2
97.5%		27.2
90.0%		9.0
75.0%	quartile	3.4
50.0%	median	-1.6
25.0%	quartile	-9.3
10.0%		-16.2
2.5%		-17.9
0.5%		-17.9
0.0%	minimum	-17.9

Summary Statistics

Mean	-2.4
Std Dev	10.5
Std Err Mean	1.7
Upper 95% Mean	1.2
Lower 95% Mean	-5.9
N	36.0

Distributions Analyte_Detection=Manganese-54 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	21.5
99.5%		21.5
97.5%		21.5
90.0%		13.8
75.0%	quartile	7.6
50.0%	median	0.6
25.0%	quartile	-5.5
10.0%		-9.1
2.5%		-30.5
0.5%		-30.5
0.0%	minimum	-30.5

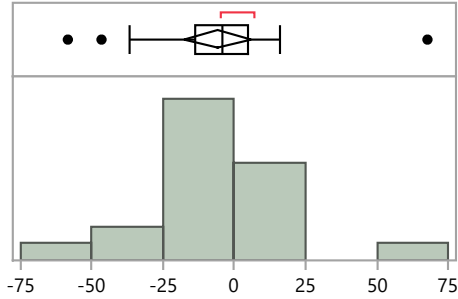
Summary Statistics

Mean	0.9
Std Dev	10.2
Std Err Mean	1.7
Upper 95% Mean	4.3
Lower 95% Mean	-2.6
N	36.0

RdV Distribution by Detection Method

Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

Bias



Quantiles

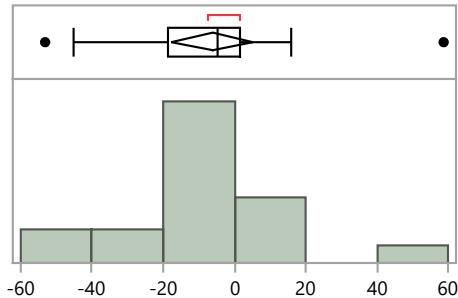
100.0%	maximum	67.7
99.5%		67.7
97.5%		67.7
90.0%		15.2
75.0%	quartile	4.5
50.0%	median	-4.1
25.0%	quartile	-13.6
10.0%		-45.6
2.5%		-58.4
0.5%		-58.4
0.0%	minimum	-58.4

Summary Statistics

Mean	-6.0
Std Dev	25.4
Std Err Mean	5.7
Upper 95% Mean	5.8
Lower 95% Mean	-17.9
N	20.0

Distributions Analyte_Detection=Plutonium-239/240 Alpha Spectrometry

Bias



Quantiles

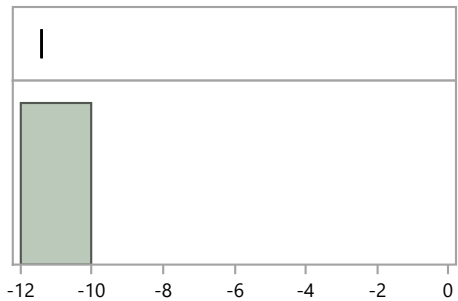
100.0%	maximum	58.7
99.5%		58.7
97.5%		58.7
90.0%		15.8
75.0%	quartile	1.4
50.0%	median	-4.7
25.0%	quartile	-18.5
10.0%		-45.3
2.5%		-53.1
0.5%		-53.1
0.0%	minimum	-53.1

Summary Statistics

Mean	-6.3
Std Dev	24.0
Std Err Mean	5.5
Upper 95% Mean	5.3
Lower 95% Mean	-17.8
N	19.0

Distributions Analyte_Detection=Plutonium-239/240 Gas Flow Proportional Counter

Bias



Quantiles

100.0%	maximum	-11.4
99.5%		-11.4
97.5%		-11.4
90.0%		-11.4
75.0%	quartile	-11.4
50.0%	median	-11.4
25.0%	quartile	-11.4
10.0%		-11.4
2.5%		-11.4
0.5%		-11.4
0.0%	minimum	-11.4

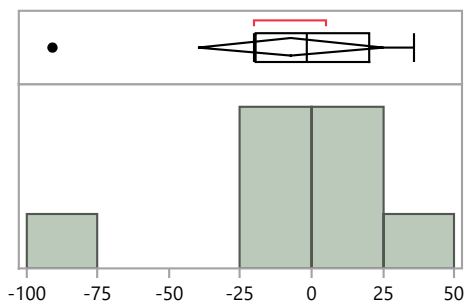
Summary Statistics

Mean	-11.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdV Distribution by Detection Method

Distributions Analyte_Detection=Strontium-90 Gas Flow Proportional Counter

Bias



Quantiles

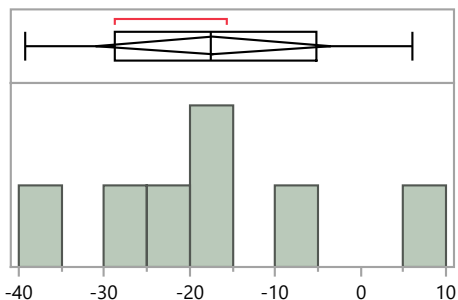
100.0%	maximum	35.9
99.5%		35.9
97.5%		35.9
90.0%		35.9
75.0%	quartile	20.1
50.0%	median	-1.7
25.0%	quartile	-19.7
10.0%		-90.9
2.5%		-90.9
0.5%		-90.9
0.0%	minimum	-90.9

Summary Statistics

Mean	-7.3
Std Dev	39.1
Std Err Mean	13.8
Upper 95% Mean	25.5
Lower 95% Mean	-40.0
N	8.0

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

Bias



Quantiles

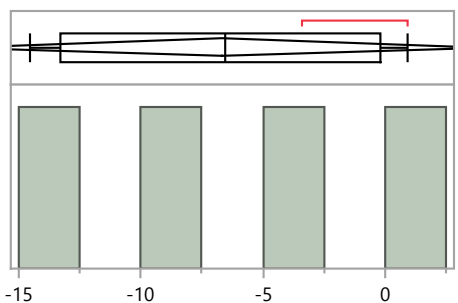
100.0%	maximum	6.0
99.5%		6.0
97.5%		6.0
90.0%		6.0
75.0%	quartile	-5.1
50.0%	median	-17.5
25.0%	quartile	-28.8
10.0%		-39.3
2.5%		-39.3
0.5%		-39.3
0.0%	minimum	-39.3

Summary Statistics

Mean	-17.3
Std Dev	14.8
Std Err Mean	5.6
Upper 95% Mean	-3.5
Lower 95% Mean	-31.0
N	7.0

Distributions Analyte_Detection=Strontium-90 Liquid Scintillation Counter

Bias



Quantiles

100.0%	maximum	0.9
99.5%		0.9
97.5%		0.9
90.0%		0.9
75.0%	quartile	-0.2
50.0%	median	-6.6
25.0%	quartile	-13.3
10.0%		-14.5
2.5%		-14.5
0.5%		-14.5
0.0%	minimum	-14.5

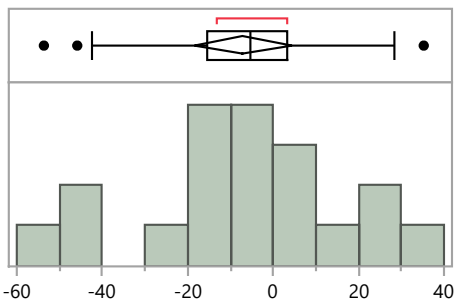
Summary Statistics

Mean	-6.7
Std Dev	6.8
Std Err Mean	3.4
Upper 95% Mean	4.1
Lower 95% Mean	-17.5
N	4.0

RdV Distribution by Detection Method

Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

Bias



Quantiles

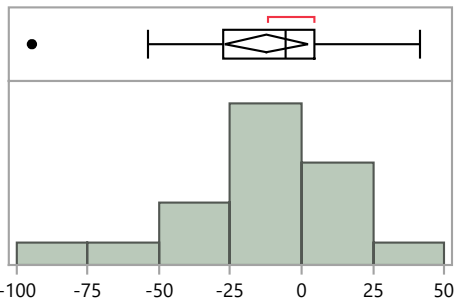
100.0%	maximum	35.2
99.5%		35.2
97.5%		35.2
90.0%		28.2
75.0%	quartile	3.2
50.0%	median	-5.5
25.0%	quartile	-15.4
10.0%		-45.8
2.5%		-53.6
0.5%		-53.6
0.0%	minimum	-53.6

Summary Statistics

Mean	-7.1
Std Dev	23.8
Std Err Mean	5.5
Upper 95% Mean	4.4
Lower 95% Mean	-18.5
N	19.0

Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

Bias



Quantiles

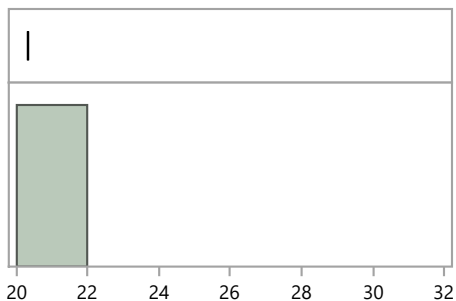
100.0%	maximum	41.3
99.5%		41.3
97.5%		41.3
90.0%		20.3
75.0%	quartile	4.5
50.0%	median	-5.4
25.0%	quartile	-27.4
10.0%		-54.1
2.5%		-94.6
0.5%		-94.6
0.0%	minimum	-94.6

Summary Statistics

Mean	-12.1
Std Dev	30.3
Std Err Mean	6.9
Upper 95% Mean	2.5
Lower 95% Mean	-26.7
N	19.0

Distributions Analyte_Detection=Uranium-238 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	20.3
99.5%		20.3
97.5%		20.3
90.0%		20.3
75.0%	quartile	20.3
50.0%	median	20.3
25.0%	quartile	20.3
10.0%		20.3
2.5%		20.3
0.5%		20.3
0.0%	minimum	20.3

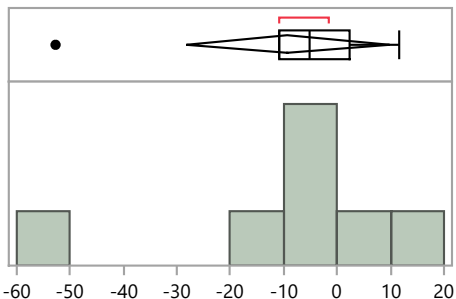
Summary Statistics

Mean	20.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Americium-241 Acid dissolution with hydrofluoric acid

Bias



Quantiles

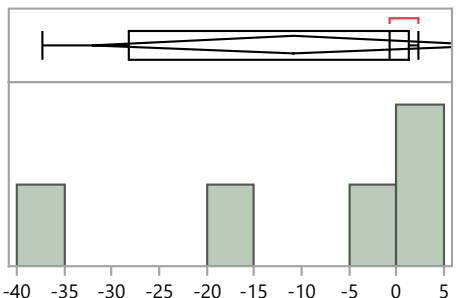
100.0%	maximum	11.5
99.5%		11.5
97.5%		11.5
90.0%		11.5
75.0%	quartile	2.3
50.0%	median	-5.3
25.0%	quartile	-11.0
10.0%		-52.7
2.5%		-52.7
0.5%		-52.7
0.0%	minimum	-52.7

Summary Statistics

Mean	-9.3
Std Dev	20.5
Std Err Mean	7.8
Upper 95% Mean	9.7
Lower 95% Mean	-28.3
N	7.0

Distributions Analyte_Method=Americium-241 Acid leaching without hydrofluoric acid

Bias



Quantiles

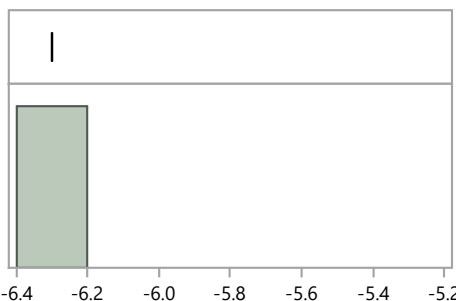
100.0%	maximum	2.3
99.5%		2.3
97.5%		2.3
90.0%		2.3
75.0%	quartile	1.4
50.0%	median	-0.8
25.0%	quartile	-28.2
10.0%		-37.3
2.5%		-37.3
0.5%		-37.3
0.0%	minimum	-37.3

Summary Statistics

Mean	-10.9
Std Dev	17.1
Std Err Mean	7.6
Upper 95% Mean	10.3
Lower 95% Mean	-32.1
N	5.0

Distributions Analyte_Method=Americium-241 EPA 907, Actinide Elements, 600/4/80-032

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

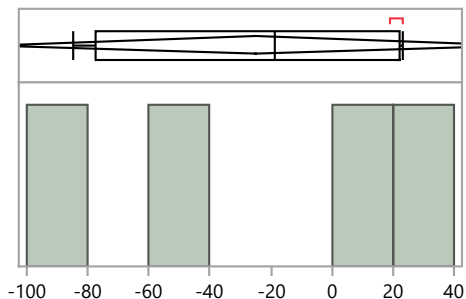
Summary Statistics

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

RdV Distribution by Preparation Method

Distributions Analyte_Method=Americium-241 No preparation - analyzed as received

Bias



Quantiles

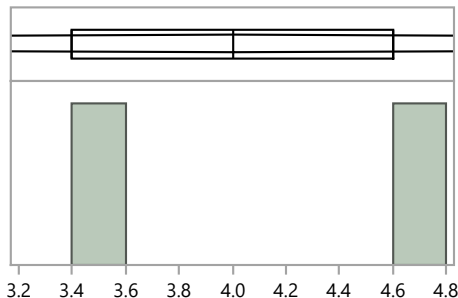
100.0%	maximum	22.9
99.5%		22.9
97.5%		22.9
90.0%		22.9
75.0%	quartile	21.9
50.0%	median	-18.7
25.0%	quartile	-77.7
10.0%		-84.7
2.5%		-84.7
0.5%		-84.7
0.0%	minimum	-84.7

Summary Statistics

Mean	-24.8
Std Dev	54.1
Std Err Mean	27.1
Upper 95% Mean	61.4
Lower 95% Mean	-111.0
N	4.0

Distributions Analyte_Method=Americium-241 Other

Bias



Quantiles

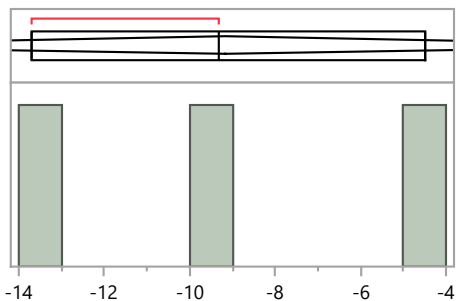
100.0%	maximum	4.6
99.5%		4.6
97.5%		4.6
90.0%		4.6
75.0%	quartile	4.6
50.0%	median	4.0
25.0%	quartile	3.4
10.0%		3.4
2.5%		3.4
0.5%		3.4
0.0%	minimum	3.4

Summary Statistics

Mean	4.0
Std Dev	0.8
Std Err Mean	0.6
Upper 95% Mean	11.6
Lower 95% Mean	-3.6
N	2.0

Distributions Analyte_Method=Americium-241 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	-4.5
99.5%		-4.5
97.5%		-4.5
90.0%		-4.5
75.0%	quartile	-4.5
50.0%	median	-9.3
25.0%	quartile	-13.7
10.0%		-13.7
2.5%		-13.7
0.5%		-13.7
0.0%	minimum	-13.7

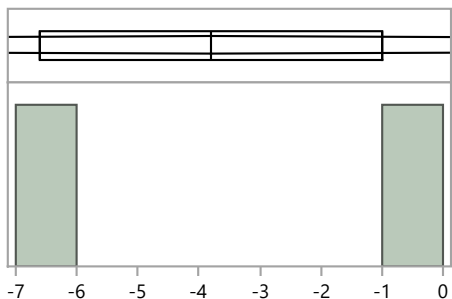
Summary Statistics

Mean	-9.2
Std Dev	4.6
Std Err Mean	2.7
Upper 95% Mean	2.3
Lower 95% Mean	-20.6
N	3.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Cesium-134 Acid dissolution with hydrofluoric acid

Bias



Quantiles

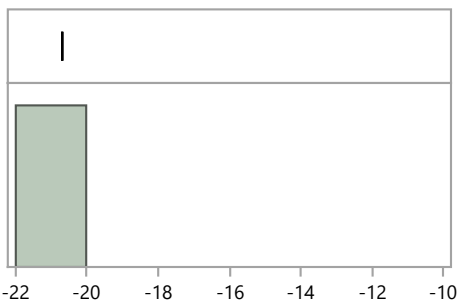
100.0%	maximum	-1.0
99.5%		-1.0
97.5%		-1.0
90.0%		-1.0
75.0%	quartile	-1.0
50.0%	median	-3.8
25.0%	quartile	-6.6
10.0%		-6.6
2.5%		-6.6
0.5%		-6.6
0.0%	minimum	-6.6

Summary Statistics

Mean	-3.8
Std Dev	4.0
Std Err Mean	2.8
Upper 95% Mean	31.8
Lower 95% Mean	-39.4
N	2.0

Distributions Analyte_Method=Cesium-134 EPA 901, Radioactive Cesium, 600/4-80-032

Bias



Quantiles

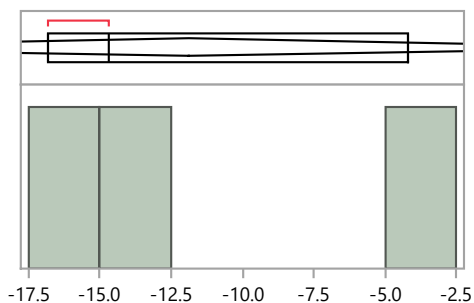
100.0%	maximum	-20.7
99.5%		-20.7
97.5%		-20.7
90.0%		-20.7
75.0%	quartile	-20.7
50.0%	median	-20.7
25.0%	quartile	-20.7
10.0%		-20.7
2.5%		-20.7
0.5%		-20.7
0.0%	minimum	-20.7

Summary Statistics

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

Distributions Analyte_Method=Cesium-134 EPA 901.1, Gamma Emitting, 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	-14.7
25.0%	quartile	-16.8
10.0%		-16.8
2.5%		-16.8
0.5%		-16.8
0.0%	minimum	-16.8

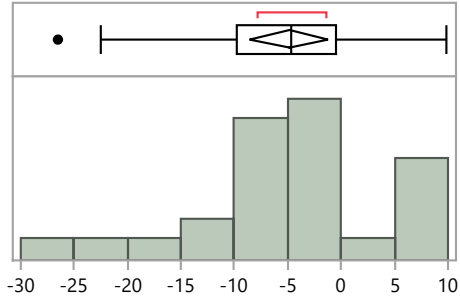
Summary Statistics

Mean	-11.9
Std Dev	6.8
Std Err Mean	3.9
Upper 95% Mean	4.9
Lower 95% Mean	-28.7
N	3.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Cesium-134 No preparation - analyzed as received

Bias



Quantiles

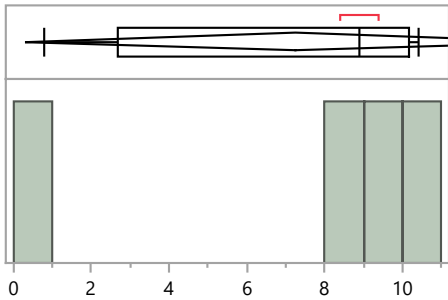
100.0%	maximum	9.8
99.5%		9.8
97.5%		9.8
90.0%		8.8
75.0%	quartile	-0.5
50.0%	median	-4.7
25.0%	quartile	-9.8
10.0%		-18.4
2.5%		-26.5
0.5%		-26.5
0.0%	minimum	-26.5

Summary Statistics

Mean	-4.9
Std Dev	9.0
Std Err Mean	1.8
Upper 95% Mean	-1.3
Lower 95% Mean	-8.5
N	26.0

Distributions Analyte_Method=Cesium-134 Other

Bias



Quantiles

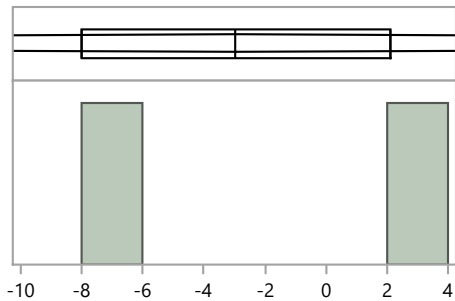
100.0%	maximum	10.4
99.5%		10.4
97.5%		10.4
90.0%		10.4
75.0%	quartile	10.2
50.0%	median	8.9
25.0%	quartile	2.7
10.0%		0.8
2.5%		0.8
0.5%		0.8
0.0%	minimum	0.8

Summary Statistics

Mean	7.3
Std Dev	4.4
Std Err Mean	2.2
Upper 95% Mean	14.2
Lower 95% Mean	0.3
N	4.0

Distributions Analyte_Method=Cobalt-57 Acid dissolution with hydrofluoric acid

Bias



Quantiles

100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		2.1
75.0%	quartile	2.1
50.0%	median	-3.0
25.0%	quartile	-8.0
10.0%		-8.0
2.5%		-8.0
0.5%		-8.0
0.0%	minimum	-8.0

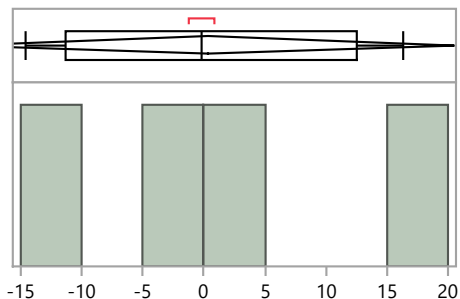
Summary Statistics

Mean	-3.0
Std Dev	7.1
Std Err Mean	5.1
Upper 95% Mean	61.2
Lower 95% Mean	-67.1
N	2.0

RdV Distribution by Preparation Method

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

Bias



Quantiles

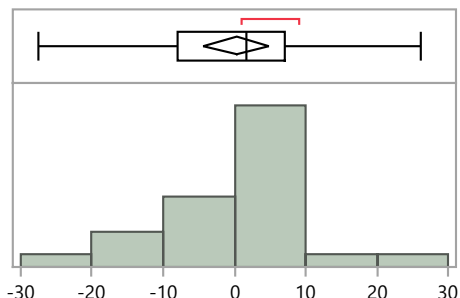
100.0%	maximum	16.3
99.5%		16.3
97.5%		16.3
90.0%		16.3
75.0%	quartile	12.5
50.0%	median	-0.1
25.0%	quartile	-11.3
10.0%		-14.6
2.5%		-14.6
0.5%		-14.6
0.0%	minimum	-14.6

Summary Statistics

Mean	0.4
Std Dev	12.7
Std Err Mean	6.3
Upper 95% Mean	20.5
Lower 95% Mean	-19.8
N	4.0

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

Bias



Quantiles

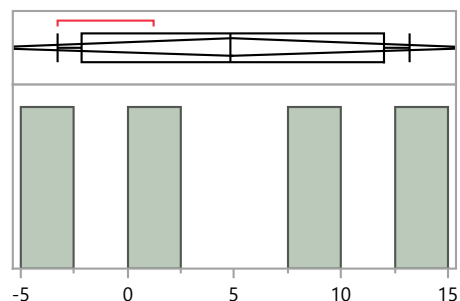
100.0%	maximum	26.2
99.5%		26.2
97.5%		26.2
90.0%		11.7
75.0%	quartile	7.0
50.0%	median	1.8
25.0%	quartile	-8.0
10.0%		-15.1
2.5%		-27.4
0.5%		-27.4
0.0%	minimum	-27.4

Summary Statistics

Mean	0.3
Std Dev	11.2
Std Err Mean	2.2
Upper 95% Mean	4.8
Lower 95% Mean	-4.3
N	26.0

Distributions Analyte_Method=Cobalt-57 Other

Bias



Quantiles

100.0%	maximum	13.2
99.5%		13.2
97.5%		13.2
90.0%		13.2
75.0%	quartile	12.0
50.0%	median	4.9
25.0%	quartile	-2.2
10.0%		-3.3
2.5%		-3.3
0.5%		-3.3
0.0%	minimum	-3.3

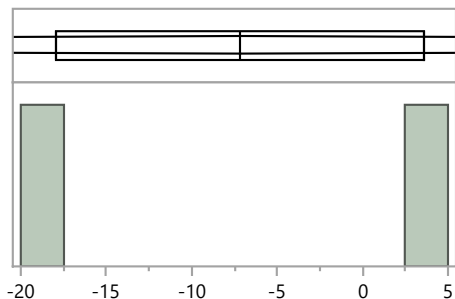
Summary Statistics

Mean	4.9
Std Dev	7.4
Std Err Mean	3.7
Upper 95% Mean	16.6
Lower 95% Mean	-6.8
N	4.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Cobalt-60 Acid dissolution with hydrofluoric acid

Bias



Quantiles

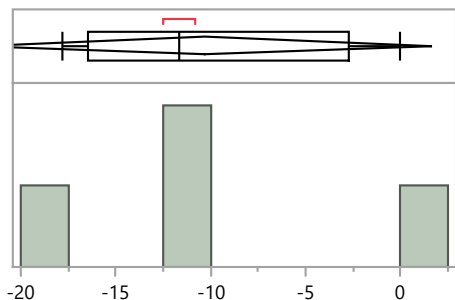
100.0%	maximum	3.6
99.5%		3.6
97.5%		3.6
90.0%		3.6
75.0%	quartile	3.6
50.0%	median	-7.2
25.0%	quartile	-17.9
10.0%		-17.9
2.5%		-17.9
0.5%		-17.9
0.0%	minimum	-17.9

Summary Statistics

Mean	-7.2
Std Dev	15.2
Std Err Mean	10.8
Upper 95% Mean	129.4
Lower 95% Mean	-143.7
N	2.0

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

Bias



Quantiles

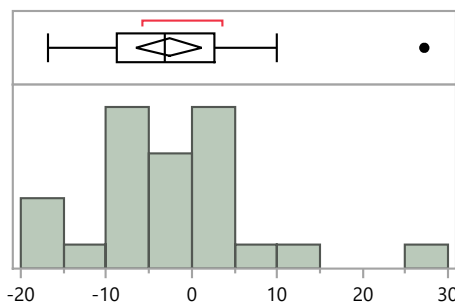
100.0%	maximum	0.0
99.5%		0.0
97.5%		0.0
90.0%		0.0
75.0%	quartile	-2.7
50.0%	median	-11.7
25.0%	quartile	-16.5
10.0%		-17.8
2.5%		-17.8
0.5%		-17.8
0.0%	minimum	-17.8

Summary Statistics

Mean	-10.3
Std Dev	7.5
Std Err Mean	3.7
Upper 95% Mean	1.6
Lower 95% Mean	-22.2
N	4.0

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

Bias



Quantiles

100.0%	maximum	27.2
99.5%		27.2
97.5%		27.2
90.0%		9.0
75.0%	quartile	2.6
50.0%	median	-3.1
25.0%	quartile	-8.8
10.0%		-15.4
2.5%		-16.8
0.5%		-16.8
0.0%	minimum	-16.8

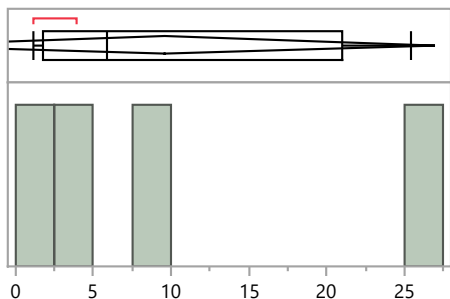
Summary Statistics

Mean	-2.6
Std Dev	9.4
Std Err Mean	1.8
Upper 95% Mean	1.2
Lower 95% Mean	-6.4
N	26.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Cobalt-60 Other

Bias



Quantiles

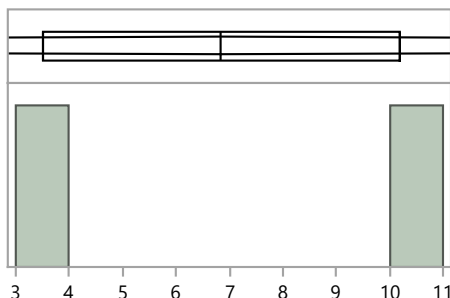
100.0%	maximum	25.4
99.5%		25.4
97.5%		25.4
90.0%		25.4
75.0%	quartile	21.0
50.0%	median	5.9
25.0%	quartile	1.8
10.0%		1.1
2.5%		1.1
0.5%		1.1
0.0%	minimum	1.1

Summary Statistics

Mean	9.6
Std Dev	10.9
Std Err Mean	5.5
Upper 95% Mean	26.9
Lower 95% Mean	-7.8
N	4.0

Distributions Analyte_Method=Manganese-54 Acid dissolution with hydrofluoric acid

Bias



Quantiles

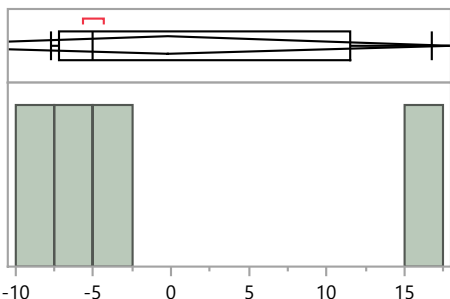
100.0%	maximum	10.2
99.5%		10.2
97.5%		10.2
90.0%		10.2
75.0%	quartile	10.2
50.0%	median	6.9
25.0%	quartile	3.5
10.0%		3.5
2.5%		3.5
0.5%		3.5
0.0%	minimum	3.5

Summary Statistics

Mean	6.9
Std Dev	4.7
Std Err Mean	3.4
Upper 95% Mean	49.4
Lower 95% Mean	-35.7
N	2.0

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

Bias



Quantiles

100.0%	maximum	16.8
99.5%		16.8
97.5%		16.8
90.0%		16.8
75.0%	quartile	11.5
50.0%	median	-5.0
25.0%	quartile	-7.2
10.0%		-7.7
2.5%		-7.7
0.5%		-7.7
0.0%	minimum	-7.7

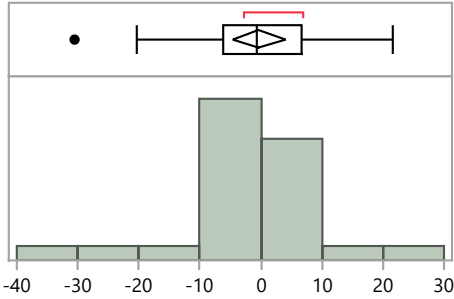
Summary Statistics

Mean	-0.2
Std Dev	11.4
Std Err Mean	5.7
Upper 95% Mean	18.0
Lower 95% Mean	-18.4
N	4.0

RdV Distribution by Preparation Method

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

Bias



Quantiles

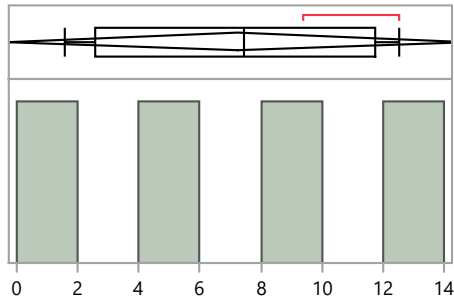
100.0%	maximum	21.5
99.5%		21.5
97.5%		21.5
90.0%		11.9
75.0%	quartile	6.7
50.0%	median	-0.6
25.0%	quartile	-6.3
10.0%		-13.2
2.5%		-30.5
0.5%		-30.5
0.0%	minimum	-30.5

Summary Statistics

Mean	-0.4
Std Dev	10.7
Std Err Mean	2.1
Upper 95% Mean	3.9
Lower 95% Mean	-4.7
N	26.0

Distributions Analyte_Method=Manganese-54 Other

Bias



Quantiles

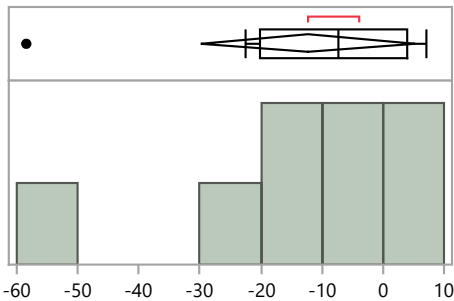
100.0%	maximum	12.5
99.5%		12.5
97.5%		12.5
90.0%		12.5
75.0%	quartile	11.7
50.0%	median	7.5
25.0%	quartile	2.6
10.0%		1.6
2.5%		1.6
0.5%		1.6
0.0%	minimum	1.6

Summary Statistics

Mean	7.3
Std Dev	4.7
Std Err Mean	2.4
Upper 95% Mean	14.8
Lower 95% Mean	-0.3
N	4.0

Distributions Analyte_Method=Plutonium-238 Acid dissolution with hydrofluoric acid

Bias



Quantiles

100.0%	maximum	7.0
99.5%		7.0
97.5%		7.0
90.0%		7.0
75.0%	quartile	3.9
50.0%	median	-7.4
25.0%	quartile	-20.1
10.0%		-58.4
2.5%		-58.4
0.5%		-58.4
0.0%	minimum	-58.4

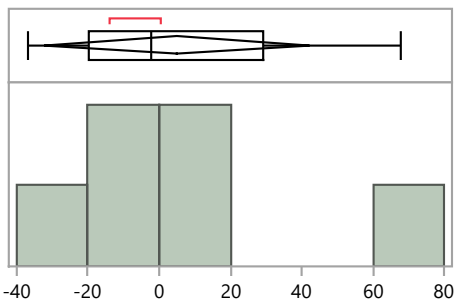
Summary Statistics

Mean	-12.3
Std Dev	21.0
Std Err Mean	7.4
Upper 95% Mean	5.3
Lower 95% Mean	-29.9
N	8.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Plutonium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

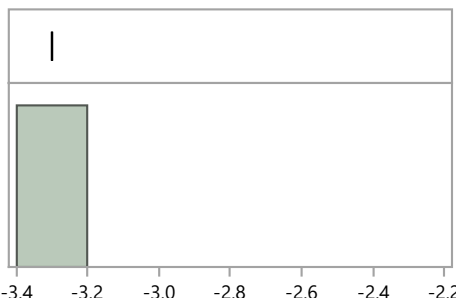
100.0%	maximum	67.7
99.5%		67.7
97.5%		67.7
90.0%		67.7
75.0%	quartile	29.0
50.0%	median	-2.0
25.0%	quartile	-19.7
10.0%		-36.8
2.5%		-36.8
0.5%		-36.8
0.0%	minimum	-36.8

Summary Statistics

Mean	4.8
Std Dev	35.4
Std Err Mean	14.5
Upper 95% Mean	42.0
Lower 95% Mean	-32.3
N	6.0

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

Bias



Quantiles

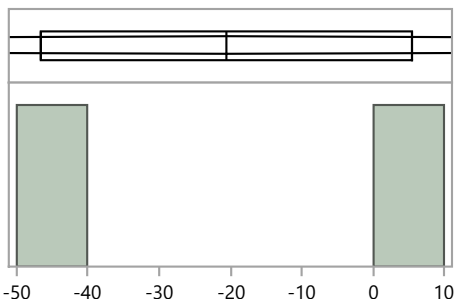
100.0%	maximum	-3.3
99.5%		-3.3
97.5%		-3.3
90.0%		-3.3
75.0%	quartile	-3.3
50.0%	median	-3.3
25.0%	quartile	-3.3
10.0%		-3.3
2.5%		-3.3
0.5%		-3.3
0.0%	minimum	-3.3

Summary Statistics

Mean	-3.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Other

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	-20.6
25.0%	quartile	-46.6
10.0%		-46.6
2.5%		-46.6
0.5%		-46.6
0.0%	minimum	-46.6

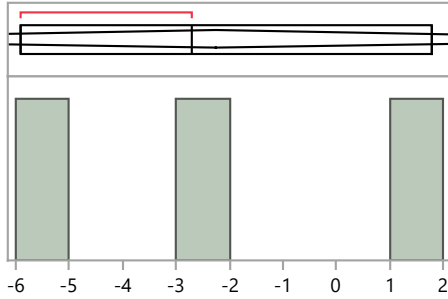
Summary Statistics

Mean	-20.6
Std Dev	36.8
Std Err Mean	26.0
Upper 95% Mean	309.8
Lower 95% Mean	-351.0
N	2.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Plutonium-238 Total dissolution by fusion

Bias



Quantiles

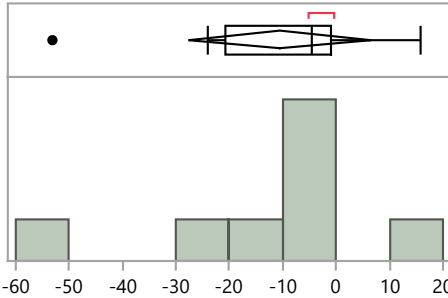
100.0%	maximum	1.8
99.5%		1.8
97.5%		1.8
90.0%		1.8
75.0%	quartile	1.8
50.0%	median	-2.7
25.0%	quartile	-5.9
10.0%		-5.9
2.5%		-5.9
0.5%		-5.9
0.0%	minimum	-5.9

Summary Statistics

Mean	-2.3
Std Dev	3.9
Std Err Mean	2.2
Upper 95% Mean	7.3
Lower 95% Mean	-11.9
N	3.0

Distributions Analyte_Method=Plutonium-239/240 Acid dissolution with hydrofluoric acid

Bias



Quantiles

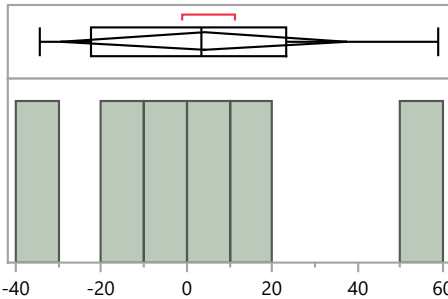
100.0%	maximum	15.8
99.5%		15.8
97.5%		15.8
90.0%		15.8
75.0%	quartile	-1.1
50.0%	median	-4.5
25.0%	quartile	-20.8
10.0%		-53.1
2.5%		-53.1
0.5%		-53.1
0.0%	minimum	-53.1

Summary Statistics

Mean	-10.6
Std Dev	20.4
Std Err Mean	7.2
Upper 95% Mean	6.5
Lower 95% Mean	-27.7
N	8.0

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

Bias



Quantiles

100.0%	maximum	58.7
99.5%		58.7
97.5%		58.7
90.0%		58.7
75.0%	quartile	23.2
50.0%	median	3.5
25.0%	quartile	-22.4
10.0%		-34.2
2.5%		-34.2
0.5%		-34.2
0.0%	minimum	-34.2

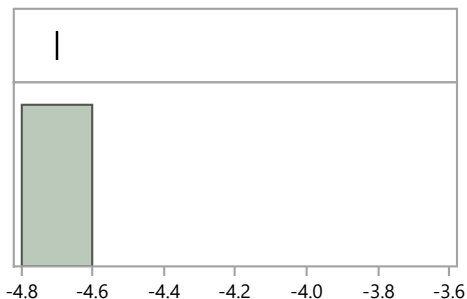
Summary Statistics

Mean	4.1
Std Dev	31.8
Std Err Mean	13.0
Upper 95% Mean	37.4
Lower 95% Mean	-29.3
N	6.0

RdV Distribution by Preparation Method

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

Bias



Quantiles

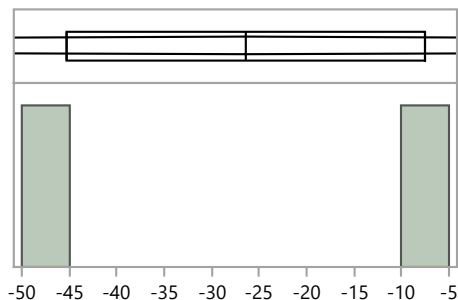
100.0%	maximum	-4.7
99.5%		-4.7
97.5%		-4.7
90.0%		-4.7
75.0%	quartile	-4.7
50.0%	median	-4.7
25.0%	quartile	-4.7
10.0%		-4.7
2.5%		-4.7
0.5%		-4.7
0.0%	minimum	-4.7

Summary Statistics

Mean	-4.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-239/240 Other

Bias



Quantiles

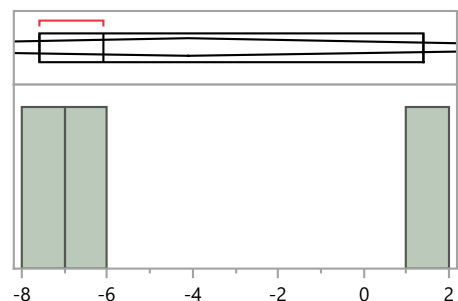
100.0%	maximum	-7.6
99.5%		-7.6
97.5%		-7.6
90.0%		-7.6
75.0%	quartile	-7.6
50.0%	median	-26.5
25.0%	quartile	-45.3
10.0%		-45.3
2.5%		-45.3
0.5%		-45.3
0.0%	minimum	-45.3

Summary Statistics

Mean	-26.5
Std Dev	26.7
Std Err Mean	18.9
Upper 95% Mean	213.1
Lower 95% Mean	-266.0
N	2.0

Distributions Analyte_Method=Plutonium-239/240 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	-6.1
25.0%	quartile	-7.6
10.0%		-7.6
2.5%		-7.6
0.5%		-7.6
0.0%	minimum	-7.6

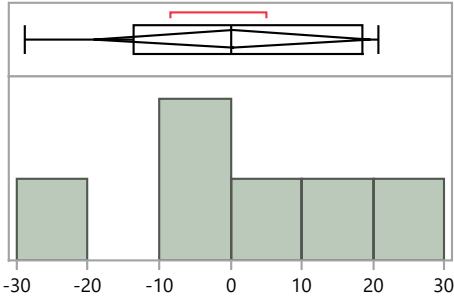
Summary Statistics

Mean	-4.1
Std Dev	4.8
Std Err Mean	2.8
Upper 95% Mean	7.9
Lower 95% Mean	-16.1
N	3.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Strontium-90 Acid dissolution with hydrofluoric acid

Bias



Quantiles

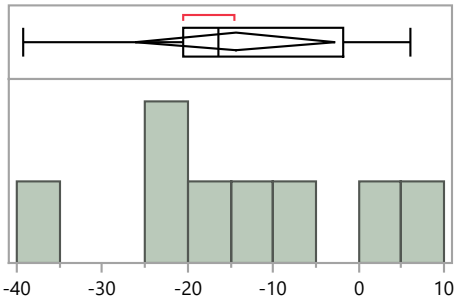
100.0%	maximum	20.8
99.5%		20.8
97.5%		20.8
90.0%		20.8
75.0%	quartile	18.6
50.0%	median	0.0
25.0%	quartile	-13.6
10.0%		-28.8
2.5%		-28.8
0.5%		-28.8
0.0%	minimum	-28.8

Summary Statistics

Mean	0.2
Std Dev	18.5
Std Err Mean	7.5
Upper 95% Mean	19.6
Lower 95% Mean	-19.2
N	6.0

Distributions Analyte_Method=Strontium-90 Acid leaching without hydrofluoric acid

Bias



Quantiles

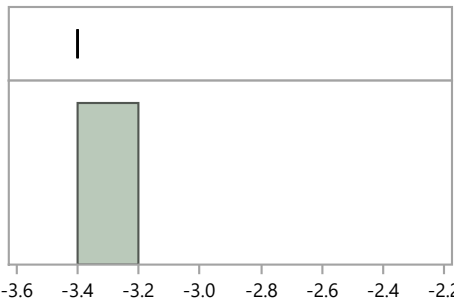
100.0%	maximum	6.0
99.5%		6.0
97.5%		6.0
90.0%		6.0
75.0%	quartile	-1.8
50.0%	median	-16.4
25.0%	quartile	-20.4
10.0%		-39.3
2.5%		-39.3
0.5%		-39.3
0.0%	minimum	-39.3

Summary Statistics

Mean	-14.4
Std Dev	14.0
Std Err Mean	5.0
Upper 95% Mean	-2.7
Lower 95% Mean	-26.2
N	8.0

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

Bias



Quantiles

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

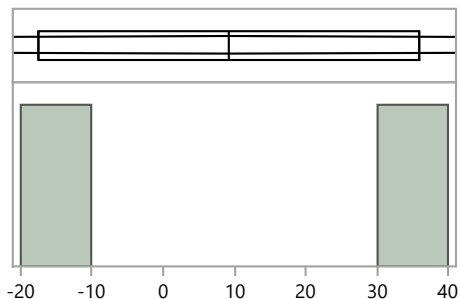
Summary Statistics

Mean	-3.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Strontium-90 Other

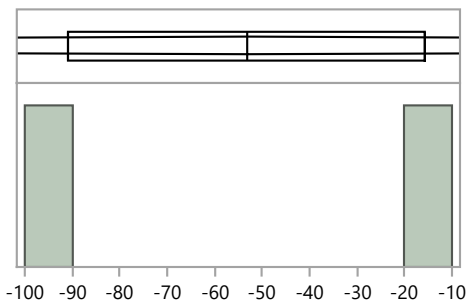
Bias



Quantiles			Summary Statistics	
100.0%	maximum	35.9	Mean	9.2
99.5%		35.9	Std Dev	37.8
97.5%		35.9	Std Err Mean	26.7
90.0%		35.9	Upper 95% Mean	348.5
75.0%	quartile	35.9	Lower 95% Mean	-330.1
50.0%	median	9.2	N	2.0
25.0%	quartile	-17.5		
10.0%		-17.5		
2.5%		-17.5		
0.5%		-17.5		
0.0%	minimum	-17.5		

Distributions Analyte_Method=Strontium-90 Total dissolution by fusion

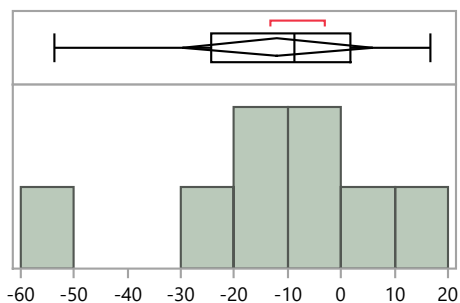
Bias



Quantiles			Summary Statistics	
100.0%	maximum	-15.7	Mean	-53.3
99.5%		-15.7	Std Dev	53.2
97.5%		-15.7	Std Err Mean	37.6
90.0%		-15.7	Upper 95% Mean	424.5
75.0%	quartile	-15.7	Lower 95% Mean	-531.1
50.0%	median	-53.3	N	2.0
25.0%	quartile	-90.9		
10.0%		-90.9		
2.5%		-90.9		
0.5%		-90.9		
0.0%	minimum	-90.9		

Distributions Analyte_Method=Uranium-234 Acid dissolution with hydrofluoric acid

Bias

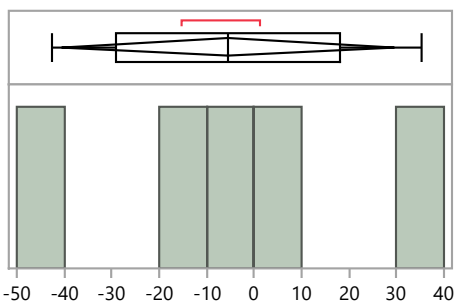


Quantiles			Summary Statistics	
100.0%	maximum	16.8	Mean	-12.0
99.5%		16.8	Std Dev	21.3
97.5%		16.8	Std Err Mean	7.5
90.0%		16.8	Upper 95% Mean	5.8
75.0%	quartile	1.6	Lower 95% Mean	-29.8
50.0%	median	-8.8	N	8.0
25.0%	quartile	-24.4		
10.0%		-53.6		
2.5%		-53.6		
0.5%		-53.6		
0.0%	minimum	-53.6		

RdV Distribution by Preparation Method

Distributions Analyte_Method=Uranium-234 Acid leaching without hydrofluoric acid

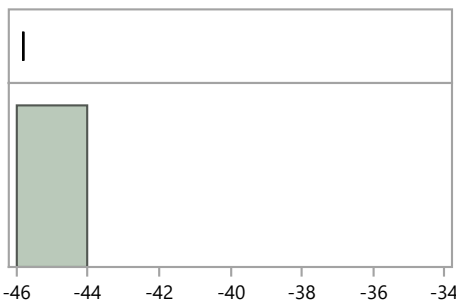
Bias



Quantiles			Summary Statistics	
100.0%	maximum	35.2	Mean	-5.4
99.5%		35.2	Std Dev	28.1
97.5%		35.2	Std Err Mean	12.6
90.0%		35.2	Upper 95% Mean	29.5
75.0%	quartile	18.2	Lower 95% Mean	-40.4
50.0%	median	-5.5	N	5.0
25.0%	quartile	-29.0		
10.0%		-42.5		
2.5%		-42.5		
0.5%		-42.5		
0.0%	minimum	-42.5		

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

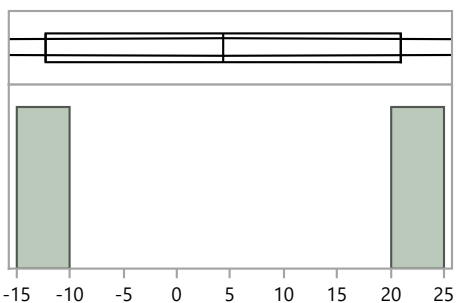
Bias



Quantiles			Summary Statistics	
100.0%	maximum	-45.8	Mean	-45.8
99.5%		-45.8	Std Dev	.
97.5%		-45.8	Std Err Mean	.
90.0%		-45.8	Upper 95% Mean	.
75.0%	quartile	-45.8	Lower 95% Mean	.
50.0%	median	-45.8	N	1.0
25.0%	quartile	-45.8		
10.0%		-45.8		
2.5%		-45.8		
0.5%		-45.8		
0.0%	minimum	-45.8		

Distributions Analyte_Method=Uranium-234 Other

Bias

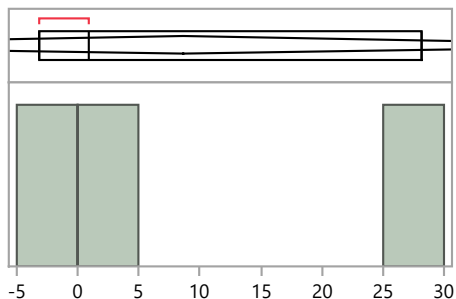


Quantiles			Summary Statistics	
100.0%	maximum	20.9	Mean	4.3
99.5%		20.9	Std Dev	23.5
97.5%		20.9	Std Err Mean	16.6
90.0%		20.9	Upper 95% Mean	215.2
75.0%	quartile	20.9	Lower 95% Mean	-206.6
50.0%	median	4.3	N	2.0
25.0%	quartile	-12.3		
10.0%		-12.3		
2.5%		-12.3		
0.5%		-12.3		
0.0%	minimum	-12.3		

RdV Distribution by Preparation Method

Distributions Analyte_Method=Uranium-234 Total dissolution by fusion

Bias



Quantiles

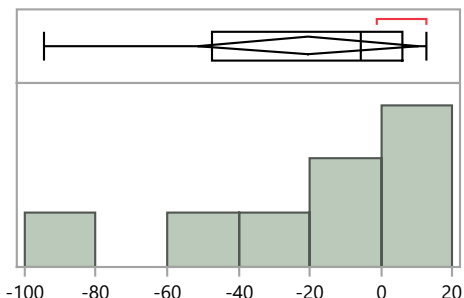
100.0%	maximum	28.2
99.5%		28.2
97.5%		28.2
90.0%		28.2
75.0%	quartile	28.2
50.0%	median	0.9
25.0%	quartile	-3.2
10.0%		-3.2
2.5%		-3.2
0.5%		-3.2
0.0%	minimum	-3.2

Summary Statistics

Mean	8.6
Std Dev	17.1
Std Err Mean	9.9
Upper 95% Mean	51.0
Lower 95% Mean	-33.8
N	3.0

Distributions Analyte_Method=Uranium-238 Acid dissolution with hydrofluoric acid

Bias



Quantiles

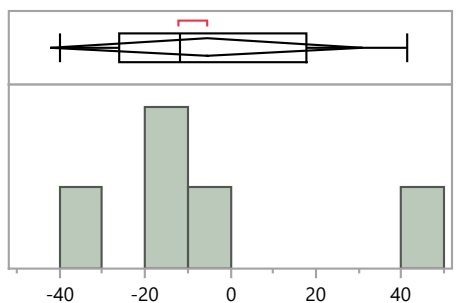
100.0%	maximum	12.8
99.5%		12.8
97.5%		12.8
90.0%		12.8
75.0%	quartile	6.0
50.0%	median	-5.5
25.0%	quartile	-47.4
10.0%		-94.6
2.5%		-94.6
0.5%		-94.6
0.0%	minimum	-94.6

Summary Statistics

Mean	-20.4
Std Dev	37.1
Std Err Mean	13.1
Upper 95% Mean	10.6
Lower 95% Mean	-51.4
N	8.0

Distributions Analyte_Method=Uranium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

100.0%	maximum	41.3
99.5%		41.3
97.5%		41.3
90.0%		41.3
75.0%	quartile	18.0
50.0%	median	-11.7
25.0%	quartile	-26.0
10.0%		-39.9
2.5%		-39.9
0.5%		-39.9
0.0%	minimum	-39.9

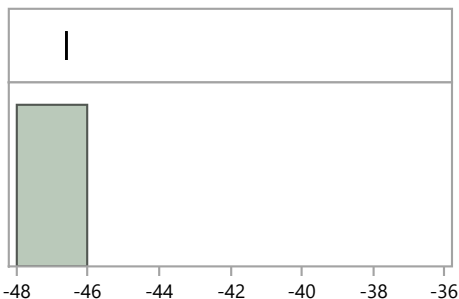
Summary Statistics

Mean	-5.5
Std Dev	29.4
Std Err Mean	13.1
Upper 95% Mean	30.9
Lower 95% Mean	-42.0
N	5.0

RdV Distribution by Preparation Method

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

Bias



Quantiles

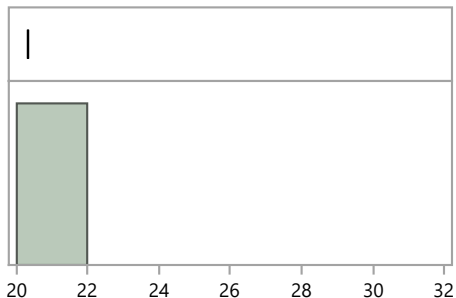
100.0%	maximum	-46.6
99.5%		-46.6
97.5%		-46.6
90.0%		-46.6
75.0%	quartile	-46.6
50.0%	median	-46.6
25.0%	quartile	-46.6
10.0%		-46.6
2.5%		-46.6
0.5%		-46.6
0.0%	minimum	-46.6

Summary Statistics

Mean	-46.6
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

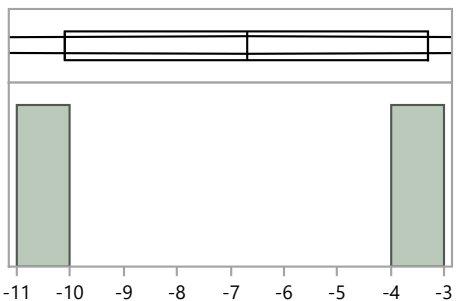
100.0%	maximum	20.3
99.5%		20.3
97.5%		20.3
90.0%		20.3
75.0%	quartile	20.3
50.0%	median	20.3
25.0%	quartile	20.3
10.0%		20.3
2.5%		20.3
0.5%		20.3
0.0%	minimum	20.3

Summary Statistics

Mean	20.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 Other

Bias



Quantiles

100.0%	maximum	-3.3
99.5%		-3.3
97.5%		-3.3
90.0%		-3.3
75.0%	quartile	-3.3
50.0%	median	-6.7
25.0%	quartile	-10.1
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

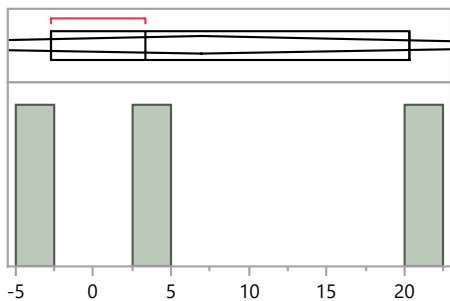
Summary Statistics

Mean	-6.7
Std Dev	4.8
Std Err Mean	3.4
Upper 95% Mean	36.5
Lower 95% Mean	-49.9
N	2.0

RdV Distribution by Preparation Method

Distributions Analyte_Method=Uranium-238 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	20.3
99.5%		20.3
97.5%		20.3
90.0%		20.3
75.0%	quartile	20.3
50.0%	median	3.4
25.0%	quartile	-2.7
10.0%		-2.7
2.5%		-2.7
0.5%		-2.7
0.0%	minimum	-2.7

Summary Statistics

Mean	7.0
Std Dev	11.9
Std Err Mean	6.9
Upper 95% Mean	36.6
Lower 95% Mean	-22.6
N	3.0