

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.

MaS52 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ADEM01	Alabama Department of Environmental Management	MaS
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	MaS
AFOH01	USAFSAM/OEA	MaS
AMEC99	Amentum Clean Energy Ltd	MaS
ARGO01	Idaho National Laboratory	MaS
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	MaS
ARSL01	ARS	MaS
AY1201	Consolidated Nuclear Security, LLC, ACO Laboratory	MaS
BSCE99	Supreme Council for Environment	MaS
BY1201	Consolidated Nuclear Security, LLC, ACO, Production Laboratory	MaS
CESL01	Lawrence Livermore National Laboratory - EMRL	MaS
CMRC01	Carlsbad Environmental Monitoring and Research Center	MaS
COPS99	Health Canada Radiation Protection Bureau	MaS
DINL99	Departamento Ingeniería Energética	MaS
EFGS01	Eurofins Frontier Global Sciences, LLC.	MaS
ERCL01	Washington State Public Health Laboratories	MaS
ERHD99	National Monitoring Section, Radiation Protection Bureau, Health Canada	MaS
ETTP01	MCLinc	MaS
FDHE01	Florida Dept of Health Environmental Laboratory	MaS
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	MaS
GENE01	GEL Laboratories, LLC	MaS
GPCL01	Georgia Power Company Environmental Laboratory	MaS
HECR01	SC Department of Environmental Services	MaS
HPAC99	UKHSA, RCE Glasgow	MaS
HPAL01	Los Alamos National Laboratory	MaS
IAEA99	International Atomic Energy Agency	MaS
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	MaS
JAEC99	Research Laboratories and Information Directorate	MaS
JLNN01	Jefferson Laboratory	MaS
JNRC99	Energy and Mineral Regulatory Commission	MaS
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	MaS
MART01	Fluor-BWXT Portsmouth LLC, Analytical Laboratory	MaS
MART03	Radioactive Material Analysis Laboratory	MaS
MDPH01	MDPH-Division of Radiation Control	MaS
NARL01	National Analytical Radiation Environmental Laboratory	MaS
NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	MaS
NJDH01	New Jersey Dept. of Health, ECLS	MaS
NRLL99	Environmental Radioactivity - National Centre for Radiation Science	MaS
ODHL01	Ohio Department of Health Laboratory	MaS
OTLI01	Pace Analytical National Center for Testing & Innovation	MaS
RAVR99	Radiactividad Ambiental y Vigilancia Radiologica	MaS
RJLG01	RJ Lee Group - Columbia Basin Analytical Laboratories (CBAL)	MaS
RPSC01	Radiation Protection Service	MaS
SEML01	SRS Environmental Monitoring Laboratory	MaS

SLAC01	SLAC DOE National Accelerator Laboratory	MaS
SOUT01	Southwest Research Institute	MaS
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	MaS
STRL01	South Texas Project Radiological Laboratory	MaS
TDHL01	Texas Department of State Health Services Laboratory	MaS
TELE01	Teledyne Brown Engineering - Environmental Services	MaS
TMAO01	EBERLINE Analytical Corporation	MaS
TNUT01	St. Louis USACE FUSRAP Laboratory	MaS
UNTE01	UniTech-235	MaS
WEST04	PACE ANALYTICAL SERVICES, GREENSBURG	MaS
WIPH01	WI, DPH, Radiation Protection Section	MaS
WIPP01	WIPP Laboratories	MaS
WSHL01	Wisconsin State Laboratory of Hygiene	MaS
YPGA01	US Army Yuma Proving Ground / Material Analysis Lab	MaS

Laboratories Not Reporting

Lab Code	Lab Name	Matrix Code
ASUK99	AWE (Aldermaston)	MaS
ISUE01	ISU Environmental Monitoring Laboratory	MaS
QUAN01	Eurofins St. Louis	MaS
TELE02	Microbac Laboratories Inc. - Northbrook	MaS

Study Reference Values

MAPEP-25-Ma552: Radiological and inorganic combined soil standard

Radiological Reference Date: 02/01/2025

Inorganic			Units: (mg/kg)	
Analyte	Reference Value	Reference Uncertainty	Tot Mtl Ref Val	Tot Mtl Ref Unc
Antimony	4.05	0.15	5.73	0.07
Arsenic	7.3	0.2	7.3	0.3
Barium	126	4	512	16
Beryllium	2.17	0.03	3.12	0.07
Cadmium	0.696	0.013	0.73	0.02
Chromium	11.7	0.3	29.5	0.9
Cobalt	5.60	0.17	7.0	0.2
Copper	14.1	0.5	21.0	1.3
Lead	10.5	0.2	14.5	0.3
Mercury	0.0623	0.0013	0.0623	0.0013
Nickel	11.6	0.4	13.8	0.9
Selenium	1.52	0.03	1.55	0.04
Silver	2.37	0.05	2.55	0.05
Technetium-99	0.00116	0.00002		
Thallium	1.10	0.02	1.44	0.04
Uranium-235	0.0255	0.0008		
Uranium-238	5.57	0.18		
Uranium-Total	5.59	0.18		
Vanadium	34.8	1.0	63	3
Zinc	48.3	1.9	76	5

Radiological			Units: (Bq/kg)	
Analyte	Reference Value	Reference Uncertainty		
Americium-241	39.8	1.0		
Cesium-134	519	10		
Cesium-137	442	7		
Cobalt-57	1000	20		
Cobalt-60	626	9		
Iron-55	1090	20		
Manganese-54	1080	20		
Nickel-63	1560	30		
Plutonium-238	33.3	0.8		
Plutonium-239/240	40.1	1.0		
Potassium-40	511	15		
Strontium-90	727	14		
Technetium-99	725	15		
Thorium-228	44.4	1.9		
Thorium-230	47.0	1.9		
Thorium-232	41.4	1.1		
Uranium-234	35.9	1.1		
Uranium-238	69	2		
Zinc-65	776	16		

Sample Statistical Summary

MAPEP-25-MaSS2: Radiological and inorganic combined soil standard

Radiological Reference Date: 02/01/2025

Inorganic						Units: (mg/kg)	
Analyte	T(1)	A(2)	Grand ⁽³⁾ Mean	Standard Deviation	Reference Value	Reference Uncertainty	Acceptance Range
Antimony	7	5			4.05	0.15	2.84 - 5.27
Arsenic	9	9	6.8	0.8	7.3	0.2	5.1 - 9.5
Barium	8	8	126	9	126	4	88 - 164
Beryllium	9	8	2.27	0.10	2.17	0.03	1.52 - 2.82
Cadmium	9	6	0.704	0.069	0.696	0.013	0.487 - 0.905
Chromium	9	5			11.7	0.3	8.2 - 15.2
Cobalt	10	10	5.90	0.47	5.60	0.17	3.92 - 7.28
Copper	11	10	15.5	1.4	14.1	0.5	9.9 - 18.3
Lead	11	11	11.1	0.8	10.5	0.2	7.4 - 13.7
Mercury	8	6	0.0600	0.0098	0.0623	0.0013	0.0436 - 0.0810
Nickel	11	10	12.4	1.1	11.6	0.4	8.1 - 15.1
Selenium	7	4			1.52	0.03	1.06 - 1.98
Silver	8	7	2.26	0.08	2.37	0.05	1.66 - 3.08
Technetium-99	3	3			0.00116	0.00002	0.00081 - 0.00151
Thallium	9	7	1.05	0.11	1.10	0.02	0.77 - 1.43
Uranium-235	10	8	0.0231	0.0025	0.0255	0.0008	0.0179 - 0.0332
Uranium-238	11	9	5.22	0.60	5.57	0.18	3.90 - 7.24
Uranium-Total	10	9	5.29	0.53	5.59	0.18	3.91 - 7.27
Vanadium	9	8	34.2	2.7	34.8	1.0	24.4 - 45.2
Zinc	11	11	54.6	4.7	48.3	1.9	33.8 - 62.8

Radiological						Units: (Bq/kg)	
Analyte	T(1)	A(2)	Grand ⁽³⁾ Mean	Standard Deviation	Reference Value	Reference Uncertainty	Acceptance Range
Americium-241	37	34	37.9	3.2	39.8	1.0	27.9 - 51.7
Cesium-134	52	47	504	47	519	10	363 - 675
Cesium-137	52	50	458	38	442	7	309 - 575
Cobalt-57	52	47	998	88	1000	20	700 - 1300
Cobalt-60	52	51	636	51	626	9	438 - 814
Iron-55	4	3			1090	20	763 - 1417
Manganese-54	52	49	1105	93	1080	20	756 - 1404
Nickel-63	8	5			1560	30	1092 - 2028
Plutonium-238	27	25	35.7	3.0	33.3	0.8	23.3 - 43.3
Plutonium-239/240	27	25	41.6	3.2	40.1	1.0	28.1 - 52.1
Potassium-40	52	51	505	51	511	15	358 - 664
Strontium-90	23	15	644	81	727	14	509 - 945
Technetium-99	14	11	656	65	725	15	508 - 943
Thorium-228	17	16	45.7	4.5	44.4	1.9	31.1 - 57.7
Thorium-230	18	17	45.6	5.1	47.0	1.9	32.9 - 61.1
Thorium-232	19	18	39.3	3.4	41.4	1.1	29.0 - 53.8
Uranium-234	27	22	34.6	4.3	35.9	1.1	25.1 - 46.7
Uranium-238	30	25	64	8	69	2	48 - 90
Zinc-65	52	49	816	78	776	16	543 - 1009

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

Results Flags:

A = Result acceptable..... $|\text{Bias}| \leq 20\%$

W = Result acceptable with warning..... $20\% < |\text{Bias}| \leq 30\%$

N = Result not acceptable..... $|\text{Bias}| > 30\%$

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE..... $\text{RP} < 2\%$

ACCEPTABLE..... $2\% \leq \text{RP} \leq 15\%$

ACCEPTABLE WITH WARNING..... $15\% < \text{RP} \leq 30\%$

NOT ACCEPTABLE..... $\text{RP} > 30\%$

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

Flag Summary Report

MAPEP-25-MaS52: Radiological and inorganic
combined soil standard

Radiological Reference Date: 02/01/2025

Inorganic				
Analyte	A	W	RW	N
Antimony	3	2		2
Arsenic	8	1		
Barium	8			
Beryllium	8			1
Cadmium	6			3
Chromium	3	2		4
Cobalt	10			
Copper	8	2		1
Lead	10	1		
Mercury	5	1		2
Nickel	9	1		1
Selenium	4			3
Silver	7			1
Thallium	6	1		2
Uranium-Total	8	1		1
Uranium-235	7	1		2
Uranium-238	8	1		2
Vanadium	8			1
Zinc	7	4		
Technetium-99	3			

Radiological				
Analyte	A	W	RW	N
Americium-241	33	1		3
Cesium-134	46	1		3
Cesium-137	48	2		2
Cobalt-57	45	2		5
Cobalt-60	49	2		1
Iron-55	2	1		1
Manganese-54	47	2		3
Nickel-63	5			3
Plutonium-238	22	3		2
Plutonium-239/240	25			2
Potassium-40	48	3		1
Strontium-90	11	4		8
Technetium-99	9	2		3
Thorium-228	15	1		1
Thorium-230	17			1
Thorium-232	18			1
Uranium-234	19	3		5
Uranium-238	21	4		5
Zinc-65	45	4		3



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

Laboratory Results For MAPEP Series 52
(ADEM01) Alabama Department of Environmental Management
1350 Coliseum Blvd.
Montgomery, AL 36110

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	453.0000	519	A		-12.7	363 - 675	11.9000	A
Cesium-137	428.0000	442	A		-3.2	309 - 575	16.5000	A
Cobalt-57	960.0000	1000	A		-4.0	700 - 1300	22.3000	A
Cobalt-60	591.0000	626	A		-5.6	438 - 814	12.3000	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1030.0000	1080	A		-4.6	756 - 1404	32.2000	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	488.0000	511	A		-4.5	358 - 664	18.8000	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	785.0000	776	A		1.2	543 - 1009	24.0000	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(ADFC99) Abu Dhabi Quality and Conformity Council-Central Testing Lab
Radiation Lab
Abu Dhabi, Abu Dhabi 853

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	344.67	519	N		-33.6	363 - 675	43.67	A
Cesium-137	471.67	442	A		6.7	309 - 575	56.80	A
Cobalt-57	1066.67	1000	A		6.7	700 - 1300	152	A
Cobalt-60	642.33	626	A		2.6	438 - 814	36.47	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1116.67	1080	A		3.4	756 - 1404	114	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	487.33	511	A		-4.6	358 - 664	41.73	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	802.33	776	A		3.4	543 - 1009	45.28	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(AFOH01) USAFSAM/OEA

2510 Fifth Street, Area B

Wright-Patterson AFB, OH 45433-7913

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37.2	39.8	A		-6.5	27.9 - 51.7	2.9	A
Cesium-134	492	519	A		-5.2	363 - 675	13	A
Cesium-137	417	442	A		-5.7	309 - 575	14	A
Cobalt-57	954	1000	A		-4.6	700 - 1300	35	A
Cobalt-60	588	626	A		-6.1	438 - 814	12	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	994	1080	A		-8.0	756 - 1404	31	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	34.3	33.3	A		3.0	23.3 - 43.3	3.0	A
Plutonium-239/240	42.6	40.1	A		6.2	28.1 - 52.1	3.5	A
Potassium-40	425	511	A		-16.8	358 - 664	24	A
Strontium-90	709	727	A		-2.5	509 - 945	27	A
Technetium-99	NR	725				508 - 943		
Thorium-228	54.8	44.4	W		23.4	31.1 - 57.7	4.4	A
Thorium-230	47.1	47.0	A		0.2	32.9 - 61.1	3.9	A
Thorium-232	47.8	41.4	A		15.5	29.0 - 53.8	3.8	A
Uranium-234	40.7	35.9	A		13.4	25.1 - 46.7	3.4	A
Uranium-238	77.9	69	A		12.9	48 - 90	5.0	A
Zinc-65	729	776	A		-6.1	543 - 1009	22	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(AMEC99) Amentum Clean Energy Ltd

612 Faraday Street

Birchwood Park, Warrington WA3 6GN

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37.1	39.8	A		-6.8	27.9 - 51.7	5.4	A
Cesium-134	471	519	A		-9.2	363 - 675	18	A
Cesium-137	432	442	A		-2.3	309 - 575	16	A
Cobalt-57	943	1000	A		-5.7	700 - 1300	37	A
Cobalt-60	596	626	A		-4.8	438 - 814	21	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1050	1080	A		-2.8	756 - 1404	37	A
Nickel-63	NR	1560	N	(28)		1092 - 2028		
Plutonium-238	34.0	33.3	A		2.1	23.3 - 43.3	1.4	A
Plutonium-239/240	42.5	40.1	A		6.0	28.1 - 52.1	1.6	A
Potassium-40	469	511	A		-8.2	358 - 664	19	A
Strontium-90	NR	727	N	(28)		509 - 945		
Technetium-99	NR	725	N	(28)		508 - 943		
Thorium-228	45.2	44.4	A		1.8	31.1 - 57.7	4.4	A
Thorium-230	55.9	47.0	A		18.9	32.9 - 61.1	5.3	A
Thorium-232	40.2	41.4	A		-2.9	29.0 - 53.8	3.9	A
Uranium-234	18.25	35.9	N		-49.2	25.1 - 46.7	0.64	A
Uranium-238	33.8	69	N		-51.0	48 - 90	1.1	A
Zinc-65	773	776	A		-0.4	543 - 1009	28	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(ARGO01) Idaho National Laboratory
INL, Materials and Fuels Complex
Idaho Falls, ID 83415

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40.3	39.8	A		1.3	27.9 - 51.7	3.6	A
Cesium-134	474	519	A		-8.7	363 - 675	10	A
Cesium-137	491	442	A		11.1	309 - 575	10	A
Cobalt-57	1100	1000	A		10.0	700 - 1300	22	A
Cobalt-60	686	626	A		9.6	438 - 814	14	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1230	1080	A		13.9	756 - 1404	25	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	572	511	A		11.9	358 - 664	29	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	953	776	W		22.8	543 - 1009	20	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(ARPL01) Analytical Support Operations - Radiochemical Processing Lab

PO Box 999

Richland, WA 99354

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40.7	39.8	A		2.3	27.9 - 51.7	5.3	A
Cesium-134	514	519	A		-1.0	363 - 675	29	A
Cesium-137	432	442	A		-2.3	309 - 575	29	A
Cobalt-57	974	1000	A		-2.6	700 - 1300	62	A
Cobalt-60	610	626	A		-2.6	438 - 814	39	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1031	1080	A		-4.5	756 - 1404	69	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	34.7	33.3	A		4.2	23.3 - 43.3	5.2	A
Plutonium-239/240	36.9	40.1	A		-8.0	28.1 - 52.1	5.3	A
Potassium-40	491	511	A		-3.9	358 - 664	31	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	14.3	35.9	N		-60.2	25.1 - 46.7	6.6	N
Uranium-238	46.8	69	N		-32.2	48 - 90	2.3	A
Zinc-65	746	776	A		-3.9	543 - 1009	50	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(ARSL01) ARS

2609 North River Road

Port Allen, LA 70767

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.079	39.8	A		-9.3	27.9 - 51.7	1.658	A
Cesium-134	483.24	519	A		-6.9	363 - 675	15.385	A
Cesium-137	435.7	442	A		-1.4	309 - 575	9.349	A
Cobalt-57	972.35	1000	A		-2.8	700 - 1300	33.331	A
Cobalt-60	626.29	626	A		0.0	438 - 814	11.419	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1061.3	1080	A		-1.7	756 - 1404	33.471	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3	N	(28)		23.3 - 43.3		
Plutonium-239/240	NR	40.1	N	(28)		28.1 - 52.1		
Potassium-40	510.27	511	A		-0.1	358 - 664	21.393	A
Strontium-90	NR	727	N	(28)		509 - 945		
Technetium-99	542.439	725	W		-25.2	508 - 943	66.514	A
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9	N	(28)		25.1 - 46.7		
Uranium-238	NR	69	N	(28)		48 - 90		
Zinc-65	817.63	776	A		5.4	543 - 1009	26.052	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(AY1201) Consolidated Nuclear Security, LLC, ACO Laboratory
Y12, NSC, Bldg. 9995, Rm 142
Oak Ridge, TN 37831-8189

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.176	4.05	A		3.1	2.84 - 5.27	0.220	A
Arsenic	6.50	7.3	A		-11.0	5.1 - 9.5	0.859	A
Barium	127	126	A		0.8	88 - 164	5.169	A
Beryllium	2.27	2.17	A		4.6	1.52 - 2.82	0.141	A
Cadmium	0.721	0.696	A		3.6	0.487 - 0.905	0.080	A
Chromium	14.2	11.7	W		21.4	8.2 - 15.2	0.447	A
Cobalt	5.92	5.60	A		5.7	3.92 - 7.28	0.296	A
Copper	17.2	14.1	W		22.0	9.9 - 18.3	0.709	A
Lead	12.6	10.5	A		20.0	7.4 - 13.7	0.822	A
Mercury	0.0604	0.0623	A		-3.1	0.0436 - 0.0810	0.0063	A
Nickel	13.6	11.6	A		17.2	8.1 - 15.1	0.672	A
Selenium	3.93	1.52	N		158.6	1.06 - 1.98	0.637	W
Silver	2.30	2.37	A		-3.0	1.66 - 3.08	0.235	A
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	1.19	1.10	A		8.2	0.77 - 1.43	0.146	A
Uranium-235	0.027	0.0255	A		5.9	0.0179 - 0.0332	0.0027	A
Uranium-238	5.84	5.57	A		4.8	3.90 - 7.24	0.5	A
Uranium-Total	5.87	5.59	A		5.0	3.91 - 7.27	0.5	A
Vanadium	34.1	34.8	A		-2.0	24.4 - 45.2	1.296	A
Zinc	57.9	48.3	A		19.9	33.8 - 62.8	3.625	A

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	35.5	39.8	A		-10.8	27.9 - 51.7	3.3	A
Cesium-134	NR	519		(6)		363 - 675		
Cesium-137	484	442	A		9.5	309 - 575	15	A
Cobalt-57	1118	1000	A		11.8	700 - 1300	30	A
Cobalt-60	678	626	A		8.3	438 - 814	14	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1202	1080	A		11.3	756 - 1404	369	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	33.5	33.3	A		0.6	23.3 - 43.3	3.0	A
Plutonium-239/240	39.2	40.1	A		-2.2	28.1 - 52.1	3.3	A
Potassium-40	586	511	A		14.7	358 - 664	49	A
Strontium-90	555	727	W		-23.7	509 - 945	17	A
Technetium-99	641	725	A		-11.6	508 - 943	23	A
Thorium-228	44.0	44.4	A		-0.9	31.1 - 57.7	3.1	A
Thorium-230	47.9	47.0	A		1.9	32.9 - 61.1	3.3	A
Thorium-232	37.5	41.4	A		-9.4	29.0 - 53.8	2.8	A
Uranium-234	36.0	35.9	A		0.3	25.1 - 46.7	2.4	A
Uranium-238	60.4	69	A		-12.5	48 - 90	3.4	A
Zinc-65	904	776	A		16.5	543 - 1009	127	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(BSCE99) Supreme Council for Environment
P. O. Box 18233
Manama, Manama 18233

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	0.15	0.73	N	(5)	-79.5	0.511 - 0.949	0.015	A
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	20.0	21.0	A	(5)	-4.8	14.7 - 27.3	2.0	A
Lead	11.4	14.5	W	(5)	-21.4	10.2 - 18.9	1.14	A
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	12.2	13.8	A	(5)	-11.6	9.7 - 17.9	1.22	A
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	66.6	76	A	(5)	-12.4	53.2 - 98.8	6.66	A

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	27.3	39.8	N		-31.4	27.9 - 51.7	3.3	A
Cesium-134	499.2	519	A		-3.8	363 - 675	25.1	A
Cesium-137	436.1	442	A		-1.3	309 - 575	35.4	A
Cobalt-57	913.4	1000	A		-8.7	700 - 1300	90.3	A
Cobalt-60	610.8	626	A		-2.4	438 - 814	34.5	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1041.6	1080	A		-3.6	756 - 1404	86.9	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	451.2	511	A		-11.7	358 - 664	30.3	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	769.9	776	A		-0.8	543 - 1009	47.8	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(BY1201) Consolidated Nuclear Security, LLC, ACO, Production Laboratory
Y12, NSC, Bldg. 9995, Rm 142
Oak Ridge, TN 37831-8189

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.27	39.8	A		-3.8	27.9 - 51.7	4.28	A
Cesium-134	NR	519		(6)		363 - 675		
Cesium-137	467	442	A		5.7	309 - 575	13.7	A
Cobalt-57	1057	1000	A		5.7	700 - 1300	13.23	N
Cobalt-60	617	626	A		-1.4	438 - 814	17.03	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1140	1080	A		5.6	756 - 1404	35.3	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	36.3	33.3	A		9.0	23.3 - 43.3	3.355	A
Plutonium-239/240	44.4	40.1	A		10.7	28.1 - 52.1	3.84	A
Potassium-40	537	511	A		5.1	358 - 664	27.5	A
Strontium-90	421.8	727	N		-42.0	509 - 945	47.41	A
Technetium-99	722	725	A		-0.4	508 - 943	24.05	A
Thorium-228	39.8	44.4	A		-10.4	31.1 - 57.7	7.05	W
Thorium-230	39.3	47.0	A		-16.4	32.9 - 61.1	7	W
Thorium-232	34.3	41.4	A		-17.2	29.0 - 53.8	6.4	W
Uranium-234	36.4	35.9	A		1.4	25.1 - 46.7	4.6	A
Uranium-238	59.7	69	A		-13.5	48 - 90	5.55	A
Zinc-65	855	776	A		10.2	543 - 1009	32.3	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(CESL01) Lawrence Livermore National Laboratory - EMRL
7000 East Avenue
Livermore, CA 94551

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	4.99E+02	519	A		-3.9	363 - 675	1.16E+01	A
Cesium-137	4.33E+02	442	A		-2.0	309 - 575	1.89E+01	A
Cobalt-57	9.90E+02	1000	A		-1.0	700 - 1300	3.09E+01	A
Cobalt-60	6.26E+02	626	A		0.0	438 - 814	1.49E+01	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1.06E+03	1080	A		-1.9	756 - 1404	3.48E+01	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	3.49E+01	33.3	A		4.8	23.3 - 43.3	2.01E+00	A
Plutonium-239/240	4.06E+01	40.1	A		1.2	28.1 - 52.1	2.20E+00	A
Potassium-40	4.51E+02	511	A		-11.7	358 - 664	3.44E+01	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	7.63E+02	776	A		-1.7	543 - 1009	2.79E+01	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(CMRC01) Carlsbad Environmental Monitoring and Research Center
1400 University Dr.
Carlsbad, NM 88220

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	4.25E+01	39.8	A		6.8	27.9 - 51.7	2.75E+00	A
Cesium-134	NR	519	N	(25)		363 - 675		
Cesium-137	5.27E+02	442	A		19.2	309 - 575	4.02E+00	N
Cobalt-57	NR	1000	N	(25)		700 - 1300		
Cobalt-60	7.20E+02	626	A		15.0	438 - 814	6.13E+00	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	NR	1080	N	(25)		756 - 1404		
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	4.27E+01	33.3	W		28.2	23.3 - 43.3	2.84E+00	A
Plutonium-239/240	4.41E+01	40.1	A		10.0	28.1 - 52.1	2.90E+00	A
Potassium-40	5.73E+02	511	A		12.1	358 - 664	7.12E+00	N
Strontium-90	4.88E+02	727	N		-32.9	509 - 945	9.58E+00	N
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	3.50E+01	35.9	A		-2.5	25.1 - 46.7	2.98E+00	A
Uranium-238	6.72E+01	69	A		-2.6	48 - 90	5.07E+00	A
Zinc-65	NR	776	N	(25)		543 - 1009		

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(COPS99) Health Canada Radiation Protection Bureau
775 Brookfield Road
Ottawa, Ontario K1A 1C1

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	538	519	A		3.7	363 - 675	14.6	A
Cesium-137	458.9	442	A		3.8	309 - 575	27.77	A
Cobalt-57	1017	1000	A		1.7	700 - 1300	72.33	A
Cobalt-60	632.3	626	A		1.0	438 - 814	18.53	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1081	1080	A		0.1	756 - 1404	65.73	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	427.8	511	A		-16.3	358 - 664	38.5	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	783.8	776	A		1.0	543 - 1009	35.43	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
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- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(DINL99) Departamento Ingeniería Energética
Escuela de Ingeniería de Bilbao
Bilbao, Vizcaya 48013

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	34.07	39.8	A		-14.4	27.9 - 51.7	1.306	A
Cesium-134	453.2	519	A		-12.7	363 - 675	23.29	A
Cesium-137	401.8	442	A		-9.1	309 - 575	20.67	A
Cobalt-57	840.2	1000	A		-16.0	700 - 1300	43.37	A
Cobalt-60	599.2	626	A		-4.3	438 - 814	30.79	A
Iron-55	1041.0	1090	A		-4.5	763 - 1417	27.96	A
Manganese-54	959.1	1080	A		-11.2	756 - 1404	49.28	A
Nickel-63	1405	1560	A		-9.9	1092 - 2028	33.19	A
Plutonium-238	34.05	33.3	A		2.3	23.3 - 43.3	1.641	A
Plutonium-239/240	39.35	40.1	A		-1.9	28.1 - 52.1	1.866	A
Potassium-40	477.7	511	A		-6.5	358 - 664	25.48	A
Strontium-90	588.4	727	A		-19.1	509 - 945	36.72	A
Technetium-99	685.2	725	A		-5.5	508 - 943	13.61	N
Thorium-228	38.73	44.4	A		-12.8	31.1 - 57.7	1.803	A
Thorium-230	41.12	47.0	A		-12.5	32.9 - 61.1	1.899	A
Thorium-232	36.33	41.4	A		-12.2	29.0 - 53.8	1.705	A
Uranium-234	31.27	35.9	A		-12.9	25.1 - 46.7	1.427	A
Uranium-238	64.68	69	A		-6.3	48 - 90	2.678	A
Zinc-65	582.8	776	W		-24.9	543 - 1009	30.0	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(EFGS01) Eurofins Frontier Global Sciences, LLC.
5755 8th St. E
Tacoma, WA 98424

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	0.053	0.0623	A		-14.9	0.0436 - 0.0810	0.004	A
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	NR	519				363 - 675		
Cesium-137	NR	442				309 - 575		
Cobalt-57	NR	1000				700 - 1300		
Cobalt-60	NR	626				438 - 814		
Iron-55	NR	1090				763 - 1417		
Manganese-54	NR	1080				756 - 1404		
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	NR	511				358 - 664		
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	NR	776				543 - 1009		

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(ERCL01) Washington State Public Health Laboratories
1610 N.E. 150th Street
Shoreline, WA 98155-9701

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	0.0254	0.0255	A		-0.4	0.0179 - 0.0332	0.0037	A
Uranium-238	5.90	5.57	A		5.9	3.90 - 7.24	0.92	W
Uranium-Total	6.00	5.59	A		7.3	3.91 - 7.27	0.92	W
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	42.5	39.8	A		6.8	27.9 - 51.7	2.3	A
Cesium-134	618	519	A		19.1	363 - 675	4	N
Cesium-137	477	442	A		7.9	309 - 575	6	N
Cobalt-57	1050	1000	A		5.0	700 - 1300	10	N
Cobalt-60	666	626	A		6.4	438 - 814	4	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1160	1080	A		7.4	756 - 1404	90	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	35.9	33.3	A		7.8	23.3 - 43.3	2.3	A
Plutonium-239/240	38.8	40.1	A		-3.2	28.1 - 52.1	2.4	A
Potassium-40	503	511	A		-1.6	358 - 664	26	A
Strontium-90	725	727	A		-0.3	509 - 945	21	A
Technetium-99	NR	725				508 - 943		
Thorium-228	51.4	44.4	A		15.8	31.1 - 57.7	4.2	A
Thorium-230	37.7	47.0	A		-19.8	32.9 - 61.1	3.6	A
Thorium-232	36.6	41.4	A		-11.6	29.0 - 53.8	3.0	A
Uranium-234	35.5	35.9	A		-1.1	25.1 - 46.7	2.4	A
Uranium-238	72.5	69	A		5.1	48 - 90	3.8	A
Zinc-65	814	776	A		4.9	543 - 1009	8	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(ERHD99) National Monitoring Section, Radiation Protection Bureau, Health Canada
775 Brookfield Road AL6302D1
Ottawa, Ontario K1A 1C1

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	5.5	7.3	W		-24.7	5.1 - 9.5	0.6	A
Barium	NR	126				88 - 164		
Beryllium	2.49	2.17	A		14.7	1.52 - 2.82	0.08	A
Cadmium	0.642	0.696	A		-7.8	0.487 - 0.905	0.007	N
Chromium	18	11.7	N		53.8	8.2 - 15.2	0.17	N
Cobalt	5.6	5.60	A		0.0	3.92 - 7.28	0.04	N
Copper	15.3	14.1	A		8.5	9.9 - 18.3	0.31	A
Lead	10.7	10.5	A		1.9	7.4 - 13.7	0.04	N
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	11.33	11.6	A		-2.3	8.1 - 15.1	0.15	N
Selenium	NR	1.52				1.06 - 1.98		
Silver	2.27	2.37	A		-4.2	1.66 - 3.08	0.01	N
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	1.07	1.10	A		-2.7	0.77 - 1.43	0.07	A
Uranium-235	0.0137	0.0255	N		-46.3	0.0179 - 0.0332	0.0004	A
Uranium-238	3.82	5.57	N		-31.4	3.90 - 7.24	0.073	N
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	38.2	34.8	A		9.8	24.4 - 45.2	0.2	N
Zinc	53.3	48.3	A		10.4	33.8 - 62.8	0.6	N

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	33.4	39.8	A		-16.1	27.9 - 51.7	1.9	A
Cesium-134	514	519	A		-1.0	363 - 675	25	A
Cesium-137	457	442	A		3.4	309 - 575	27	A
Cobalt-57	1041	1000	A		4.1	700 - 1300	52	A
Cobalt-60	676	626	A		8.0	438 - 814	33	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1080	1080	A		0.0	756 - 1404	66	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	33.2	33.3	A		-0.3	23.3 - 43.3	1.2	A
Plutonium-239/240	39.0	40.1	A		-2.7	28.1 - 52.1	1.4	A
Potassium-40	442	511	A		-13.5	358 - 664	27	A
Strontium-90	722	727	A		-0.7	509 - 945	26	A
Technetium-99	NR	725				508 - 943		
Thorium-228	41.9	44.4	A		-5.6	31.1 - 57.7	2.2	A
Thorium-230	40.0	47.0	A		-14.9	32.9 - 61.1	2.1	A
Thorium-232	34.3	41.4	A		-17.2	29.0 - 53.8	1.9	A
Uranium-234	34.0	35.9	A		-5.3	25.1 - 46.7	1.5	A
Uranium-238	65.9	69	A		-4.5	48 - 90	2.0	A
Zinc-65	812	776	A		4.6	543 - 1009	48	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(ETTP01) MCLinc

161 Mitchell Road

Oak Ridge, Tennessee 37830

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	2.962	4.05	W		-26.9	2.84 - 5.27	0.30	A
Arsenic	6.168	7.3	A		-15.5	5.1 - 9.5	0.62	A
Barium	113.419	126	A		-10.0	88 - 164	6.76	A
Beryllium	2.286	2.17	A		5.3	1.52 - 2.82	0.163	A
Cadmium	0.685	0.696	A		-1.6	0.487 - 0.905	0.0499	A
Chromium	12.638	11.7	A		8.0	8.2 - 15.2	1.30	A
Cobalt	5.389	5.60	A		-3.8	3.92 - 7.28	0.34	A
Copper	12.710	14.1	A		-9.9	9.9 - 18.3	0.71	A
Lead	10.199	10.5	A		-2.9	7.4 - 13.7	0.56	A
Mercury	0.055	0.0623	A		-11.7	0.0436 - 0.0810	0.0028	A
Nickel	11.461	11.6	A		-1.2	8.1 - 15.1	0.83	A
Selenium	4.457	1.52	N		193.2	1.06 - 1.98	0.49	A
Silver	2.288	2.37	A		-3.5	1.66 - 3.08	0.192	A
Technetium-99	0.0009554	0.00116	A		-17.6	0.00081 - 0.00151	0.0000478	A
Thallium	0.662	1.10	N		-39.8	0.77 - 1.43	0.031	A
Uranium-235	0.024	0.0255	A		-5.9	0.0179 - 0.0332	0.0012	A
Uranium-238	4.97	5.57	A		-10.8	3.90 - 7.24	0.249	A
Uranium-Total	4.99	5.59	A		-10.7	3.91 - 7.27	4.99	N
Vanadium	33.512	34.8	A		-3.7	24.4 - 45.2	3.22	A
Zinc	48.941	48.3	A		1.3	33.8 - 62.8	8.39	W

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	NR	519				363 - 675		
Cesium-137	NR	442				309 - 575		
Cobalt-57	NR	1000				700 - 1300		
Cobalt-60	NR	626				438 - 814		
Iron-55	NR	1090				763 - 1417		
Manganese-54	NR	1080				756 - 1404		
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	NR	511				358 - 664		
Strontium-90	NR	727				509 - 945		
Technetium-99	605	725	A		-16.6	508 - 943	60.5	A
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	NR	776				543 - 1009		

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(FDHE01) Florida Dept of Health Environmental Laboratory
2100 All Childrens Way
Orlando, FL 32818-5271

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40.13	39.8	A		0.8	27.9 - 51.7	1.59	A
Cesium-134	537.35	519	A		3.5	363 - 675	8.46	N
Cesium-137	438	442	A		-0.9	309 - 575	9.85	A
Cobalt-57	909	1000	A		-9.1	700 - 1300	19.7	A
Cobalt-60	598	626	A		-4.5	438 - 814	10.2	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1080	1080	A		0.0	756 - 1404	23.6	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	38.13	33.3	A		14.5	23.3 - 43.3	13	N
Plutonium-239/240	44.95	40.1	A		12.1	28.1 - 52.1	15	N
Potassium-40	489	511	A		-4.3	358 - 664	16.1	A
Strontium-90	779.28	727	A		7.2	509 - 945	56	A
Technetium-99	NR	725				508 - 943		
Thorium-228	48.14	44.4	A		8.4	31.1 - 57.7	0.48	N
Thorium-230	48.8	47.0	A		3.8	32.9 - 61.1	0.5	N
Thorium-232	38.54	41.4	A		-6.9	29.0 - 53.8	0.4	N
Uranium-234	26.03	35.9	W		-27.5	25.1 - 46.7	2.8	A
Uranium-238	63.41	69	A		-8.1	48 - 90	6.9	A
Zinc-65	799	776	A		3.0	543 - 1009	18	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab
2100 All Childrens Way
Orlando, FL 32818-5271

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40.09	39.8	A		0.7	27.9 - 51.7	3.99	A
Cesium-134	554.16	519	A		6.8	363 - 675	6.58	N
Cesium-137	429.04	442	A		-2.9	309 - 575	7.36	N
Cobalt-57	910.85	1000	A		-8.9	700 - 1300	12.77	N
Cobalt-60	613.5	626	A		-2.0	438 - 814	8.25	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1054.87	1080	A		-2.3	756 - 1404	17.08	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	516.16	511	A		1.0	358 - 664	12.35	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	63.05	69	A		-8.6	48 - 90	2.79	A
Zinc-65	813.15	776	A		4.8	543 - 1009	15.49	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(GENE01) GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	3.56	4.05	A		-12.1	2.84 - 5.27	0.261	A
Arsenic	8.40	7.3	A		15.1	5.1 - 9.5	0.578	A
Barium	120	126	A		-4.8	88 - 164	8.03	A
Beryllium	2.23	2.17	A		2.8	1.52 - 2.82	0.152	A
Cadmium	0.408	0.696	N		-41.4	0.487 - 0.905	0.0425	A
Chromium	12.8	11.7	A		9.4	8.2 - 15.2	0.855	A
Cobalt	5.21	5.60	A		-7.0	3.92 - 7.28	0.351	A
Copper	14.7	14.1	A		4.3	9.9 - 18.3	0.986	A
Lead	11.3	10.5	A		7.6	7.4 - 13.7	0.759	A
Mercury	0.0596	0.0623	A		-4.3	0.0436 - 0.0810	0.00476	A
Nickel	11.3	11.6	A		-2.6	8.1 - 15.1	0.754	A
Selenium	1.74	1.52	A		14.5	1.06 - 1.98	0.155	A
Silver	2.16	2.37	A		-8.9	1.66 - 3.08	0.148	A
Technetium-99	0.00116	0.00116	A		0.0	0.00081 - 0.00151	0.000152	A
Thallium	-0.926	1.10	N	(29)	-184.2	0.77 - 1.43	0.174	N
Uranium-235	0.0207	0.0255	A		-18.8	0.0179 - 0.0332	0.00155	A
Uranium-238	5.28	5.57	A		-5.2	3.90 - 7.24	0.309	A
Uranium-Total	5.301	5.59	A		-5.2	3.91 - 7.27	0.309	A
Vanadium	33.5	34.8	A		-3.7	24.4 - 45.2	2.23	A
Zinc	48.1	48.3	A		-0.4	33.8 - 62.8	3.21	A

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.2	39.8	A		-4.0	27.9 - 51.7	2.73	A
Cesium-134	465	519	A		-10.4	363 - 675	24.0	A
Cesium-137	464	442	A		5.0	309 - 575	20.5	A
Cobalt-57	1160	1000	A		16.0	700 - 1300	43.7	A
Cobalt-60	605	626	A		-3.4	438 - 814	29.5	A
Iron-55	1310	1090	W		20.2	763 - 1417	128	A
Manganese-54	1120	1080	A		3.7	756 - 1404	60.1	A
Nickel-63	1380	1560	A		-11.5	1092 - 2028	131	A
Plutonium-238	33.7	33.3	A		1.2	23.3 - 43.3	2.89	A
Plutonium-239/240	36.1	40.1	A		-10.0	28.1 - 52.1	3.02	A
Potassium-40	505	511	A		-1.2	358 - 664	26.9	A
Strontium-90	597	727	A		-17.9	509 - 945	55.3	A
Technetium-99	734	725	A		1.2	508 - 943	50.2	A
Thorium-228	49.0	44.4	A		10.4	31.1 - 57.7	4.43	A
Thorium-230	49.0	47.0	A		4.3	32.9 - 61.1	4.34	A
Thorium-232	42.3	41.4	A		2.2	29.0 - 53.8	3.82	A
Uranium-234	34.7	35.9	A		-3.3	25.1 - 46.7	2.66	A
Uranium-238	62.0	69	A		-10.1	48 - 90	3.99	A
Zinc-65	833	776	A		7.3	543 - 1009	40.5	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(GPCL01) Georgia Power Company Environmental Laboratory
2480 Maner Road
Atlanta, GA 30339

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	604.07	519	A		16.4	363 - 675	34.80	A
Cesium-137	530.25	442	A		20.0	309 - 575	34.53	A
Cobalt-57	1132.88	1000	A		13.3	700 - 1300	83.50	A
Cobalt-60	697.51	626	A		11.4	438 - 814	43.92	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1287.62	1080	A		19.2	756 - 1404	83.28	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	627.49	511	W		22.8	358 - 664	45.07	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	978.66	776	W		26.1	543 - 1009	63.26	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(HECR01) SC Department of Environmental Services
8231 Parklane Road
Columbia, SC 29223

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	527.1	519	A		1.6	363 - 675	21.34	A
Cesium-137	475.6	442	A		7.6	309 - 575	41.35	A
Cobalt-57	1012	1000	A		1.2	700 - 1300	58.53	A
Cobalt-60	631.3	626	A		0.8	438 - 814	39.15	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1161	1080	A		7.5	756 - 1404	152.0	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	564.4	511	A		10.5	358 - 664	51.25	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	901.8	776	A		16.2	543 - 1009	104.1	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(HPAC99) UKHSA, RCE Glasgow
155 Hardgate Road
Glasgow, Scotland G51 4LS

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	7.3	7.3	A		0.0	5.1 - 9.5	.475	A
Barium	129.5	126	A		2.8	88 - 164	12.9	A
Beryllium	2.3	2.17	A		6.0	1.52 - 2.82	.218	A
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	15.33	11.7	N		31.0	8.2 - 15.2	1.92	A
Cobalt	6.29	5.60	A		12.3	3.92 - 7.28	.35	A
Copper	16.09	14.1	A		14.1	9.9 - 18.3	1.13	A
Lead	11.67	10.5	A		11.1	7.4 - 13.7	.76	A
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	13.33	11.6	A		14.9	8.1 - 15.1	1	A
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	.0011778	0.00116	A		1.5	0.00081 - 0.00151	.00013545	A
Thallium	1.03	1.10	A		-6.4	0.77 - 1.43	.07	A
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	3.22	5.57	N		-42.2	3.90 - 7.24	.32	A
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	35.31	34.8	A		1.5	24.4 - 45.2	3.18	A
Zinc	57.99	48.3	W		20.1	33.8 - 62.8	4.93	A

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	42.1	39.8	A		5.8	27.9 - 51.7	3.7	A
Cesium-134	513	519	A		-1.2	363 - 675	23	A
Cesium-137	443	442	A		0.2	309 - 575	21	A
Cobalt-57	902	1000	A		-9.8	700 - 1300	42	A
Cobalt-60	647	626	A		3.4	438 - 814	29	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1073	1080	A		-0.6	756 - 1404	124	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	32.3	33.3	A		-3.0	23.3 - 43.3	1.5	A
Plutonium-239/240	38.1	40.1	A		-5.0	28.1 - 52.1	1.8	A
Potassium-40	496	511	A		-2.9	358 - 664	24	A
Strontium-90	608	727	A		-16.4	509 - 945	34	A
Technetium-99	703	725	A		-3.0	508 - 943	26	A
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	27.49	35.9	W		-23.4	25.1 - 46.7	1.4	A
Uranium-238	52.19	69	W		-24.4	48 - 90	2.37	A
Zinc-65	803	776	A		3.5	543 - 1009	37	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(HPAL01) Los Alamos National Laboratory
Scott Engeman, z277361 MS G761
Los Alamos, NM 87545-1663

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	39.52	39.8	A		-0.7	27.9 - 51.7	2.83	A
Cesium-134	449.95	519	A		-13.3	363 - 675	15.19	A
Cesium-137	443.10	442	A		0.2	309 - 575	15.06	A
Cobalt-57	968.28	1000	A		-3.2	700 - 1300	56.67	A
Cobalt-60	583.23	626	A		-6.8	438 - 814	18.34	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1074.33	1080	A		-0.5	756 - 1404	36.03	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	474.25	511	A		-7.2	358 - 664	27.90	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69	N	(28)		48 - 90		
Zinc-65	804.02	776	A		3.6	543 - 1009	27.17	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(IAEA99) International Atomic Energy Agency
Agency's Laboratories Seibersdorf
Seibersdorf, Austria A-2444

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.9	39.8	A		-2.3	27.9 - 51.7	1.6	A
Cesium-134	524	519	A		1.0	363 - 675	19	A
Cesium-137	446	442	A		0.9	309 - 575	12	A
Cobalt-57	981	1000	A		-1.9	700 - 1300	29	A
Cobalt-60	619	626	A		-1.1	438 - 814	23	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1060	1080	A		-1.9	756 - 1404	27	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	470	511	A		-8.0	358 - 664	19	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	786	776	A		1.3	543 - 1009	23	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(IEMA01) Illinois Emergency Management Agency Radiochemistry Laboratory
1301 Knotts St.
Springfield, IL 62703

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.43	39.8	A		-8.5	27.9 - 51.7	1.98	A
Cesium-134	490	519	A		-5.6	363 - 675	3.9	N
Cesium-137	488	442	A		10.4	309 - 575	7.9	N
Cobalt-57	1000	1000	A		0.0	700 - 1300	12.3	N
Cobalt-60	672	626	A		7.3	438 - 814	6.7	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1200	1080	A		11.1	756 - 1404	15.7	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	38.69	33.3	A		16.2	23.3 - 43.3	2.24	A
Plutonium-239/240	46.78	40.1	A		16.7	28.1 - 52.1	2.56	A
Potassium-40	563	511	A		10.2	358 - 664	11.6	A
Strontium-90	685	727	A		-5.8	509 - 945	28.3	A
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	35.13	35.9	A		-2.1	25.1 - 46.7	1.89	A
Uranium-238	63.88	69	A		-7.4	48 - 90	2.82	A
Zinc-65	921	776	A		18.7	543 - 1009	14.0	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(JAEC99) Research Laboratories and Information Directorate
Jordan Atomic Energy Commission
Amman, Jordan 70 (11934)

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	7.64	7.0	A	(5)	9.1	4.90 - 9.10	0.99	A
Copper	19.95	21.0	A	(5)	-5.0	14.7 - 27.3	2.03	A
Lead	15.09	14.5	A	(5)	4.1	10.2 - 18.9	1.26	A
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	19.545	13.8	N	(5)	41.6	9.7 - 17.9	2.1	A
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	60.45	76	W	(5)	-20.5	53.2 - 98.8	1.52	A

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	32.1	39.8	A		-19.3	27.9 - 51.7	1.6	A
Cesium-134	527.5	519	A		1.6	363 - 675	20.5	A
Cesium-137	432.2	442	A		-2.2	309 - 575	15.7	A
Cobalt-57	964.6	1000	A		-3.5	700 - 1300	30.4	A
Cobalt-60	554	626	A		-11.5	438 - 814	15.2	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1018.9	1080	A		-5.7	756 - 1404	38.4	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	482.7	511	A		-5.5	358 - 664	18.4	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	37.9	41.4	A		-8.5	29.0 - 53.8	1.8	A
Uranium-234	33.1	35.9	A		-7.8	25.1 - 46.7	3.1	A
Uranium-238	71.2	69	A		3.2	48 - 90	5.2	A
Zinc-65	731.5	776	A		-5.7	543 - 1009	25.9	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(JLNN01) Jefferson Laboratory

111 Hadron Drive

Newport News, VA 23606

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37	39.8	A		-7.0	27.9 - 51.7	.96	A
Cesium-134	492	519	A		-5.2	363 - 675	8	N
Cesium-137	471	442	A		6.6	309 - 575	7.42	N
Cobalt-57	1070	1000	A		7.0	700 - 1300	21.5	A
Cobalt-60	653	626	A		4.3	438 - 814	8.42	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1150	1080	A		6.5	756 - 1404	15.1	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	535	511	A		4.7	358 - 664	11.4	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	867	776	A		11.7	543 - 1009	11	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(JNRC99) Energy and Mineral Regulatory Commission
Radiological laboratories directorate
Amman, Amman 11821

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	35	39.8	A		-12.1	27.9 - 51.7	0.5	N
Cesium-134	495	519	A		-4.6	363 - 675	2	N
Cesium-137	459	442	A		3.8	309 - 575	3	N
Cobalt-57	952	1000	A		-4.8	700 - 1300	9	N
Cobalt-60	578	626	A		-7.7	438 - 814	3	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1038	1080	A		-3.9	756 - 1404	6	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	470	511	A		-8.0	358 - 664	7	N
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	52	69	W		-24.6	48 - 90	2	A
Zinc-65	738	776	A		-4.9	543 - 1009	5	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(LOCK03) Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory
INL/Battelle Energy Alliance, LLC
Idaho Falls, ID 83415-7111

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	594.5	519	A		14.5	363 - 675	10.63	N
Cesium-137	573	442	W		29.6	309 - 575	10.61	N
Cobalt-57	1350	1000	N		35.0	700 - 1300	26.18	N
Cobalt-60	763	626	W		21.9	438 - 814	13.71	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1357.5	1080	W		25.7	756 - 1404	24.66	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	579.75	511	A		13.5	358 - 664	17.69	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	965.75	776	W		24.5	543 - 1009	17.59	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(MART01) Fluor-BWXT Portsmouth LLC, Analytical Laboratory
COC, Bldg. X-705, Rm 106
Piketon, OH 45661

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	0.02146	0.0255	A		-15.8	0.0179 - 0.0332	0.00221	A
Uranium-238	5.2512	5.57	A		-5.7	3.90 - 7.24	0.541	A
Uranium-Total	5.2726	5.59	A		-5.7	3.91 - 7.27	0.541	A
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.47	39.8	A		-3.3	27.9 - 51.7	1.663	A
Cesium-134	NR	519				363 - 675		
Cesium-137	NR	442				309 - 575		
Cobalt-57	NR	1000				700 - 1300		
Cobalt-60	NR	626				438 - 814		
Iron-55	NR	1090				763 - 1417		
Manganese-54	NR	1080				756 - 1404		
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	35.35	33.3	A		6.2	23.3 - 43.3	1.792	A
Plutonium-239/240	43.4	40.1	A		8.2	28.1 - 52.1	2.101	A
Potassium-40	NR	511				358 - 664		
Strontium-90	NR	727				509 - 945		
Technetium-99	722	725	A		-0.4	508 - 943	10.49	N
Thorium-228	39.36	44.4	A		-11.4	31.1 - 57.7	2.969	A
Thorium-230	39.92	47.0	A		-15.1	32.9 - 61.1	2.991	A
Thorium-232	34.99	41.4	A		-15.5	29.0 - 53.8	2.702	A
Uranium-234	27.84	35.9	W		-22.5	25.1 - 46.7	1.915	A
Uranium-238	58.22	69	A		-15.6	48 - 90	3.398	A
Zinc-65	NR	776				543 - 1009		

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(MART03) Radioactive Material Analysis Laboratory
ORNL
Oak Ridge, TN 37830

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	6.02	4.05	N		48.6	2.84 - 5.27	0.60	A
Arsenic	7.31	7.3	A		0.1	5.1 - 9.5	0.73	A
Barium	129	126	A		2.4	88 - 164	13	A
Beryllium	2.20	2.17	A		1.4	1.52 - 2.82	0.22	A
Cadmium	0.659	0.696	A		-5.3	0.487 - 0.905	0.066	A
Chromium	14.4	11.7	W		23.1	8.2 - 15.2	1.4	A
Cobalt	6.21	5.60	A		10.9	3.92 - 7.28	0.62	A
Copper	15.8	14.1	A		12.1	9.9 - 18.3	1.6	A
Lead	11.1	10.5	A		5.7	7.4 - 13.7	1.1	A
Mercury	0.136	0.0623	N		118.3	0.0436 - 0.0810	0.027	W
Nickel	12.6	11.6	A		8.6	8.1 - 15.1	1.3	A
Selenium	1.39	1.52	A		-8.6	1.06 - 1.98	0.14	A
Silver	2.20	2.37	A		-7.2	1.66 - 3.08	0.22	A
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	1.09	1.10	A		-0.9	0.77 - 1.43	0.11	A
Uranium-235	0.0224	0.0255	A		-12.2	0.0179 - 0.0332	0.0022	A
Uranium-238	5.64	5.57	A		1.3	3.90 - 7.24	0.56	A
Uranium-Total	5.67	5.59	A		1.4	3.91 - 7.27	0.57	A
Vanadium	34.1	34.8	A		-2.0	24.4 - 45.2	3.4	A
Zinc	51.2	48.3	A		6.0	33.8 - 62.8	5.1	A

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	398.1	519	W		-23.3	363 - 675	3.8	N
Cesium-137	1638	442	N		270.6	309 - 575	23	N
Cobalt-57	331.3	1000	N		-66.9	700 - 1300	4.1	N
Cobalt-60	705.7	626	A		12.7	438 - 814	8.3	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	106.3	1080	N		-90.2	756 - 1404	2.5	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	483	511	A		-5.5	358 - 664	14	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	386	776	N		-50.3	543 - 1009	7.2	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(MDPH01) MDPH-Division of Radiation Control
MERL-Room 0066
Jamaica Plain, MA 02130-3597

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37.05	39.8	A		-6.9	27.9 - 51.7	2.65	A
Cesium-134	521.70	519	A		0.5	363 - 675	12.88	A
Cesium-137	476.38	442	A		7.8	309 - 575	12.15	A
Cobalt-57	1072.63	1000	A		7.3	700 - 1300	40.42	A
Cobalt-60	667.85	626	A		6.7	438 - 814	18.96	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1158.10	1080	A		7.2	756 - 1404	27.78	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	551.3	511	A		7.9	358 - 664	21.66	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	863.95	776	A		11.3	543 - 1009	20.91	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(NARL01) National Analytical Radiation Environmental Laboratory
540 S. Morris Ave.
Montgomery, AL 36115-2601

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.9	39.8	A		-7.3	27.9 - 51.7	2.42	A
Cesium-134	521	519	A		0.4	363 - 675	28.5	A
Cesium-137	456	442	A		3.2	309 - 575	24.9	A
Cobalt-57	959	1000	A		-4.1	700 - 1300	52.9	A
Cobalt-60	626	626	A		0.0	438 - 814	33.7	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1120	1080	A		3.7	756 - 1404	60.9	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	40.6	33.3	W		21.9	23.3 - 43.3	2.76	A
Plutonium-239/240	45.5	40.1	A		13.5	28.1 - 52.1	2.99	A
Potassium-40	534	511	A		4.5	358 - 664	29.7	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	43.4	44.4	A		-2.3	31.1 - 57.7	3.68	A
Thorium-230	46.7	47.0	A		-0.6	32.9 - 61.1	4.01	A
Thorium-232	40.3	41.4	A		-2.7	29.0 - 53.8	3.5	A
Uranium-234	35.9	35.9	A		0.0	25.1 - 46.7	4.03	A
Uranium-238	67.4	69	A		-2.3	48 - 90	6.16	A
Zinc-65	855	776	A		10.2	543 - 1009	46.6	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(NESI01) BWXT-Radioisotope & Analytical Chemistry Laboratory
Lynchburg Technology Center
Lynchburg, VA 24504-5447

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	7.48	4.05	N		84.7	2.84 - 5.27	0.755	A
Arsenic	6.50	7.3	A		-11.0	5.1 - 9.5	0.30	A
Barium	143	126	A		13.5	88 - 164	0.78	N
Beryllium	1.05	2.17	N		-51.6	1.52 - 2.82	0.02	N
Cadmium	0.479	0.696	N		-31.2	0.487 - 0.905	0.01	A
Chromium	7.56	11.7	N		-35.4	8.2 - 15.2	0.14	N
Cobalt	6.30	5.60	A		12.5	3.92 - 7.28	0.11	N
Copper	21.3	14.1	N		51.1	9.9 - 18.3	0.11	N
Lead	10.5	10.5	A		0.0	7.4 - 13.7	0.19	N
Mercury	0.053	0.0623	A		-14.9	0.0436 - 0.0810	0.004	A
Nickel	11.6	11.6	A		0.0	8.1 - 15.1	0.21	N
Selenium	5.81	1.52	N		282.2	1.06 - 1.98	0.11	N
Silver	1.12	2.37	N		-52.7	1.66 - 3.08	0.02	N
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	0.824	1.10	W		-25.1	0.77 - 1.43	0.02	A
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	49.9	34.8	N		43.4	24.4 - 45.2	0.27	N
Zinc	58.4	48.3	W		20.9	33.8 - 62.8	1.06	N

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.3	39.8	A		-3.8	27.9 - 51.7	5.45	A
Cesium-134	485	519	A		-6.6	363 - 675	17.4	A
Cesium-137	464	442	A		5.0	309 - 575	19.8	A
Cobalt-57	1045	1000	A		4.5	700 - 1300	86.6	A
Cobalt-60	665	626	A		6.2	438 - 814	28.4	A
Iron-55	889	1090	A		-18.4	763 - 1417	130	A
Manganese-54	1135	1080	A		5.1	756 - 1404	48.7	A
Nickel-63	1341	1560	A		-14.0	1092 - 2028	144	A
Plutonium-238	33.7	33.3	A		1.2	23.3 - 43.3	8.87	W
Plutonium-239/240	39.8	40.1	A		-0.7	28.1 - 52.1	4.92	A
Potassium-40	528	511	A		3.3	358 - 664	25.7	A
Strontium-90	579	727	W		-20.4	509 - 945	48.5	A
Technetium-99	564	725	W		-22.2	508 - 943	45.3	A
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	40.7	35.9	A		13.4	25.1 - 46.7	4.38	A
Uranium-238	69.6	69	A		0.9	48 - 90	5.84	A
Zinc-65	863	776	A		11.2	543 - 1009	37.9	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(NJDH01) New Jersey Dept. of Health, ECLS
3 Schwarzkopf Drive
Ewing, NJ 08628

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	422	519	A		-18.7	363 - 675	26	A
Cesium-137	410	442	A		-7.2	309 - 575	25	A
Cobalt-57	867	1000	A		-13.3	700 - 1300	87	A
Cobalt-60	529	626	A		-15.5	438 - 814	21	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	984	1080	A		-8.9	756 - 1404	59	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	443	511	A		-13.3	358 - 664	19	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	718	776	A		-7.5	543 - 1009	29	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(NRLL99) Environmental Radioactivity - National Centre for Radiation Science
PO Box 29181
Christchurch, Christchurch 8540

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.6	39.8	A		-8.0	27.9 - 51.7	2.0	A
Cesium-134	515	519	A		-0.8	363 - 675	21	A
Cesium-137	445	442	A		0.7	309 - 575	18	A
Cobalt-57	1013	1000	A		1.3	700 - 1300	46	A
Cobalt-60	623	626	A		-0.5	438 - 814	27	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1065	1080	A		-1.4	756 - 1404	43	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	37.1	33.3	A		11.4	23.3 - 43.3	2.3	A
Plutonium-239/240	42.2	40.1	A		5.2	28.1 - 52.1	2.4	A
Potassium-40	465	511	A		-9.0	358 - 664	23	A
Strontium-90	690	727	A		-5.1	509 - 945	36	A
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	42.8	47.0	A		-8.9	32.9 - 61.1	2.8	A
Thorium-232	42.3	41.4	A		2.2	29.0 - 53.8	2.8	A
Uranium-234	33.7	35.9	A		-6.1	25.1 - 46.7	1.3	A
Uranium-238	66.0	69	A		-4.3	48 - 90	2.1	A
Zinc-65	774	776	A		-0.3	543 - 1009	32	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(ODHL01) Ohio Department of Health Laboratory
8995 E Main Street
Reynoldsburg, OH 43068

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	579	519	A		11.6	363 - 675	16.6	A
Cesium-137	495	442	A		12.0	309 - 575	29.8	A
Cobalt-57	1170	1000	A		17.0	700 - 1300	80.4	A
Cobalt-60	676	626	A		8.0	438 - 814	19.2	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1170	1080	A		8.3	756 - 1404	70.1	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	499	511	A		-2.3	358 - 664	22.5	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	841	776	A		8.4	543 - 1009	36.6	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(OTLI01) Pace Analytical National Center for Testing & Innovation
12065 Lebanon Road
Mt. Juliet, TN 37122

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	3.12	4.05	W		-23.0	2.84 - 5.27	0.166	A
Arsenic	7.14	7.3	A		-2.2	5.1 - 9.5	0.1	N
Barium	127	126	A		0.8	88 - 164	.152	N
Beryllium	2.19	2.17	A		0.9	1.52 - 2.82	0.138	A
Cadmium	.683	0.696	A		-1.9	0.487 - 0.905	.0855	A
Chromium	16.2	11.7	N		38.5	8.2 - 15.2	0.296	N
Cobalt	6.56	5.60	A		17.1	3.92 - 7.28	.046	N
Copper	17	14.1	W		20.6	9.9 - 18.3	.132	N
Lead	11.6	10.5	A		10.5	7.4 - 13.7	0.099	N
Mercury	.0402	0.0623	N		-35.5	0.0436 - 0.0810	.0206	N
Nickel	14	11.6	W		20.7	8.1 - 15.1	.197	N
Selenium	1.44	1.52	A		-5.3	1.06 - 1.98	.18	A
Silver	2.22	2.37	A		-6.3	1.66 - 3.08	.0865	A
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	1.05	1.10	A		-4.5	0.77 - 1.43	.065	A
Uranium-235	.0168	0.0255	N		-34.1	0.0179 - 0.0332	.002	A
Uranium-238	4.0	5.57	W		-28.2	3.90 - 7.24	0.2	A
Uranium-Total	4.37	5.59	W		-21.8	3.91 - 7.27	0.196	A
Vanadium	36.2	34.8	A		4.0	24.4 - 45.2	0.187	N
Zinc	61.6	48.3	W		27.5	33.8 - 62.8	.74	N

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	43.5	39.8	A		9.3	27.9 - 51.7	8.97	W
Cesium-134	498	519	A		-4.0	363 - 675	30.3	A
Cesium-137	488	442	A		10.4	309 - 575	6.1	N
Cobalt-57	1030	1000	A		3.0	700 - 1300	62.6	A
Cobalt-60	699	626	A		11.7	438 - 814	43.4	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1220	1080	A		13.0	756 - 1404	75.1	A
Nickel-63	1650	1560	A		5.8	1092 - 2028	90.8	A
Plutonium-238	32.8	33.3	A		-1.5	23.3 - 43.3	6.07	W
Plutonium-239/240	40.2	40.1	A		0.2	28.1 - 52.1	6.72	W
Potassium-40	558	511	A		9.2	358 - 664	40.7	A
Strontium-90	152	727	N		-79.1	509 - 945	11.2	A
Technetium-99	480	725	N		-33.8	508 - 943	23.2	A
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	124	35.9	N		245.4	25.1 - 46.7	14.3	A
Uranium-238	142	69	N		105.8	48 - 90	14.3	A
Zinc-65	921	776	A		18.7	543 - 1009	58.2	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(RAVR99) Radiactividad Ambiental y Vigilancia Radiologica
CIEMAT (Ed 70 P2 D11)
Madrid, Madrid 28040

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	39.5	39.8	A		-0.8	27.9 - 51.7	3.0	A
Cesium-134	525	519	A		1.2	363 - 675	11	A
Cesium-137	464	442	A		5.0	309 - 575	10	A
Cobalt-57	1016	1000	A		1.6	700 - 1300	21	A
Cobalt-60	642	626	A		2.6	438 - 814	10	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1100	1080	A		1.9	756 - 1404	23	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	31.6	33.3	A		-5.1	23.3 - 43.3	2.4	A
Plutonium-239/240	39.0	40.1	A		-2.7	28.1 - 52.1	2.8	A
Potassium-40	484	511	A		-5.3	358 - 664	11	A
Strontium-90	524.49	727	W		-27.9	509 - 945	18.92	A
Technetium-99	NR	725				508 - 943		
Thorium-228	47.7	44.4	A		7.4	31.1 - 57.7	4.4	A
Thorium-230	42.1	47.0	A		-10.4	32.9 - 61.1	4.0	A
Thorium-232	40.9	41.4	A		-1.2	29.0 - 53.8	3.9	A
Uranium-234	29.3	35.9	A		-18.4	25.1 - 46.7	1.5	A
Uranium-238	55.2	69	A		-20.0	48 - 90	2.3	A
Zinc-65	805	776	A		3.7	543 - 1009	17	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(RJLG01) RJ Lee Group - Columbia Basin Analytical Laboratories (CBAL)

2710 North 20th Avenue

Pasco, WA 99301

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.02	4.05	A		-0.7	2.84 - 5.27	0.053	N
Arsenic	6.55	7.3	A		-10.3	5.1 - 9.5	0.178	A
Barium	117	126	A		-7.1	88 - 164	0.992	N
Beryllium	2.17	2.17	A		0.0	1.52 - 2.82	0.060	A
Cadmium	0.835	0.696	A		20.0	0.487 - 0.905	0.022	A
Chromium	12.3	11.7	A		5.1	8.2 - 15.2	0.078	N
Cobalt	5.64	5.60	A		0.7	3.92 - 7.28	0.091	N
Copper	15.3	14.1	A		8.5	9.9 - 18.3	0.153	N
Lead	10.5	10.5	A		0.0	7.4 - 13.7	0.137	N
Mercury	0.079	0.0623	W		26.8	0.0436 - 0.0810	0.045	N
Nickel	12.1	11.6	A		4.3	8.1 - 15.1	0.228	N
Selenium	1.70	1.52	A		11.8	1.06 - 1.98	0.034	A
Silver	2.39	2.37	A		0.8	1.66 - 3.08	0.045	N
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	1.10	1.10	A		0.0	0.77 - 1.43	0.034	A
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	3.73	5.59	N		-33.3	3.91 - 7.27	0.013	N
Vanadium	28.7	34.8	A		-17.5	24.4 - 45.2	0.343	N
Zinc	53.9	48.3	A		11.6	33.8 - 62.8	0.880	N

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	NR	519				363 - 675		
Cesium-137	NR	442				309 - 575		
Cobalt-57	NR	1000				700 - 1300		
Cobalt-60	NR	626				438 - 814		
Iron-55	NR	1090				763 - 1417		
Manganese-54	NR	1080				756 - 1404		
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	NR	511				358 - 664		
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	NR	776				543 - 1009		

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(RPSC01) Radiation Protection Service

O. Ministry of Labour, Immigration, Training & Skills Development
Mississauga, Ontario L4V 1W8

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	444	519	A		-14.5	363 - 675	6.36	N
Cesium-137	374	442	A		-15.4	309 - 575	13.9	A
Cobalt-57	790	1000	W		-21.0	700 - 1300	30.0	A
Cobalt-60	534	626	A		-14.7	438 - 814	11.8	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	885	1080	A		-18.1	756 - 1404	27.3	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	395	511	W		-22.7	358 - 664	14.6	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	649	776	A		-16.4	543 - 1009	19.1	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(SEML01) SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	75.7	39.8	N		90.2	27.9 - 51.7	4.3	A
Cesium-134	453	519	A		-12.7	363 - 675	32	A
Cesium-137	384	442	A		-13.1	309 - 575	37	A
Cobalt-57	825	1000	A		-17.5	700 - 1300	63	A
Cobalt-60	544	626	A		-13.1	438 - 814	43	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	953	1080	A		-11.8	756 - 1404	98	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	38.7	33.3	A		16.2	23.3 - 43.3	2.1	A
Plutonium-239/240	45.9	40.1	A		14.5	28.1 - 52.1	2.6	A
Potassium-40	436	511	A		-14.7	358 - 664	42	A
Strontium-90	650	727	A		-10.6	509 - 945	36	A
Technetium-99	NR	725				508 - 943		
Thorium-228	48.8	44.4	A		9.9	31.1 - 57.7	2.8	A
Thorium-230	49.6	47.0	A		5.5	32.9 - 61.1	2.9	A
Thorium-232	40.6	41.4	A		-1.9	29.0 - 53.8	2.4	A
Uranium-234	40.6	35.9	A		13.1	25.1 - 46.7	2.6	A
Uranium-238	77.2	69	A		11.9	48 - 90	4.3	A
Zinc-65	725	776	A		-6.6	543 - 1009	69	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(SLAC01) SLAC DOE National Accelerator Laboratory
2575 Sand Hill Road
Menlo Park, CA 94025

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	485.06	519	A		-6.5	363 - 675	48.51	A
Cesium-137	455.08	442	A		3.0	309 - 575	45.51	A
Cobalt-57	985.11	1000	A		-1.5	700 - 1300	98.51	A
Cobalt-60	619.53	626	A		-1.0	438 - 814	61.95	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1090.75	1080	A		1.0	756 - 1404	109.08	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	509.6	511	A		-0.3	358 - 664	50.96	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	806.72	776	A		4.0	543 - 1009	80.67	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(SOUT01) Southwest Research Institute
6220 Culebra Rd.
San Antonio, TX 78238-5166

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	0.0196	0.0255	W		-23.1	0.0179 - 0.0332	0.00613	N
Uranium-238	4.69	5.57	A		-15.8	3.90 - 7.24	0.752	W
Uranium-Total	4.72	5.59	A		-15.6	3.91 - 7.27	0.756	W
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	43.3	39.8	A		8.8	27.9 - 51.7	5.04	A
Cesium-134	478	519	A		-7.9	363 - 675	5.37	N
Cesium-137	470	442	A		6.3	309 - 575	8.74	N
Cobalt-57	1056	1000	A		5.6	700 - 1300	16.4	N
Cobalt-60	670	626	A		7.0	438 - 814	9.48	N
Iron-55	722	1090	N		-33.8	763 - 1417	81.4	A
Manganese-54	1159	1080	A		7.3	756 - 1404	19.8	N
Nickel-63	1519	1560	A		-2.6	1092 - 2028	93.7	A
Plutonium-238	34.3	33.3	A		3.0	23.3 - 43.3	3.07	A
Plutonium-239/240	45.2	40.1	A		12.7	28.1 - 52.1	3.81	A
Potassium-40	533	511	A		4.3	358 - 664	18.7	A
Strontium-90	526	727	W		-27.6	509 - 945	45.6	A
Technetium-99	633	725	A		-12.7	508 - 943	35.9	A
Thorium-228	46.3	44.4	A		4.3	31.1 - 57.7	4.59	A
Thorium-230	52.2	47.0	A		11.1	32.9 - 61.1	4.96	A
Thorium-232	41.9	41.4	A		1.2	29.0 - 53.8	4.19	A
Uranium-234	35.4	35.9	A		-1.4	25.1 - 46.7	3.01	A
Uranium-238	70.4	69	A		2.0	48 - 90	5.44	A
Zinc-65	904	776	A		16.5	543 - 1009	18.8	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(SRPD01) Sandia National Laboratories, Radiation Protection Sample Diagnostics

PO Box 5800, MS1103

Albuquerque, NM 87185-1103

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	3.22E+01	39.8	A		-19.1	27.9 - 51.7	4.11E+00	A
Cesium-134	5.41E+02	519	A		4.2	363 - 675	3.48E+01	A
Cesium-137	4.75E+02	442	A		7.5	309 - 575	2.86E+01	A
Cobalt-57	1.01E+03	1000	A		1.0	700 - 1300	1.01E+02	A
Cobalt-60	6.56E+02	626	A		4.8	438 - 814	2.64E+01	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1.13E+03	1080	A		4.6	756 - 1404	6.78E+01	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	5.10E+02	511	A		-0.2	358 - 664	2.25E+01	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	8.15E+02	776	A		5.0	543 - 1009	3.61E+01	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(STRL01) South Texas Project Radiological Laboratory
12090 FM 521
Wadsworth, Texas 77483

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	155.5	519	N		-70.0	363 - 675	1.3	N
Cesium-137	137.2	442	N		-69.0	309 - 575	2.7	N
Cobalt-57	306	1000	N		-69.4	700 - 1300	4.3	N
Cobalt-60	192.3	626	N		-69.3	438 - 814	1.7	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	341.7	1080	N		-68.4	756 - 1404	4.1	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	NR	511	N	(25)		358 - 664		
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	134.4	776	N		-82.7	543 - 1009	2.0	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(TDHL01) Texas Department of State Health Services Laboratory
1100 W 49th Street
Austin, TX 78756

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	521	519	A		0.4	363 - 675	10	N
Cesium-137	454	442	A		2.7	309 - 575	15	A
Cobalt-57	1008	1000	A		0.8	700 - 1300	20	N
Cobalt-60	622	626	A		-0.6	438 - 814	12	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1101	1080	A		1.9	756 - 1404	28	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	522	511	A		2.2	358 - 664	30	A
Strontium-90	NR	727	N	(28)		509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	850	776	A		9.5	543 - 1009	25	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(TELE01) Teledyne Brown Engineering - Environmental Services
2508 Quality Lane
Knoxville, TN 37931-6819

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	NR	519				363 - 675		
Cesium-137	NR	442				309 - 575		
Cobalt-57	NR	1000				700 - 1300		
Cobalt-60	NR	626				438 - 814		
Iron-55	NR	1090				763 - 1417		
Manganese-54	NR	1080				756 - 1404		
Nickel-63	964	1560	N		-38.2	1092 - 2028	31.6	A
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	NR	511				358 - 664		
Strontium-90	NR	727				509 - 945		
Technetium-99	659	725	A		-9.1	508 - 943	34.0	A
Thorium-228	44.3	44.4	A		-0.2	31.1 - 57.7	18.5	N
Thorium-230	46.4	47.0	A		-1.3	32.9 - 61.1	17.8	N
Thorium-232	39.9	41.4	A		-3.6	29.0 - 53.8	15.9	N
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	NR	776				543 - 1009		

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(TMAO01) EBERLINE Analytical Corporation
601 A SCARBORO RD
OAK RIDGE, TN 37830-

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.36	39.8	A		-3.6	27.9 - 51.7	11.12	W
Cesium-134	506.34	519	A		-2.4	363 - 675	30.52	A
Cesium-137	498.99	442	A		12.9	309 - 575	45.09	A
Cobalt-57	338.33	1000	N		-66.2	700 - 1300	30.99	A
Cobalt-60	708.17	626	A		13.1	438 - 814	41.50	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1217.66	1080	A		12.7	756 - 1404	160.45	A
Nickel-63	600.60	1560	N		-61.5	1092 - 2028	59.55	A
Plutonium-238	34.01	33.3	A		2.1	23.3 - 43.3	20.99	N
Plutonium-239/240	38.95	40.1	A		-2.9	28.1 - 52.1	22.50	N
Potassium-40	565.74	511	A		10.7	358 - 664	71.20	A
Strontium-90	502.92	727	N		-30.8	509 - 945	26.73	A
Technetium-99	440.65	725	N		-39.2	508 - 943	35.33	A
Thorium-228	23.71	44.4	N		-46.6	31.1 - 57.7	15.22	N
Thorium-230	30.49	47.0	N		-35.1	32.9 - 61.1	17.20	N
Thorium-232	25.15	41.4	N		-39.3	29.0 - 53.8	15.28	N
Uranium-234	18.21	35.9	N		-49.3	25.1 - 46.7	6.22	N
Uranium-238	48.34	69	W		-29.9	48 - 90	10.77	W
Zinc-65	926.35	776	A		19.4	543 - 1009	95.71	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(TNUT01) St. Louis USACE FUSRAP Laboratory
112 James S McDonnell Blvd
HAZELWOOD, MO 63042

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	34.3	39.8	A		-13.8	27.9 - 51.7	1.27	A
Cesium-134	425	519	A		-18.1	363 - 675	5.13	N
Cesium-137	428	442	A		-3.2	309 - 575	11.0	A
Cobalt-57	927	1000	A		-7.3	700 - 1300	16.6	N
Cobalt-60	598	626	A		-4.5	438 - 814	10.3	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1070	1080	A		-0.9	756 - 1404	24.0	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3	N	(28)		23.3 - 43.3		
Plutonium-239/240	NR	40.1	N	(28)		28.1 - 52.1		
Potassium-40	510	511	A		-0.2	358 - 664	14.8	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	48.0	44.4	A		8.1	31.1 - 57.7	5.47	A
Thorium-230	49.1	47.0	A		4.5	32.9 - 61.1	5.55	A
Thorium-232	40.1	41.4	A		-3.1	29.0 - 53.8	4.79	A
Uranium-234	41.4	35.9	A		15.3	25.1 - 46.7	5.86	A
Uranium-238	62.2	69	A		-9.9	48 - 90	7.30	A
Zinc-65	833	776	A		7.3	543 - 1009	20.1	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52

(UNTE01) UniTech-235

178 Aldo Drive

Barnwell, SC 29812

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	561.29	519	A		8.1	363 - 675	23.38	A
Cesium-137	562.77	442	W		27.3	309 - 575	32.26	A
Cobalt-57	1225.81	1000	W		22.6	700 - 1300	59.53	A
Cobalt-60	753.32	626	W		20.3	438 - 814	27.64	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1366.78	1080	W		26.6	756 - 1404	64.82	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	634.07	511	W		24.1	358 - 664	50.73	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	897.72	776	A		15.7	543 - 1009	49.61	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(WEST04) PACE ANALYTICAL SERVICES, GREENSBURG
1638 Roseytown Road
Greensburg, PA 15601

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	449.20	519	A		-13.4	363 - 675	31.900	A
Cesium-137	425.20	442	A		-3.8	309 - 575	30.080	A
Cobalt-57	939.70	1000	A		-6.0	700 - 1300	66.890	A
Cobalt-60	591.10	626	A		-5.6	438 - 814	39.450	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1087.50	1080	A		0.7	756 - 1404	76.290	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	498.10	511	A		-2.5	358 - 664	38.680	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	806.40	776	A		3.9	543 - 1009	54.500	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(WIPH01) WI, DPH, Radiation Protection Section
1 West Wilson Street
Madison, WI 53703

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	31.0379	39.8	W		-22.0	27.9 - 51.7	6.7919	W
Cesium-134	495.6733	519	A		-4.5	363 - 675	10.7534	A
Cesium-137	439.6324	442	A		-0.5	309 - 575	26.4733	A
Cobalt-57	971.9317	1000	A		-2.8	700 - 1300	69.3786	A
Cobalt-60	649.3956	626	A		3.7	438 - 814	18.4362	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1037.9528	1080	A		-3.9	756 - 1404	53.0092	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	444.0809	511	A		-13.1	358 - 664	19.4334	A
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	742.4582	776	A		-4.3	543 - 1009	30.0568	A

Radiological Reference Date: February 1, 2025

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:

(5) = Total Metal

(6) = Not Evaluated

(25) = Result not reported with other gamma results

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP Series 52

(WIPP01) WIPP Laboratories

1400 University Drive

Carlsbad, NM 88220

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	4.09E+01	39.8	A		2.8	27.9 - 51.7	2.76E+00	A
Cesium-134	5.72E+02	519	A		10.2	363 - 675	6.58E+00	N
Cesium-137	4.60E+02	442	A		4.1	309 - 575	4.86E+00	N
Cobalt-57	1.06E+03	1000	A		6.0	700 - 1300	2.35E+01	A
Cobalt-60	6.67E+02	626	A		6.6	438 - 814	8.10E+00	N
Iron-55	NR	1090				763 - 1417		
Manganese-54	1.08E+03	1080	A		0.0	756 - 1404	9.52E+00	N
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	3.57E+01	33.3	A		7.2	23.3 - 43.3	3.36E+00	A
Plutonium-239/240	4.67E+01	40.1	A		16.5	28.1 - 52.1	4.30E+00	A
Potassium-40	4.87E+02	511	A		-4.7	358 - 664	1.33E+01	A
Strontium-90	7.16E+02	727	A		-1.5	509 - 945	3.49E+01	A
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	3.76E+01	35.9	A		4.7	25.1 - 46.7	6.99E+00	W
Uranium-238	7.57E+01	69	A		9.7	48 - 90	1.38E+01	W
Zinc-65	7.76E+02	776	A		0.0	543 - 1009	9.52E+00	N

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(WSHL01) Wisconsin State Laboratory of Hygiene
2601 Agriculture Drive
Madison, WI 53718

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	NR	0.0255				0.0179 - 0.0332		
Uranium-238	NR	5.57				3.90 - 7.24		
Uranium-Total	NR	5.59				3.91 - 7.27		
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	26.23	39.8	N		-34.1	27.9 - 51.7	7.93	N
Cesium-134	489	519	A		-5.8	363 - 675	9.40	N
Cesium-137	452	442	A		2.3	309 - 575	13.5	A
Cobalt-57	972	1000	A		-2.8	700 - 1300	21.1	A
Cobalt-60	613	626	A		-2.1	438 - 814	37.5	A
Iron-55	NR	1090				763 - 1417		
Manganese-54	1080	1080	A		0.0	756 - 1404	45.6	A
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	42.44	33.3	W		27.4	23.3 - 43.3	3.259	A
Plutonium-239/240	40.65	40.1	A		1.4	28.1 - 52.1	3.098	A
Potassium-40	506	511	A		-1.0	358 - 664	44.3	A
Strontium-90	NR	727	N	(28)		509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	34.33	35.9	A		-4.4	25.1 - 46.7	2.97	A
Uranium-238	51.52	69	W		-25.3	48 - 90	3.73	A
Zinc-65	797	776	A		2.7	543 - 1009	63.8	A

Radiological Reference Date: February 1, 2025

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:

- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations



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

Laboratory Results For MAPEP Series 52
(YPGA01) US Army Yuma Proving Ground / Material Analysis Lab
301 C. Street
Yuma, AZ 85365

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.05				2.84 - 5.27		
Arsenic	NR	7.3				5.1 - 9.5		
Barium	NR	126				88 - 164		
Beryllium	NR	2.17				1.52 - 2.82		
Cadmium	NR	0.696				0.487 - 0.905		
Chromium	NR	11.7				8.2 - 15.2		
Cobalt	NR	5.60				3.92 - 7.28		
Copper	NR	14.1				9.9 - 18.3		
Lead	NR	10.5				7.4 - 13.7		
Mercury	NR	0.0623				0.0436 - 0.0810		
Nickel	NR	11.6				8.1 - 15.1		
Selenium	NR	1.52				1.06 - 1.98		
Silver	NR	2.37				1.66 - 3.08		
Technetium-99	NR	0.00116				0.00081 - 0.00151		
Thallium	NR	1.10				0.77 - 1.43		
Uranium-235	0.024	0.0255	A		-5.9	0.0179 - 0.0332	0.003	A
Uranium-238	5.4	5.57	A		-3.1	3.90 - 7.24	0.3	A
Uranium-Total	5.4	5.59	A		-3.4	3.91 - 7.27	0.3	A
Vanadium	NR	34.8				24.4 - 45.2		
Zinc	NR	48.3				33.8 - 62.8		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	39.8				27.9 - 51.7		
Cesium-134	NR	519				363 - 675		
Cesium-137	NR	442				309 - 575		
Cobalt-57	NR	1000				700 - 1300		
Cobalt-60	NR	626				438 - 814		
Iron-55	NR	1090				763 - 1417		
Manganese-54	NR	1080				756 - 1404		
Nickel-63	NR	1560				1092 - 2028		
Plutonium-238	NR	33.3				23.3 - 43.3		
Plutonium-239/240	NR	40.1				28.1 - 52.1		
Potassium-40	NR	511				358 - 664		
Strontium-90	NR	727				509 - 945		
Technetium-99	NR	725				508 - 943		
Thorium-228	NR	44.4				31.1 - 57.7		
Thorium-230	NR	47.0				32.9 - 61.1		
Thorium-232	NR	41.4				29.0 - 53.8		
Uranium-234	NR	35.9				25.1 - 46.7		
Uranium-238	NR	69				48 - 90		
Zinc-65	NR	776				543 - 1009		

Radiological Reference Date: February 1, 2025

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%

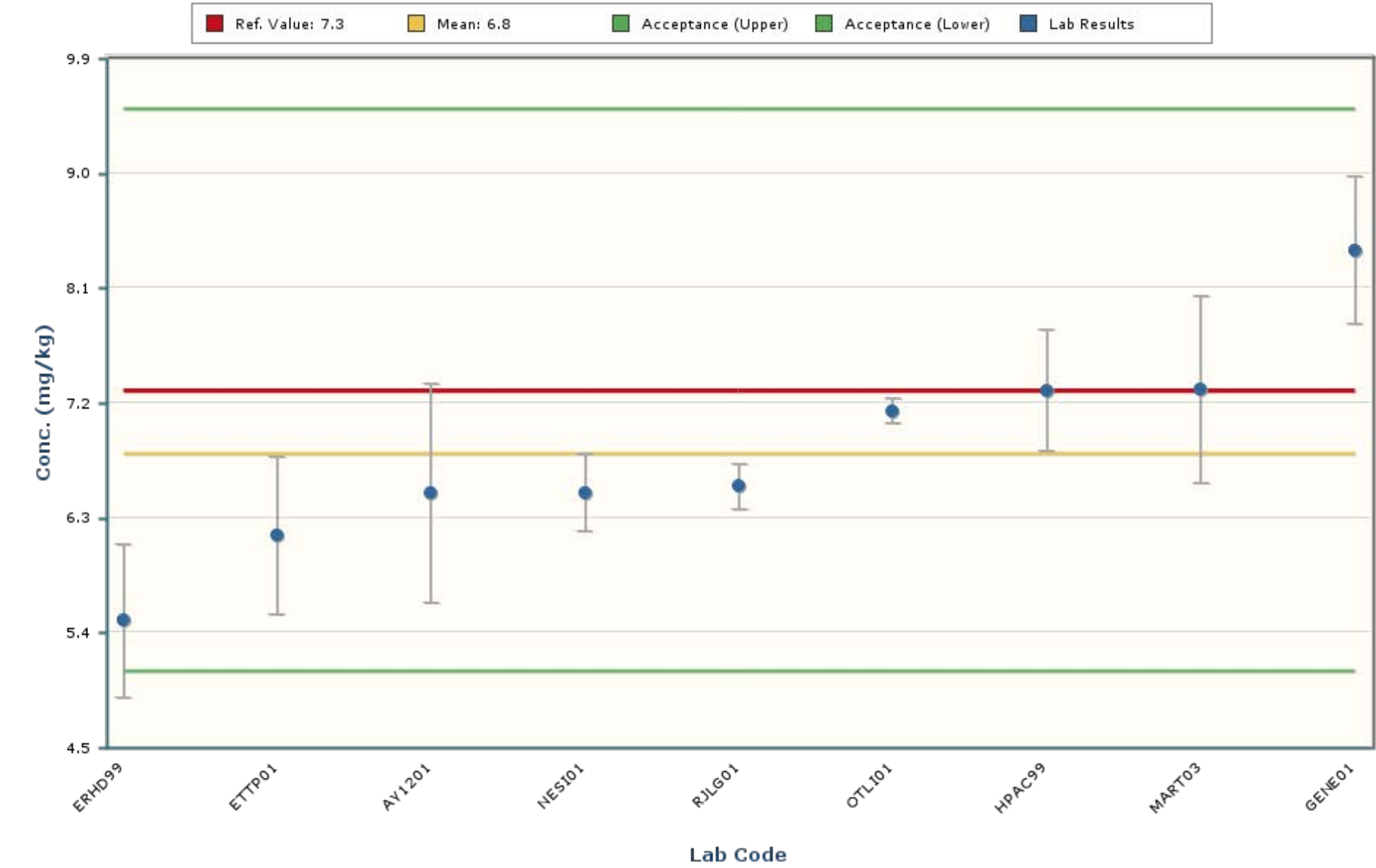
NOT ACCEPTABLE.....RP > 30%

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

Notes:

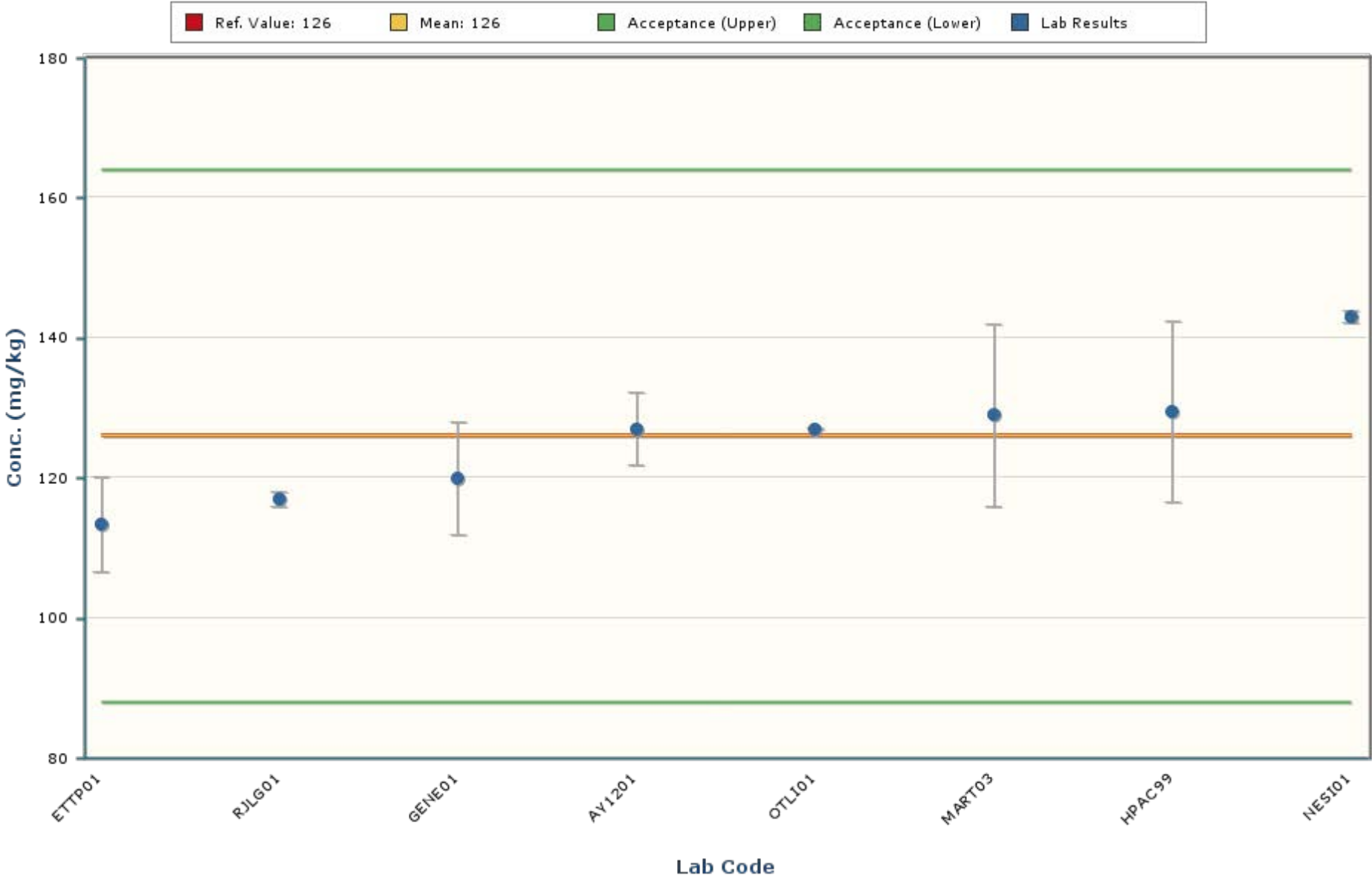
- (5) = Total Metal
- (6) = Not Evaluated
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations

Arsenic
MAPEP-25-MaS52



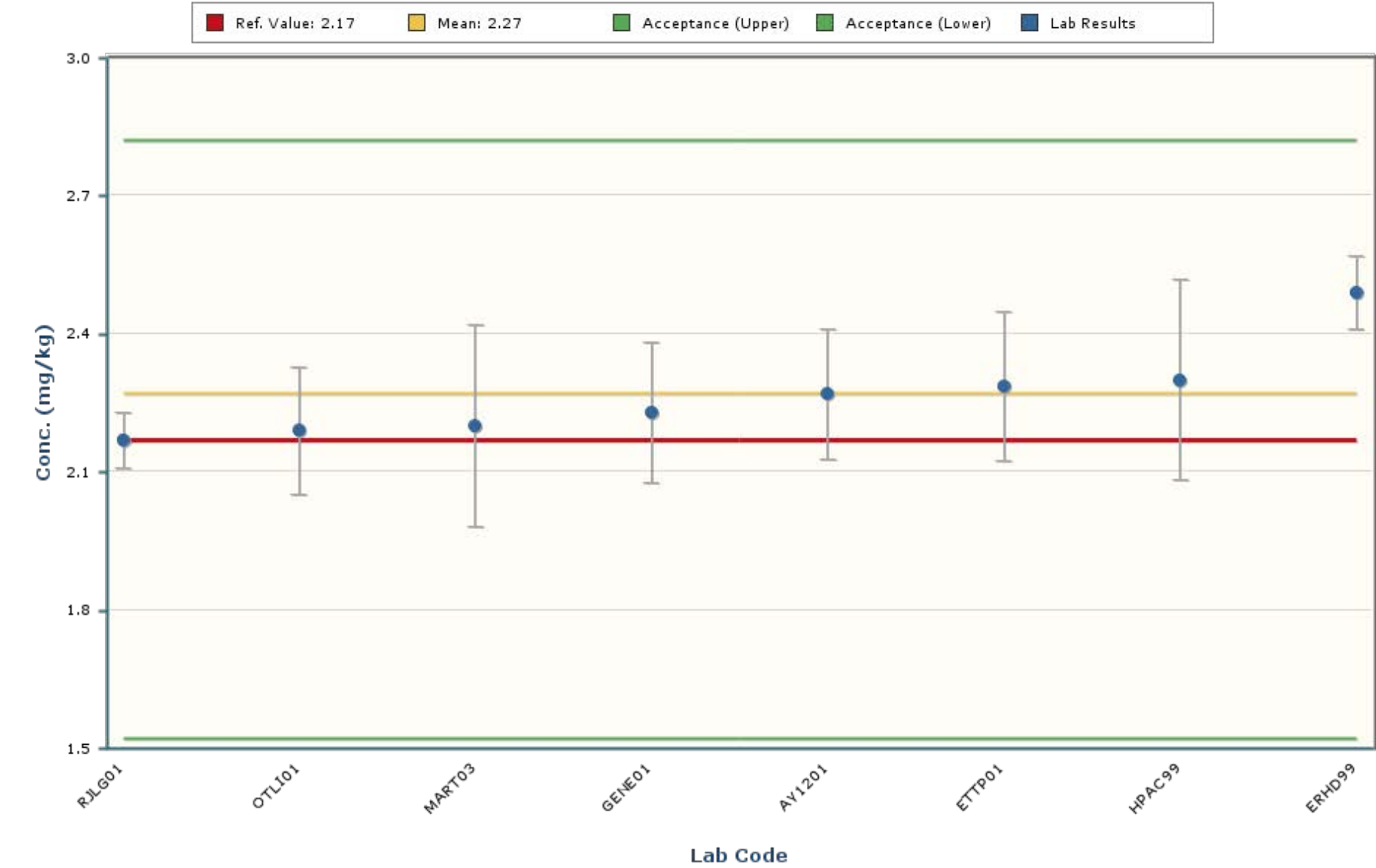
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 2.7 and 11.0 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Barium
MAPEP-25-MaS52



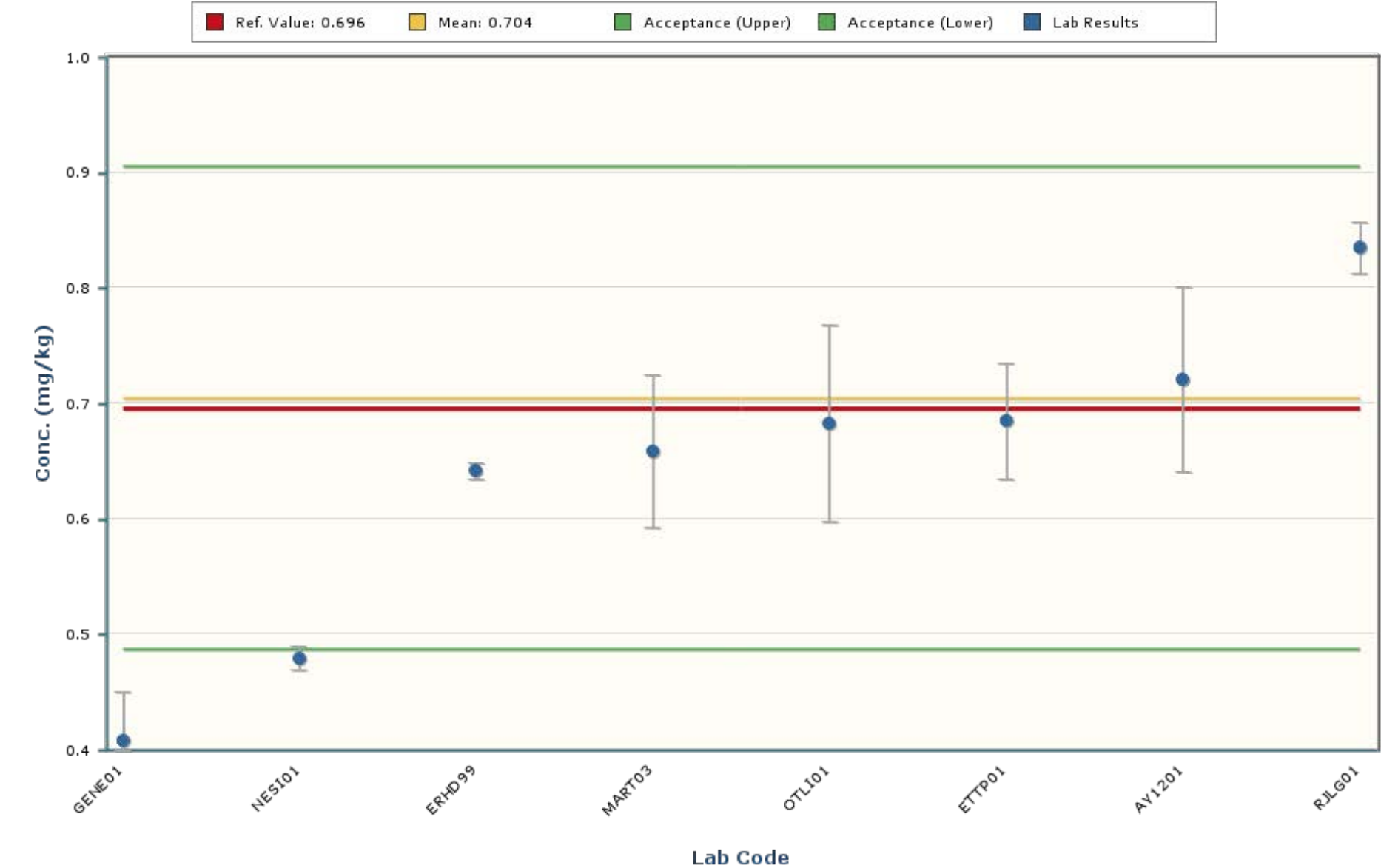
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 80 and 172 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Beryllium
MAPEP-25-MaS52



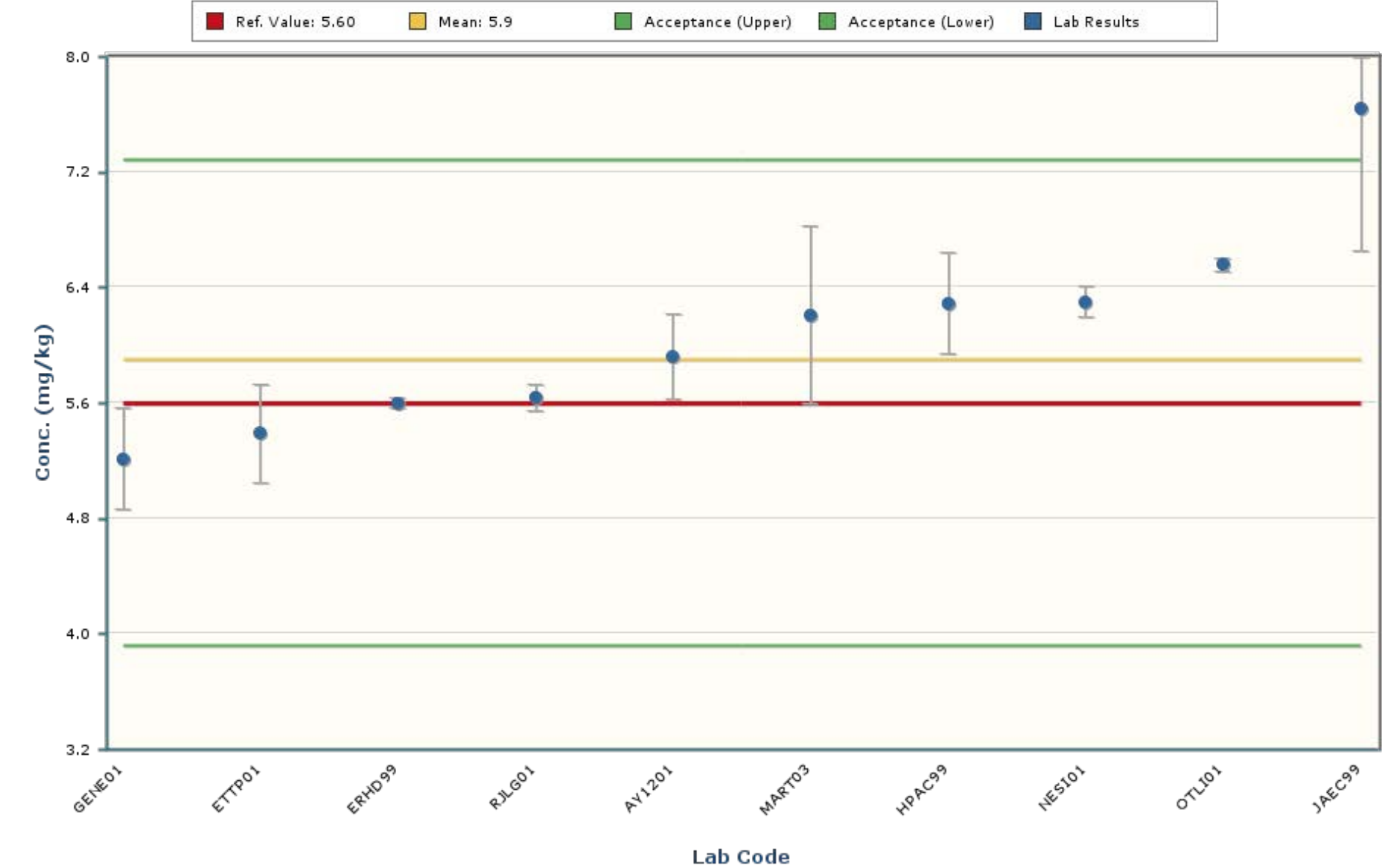
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 1.76 and 2.78 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Cadmium
MAPEP-25-MaS52



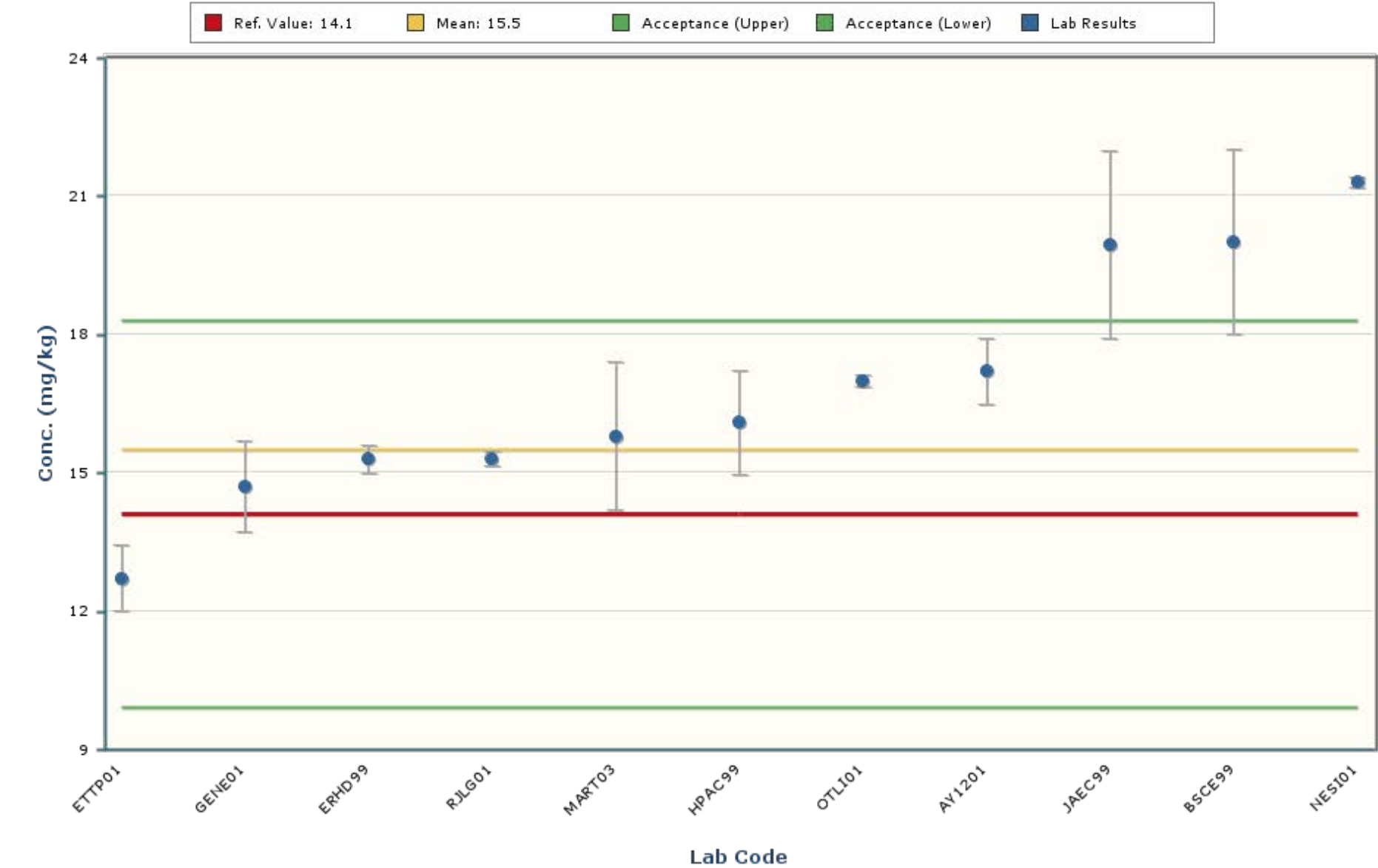
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.357 and 1.051 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Cobalt
MAPEP-25-MaS52



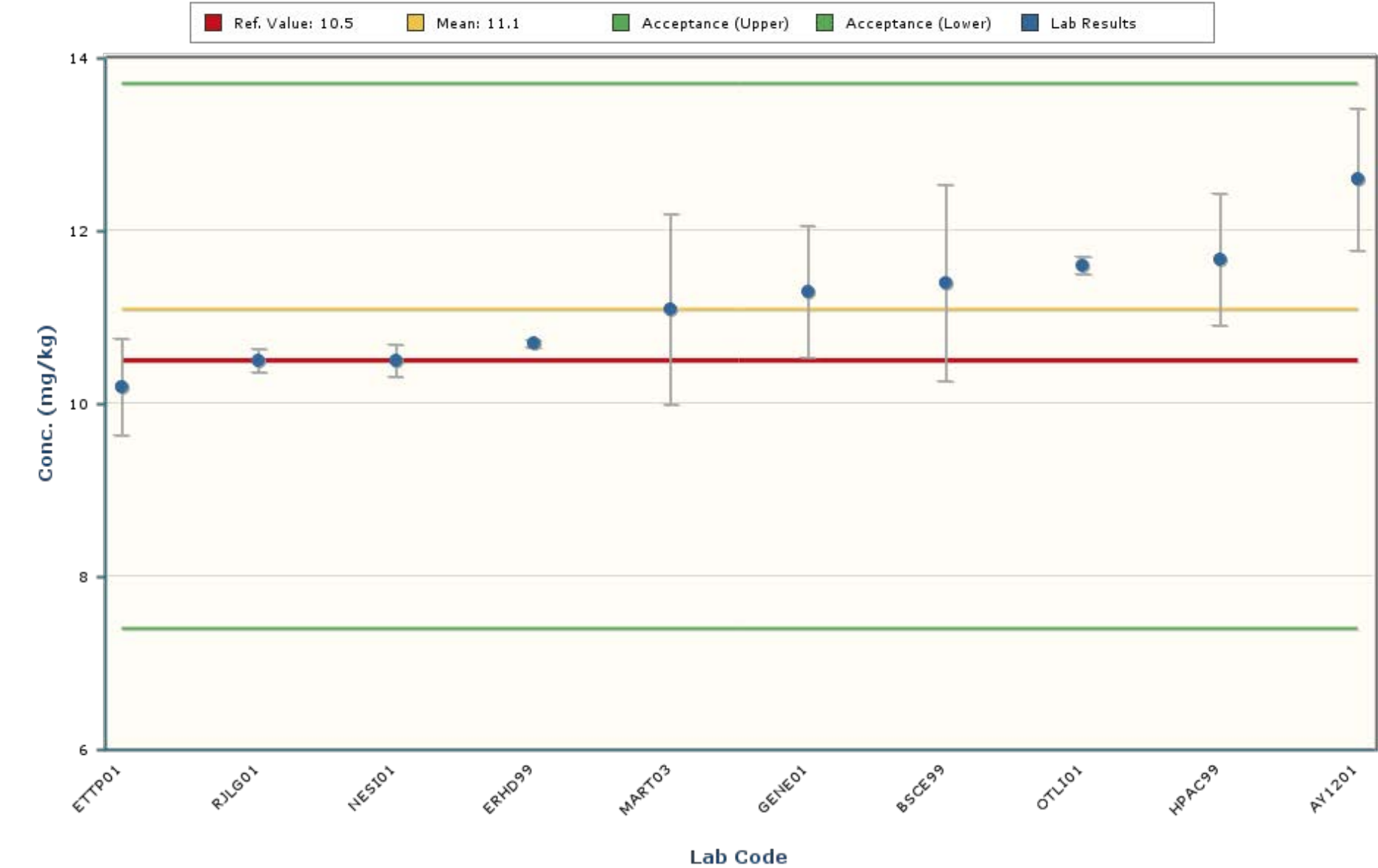
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 3.57 and 8.23 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Copper
MAPEP-25-MaS52



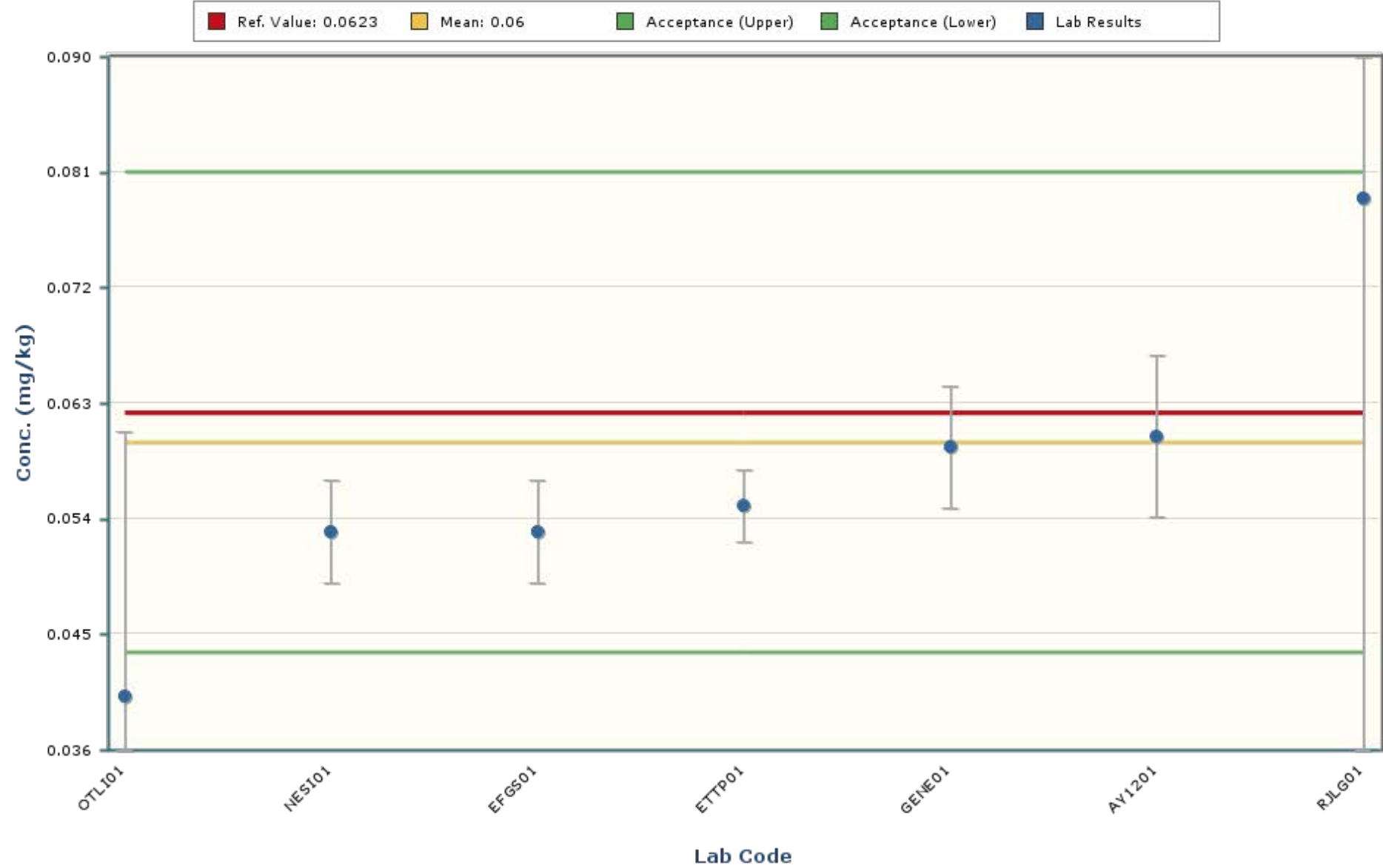
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 8.4 and 22.6 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Lead
MAPEP-25-MaS52



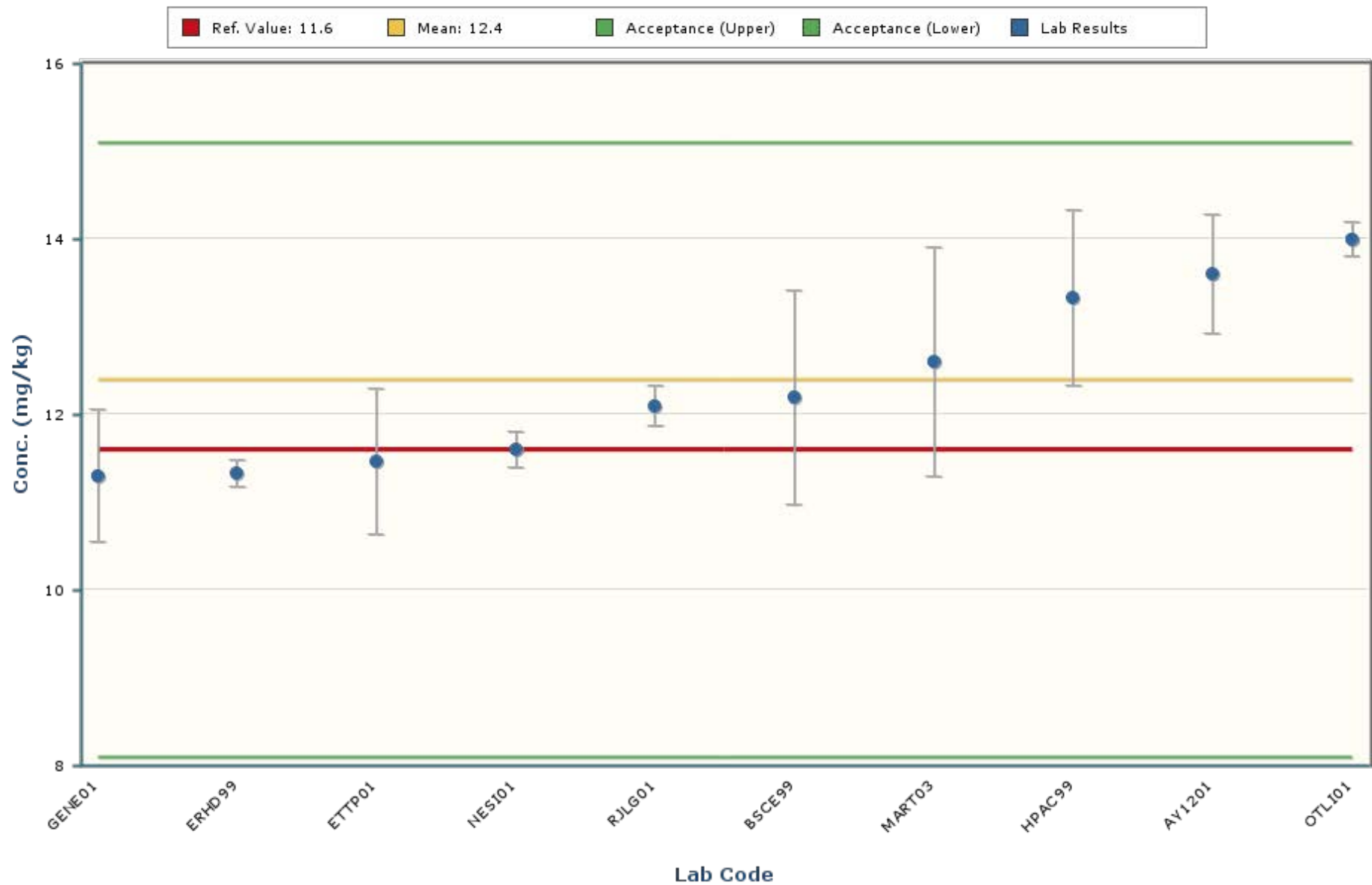
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 7.4 and 14.9 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Mercury
MAPEP-25-MaS52



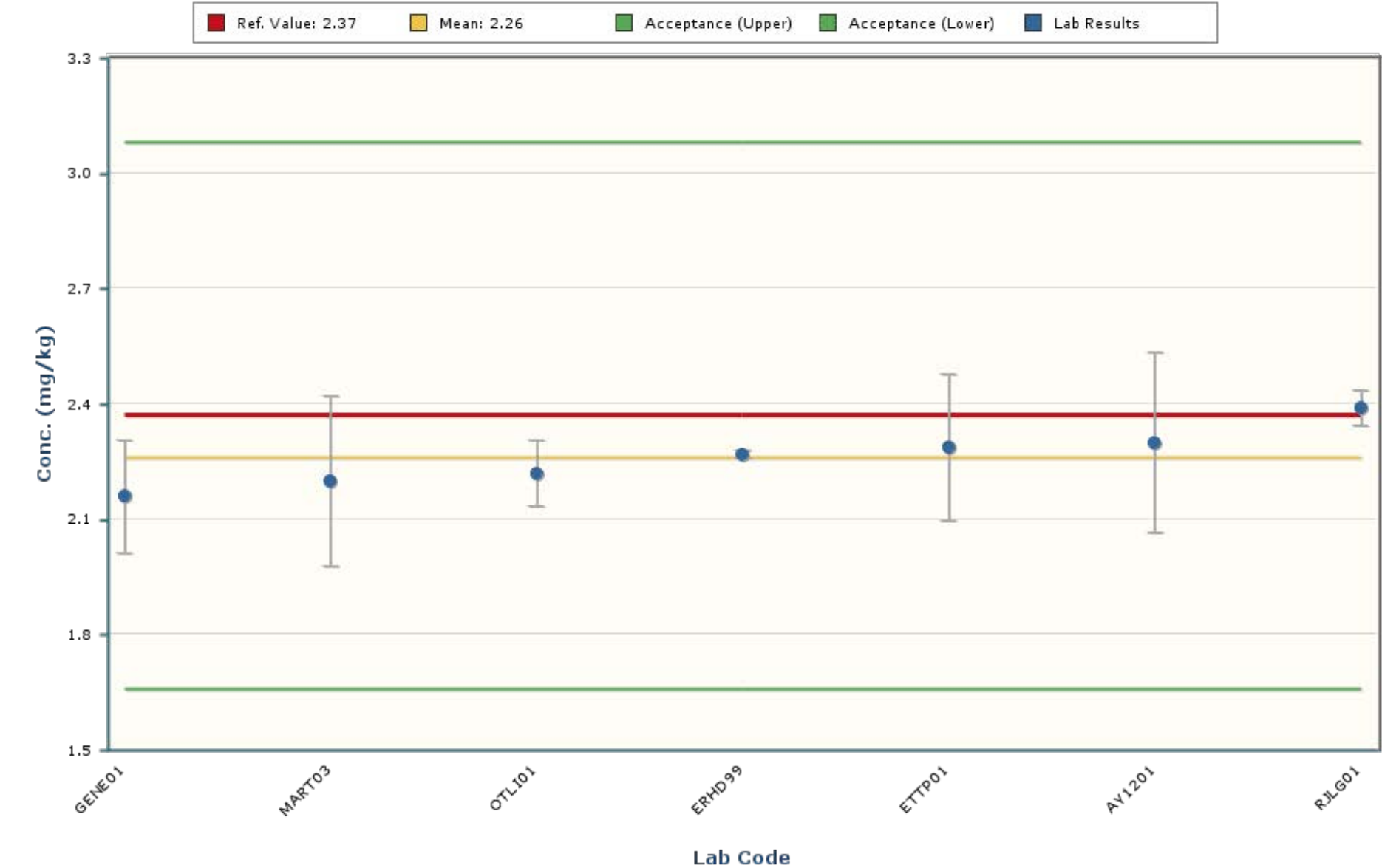
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.0108 and 0.1092 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Nickel
MAPEP-25-MaS52



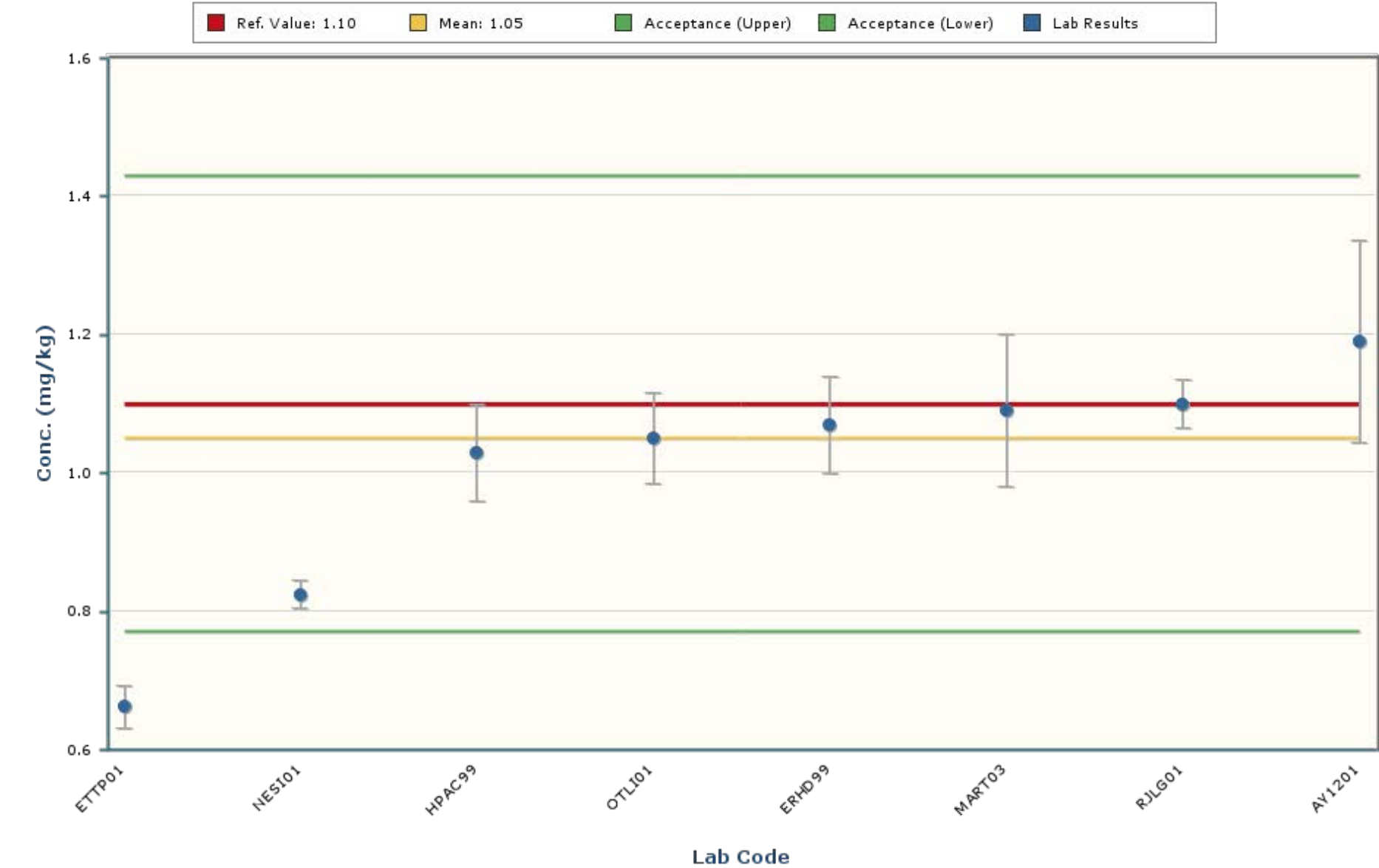
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 7.1 and 17.6 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Silver
MAPEP-25-MaS52



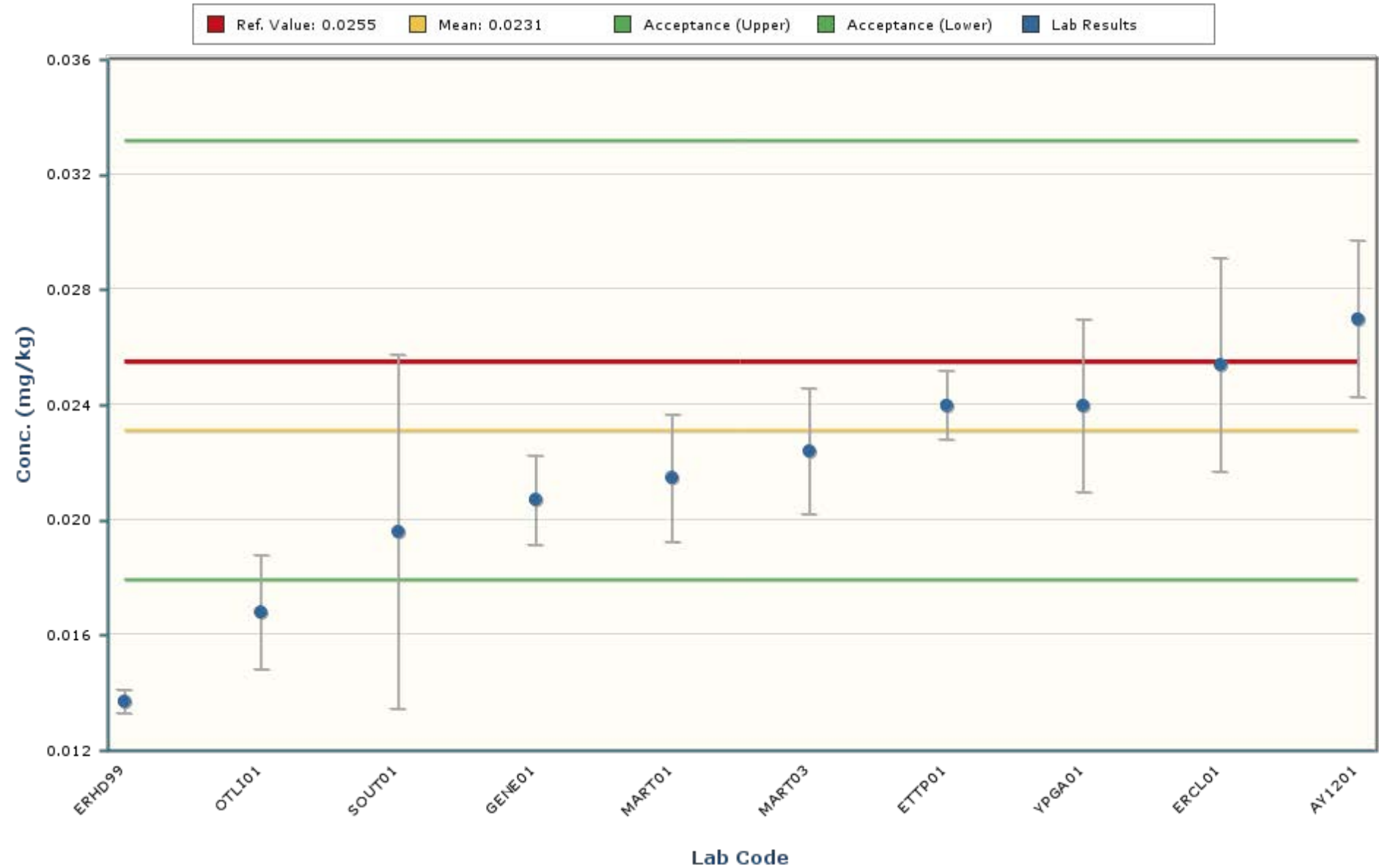
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 1.88 and 2.64 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Thallium
MAPEP-25-MaS52



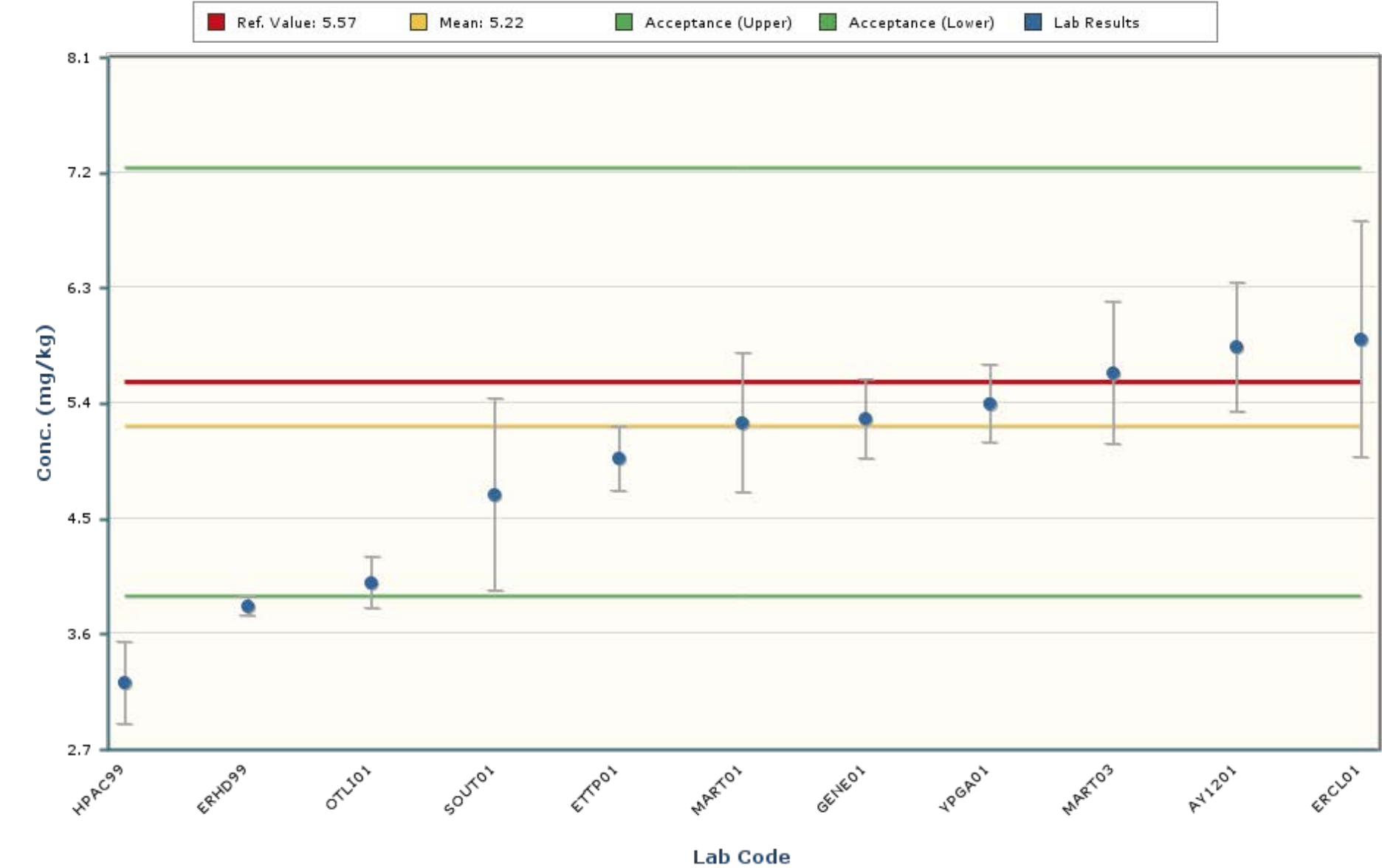
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.49 and 1.61 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Uranium-235
MAPEP-25-MaS52



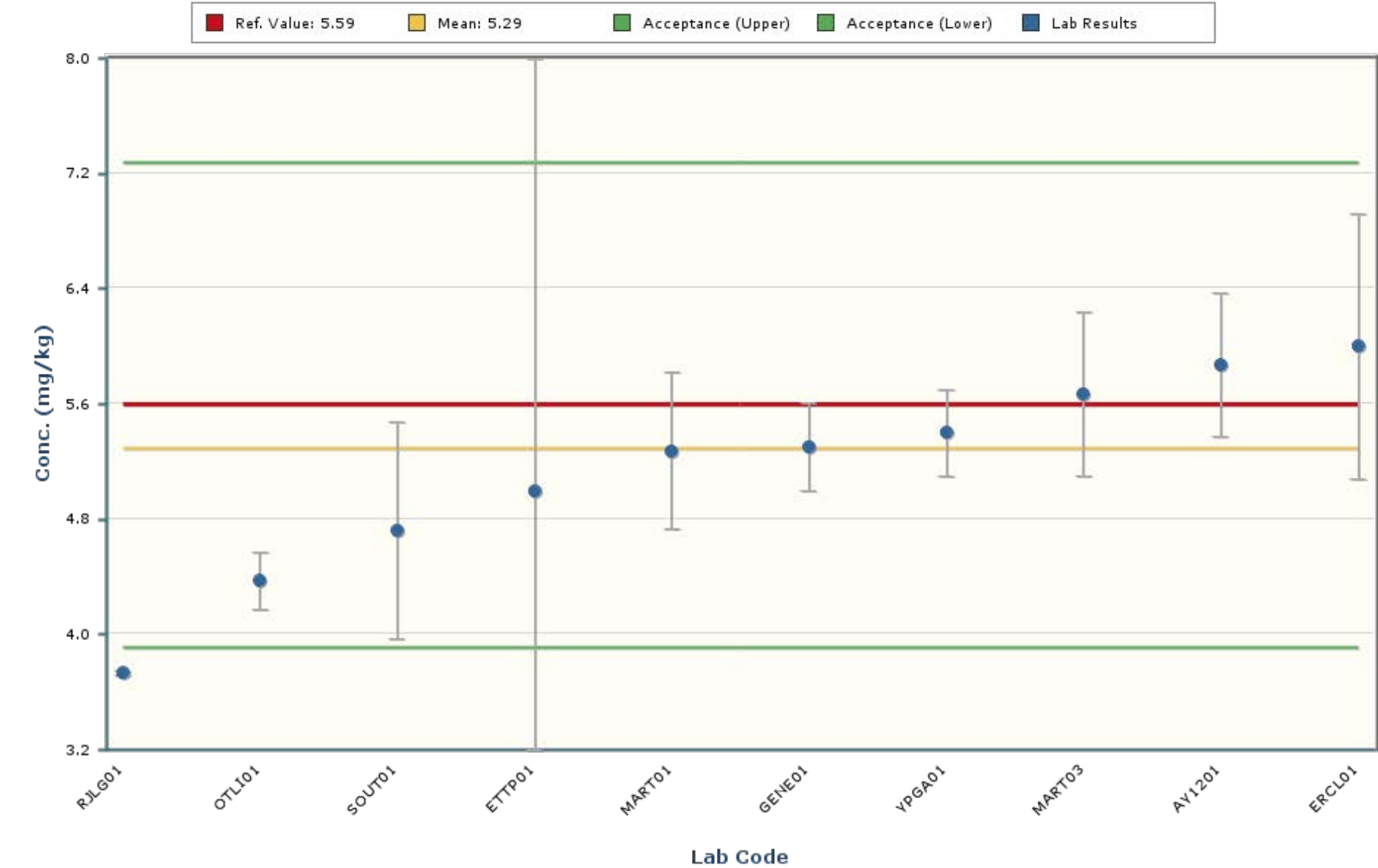
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.0106 and 0.0355 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Uranium-238
MAPEP-25-MaS52



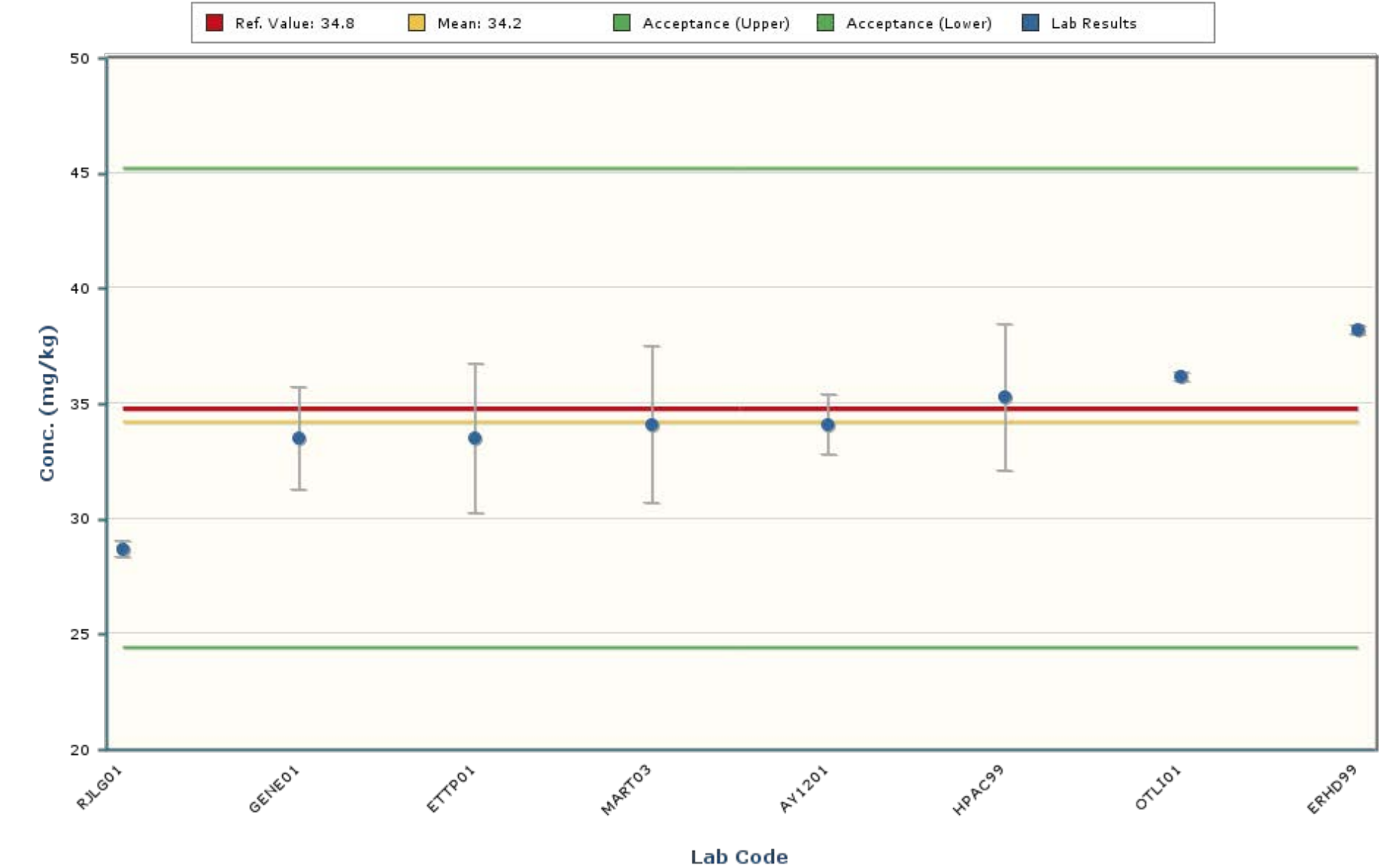
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 2.21 and 8.23 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Uranium-Total
MAPEP-25-MaS52



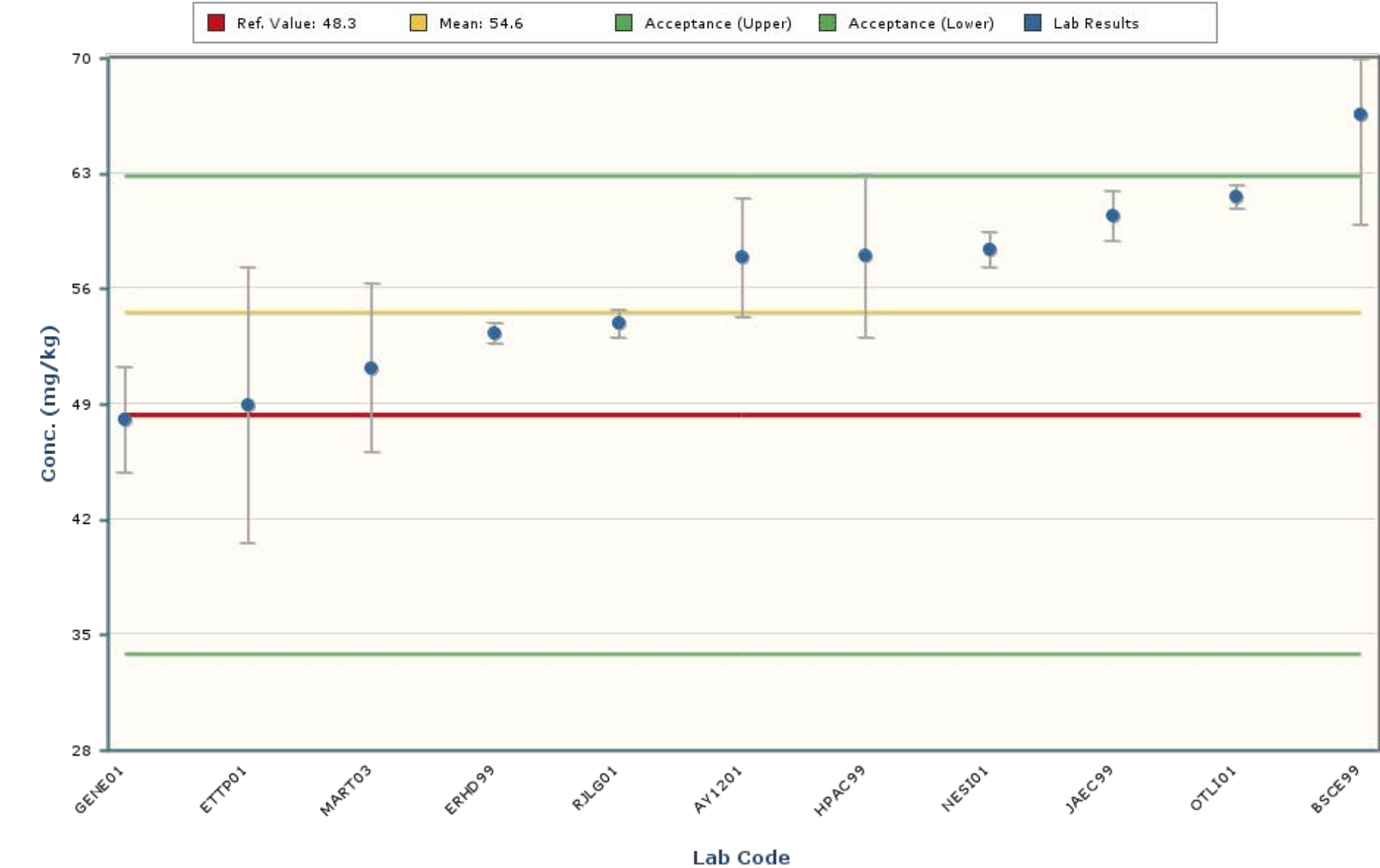
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 2.63 and 7.94 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Vanadium
MAPEP-25-MaS52



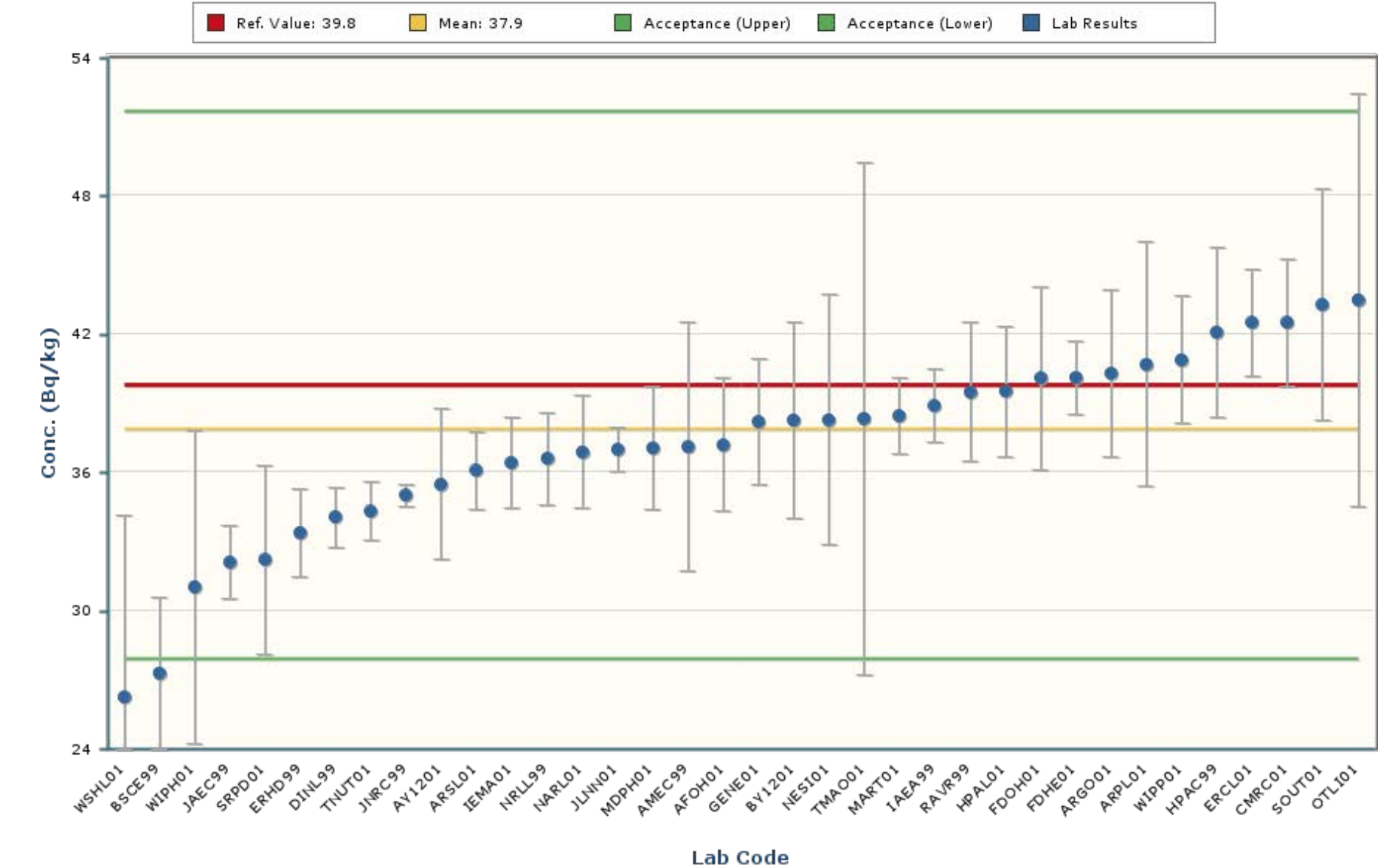
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 20.5 and 47.9 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Zinc
MAPEP-25-MaS52



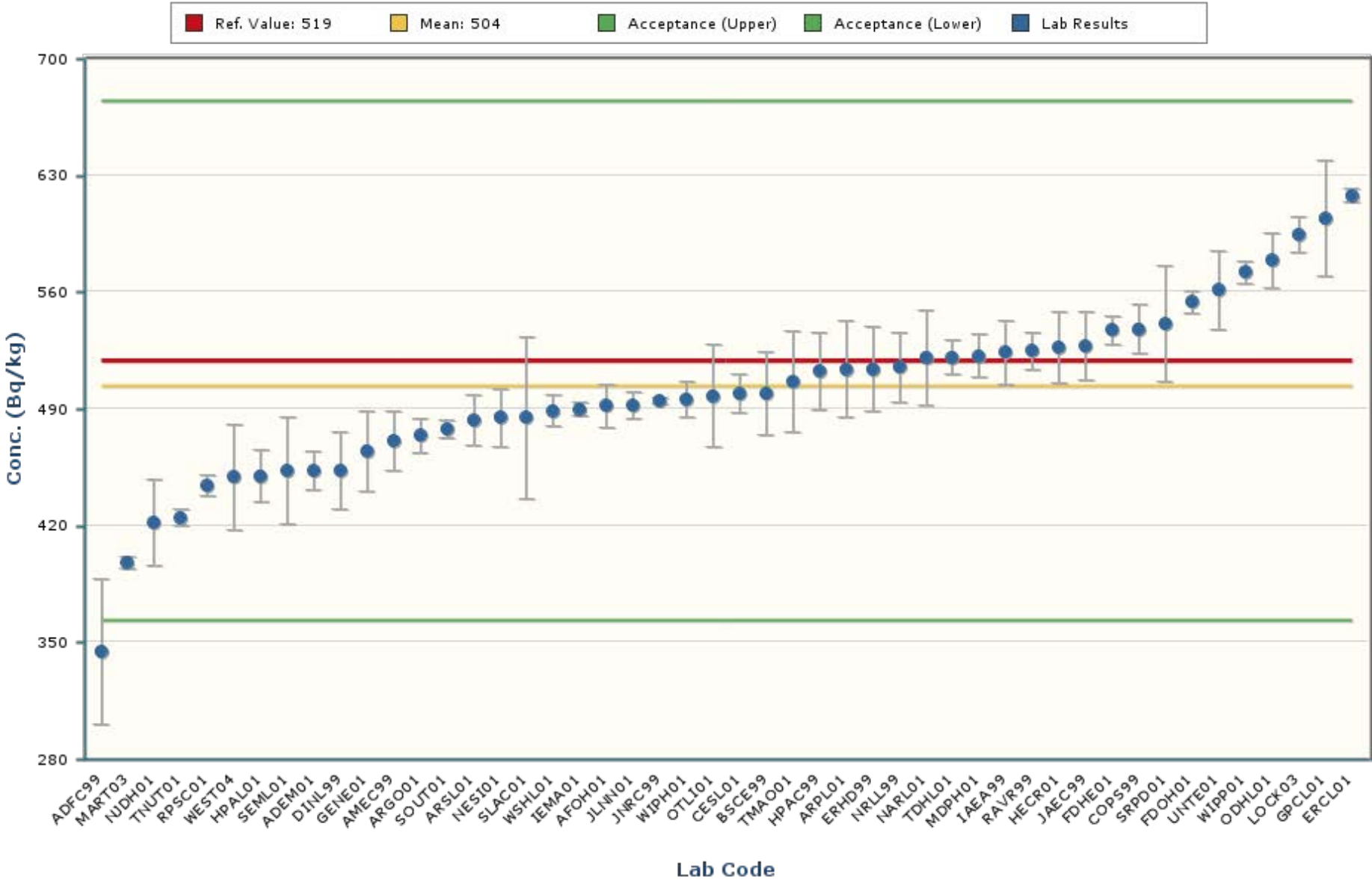
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 31.3 and 77.9 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Americium-241
MAPEP-25-MaS52



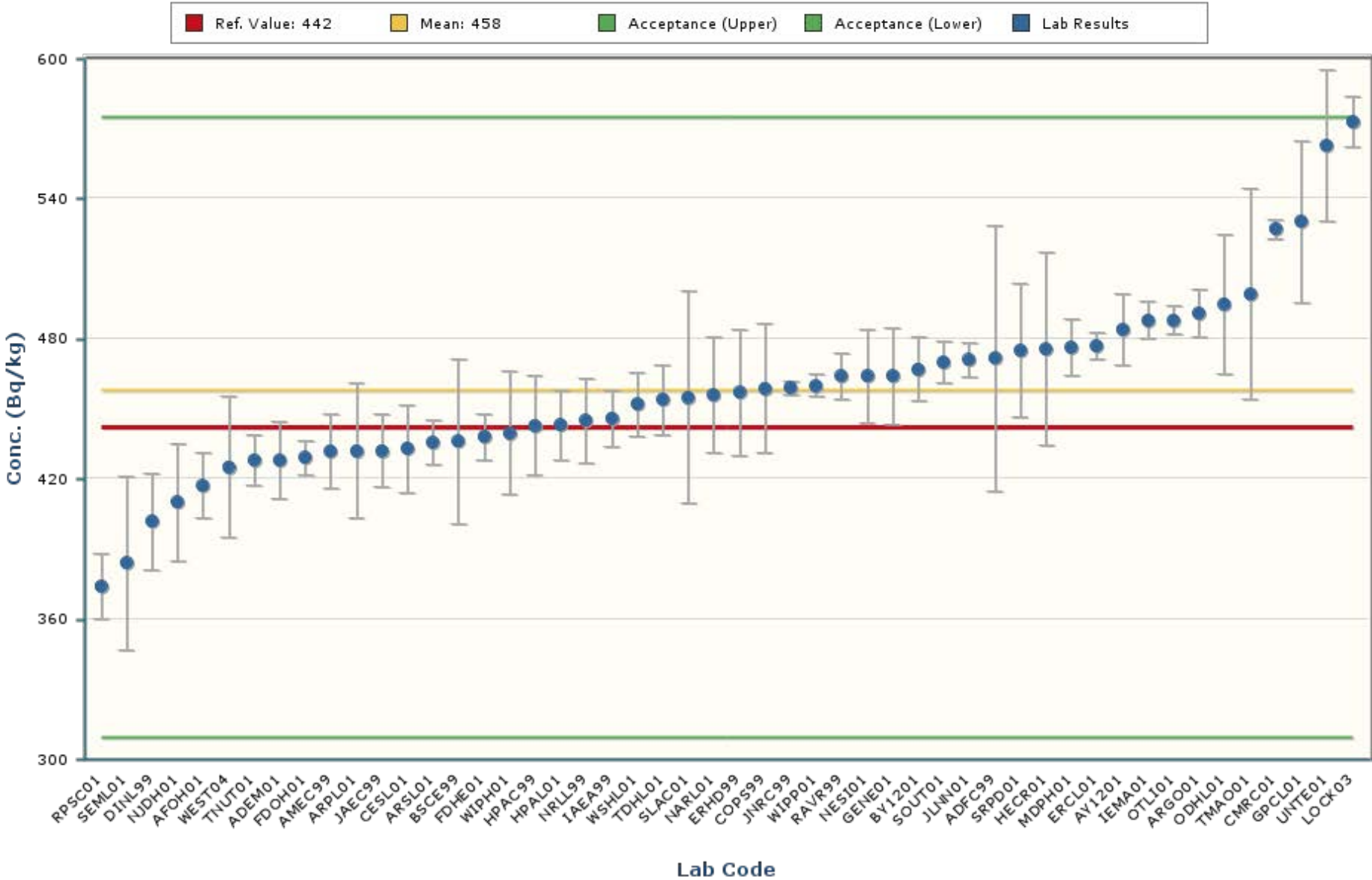
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 21.7 and 54.1 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Cesium-134
MAPEP-25-MaS52



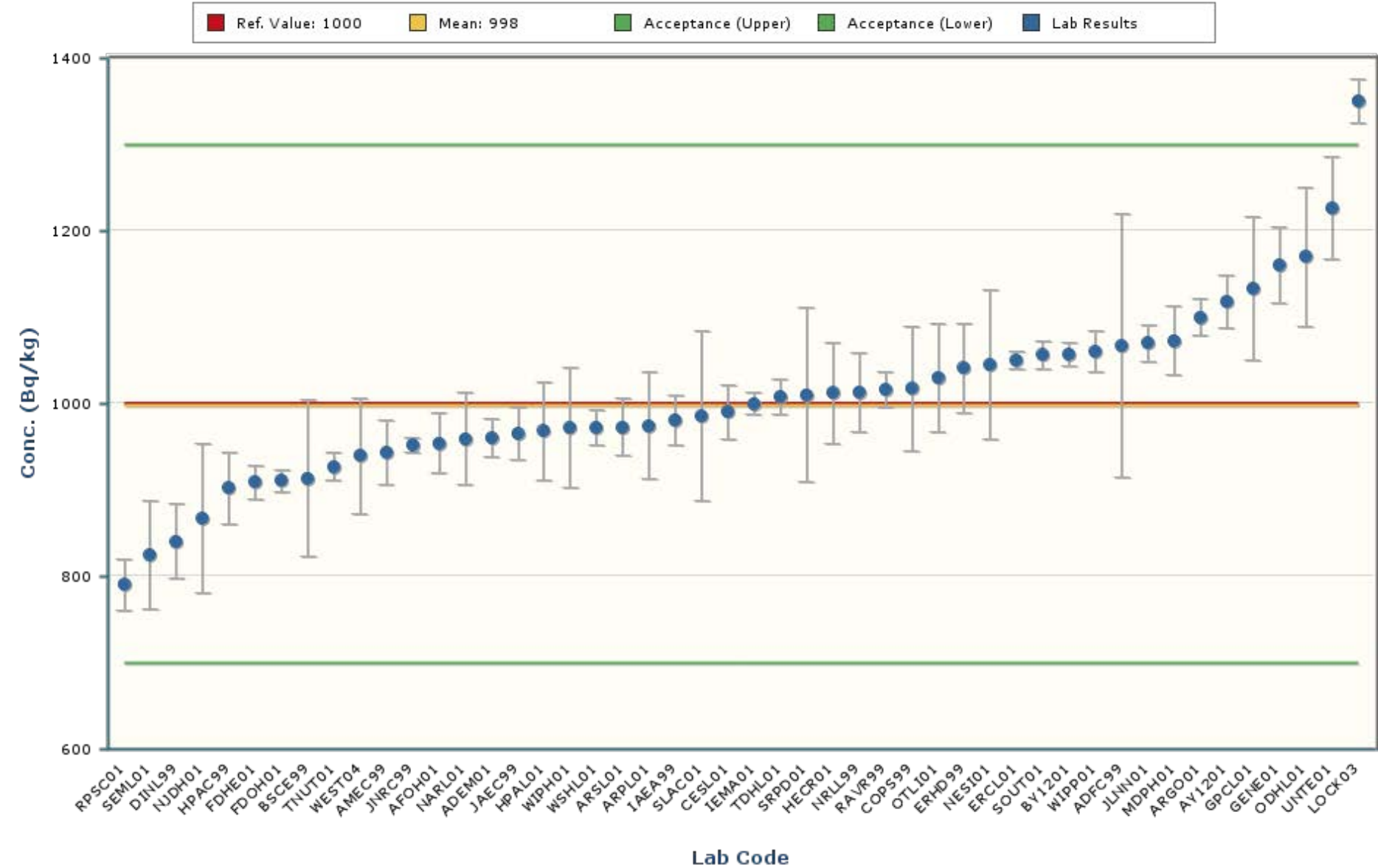
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 268 and 739 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Cesium-137
MAPEP-25-MaS52



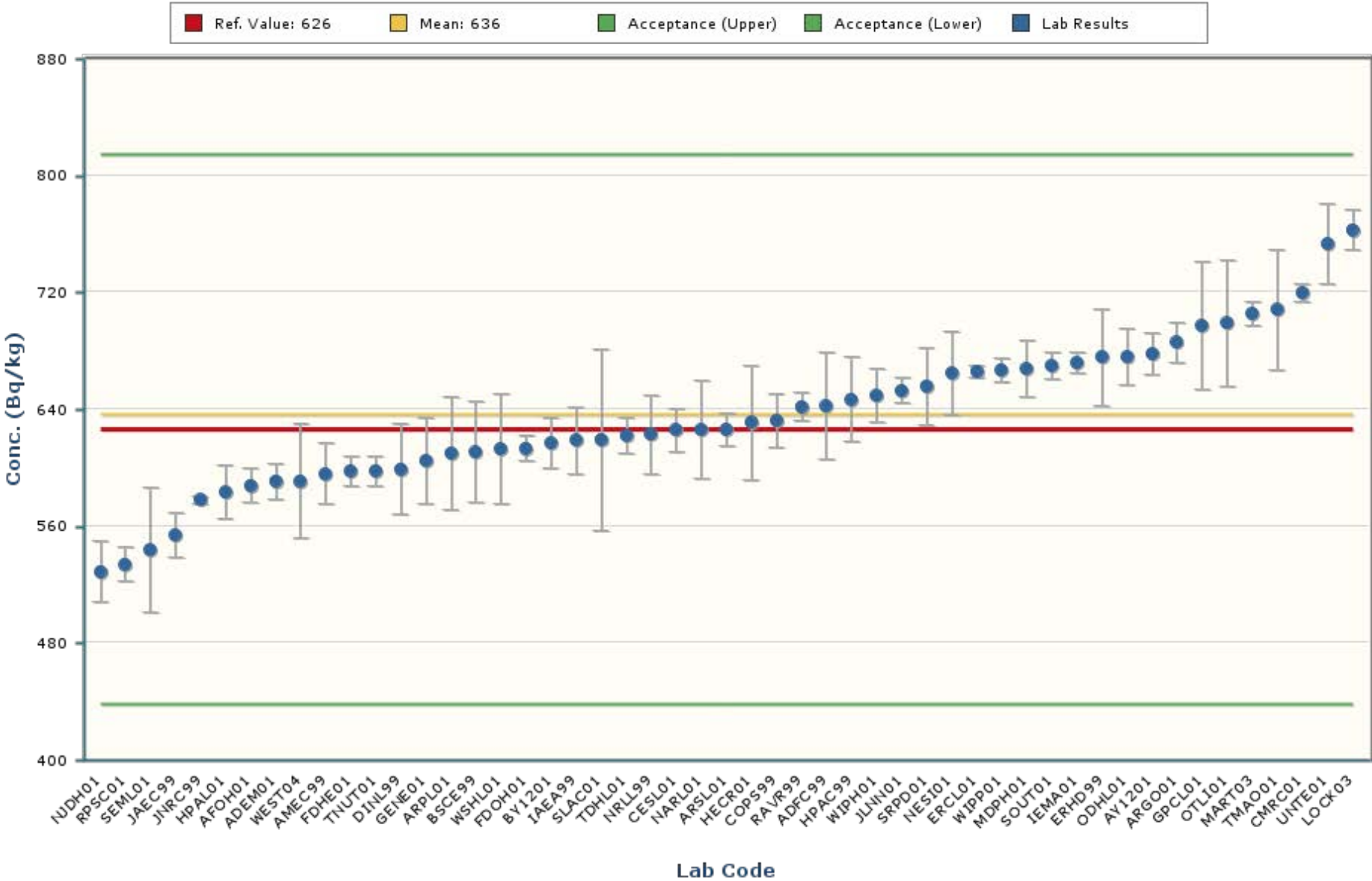
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 268 and 649 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Cobalt-57
MAPEP-25-MaS52



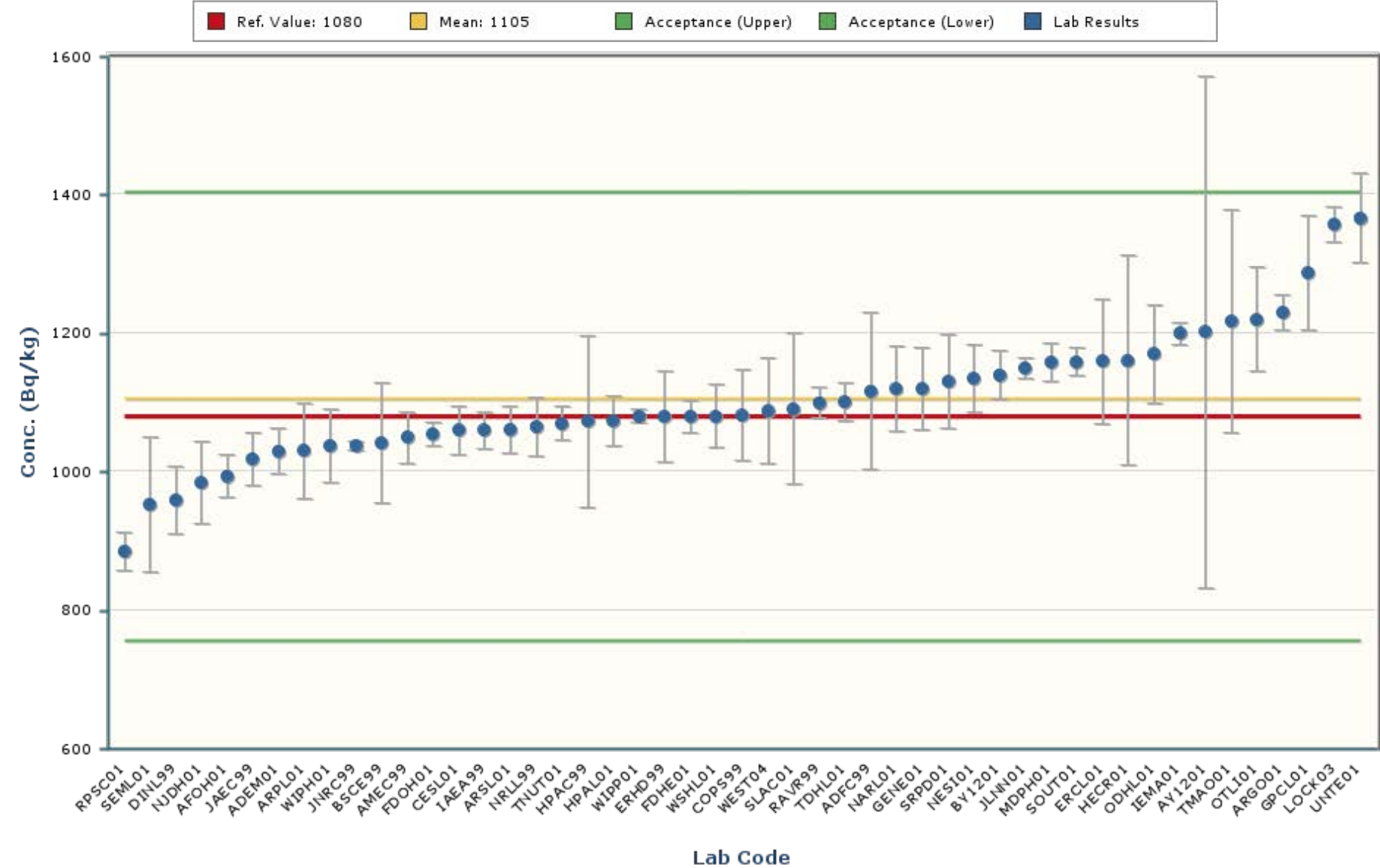
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 558 and 1438 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Cobalt-60
MAPEP-25-MaS52



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 381 and 891 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

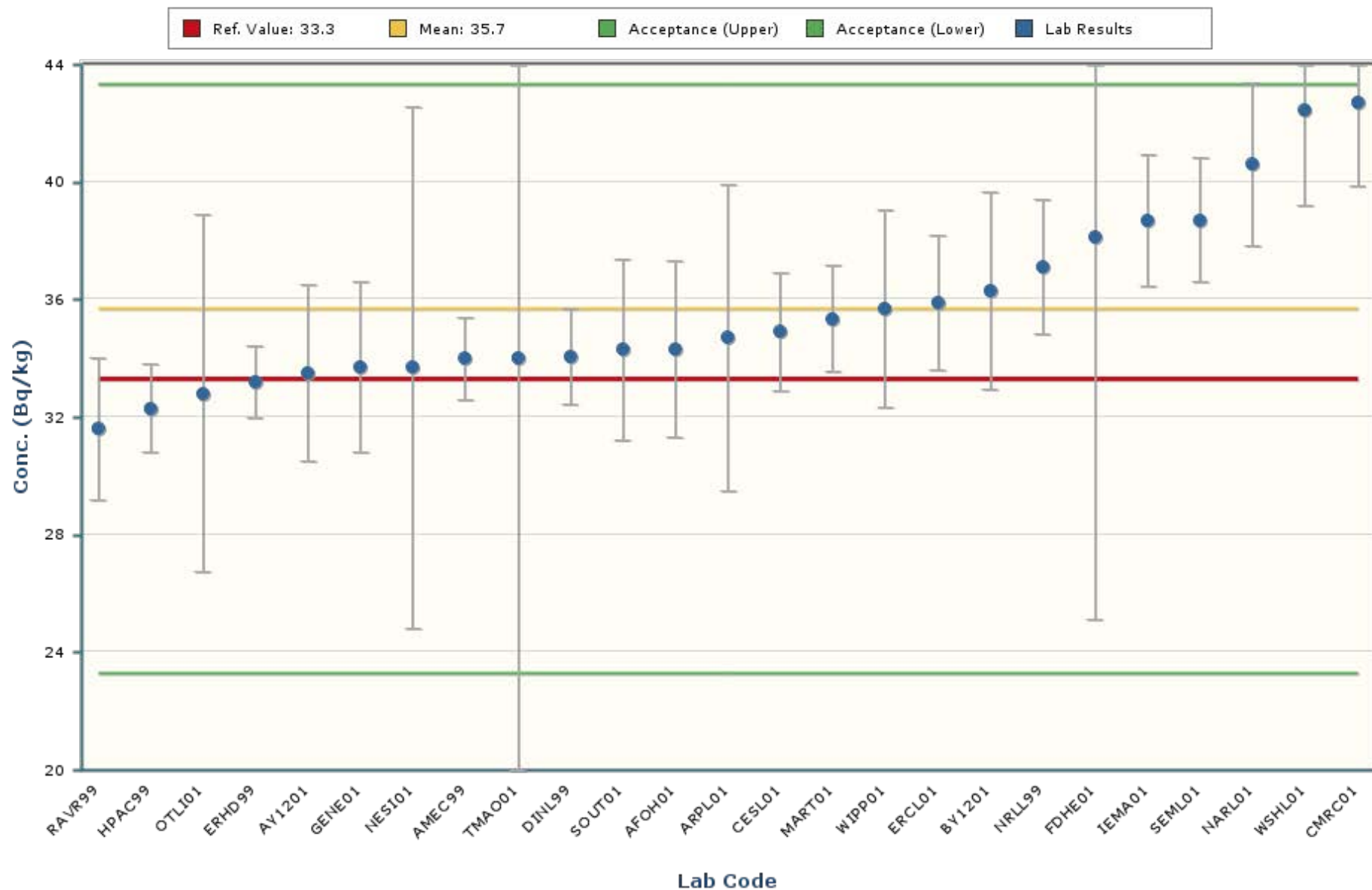
Manganese-54
MAPEP-25-MaS52



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 638 and 1571 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Plutonium-238

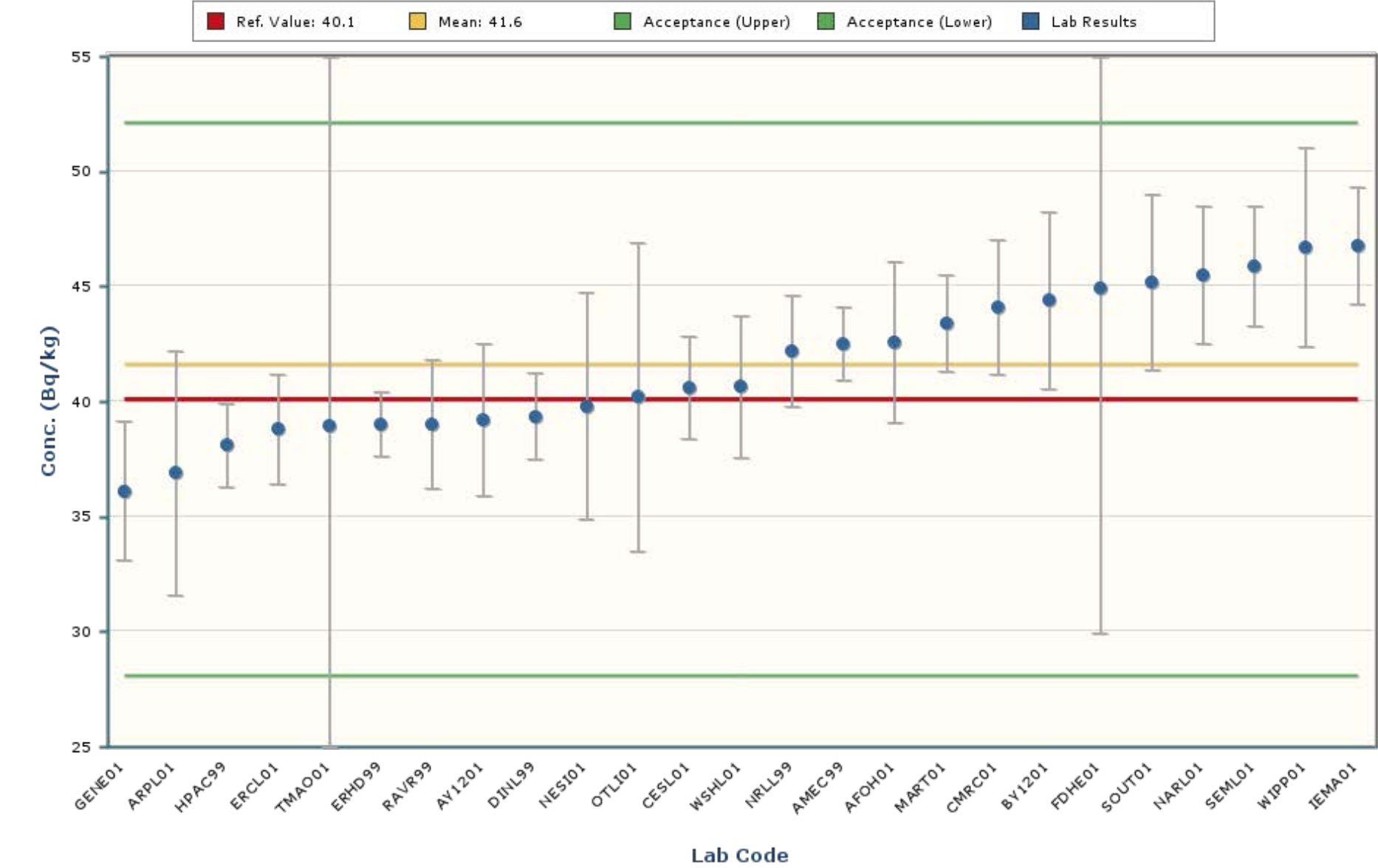
MAPEP-25-MaS52



Notes:

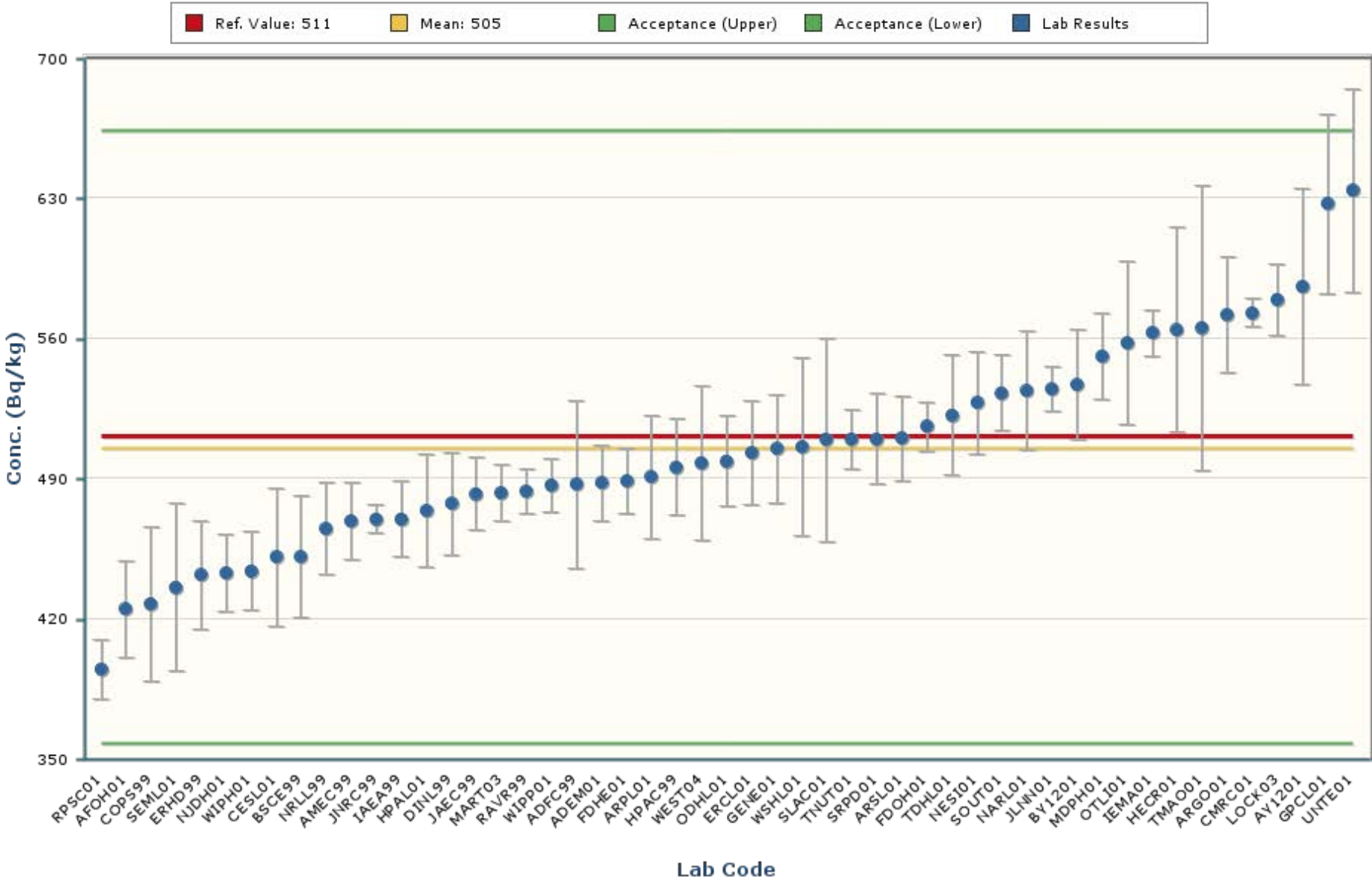
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 20.8 and 50.7 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Plutonium-239/240
MAPEP-25-MaS52



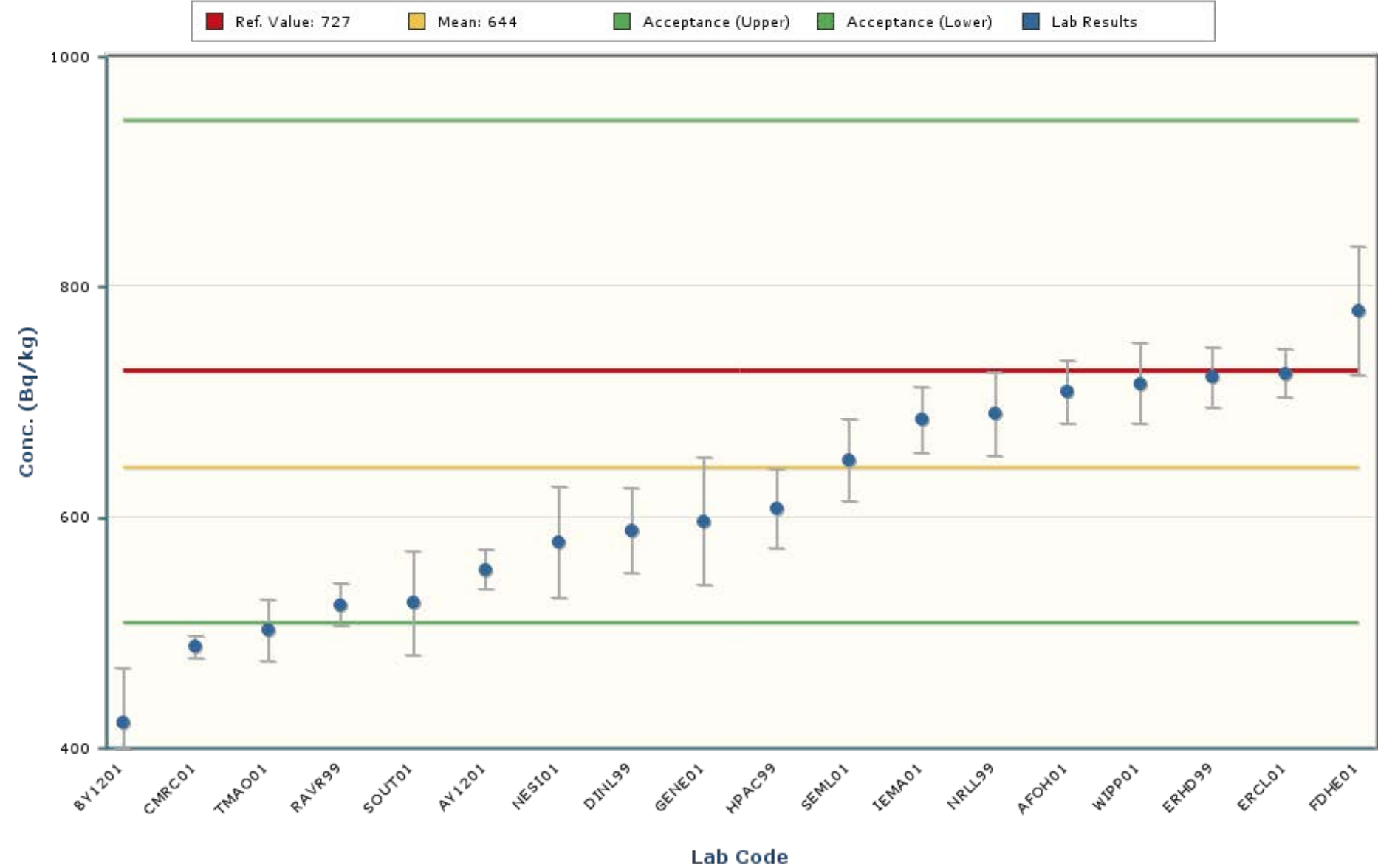
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 25.8 and 57.5 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Potassium-40
MAPEP-25-MaS52



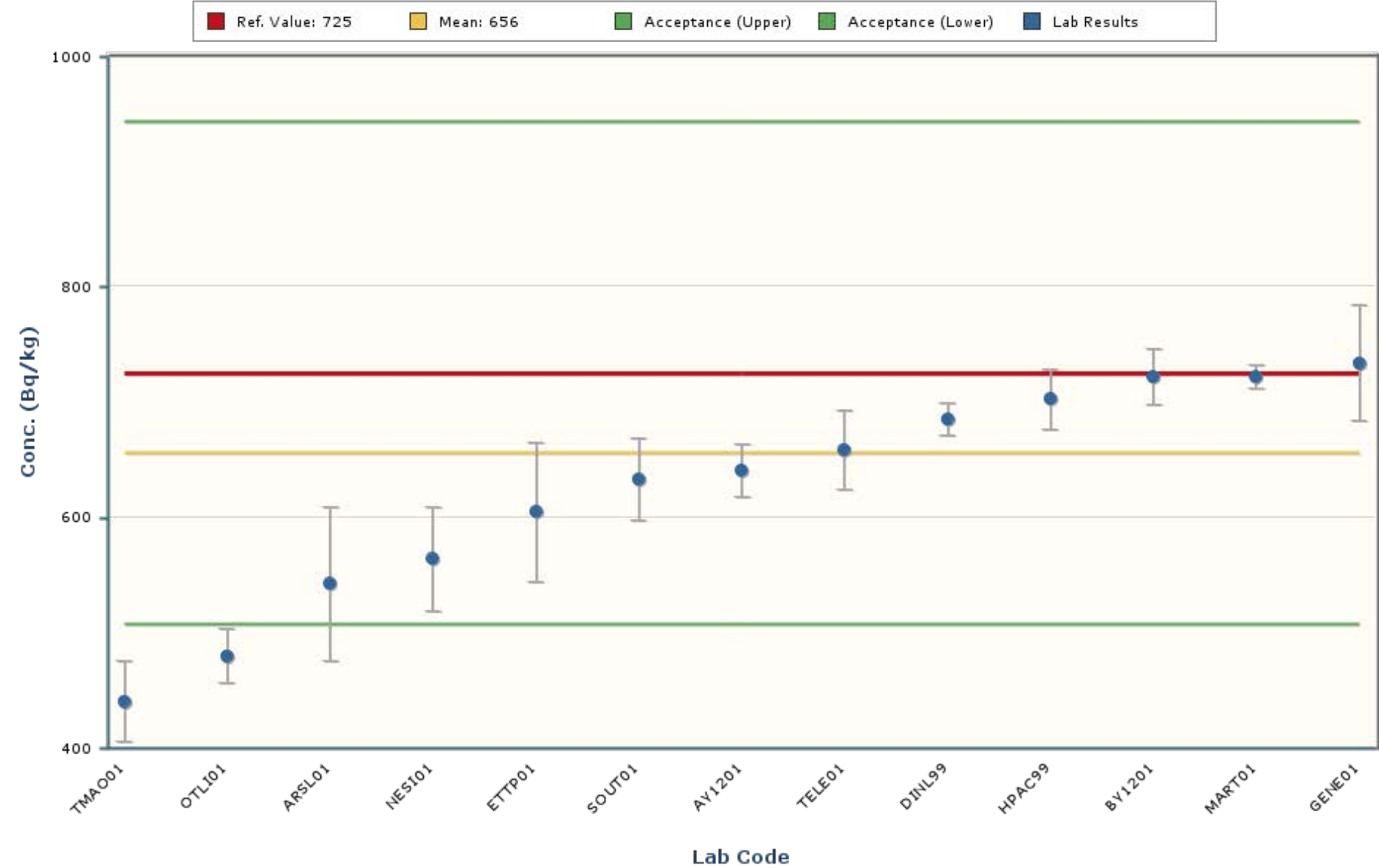
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 251 and 760 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Strontium-90
MAPEP-25-MaS52



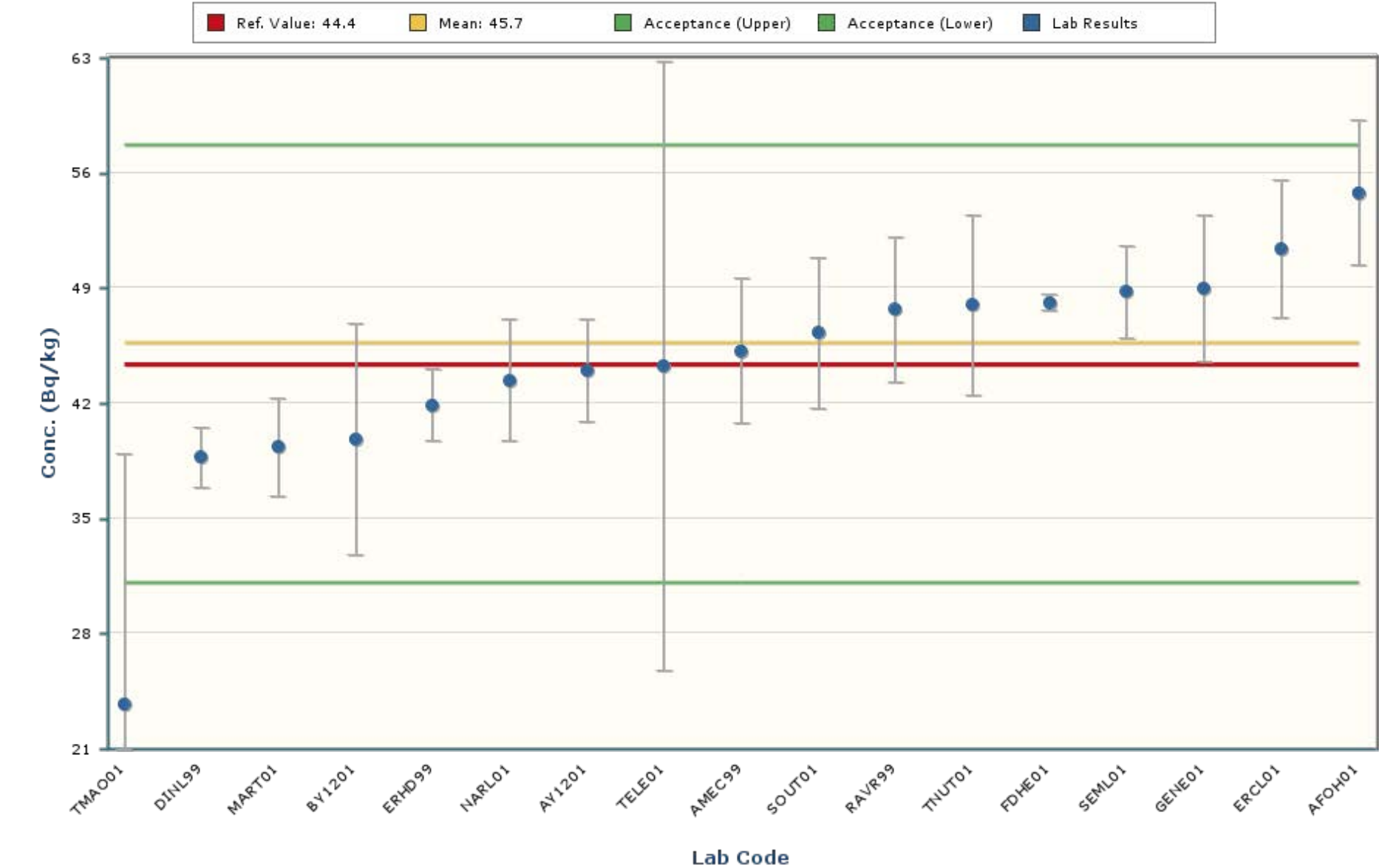
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 240 and 1047 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Technetium-99
MAPEP-25-MaS52



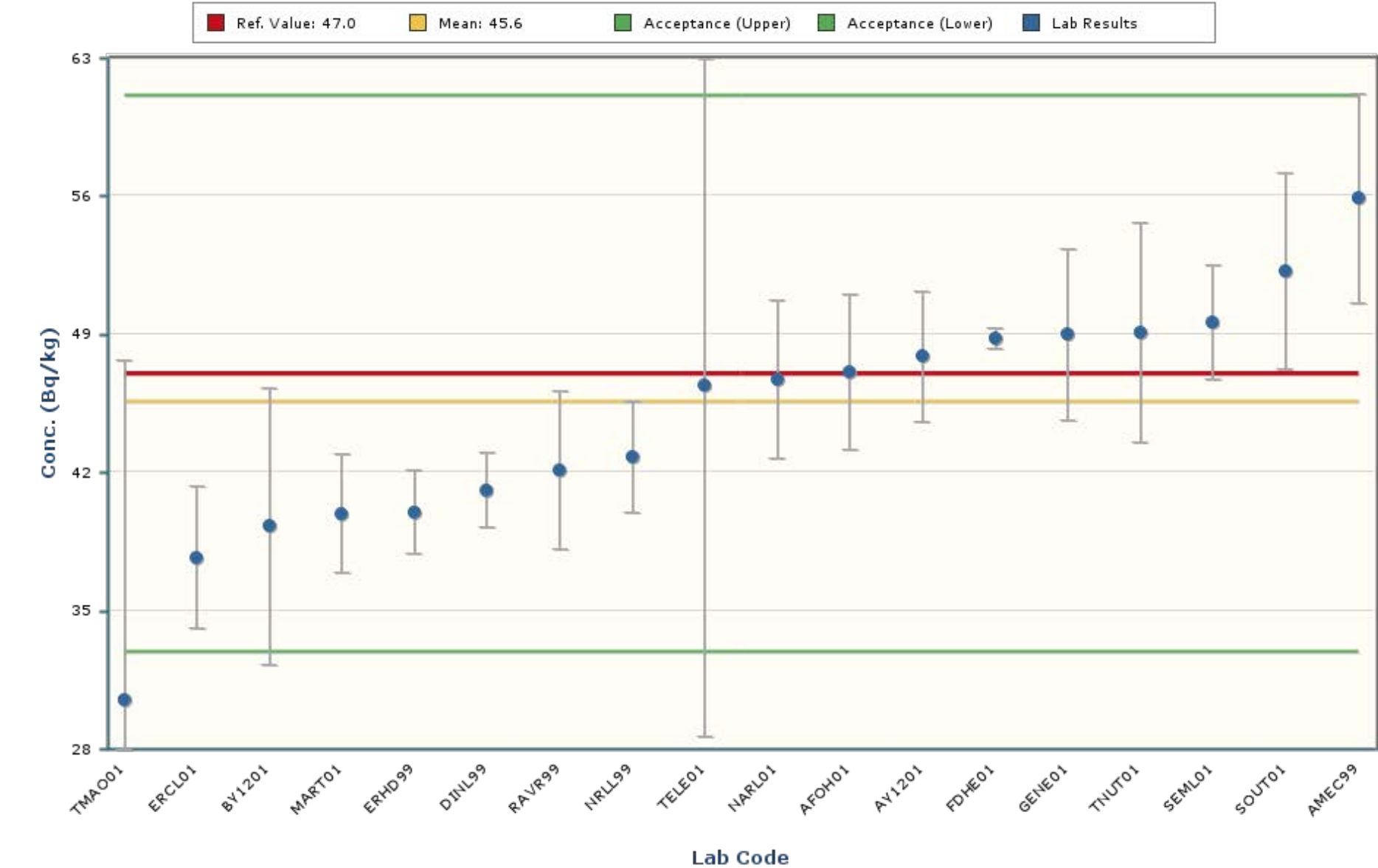
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 329 and 982 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Thorium-228
MAPEP-25-MaS52



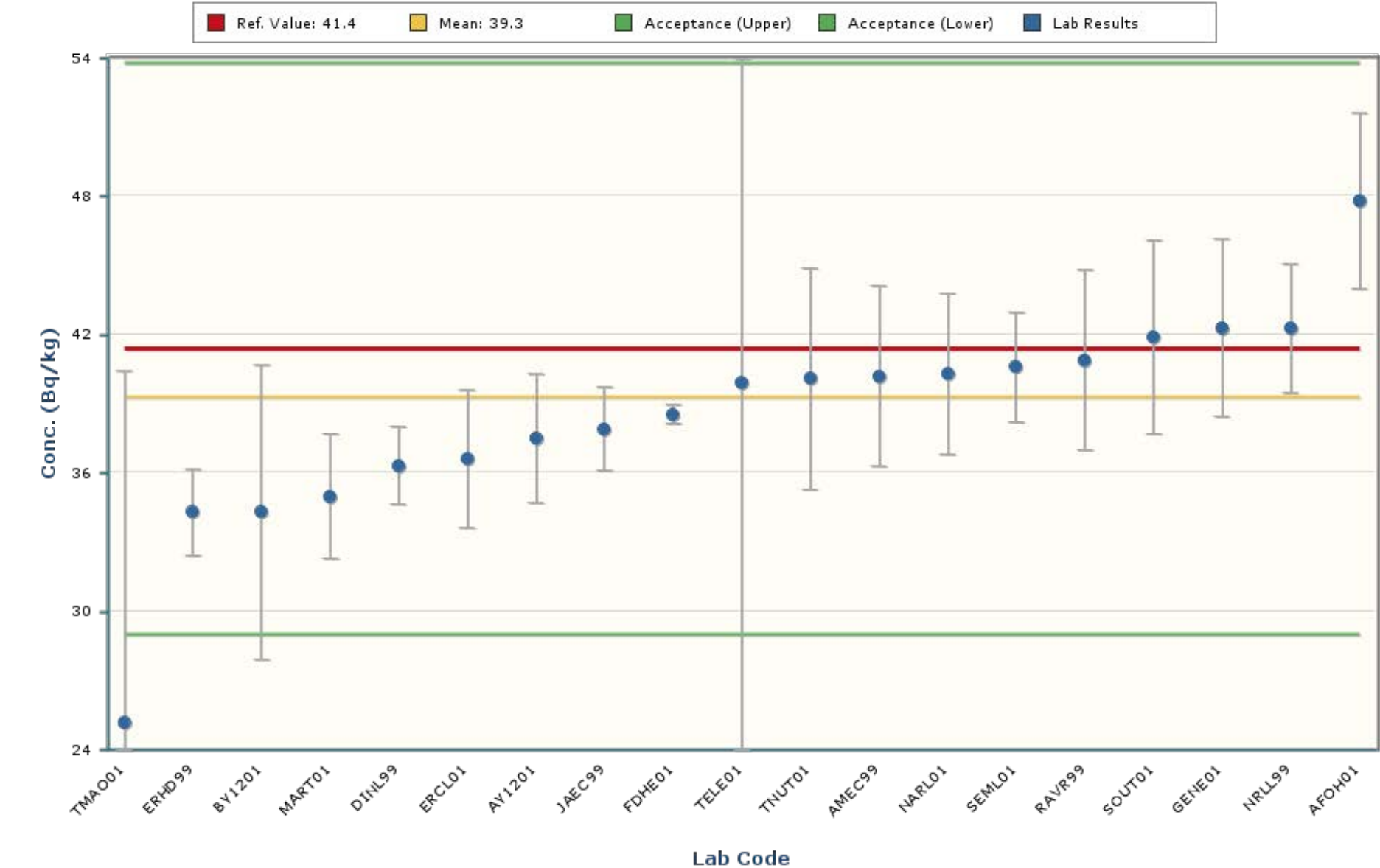
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 23.3 and 68.0 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Thorium-230
MAPEP-25-MaS52



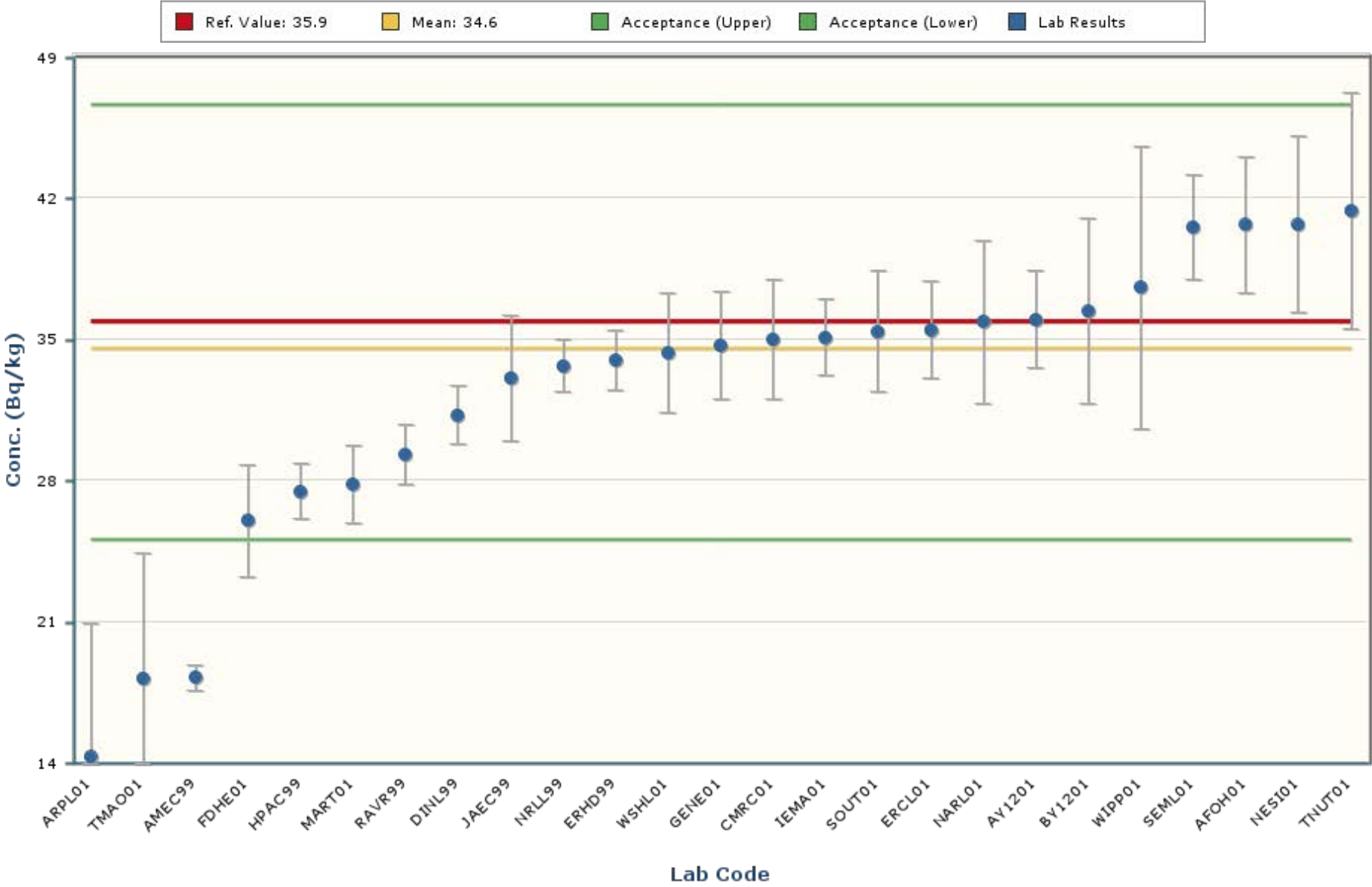
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 20.2 and 71.1 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Thorium-232
MAPEP-25-MaS52



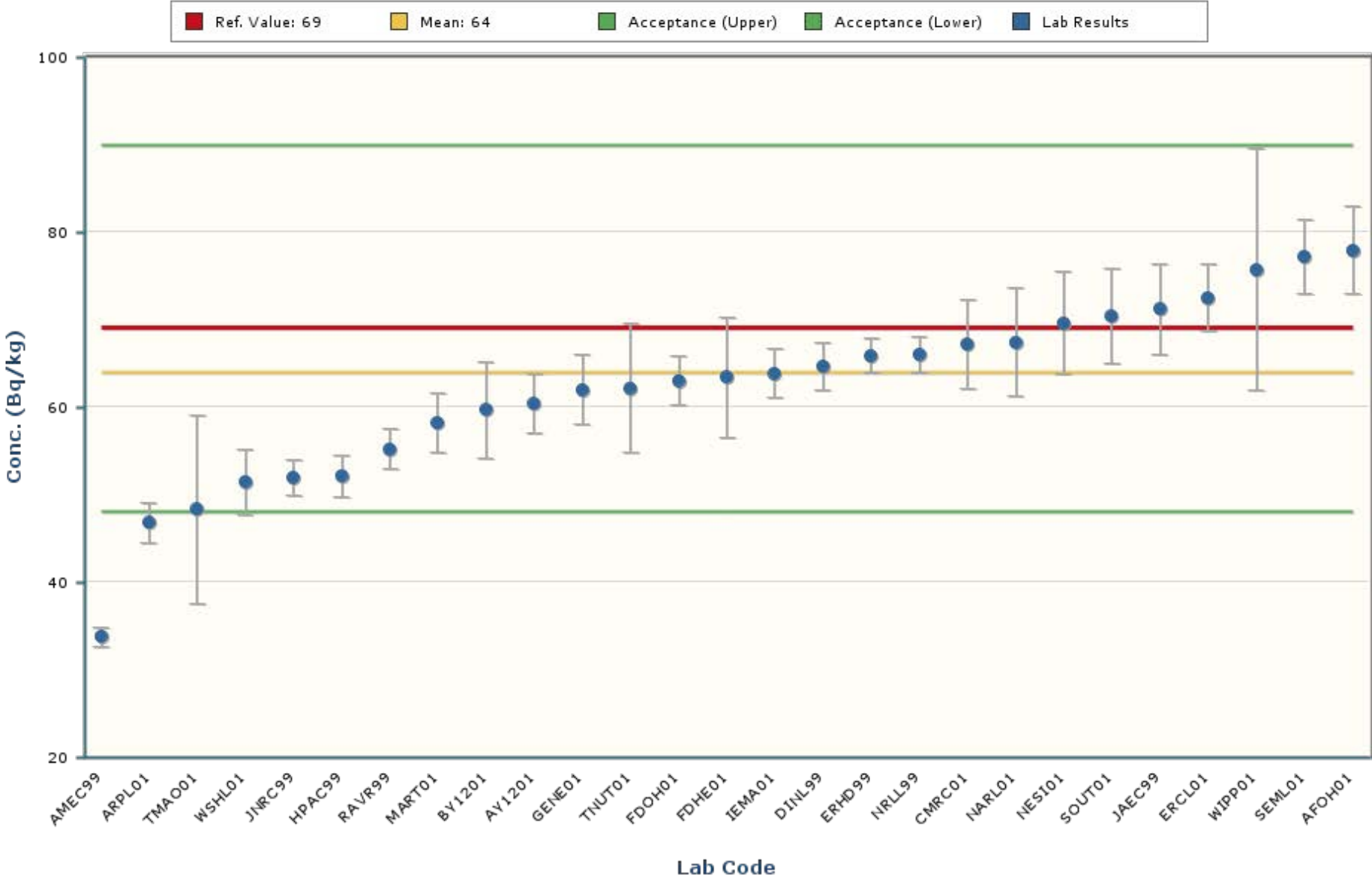
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 22.4 and 56.2 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Uranium-234
MAPEP-25-MaS52



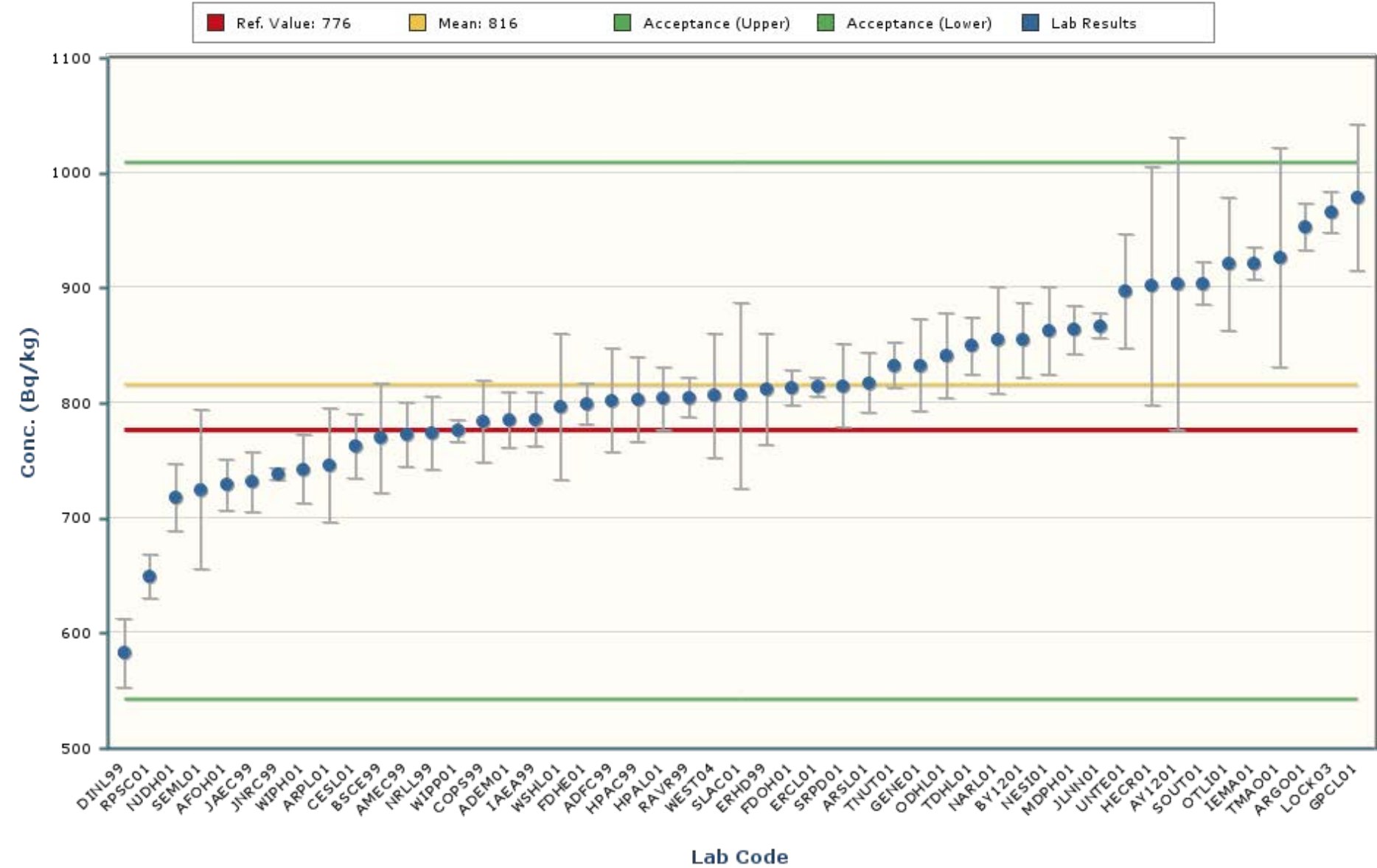
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 13.2 and 56.1 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Uranium-238
MAPEP-25-MaS52



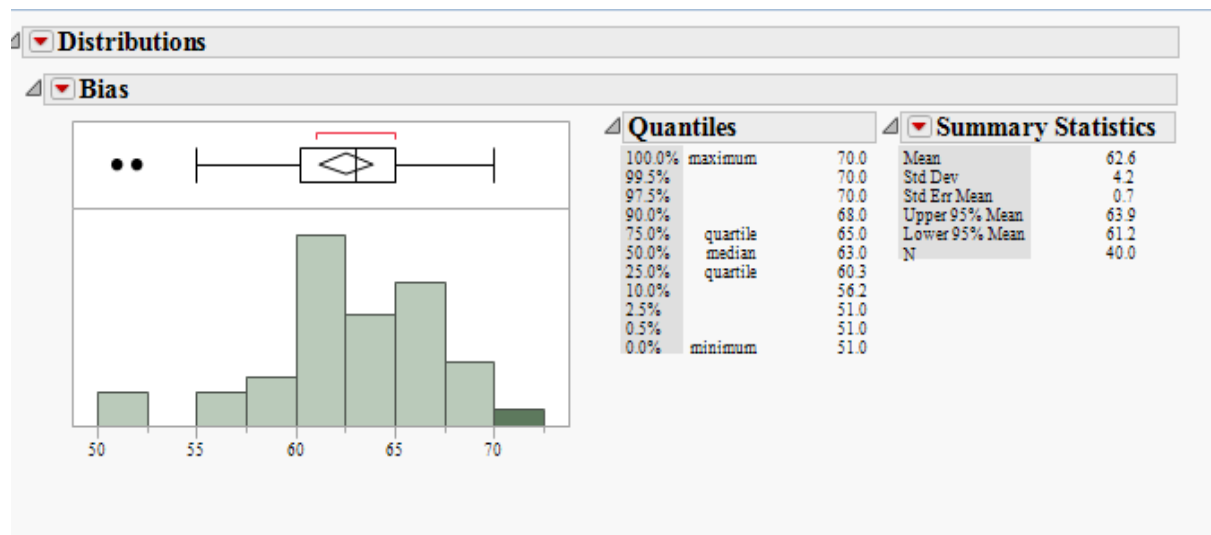
Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 24 and 104 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at $\pm$ one standard deviation.

Zinc-65
MAPEP-25-MaS52



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 428 and 1205 (± 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.

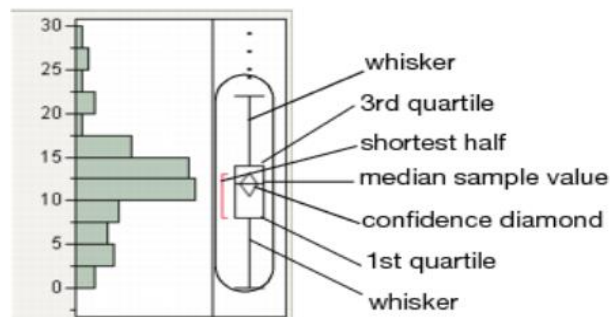


Outlier Box Plot

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)

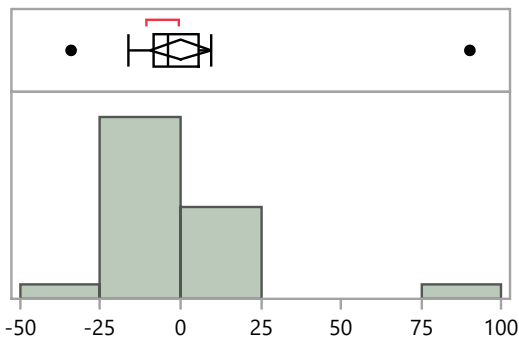


If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

MaS52 Distribution by Detection Method

Distributions Analyte_Detection=Americium-241 Alpha Spectrometry

Bias



Quantiles

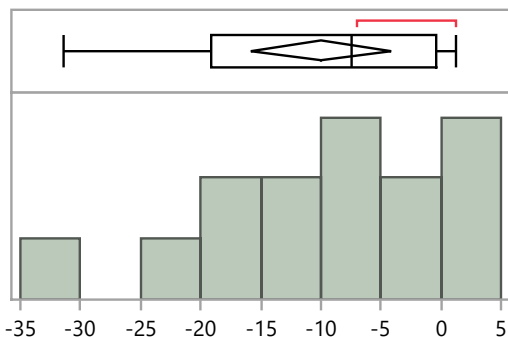
100.0%	maximum	90.2
99.5%		90.2
97.5%		90.2
90.0%		9.1
75.0%	quartile	5.8
50.0%	median	-3.8
25.0%	quartile	-8.5
10.0%		-15.4
2.5%		-34.1
0.5%		-34.1
0.0%	minimum	-34.1

Summary Statistics

Mean	-0.0
Std Dev	21.9
Std Err Mean	4.6
Upper 95% Mean	9.5
Lower 95% Mean	-9.5
N	23.0

Distributions Analyte_Detection=Americium-241 Gamma Spectrometry

Bias



Quantiles

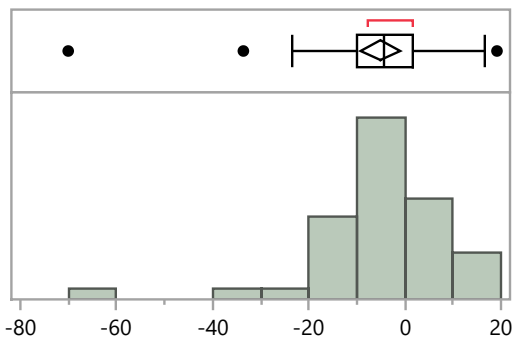
100.0%	maximum	1.3
99.5%		1.3
97.5%		1.3
90.0%		1.1
75.0%	quartile	-0.3
50.0%	median	-7.5
25.0%	quartile	-19.2
10.0%		-26.7
2.5%		-31.4
0.5%		-31.4
0.0%	minimum	-31.4

Summary Statistics

Mean	-10.0
Std Dev	10.1
Std Err Mean	2.7
Upper 95% Mean	-4.2
Lower 95% Mean	-15.8
N	14.0

Distributions Analyte_Detection=Cesium-134 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	19.1
99.5%		19.1
97.5%		18.5
90.0%		10.3
75.0%	quartile	1.5
50.0%	median	-4.3
25.0%	quartile	-10.1
10.0%		-18.2
2.5%		-61.8
0.5%		-70.0
0.0%	minimum	-70.0

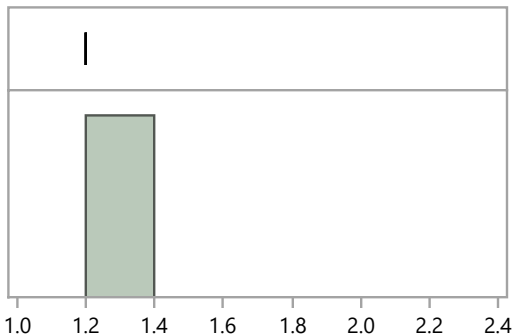
Summary Statistics

Mean	-5.1
Std Dev	13.8
Std Err Mean	2.0
Upper 95% Mean	-1.1
Lower 95% Mean	-9.1
N	48.0

MaS52 Distribution by Detection Method

Distributions Analyte_Detection=Cesium-134 Gas Flow Proportional Counter

Bias



Quantiles

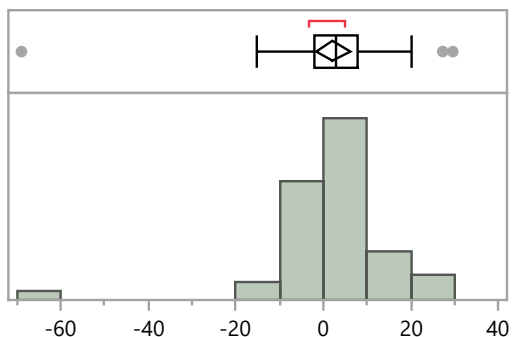
100.0%	maximum	1.2
99.5%		1.2
97.5%		1.2
90.0%		1.2
75.0%	quartile	1.2
50.0%	median	1.2
25.0%	quartile	1.2
10.0%		1.2
2.5%		1.2
0.5%		1.2
0.0%	minimum	1.2

Summary Statistics

Mean	1.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Cesium-137 Gamma Spectrometry

Bias



Quantiles

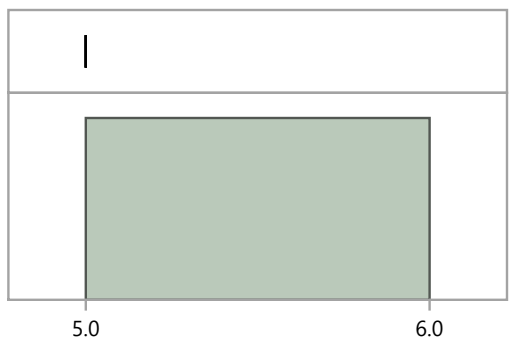
100.0%	maximum	29.6
99.5%		29.6
97.5%		29.0
90.0%		12.8
75.0%	quartile	7.7
50.0%	median	3.1
25.0%	quartile	-2.2
10.0%		-7.1
2.5%		-54.3
0.5%		-69.0
0.0%	minimum	-69.0

Summary Statistics

Mean	2.2
Std Dev	13.4
Std Err Mean	1.9
Upper 95% Mean	6.0
Lower 95% Mean	-1.6
N	50.0

Distributions Analyte_Detection=Cesium-137 Gas Flow Proportional Counter

Bias

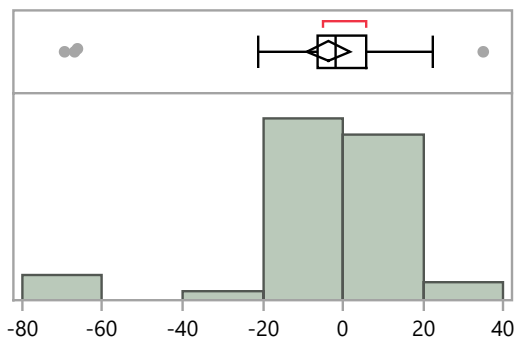


Quantiles

100.0%	maximum	5.0
99.5%		5.0
97.5%		5.0
90.0%		5.0
75.0%	quartile	5.0
50.0%	median	5.0
25.0%	quartile	5.0
10.0%		5.0
2.5%		5.0
0.5%		5.0
0.0%	minimum	5.0

Summary Statistics

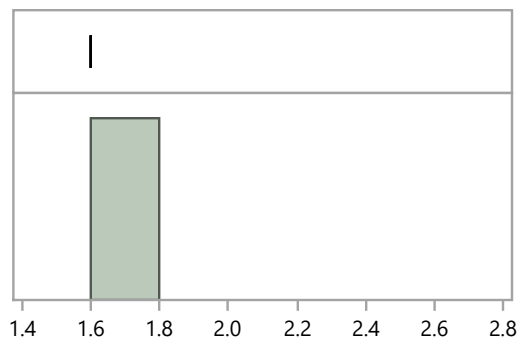
Mean	5.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Detection Method**Distributions Analyte_Detection=Cobalt-57 Gamma Spectrometry****Bias****Quantiles**

100.0%	maximum	35.0
99.5%		35.0
97.5%		31.6
90.0%		13.2
75.0%	quartile	5.6
50.0%	median	-1.7
25.0%	quartile	-6.3
10.0%		-17.4
2.5%		-68.7
0.5%		-69.4
0.0%	minimum	-69.4

Summary Statistics

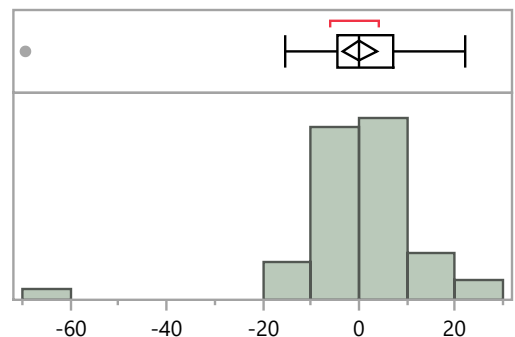
Mean	-3.6
Std Dev	19.1
Std Err Mean	2.7
Upper 95% Mean	1.8
Lower 95% Mean	-9.0
N	50.0

Distributions Analyte_Detection=Cobalt-57 Gas Flow Proportional Counter**Bias****Quantiles**

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

Summary Statistics

Mean	1.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Cobalt-60 Gamma Spectrometry**Bias****Quantiles**

100.0%	maximum	21.9
99.5%		21.9
97.5%		21.4
90.0%		12.5
75.0%	quartile	7.0
50.0%	median	0.0
25.0%	quartile	-4.5
10.0%		-10.7
2.5%		-53.2
0.5%		-69.3
0.0%	minimum	-69.3

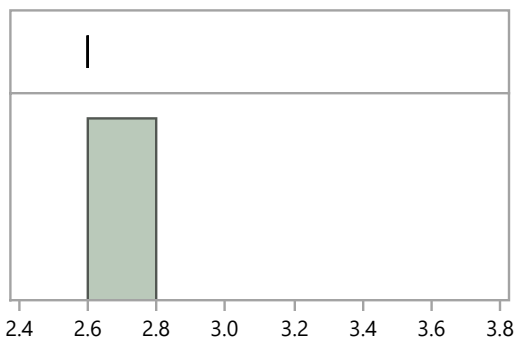
Summary Statistics

Mean	0.2
Std Dev	12.8
Std Err Mean	1.8
Upper 95% Mean	3.8
Lower 95% Mean	-3.4
N	51.0

MaS52 Distribution by Detection Method

Distributions Analyte_Detection=Cobalt-60 Gas Flow Proportional Counter

Bias



Quantiles

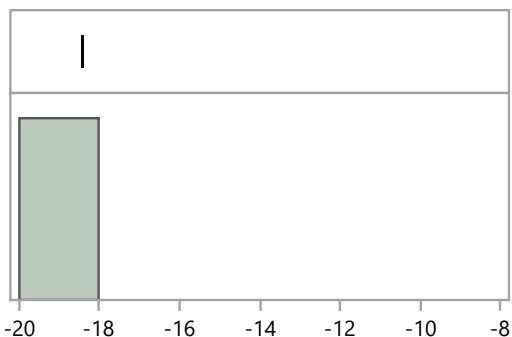
100.0%	maximum	2.6
99.5%		2.6
97.5%		2.6
90.0%		2.6
75.0%	quartile	2.6
50.0%	median	2.6
25.0%	quartile	2.6
10.0%		2.6
2.5%		2.6
0.5%		2.6
0.0%	minimum	2.6

Summary Statistics

Mean	2.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Iron-55 Gamma Spectrometry

Bias



Quantiles

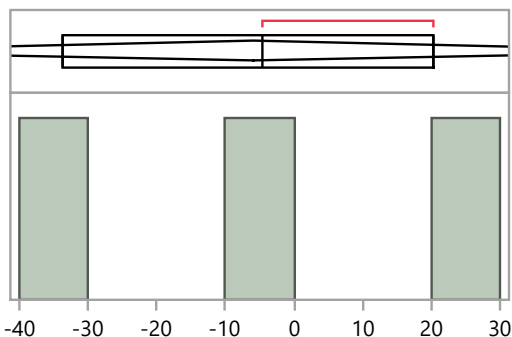
100.0%	maximum	-18.4
99.5%		-18.4
97.5%		-18.4
90.0%		-18.4
75.0%	quartile	-18.4
50.0%	median	-18.4
25.0%	quartile	-18.4
10.0%		-18.4
2.5%		-18.4
0.5%		-18.4
0.0%	minimum	-18.4

Summary Statistics

Mean	-18.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Iron-55 Liquid Scintillation Counter

Bias



Quantiles

100.0%	maximum	20.2
99.5%		20.2
97.5%		20.2
90.0%		20.2
75.0%	quartile	20.2
50.0%	median	-4.5
25.0%	quartile	-33.8
10.0%		-33.8
2.5%		-33.8
0.5%		-33.8
0.0%	minimum	-33.8

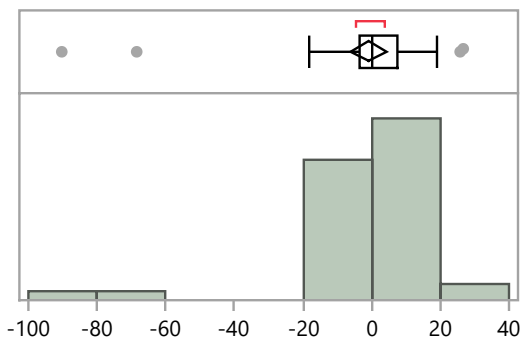
Summary Statistics

Mean	-6.0
Std Dev	27.0
Std Err Mean	15.6
Upper 95% Mean	61.1
Lower 95% Mean	-73.2
N	3.0

MaS52 Distribution by Detection Method

Distributions Analyte_Detection=Manganese-54 Gamma Spectrometry

Bias



Quantiles

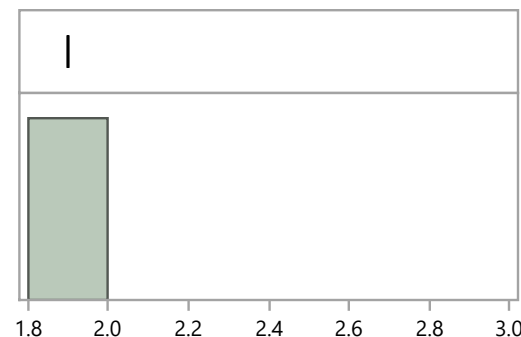
100.0%	maximum	26.6
99.5%		26.6
97.5%		26.4
90.0%		13.0
75.0%	quartile	7.2
50.0%	median	0.0
25.0%	quartile	-3.7
10.0%		-11.0
2.5%		-84.2
0.5%		-90.2
0.0%	minimum	-90.2

Summary Statistics

Mean	-1.0
Std Dev	18.4
Std Err Mean	2.6
Upper 95% Mean	4.2
Lower 95% Mean	-6.2
N	50.0

Distributions Analyte_Detection=Manganese-54 Gas Flow Proportional Counter

Bias



Quantiles

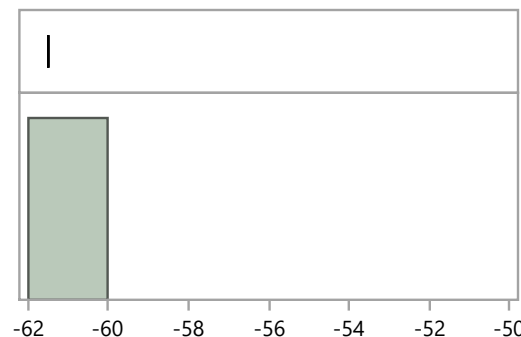
100.0%	maximum	1.9
99.5%		1.9
97.5%		1.9
90.0%		1.9
75.0%	quartile	1.9
50.0%	median	1.9
25.0%	quartile	1.9
10.0%		1.9
2.5%		1.9
0.5%		1.9
0.0%	minimum	1.9

Summary Statistics

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

Distributions Analyte_Detection=Nickel-63 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	-61.5
99.5%		-61.5
97.5%		-61.5
90.0%		-61.5
75.0%	quartile	-61.5
50.0%	median	-61.5
25.0%	quartile	-61.5
10.0%		-61.5
2.5%		-61.5
0.5%		-61.5
0.0%	minimum	-61.5

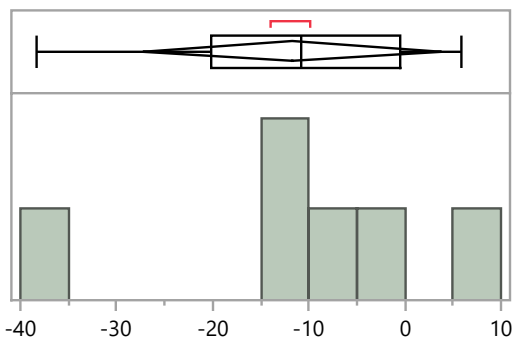
Summary Statistics

Mean	-61.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Detection Method

Distributions Analyte_Detection=Nickel-63 Liquid Scintillation Counter

Bias



Quantiles

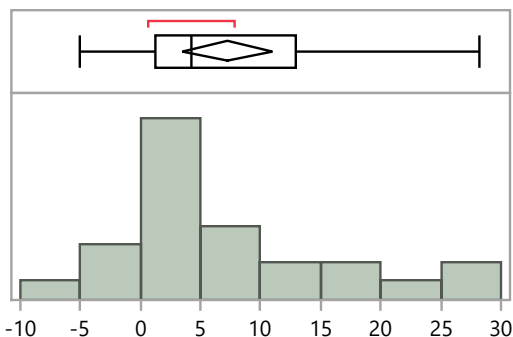
100.0%	maximum	5.8
99.5%		5.8
97.5%		5.8
90.0%		5.8
75.0%	quartile	-0.5
50.0%	median	-10.7
25.0%	quartile	-20.1
10.0%		-38.2
2.5%		-38.2
0.5%		-38.2
0.0%	minimum	-38.2

Summary Statistics

Mean	-11.7
Std Dev	14.8
Std Err Mean	6.1
Upper 95% Mean	3.8
Lower 95% Mean	-27.3
N	6.0

Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

Bias



Quantiles

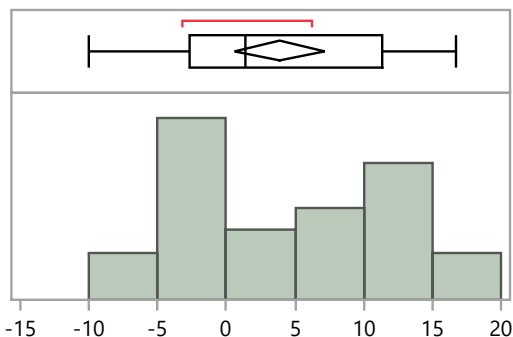
100.0%	maximum	28.2
99.5%		28.2
97.5%		28.2
90.0%		24.1
75.0%	quartile	13.0
50.0%	median	4.2
25.0%	quartile	1.2
10.0%		-2.1
2.5%		-5.1
0.5%		-5.1
0.0%	minimum	-5.1

Summary Statistics

Mean	7.2
Std Dev	9.0
Std Err Mean	1.8
Upper 95% Mean	10.9
Lower 95% Mean	3.5
N	25.0

Distributions Analyte_Detection=Plutonium-239/240 Alpha Spectrometry

Bias

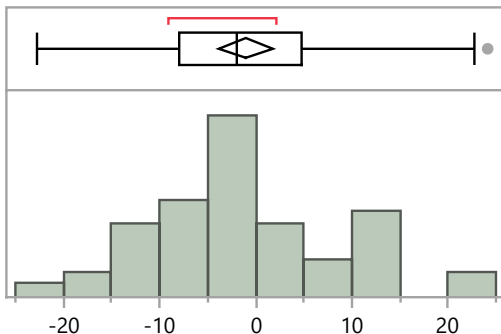


Quantiles

100.0%	maximum	16.7
99.5%		16.7
97.5%		16.7
90.0%		15.3
75.0%	quartile	11.4
50.0%	median	1.4
25.0%	quartile	-2.7
10.0%		-6.2
2.5%		-10.0
0.5%		-10.0
0.0%	minimum	-10.0

Summary Statistics

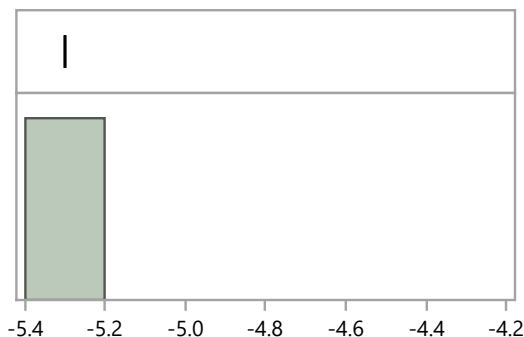
Mean	3.8
Std Dev	7.9
Std Err Mean	1.6
Upper 95% Mean	7.1
Lower 95% Mean	0.6
N	25.0

MaS52 Distribution by Detection Method**Distributions Analyte_Detection=Potassium-40 Gamma Spectrometry****Bias****Quantiles**

100.0%	maximum	24.1
99.5%		24.1
97.5%		23.7
90.0%		12.1
75.0%	quartile	4.8
50.0%	median	-2.0
25.0%	quartile	-8.0
10.0%		-13.5
2.5%		-21.1
0.5%		-22.7
0.0%	minimum	-22.7

Summary Statistics

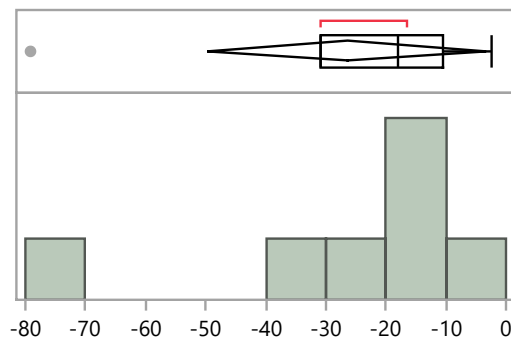
Mean	-1.1
Std Dev	10.0
Std Err Mean	1.4
Upper 95% Mean	1.8
Lower 95% Mean	-3.9
N	50.0

Distributions Analyte_Detection=Potassium-40 Gas Flow Proportional Counter**Bias****Quantiles**

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

Summary Statistics

Mean	-5.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Strontium-90 Gas Flow Proportional Counter**Bias****Quantiles**

100.0%	maximum	-2.5
99.5%		-2.5
97.5%		-2.5
90.0%		-2.5
75.0%	quartile	-10.6
50.0%	median	-17.9
25.0%	quartile	-30.8
10.0%		-79.1
2.5%		-79.1
0.5%		-79.1
0.0%	minimum	-79.1

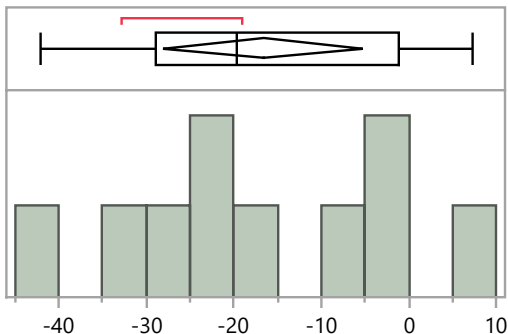
Summary Statistics

Mean	-26.5
Std Dev	25.1
Std Err Mean	9.5
Upper 95% Mean	-3.2
Lower 95% Mean	-49.7
N	7.0

MaS52 Distribution by Detection Method

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

Bias



Quantiles

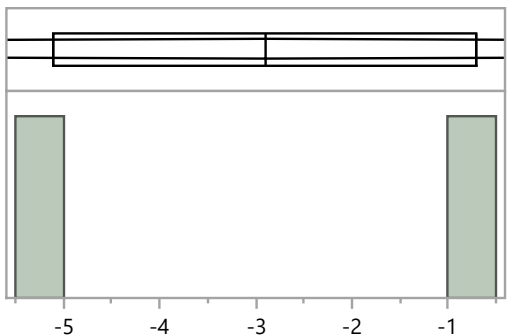
100.0%	maximum	7.2
99.5%		7.2
97.5%		7.2
90.0%		6.5
75.0%	quartile	-1.2
50.0%	median	-19.8
25.0%	quartile	-28.9
10.0%		-41.1
2.5%		-42.0
0.5%		-42.0
0.0%	minimum	-42.0

Summary Statistics

Mean	-16.6
Std Dev	15.9
Std Err Mean	5.0
Upper 95% Mean	-5.2
Lower 95% Mean	-28.0
N	10.0

Distributions Analyte_Detection=Strontium-90 Liquid Scintillation Counter

Bias



Quantiles

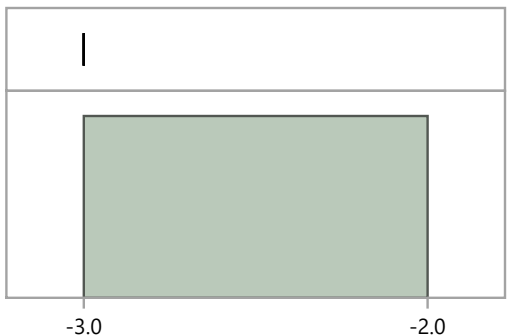
100.0%	maximum	-0.7
99.5%		-0.7
97.5%		-0.7
90.0%		-0.7
75.0%	quartile	-0.7
50.0%	median	-2.9
25.0%	quartile	-5.1
10.0%		-5.1
2.5%		-5.1
0.5%		-5.1
0.0%	minimum	-5.1

Summary Statistics

Mean	-2.9
Std Dev	3.1
Std Err Mean	2.2
Upper 95% Mean	25.1
Lower 95% Mean	-30.9
N	2.0

Distributions Analyte_Detection=Technetium-99 Gas Flow Proportional Counter

Bias

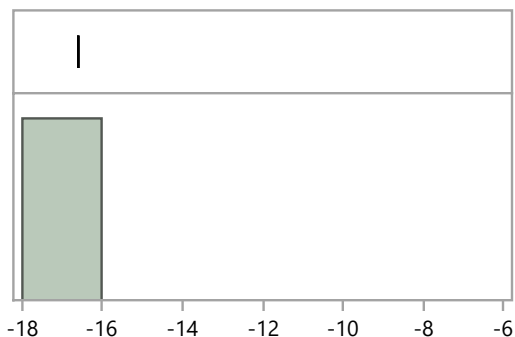


Quantiles

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

Summary Statistics

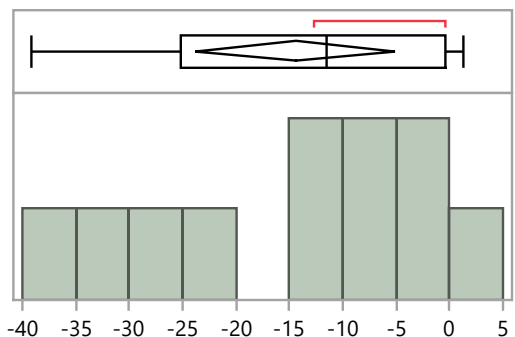
Mean	-3.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Detection Method**Distributions Analyte_Detection=Technetium-99 Inductively Coupled Plasma Mass Spectrometry****Bias****Quantiles**

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

Summary Statistics

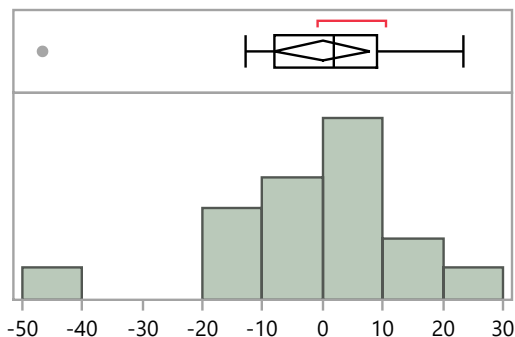
Mean	-16.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Technetium-99 Liquid Scintillation Counter**Bias****Quantiles**

100.0%	maximum	1.2
99.5%		1.2
97.5%		1.2
90.0%		0.9
75.0%	quartile	-0.4
50.0%	median	-11.6
25.0%	quartile	-25.2
10.0%		-38.1
2.5%		-39.2
0.5%		-39.2
0.0%	minimum	-39.2

Summary Statistics

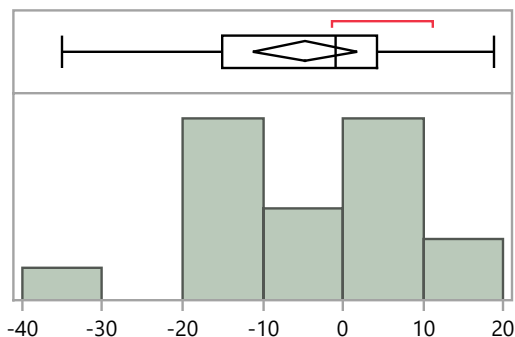
Mean	-14.4
Std Dev	13.9
Std Err Mean	4.2
Upper 95% Mean	-5.1
Lower 95% Mean	-23.8
N	11.0

Distributions Analyte_Detection=Thorium-228 Alpha Spectrometry**Bias****Quantiles**

100.0%	maximum	23.4
99.5%		23.4
97.5%		23.4
90.0%		17.3
75.0%	quartile	9.2
50.0%	median	1.8
25.0%	quartile	-8.0
10.0%		-19.6
2.5%		-46.6
0.5%		-46.6
0.0%	minimum	-46.6

Summary Statistics

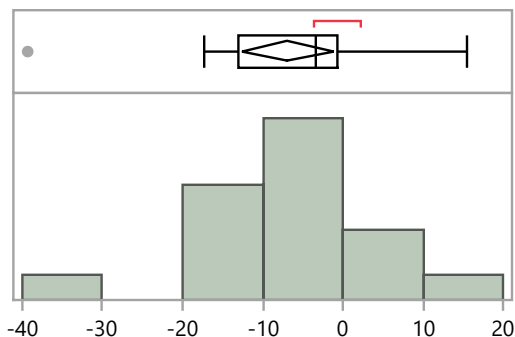
Mean	-0.0
Std Dev	15.5
Std Err Mean	3.8
Upper 95% Mean	7.9
Lower 95% Mean	-8.0
N	17.0

MaS52 Distribution by Detection Method**Distributions Analyte_Detection=Thorium-230 Alpha Spectrometry****Bias****Quantiles**

100.0%	maximum	18.9
99.5%		18.9
97.5%		18.9
90.0%		11.9
75.0%	quartile	4.4
50.0%	median	-1.0
25.0%	quartile	-15.0
10.0%		-21.3
2.5%		-35.1
0.5%		-35.1
0.0%	minimum	-35.1

Summary Statistics

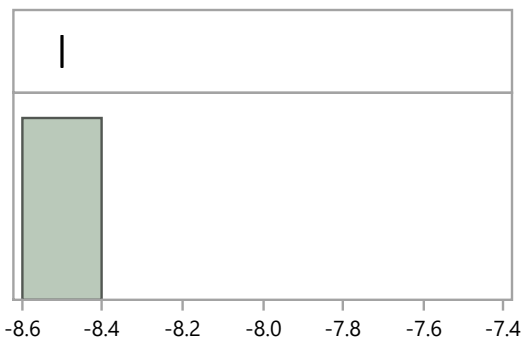
Mean	-4.7
Std Dev	13.0
Std Err Mean	3.1
Upper 95% Mean	1.7
Lower 95% Mean	-11.2
N	18.0

Distributions Analyte_Detection=Thorium-232 Alpha Spectrometry**Bias****Quantiles**

100.0%	maximum	15.5
99.5%		15.5
97.5%		15.5
90.0%		3.5
75.0%	quartile	-0.6
50.0%	median	-3.4
25.0%	quartile	-13.0
10.0%		-19.4
2.5%		-39.3
0.5%		-39.3
0.0%	minimum	-39.3

Summary Statistics

Mean	-6.9
Std Dev	11.5
Std Err Mean	2.7
Upper 95% Mean	-1.2
Lower 95% Mean	-12.6
N	18.0

Distributions Analyte_Detection=Thorium-232 Gamma Spectrometry**Bias****Quantiles**

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

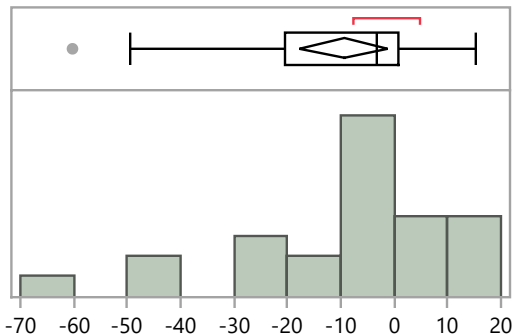
Summary Statistics

Mean	-8.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Detection Method

Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

Bias



Quantiles

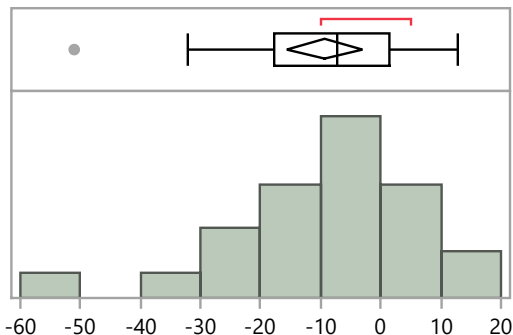
100.0%	maximum	15.3
99.5%		15.3
97.5%		15.3
90.0%		13.4
75.0%	quartile	0.9
50.0%	median	-3.3
25.0%	quartile	-20.5
10.0%		-49.2
2.5%		-60.2
0.5%		-60.2
0.0%	minimum	-60.2

Summary Statistics

Mean	-9.4
Std Dev	19.9
Std Err Mean	4.0
Upper 95% Mean	-1.2
Lower 95% Mean	-17.7
N	25.0

Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

Bias



Quantiles

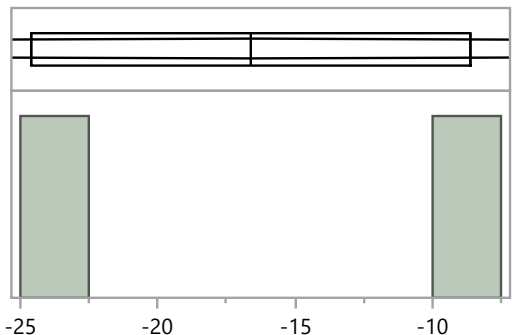
100.0%	maximum	12.9
99.5%		12.9
97.5%		12.9
90.0%		10.6
75.0%	quartile	1.5
50.0%	median	-7.4
25.0%	quartile	-17.8
10.0%		-30.8
2.5%		-51.0
0.5%		-51.0
0.0%	minimum	-51.0

Summary Statistics

Mean	-9.4
Std Dev	15.0
Std Err Mean	3.0
Upper 95% Mean	-3.2
Lower 95% Mean	-15.6
N	25.0

Distributions Analyte_Detection=Uranium-238 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	-8.6
99.5%		-8.6
97.5%		-8.6
90.0%		-8.6
75.0%	quartile	-8.6
50.0%	median	-16.6
25.0%	quartile	-24.6
10.0%		-24.6
2.5%		-24.6
0.5%		-24.6
0.0%	minimum	-24.6

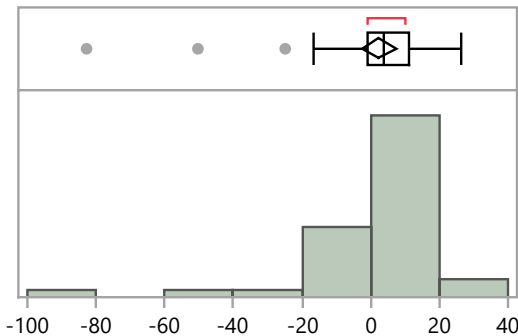
Summary Statistics

Mean	-16.6
Std Dev	11.3
Std Err Mean	8.0
Upper 95% Mean	85.0
Lower 95% Mean	-118.2
N	2.0

MaS52 Distribution by Detection Method

Distributions Analyte_Detection=Zinc-65 Gamma Spectrometry

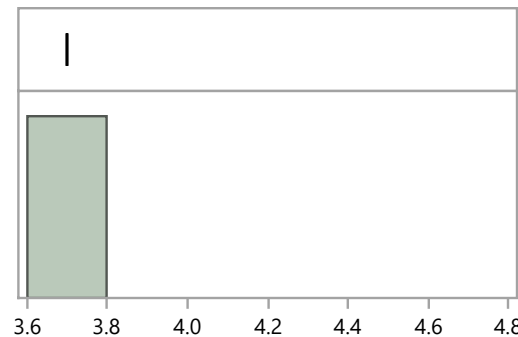
Bias



Quantiles			Summary Statistics	
100.0%	maximum	26.1	Mean	2.4
99.5%		26.1	Std Dev	17.6
97.5%		25.7	Std Err Mean	2.5
90.0%		18.7	Upper 95% Mean	7.4
75.0%	quartile	11.2	Lower 95% Mean	-2.6
50.0%	median	4.0	N	50.0
25.0%	quartile	-1.0		
10.0%		-7.4		
2.5%		-73.8		
0.5%		-82.7		
0.0%	minimum	-82.7		

Distributions Analyte_Detection=Zinc-65 Gas Flow Proportional Counter

Bias

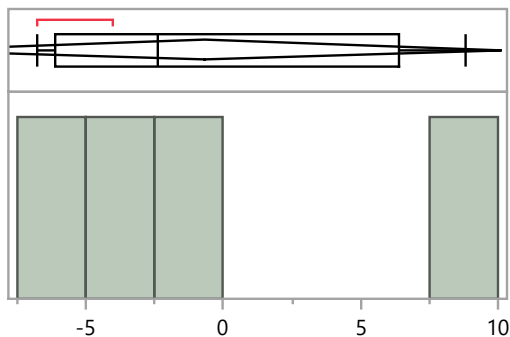


Quantiles			Summary Statistics	
100.0%	maximum	3.7	Mean	3.7
99.5%		3.7	Std Dev	.
97.5%		3.7	Std Err Mean	.
90.0%		3.7	Upper 95% Mean	.
75.0%	quartile	3.7	Lower 95% Mean	.
50.0%	median	3.7	N	1.0
25.0%	quartile	3.7		
10.0%		3.7		
2.5%		3.7		
0.5%		3.7		
0.0%	minimum	3.7		

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Americium-241 Acid dissolution with hydrofluoric acid

Bias



Quantiles

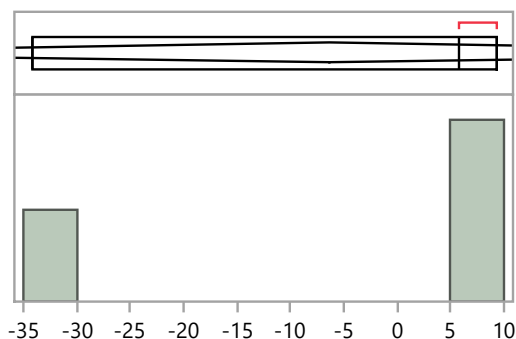
100.0%	maximum	8.8
99.5%		8.8
97.5%		8.8
90.0%		8.8
75.0%	quartile	6.4
50.0%	median	-2.4
25.0%	quartile	-6.1
10.0%		-6.8
2.5%		-6.8
0.5%		-6.8
0.0%	minimum	-6.8

Summary Statistics

Mean	-0.7
Std Dev	6.8
Std Err Mean	3.4
Upper 95% Mean	10.1
Lower 95% Mean	-11.5
N	4.0

Distributions Analyte_Method=Americium-241 Acid leaching without hydrofluoric acid

Bias



Quantiles

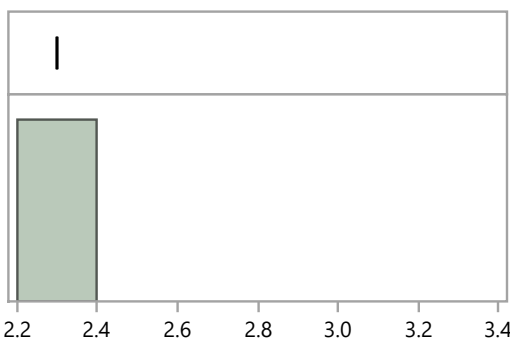
100.0%	maximum	9.3
99.5%		9.3
97.5%		9.3
90.0%		9.3
75.0%	quartile	9.3
50.0%	median	5.8
25.0%	quartile	-34.1
10.0%		-34.1
2.5%		-34.1
0.5%		-34.1
0.0%	minimum	-34.1

Summary Statistics

Mean	-6.3
Std Dev	24.1
Std Err Mean	13.9
Upper 95% Mean	53.6
Lower 95% Mean	-66.2
N	3.0

Distributions Analyte_Method=Americium-241 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	2.3
99.5%		2.3
97.5%		2.3
90.0%		2.3
75.0%	quartile	2.3
50.0%	median	2.3
25.0%	quartile	2.3
10.0%		2.3
2.5%		2.3
0.5%		2.3
0.0%	minimum	2.3

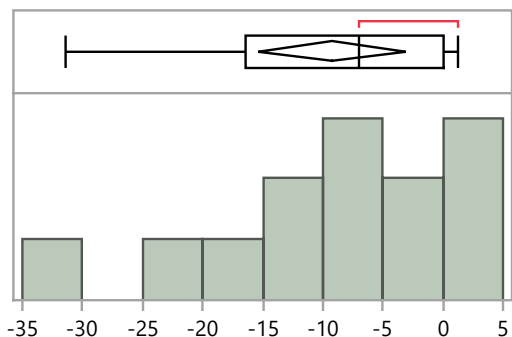
Summary Statistics

Mean	2.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Preparation Method

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

Bias



Quantiles

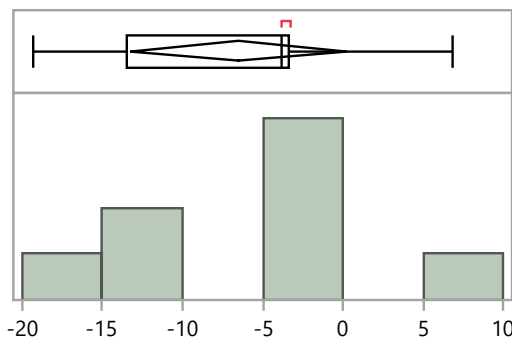
100.0%	maximum	1.3
99.5%		1.3
97.5%		1.3
90.0%		1.1
75.0%	quartile	0.0
50.0%	median	-7.0
25.0%	quartile	-16.5
10.0%		-27.6
2.5%		-31.4
0.5%		-31.4
0.0%	minimum	-31.4

Summary Statistics

Mean	-9.3
Std Dev	10.1
Std Err Mean	2.8
Upper 95% Mean	-3.2
Lower 95% Mean	-15.4
N	13.0

Distributions Analyte_Method=Americium-241 Other

Bias



Quantiles

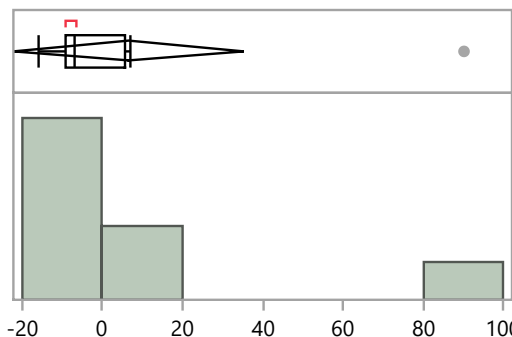
100.0%	maximum	6.8
99.5%		6.8
97.5%		6.8
90.0%		6.8
75.0%	quartile	-3.4
50.0%	median	-3.8
25.0%	quartile	-13.5
10.0%		-19.3
2.5%		-19.3
0.5%		-19.3
0.0%	minimum	-19.3

Summary Statistics

Mean	-6.5
Std Dev	8.1
Std Err Mean	2.8
Upper 95% Mean	0.2
Lower 95% Mean	-13.3
N	8.0

Distributions Analyte_Method=Americium-241 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	90.2
99.5%		90.2
97.5%		90.2
90.0%		90.2
75.0%	quartile	5.8
50.0%	median	-6.9
25.0%	quartile	-9.1
10.0%		-16.1
2.5%		-16.1
0.5%		-16.1
0.0%	minimum	-16.1

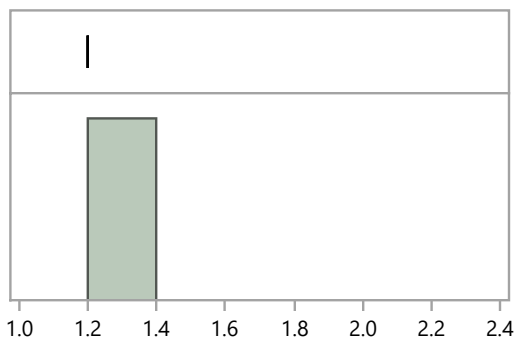
Summary Statistics

Mean	6.5
Std Dev	34.6
Std Err Mean	12.2
Upper 95% Mean	35.4
Lower 95% Mean	-22.4
N	8.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Cesium-134 Acid leaching without hydrofluoric acid

Bias



Quantiles

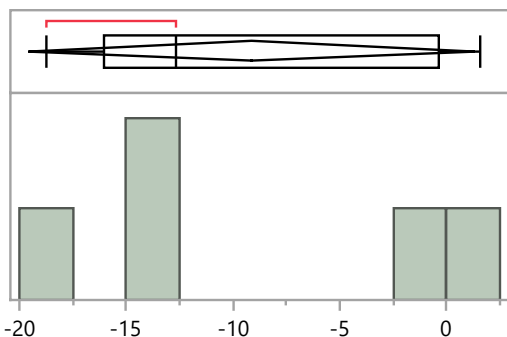
100.0%	maximum	1.2
99.5%		1.2
97.5%		1.2
90.0%		1.2
75.0%	quartile	1.2
50.0%	median	1.2
25.0%	quartile	1.2
10.0%		1.2
2.5%		1.2
0.5%		1.2
0.0%	minimum	1.2

Summary Statistics

Mean	1.2
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

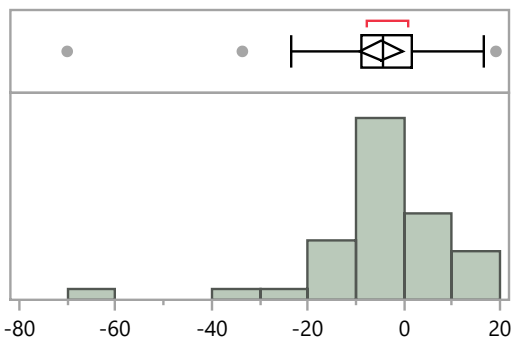
100.0%	maximum	1.6
99.5%		1.6
97.5%		1.6
90.0%		1.6
75.0%	quartile	-0.4
50.0%	median	-12.7
25.0%	quartile	-16.1
10.0%		-18.7
2.5%		-18.7
0.5%		-18.7
0.0%	minimum	-18.7

Summary Statistics

Mean	-9.1
Std Dev	8.4
Std Err Mean	3.8
Upper 95% Mean	1.3
Lower 95% Mean	-19.6
N	5.0

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

Bias



Quantiles

100.0%	maximum	19.1
99.5%		19.1
97.5%		18.9
90.0%		11.2
75.0%	quartile	1.6
50.0%	median	-4.3
25.0%	quartile	-8.8
10.0%		-17.0
2.5%		-67.3
0.5%		-70.0
0.0%	minimum	-70.0

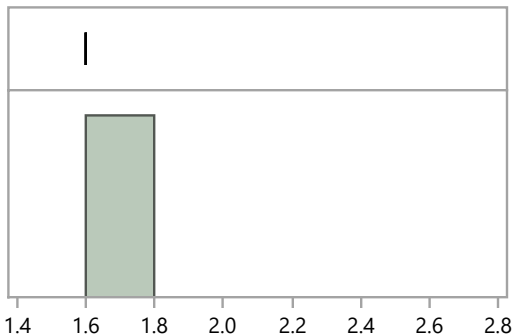
Summary Statistics

Mean	-4.8
Std Dev	14.5
Std Err Mean	2.2
Upper 95% Mean	-0.3
Lower 95% Mean	-9.3
N	42.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Cesium-134 Other

Bias



Quantiles

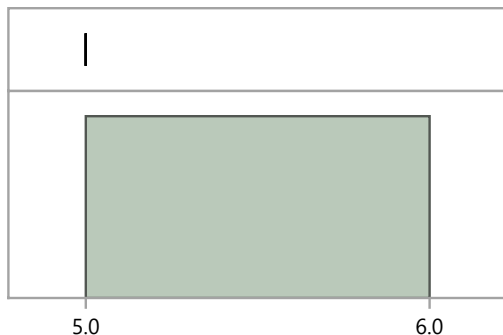
100.0%	maximum	1.6
99.5%		1.6
97.5%		1.6
90.0%		1.6
75.0%	quartile	1.6
50.0%	median	1.6
25.0%	quartile	1.6
10.0%		1.6
2.5%		1.6
0.5%		1.6
0.0%	minimum	1.6

Summary Statistics

Mean	1.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cesium-137 Acid leaching without hydrofluoric acid

Bias



Quantiles

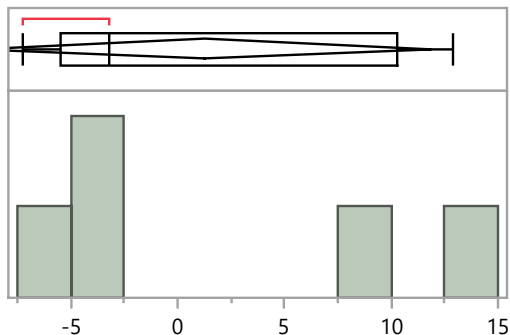
100.0%	maximum	5.0
99.5%		5.0
97.5%		5.0
90.0%		5.0
75.0%	quartile	5.0
50.0%	median	5.0
25.0%	quartile	5.0
10.0%		5.0
2.5%		5.0
0.5%		5.0
0.0%	minimum	5.0

Summary Statistics

Mean	5.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

100.0%	maximum	12.9
99.5%		12.9
97.5%		12.9
90.0%		12.9
75.0%	quartile	10.3
50.0%	median	-3.2
25.0%	quartile	-5.5
10.0%		-7.2
2.5%		-7.2
0.5%		-7.2
0.0%	minimum	-7.2

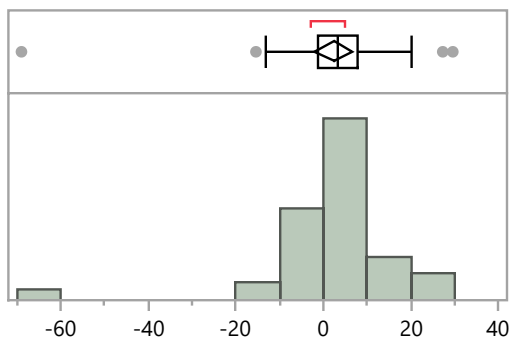
Summary Statistics

Mean	1.3
Std Dev	8.6
Std Err Mean	3.8
Upper 95% Mean	11.9
Lower 95% Mean	-9.4
N	5.0

MaS52 Distribution by Preparation Method

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

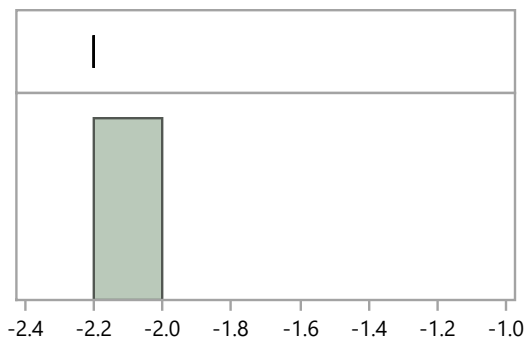
Bias



Quantiles			Summary Statistics	
100.0%	maximum	29.6	Mean	2.4
99.5%		29.6	Std Dev	14.1
97.5%		29.3	Std Err Mean	2.1
90.0%		15.6	Upper 95% Mean	6.7
75.0%	quartile	7.7	Lower 95% Mean	-1.8
50.0%	median	3.3	N	44.0
25.0%	quartile	-1.4		
10.0%		-7.4		
2.5%		-62.3		
0.5%		-69.0		
0.0%	minimum	-69.0		

Distributions Analyte_Method=Cesium-137 Other

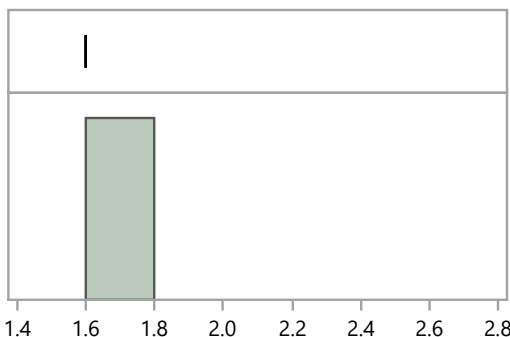
Bias



Quantiles			Summary Statistics	
100.0%	maximum	-2.2	Mean	-2.2
99.5%		-2.2	Std Dev	.
97.5%		-2.2	Std Err Mean	.
90.0%		-2.2	Upper 95% Mean	.
75.0%	quartile	-2.2	Lower 95% Mean	.
50.0%	median	-2.2	N	1.0
25.0%	quartile	-2.2		
10.0%		-2.2		
2.5%		-2.2		
0.5%		-2.2		
0.0%	minimum	-2.2		

Distributions Analyte_Method=Cobalt-57 Acid leaching without hydrofluoric acid

Bias

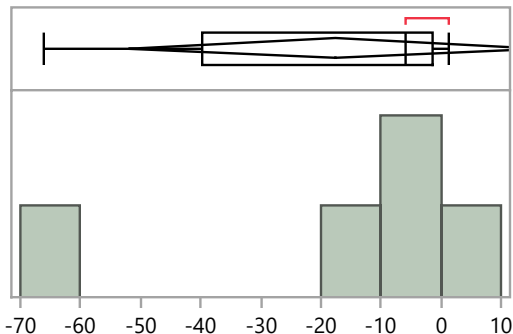


Quantiles			Summary Statistics	
100.0%	maximum	1.6	Mean	1.6
99.5%		1.6	Std Dev	.
97.5%		1.6	Std Err Mean	.
90.0%		1.6	Upper 95% Mean	.
75.0%	quartile	1.6	Lower 95% Mean	.
50.0%	median	1.6	N	1.0
25.0%	quartile	1.6		
10.0%		1.6		
2.5%		1.6		
0.5%		1.6		
0.0%	minimum	1.6		

MaS52 Distribution by Preparation Method

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

Bias



Quantiles

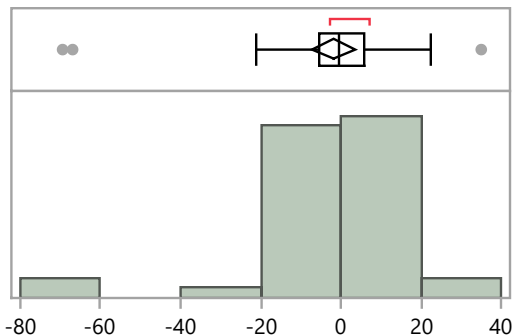
100.0%	maximum	1.2
99.5%		1.2
97.5%		1.2
90.0%		1.2
75.0%	quartile	-1.4
50.0%	median	-6.0
25.0%	quartile	-39.8
10.0%		-66.2
2.5%		-66.2
0.5%		-66.2
0.0%	minimum	-66.2

Summary Statistics

Mean	-17.7
Std Dev	27.6
Std Err Mean	12.4
Upper 95% Mean	16.6
Lower 95% Mean	-52.0
N	5.0

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

Bias



Quantiles

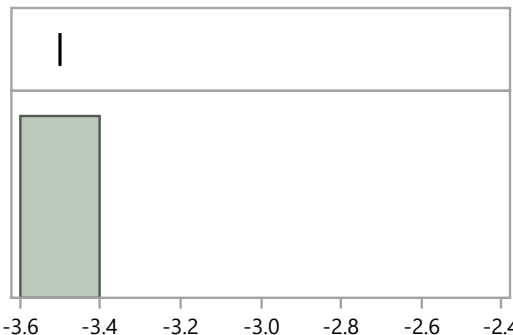
100.0%	maximum	35.0
99.5%		35.0
97.5%		33.5
90.0%		14.7
75.0%	quartile	5.9
50.0%	median	-0.5
25.0%	quartile	-5.5
10.0%		-16.8
2.5%		-69.1
0.5%		-69.4
0.0%	minimum	-69.4

Summary Statistics

Mean	-2.0
Std Dev	17.8
Std Err Mean	2.7
Upper 95% Mean	3.4
Lower 95% Mean	-7.4
N	44.0

Distributions Analyte_Method=Cobalt-57 Other

Bias



Quantiles

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

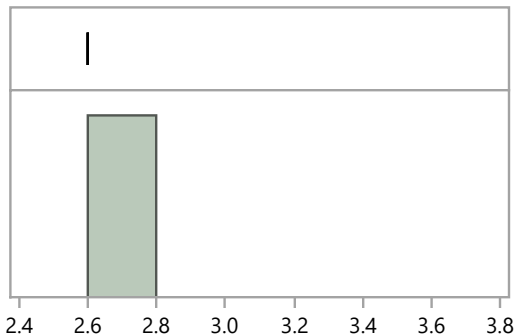
Summary Statistics

Mean	-3.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Cobalt-60 Acid leaching without hydrofluoric acid

Bias



Quantiles

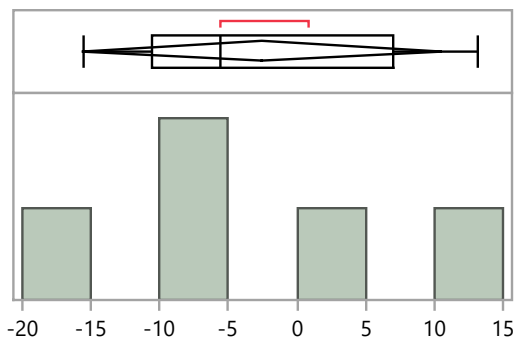
100.0%	maximum	2.6
99.5%		2.6
97.5%		2.6
90.0%		2.6
75.0%	quartile	2.6
50.0%	median	2.6
25.0%	quartile	2.6
10.0%		2.6
2.5%		2.6
0.5%		2.6
0.0%	minimum	2.6

Summary Statistics

Mean	2.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

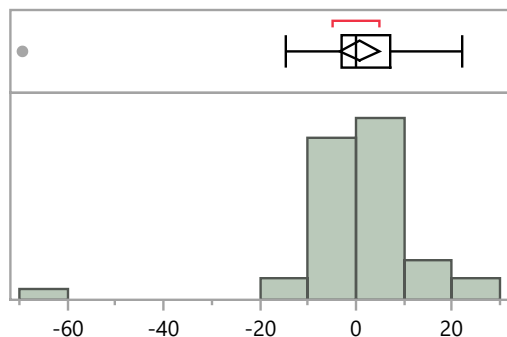
100.0%	maximum	13.1
99.5%		13.1
97.5%		13.1
90.0%		13.1
75.0%	quartile	7.0
50.0%	median	-5.6
25.0%	quartile	-10.6
10.0%		-15.5
2.5%		-15.5
0.5%		-15.5
0.0%	minimum	-15.5

Summary Statistics

Mean	-2.6
Std Dev	10.5
Std Err Mean	4.7
Upper 95% Mean	10.5
Lower 95% Mean	-15.6
N	5.0

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

Bias



Quantiles

100.0%	maximum	21.9
99.5%		21.9
97.5%		21.7
90.0%		12.1
75.0%	quartile	7.2
50.0%	median	0.0
25.0%	quartile	-3.0
10.0%		-7.2
2.5%		-61.1
0.5%		-69.3
0.0%	minimum	-69.3

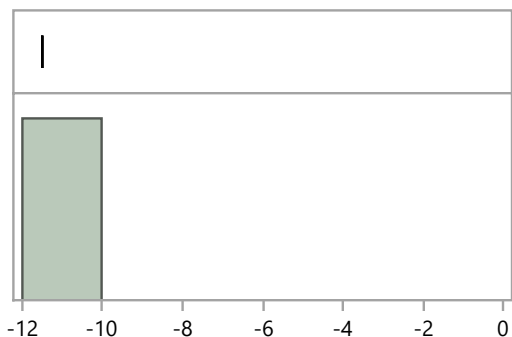
Summary Statistics

Mean	0.8
Std Dev	13.1
Std Err Mean	2.0
Upper 95% Mean	4.7
Lower 95% Mean	-3.2
N	45.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Cobalt-60 Other

Bias



Quantiles

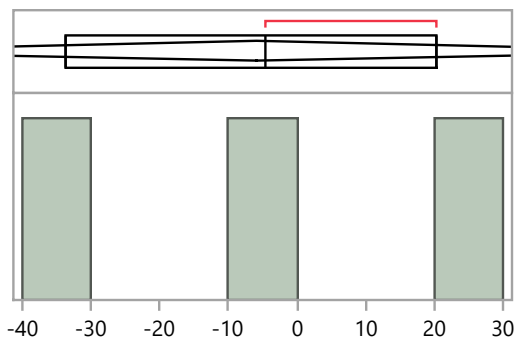
100.0%	maximum	-11.5
99.5%		-11.5
97.5%		-11.5
90.0%		-11.5
75.0%	quartile	-11.5
50.0%	median	-11.5
25.0%	quartile	-11.5
10.0%		-11.5
2.5%		-11.5
0.5%		-11.5
0.0%	minimum	-11.5

Summary Statistics

Mean	-11.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Iron-55 Acid dissolution with hydrofluoric acid

Bias



Quantiles

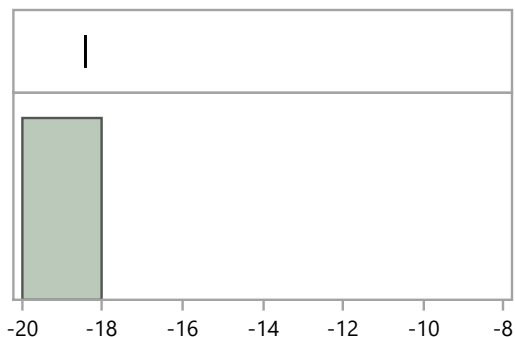
100.0%	maximum	20.2
99.5%		20.2
97.5%		20.2
90.0%		20.2
75.0%	quartile	20.2
50.0%	median	-4.5
25.0%	quartile	-33.8
10.0%		-33.8
2.5%		-33.8
0.5%		-33.8
0.0%	minimum	-33.8

Summary Statistics

Mean	-6.0
Std Dev	27.0
Std Err Mean	15.6
Upper 95% Mean	61.1
Lower 95% Mean	-73.2
N	3.0

Distributions Analyte_Method=Iron-55 Other

Bias



Quantiles

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

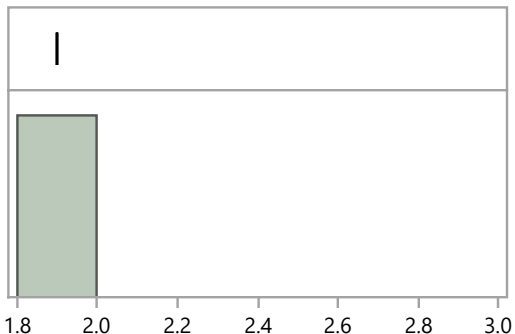
Summary Statistics

Mean	-18.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Manganese-54 Acid leaching without hydrofluoric acid

Bias



Quantiles

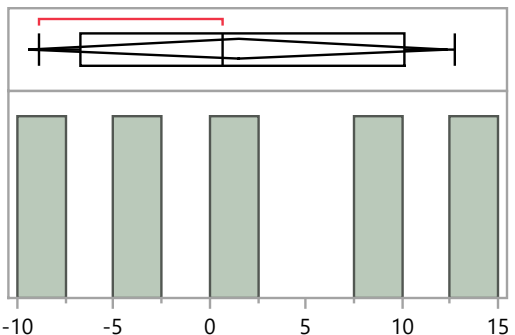
100.0%	maximum	1.9
99.5%		1.9
97.5%		1.9
90.0%		1.9
75.0%	quartile	1.9
50.0%	median	1.9
25.0%	quartile	1.9
10.0%		1.9
2.5%		1.9
0.5%		1.9
0.0%	minimum	1.9

Summary Statistics

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

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

Bias



Quantiles

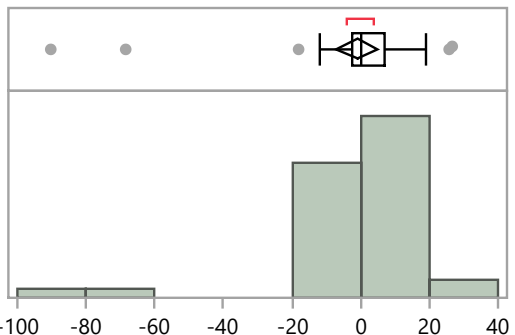
100.0%	maximum	12.7
99.5%		12.7
97.5%		12.7
90.0%		12.7
75.0%	quartile	10.1
50.0%	median	0.7
25.0%	quartile	-6.8
10.0%		-8.9
2.5%		-8.9
0.5%		-8.9
0.0%	minimum	-8.9

Summary Statistics

Mean	1.5
Std Dev	8.8
Std Err Mean	3.9
Upper 95% Mean	12.4
Lower 95% Mean	-9.4
N	5.0

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

Bias

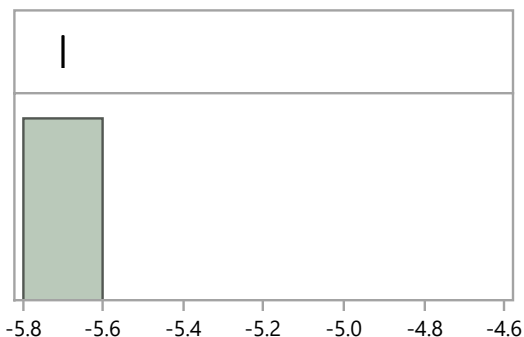


Quantiles

100.0%	maximum	26.6
99.5%		26.6
97.5%		26.5
90.0%		13.5
75.0%	quartile	7.0
50.0%	median	0.0
25.0%	quartile	-2.7
10.0%		-11.5
2.5%		-87.5
0.5%		-90.2
0.0%	minimum	-90.2

Summary Statistics

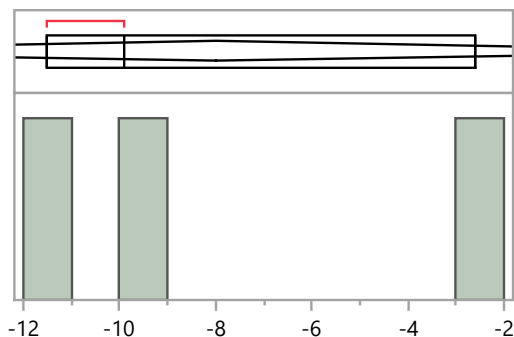
Mean	-1.2
Std Dev	19.4
Std Err Mean	2.9
Upper 95% Mean	4.8
Lower 95% Mean	-7.1
N	44.0

MaS52 Distribution by Preparation Method**Distributions Analyte_Method=Manganese-54 Other****Bias****Quantiles**

100.0%	maximum	-5.7
99.5%		-5.7
97.5%		-5.7
90.0%		-5.7
75.0%	quartile	-5.7
50.0%	median	-5.7
25.0%	quartile	-5.7
10.0%		-5.7
2.5%		-5.7
0.5%		-5.7
0.0%	minimum	-5.7

Summary Statistics

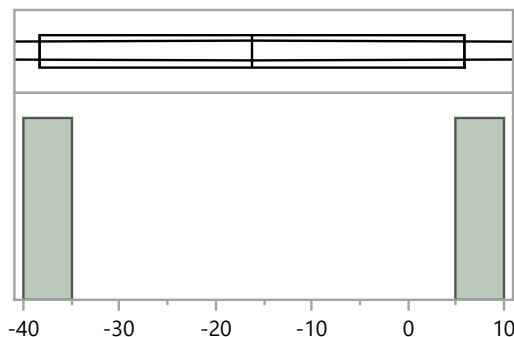
Mean	-5.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Nickel-63 Acid dissolution with hydrofluoric acid**Bias****Quantiles**

100.0%	maximum	-2.6
99.5%		-2.6
97.5%		-2.6
90.0%		-2.6
75.0%	quartile	-2.6
50.0%	median	-9.9
25.0%	quartile	-11.5
10.0%		-11.5
2.5%		-11.5
0.5%		-11.5
0.0%	minimum	-11.5

Summary Statistics

Mean	-8.0
Std Dev	4.7
Std Err Mean	2.7
Upper 95% Mean	3.8
Lower 95% Mean	-19.8
N	3.0

Distributions Analyte_Method=Nickel-63 Acid leaching without hydrofluoric acid**Bias****Quantiles**

100.0%	maximum	5.8
99.5%		5.8
97.5%		5.8
90.0%		5.8
75.0%	quartile	5.8
50.0%	median	-16.2
25.0%	quartile	-38.2
10.0%		-38.2
2.5%		-38.2
0.5%		-38.2
0.0%	minimum	-38.2

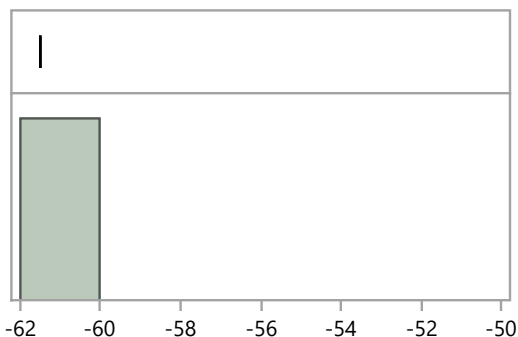
Summary Statistics

Mean	-16.2
Std Dev	31.1
Std Err Mean	22.0
Upper 95% Mean	263.3
Lower 95% Mean	-295.7
N	2.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Nickel-63 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

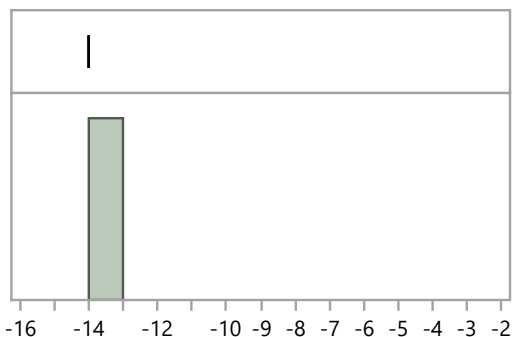
100.0%	maximum	-61.5
99.5%		-61.5
97.5%		-61.5
90.0%		-61.5
75.0%	quartile	-61.5
50.0%	median	-61.5
25.0%	quartile	-61.5
10.0%		-61.5
2.5%		-61.5
0.5%		-61.5
0.0%	minimum	-61.5

Summary Statistics

Mean	-61.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Nickel-63 Other

Bias



Quantiles

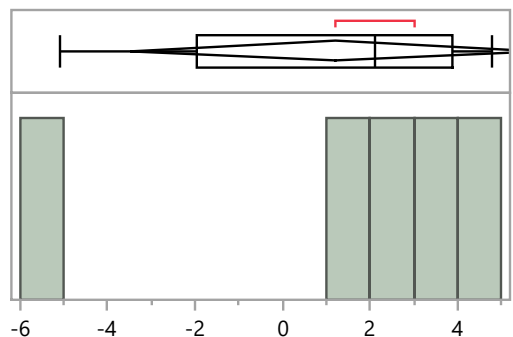
100.0%	maximum	-14.0
99.5%		-14.0
97.5%		-14.0
90.0%		-14.0
75.0%	quartile	-14.0
50.0%	median	-14.0
25.0%	quartile	-14.0
10.0%		-14.0
2.5%		-14.0
0.5%		-14.0
0.0%	minimum	-14.0

Summary Statistics

Mean	-14.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Acid dissolution with hydrofluoric acid

Bias



Quantiles

100.0%	maximum	4.8
99.5%		4.8
97.5%		4.8
90.0%		4.8
75.0%	quartile	3.9
50.0%	median	2.1
25.0%	quartile	-2.0
10.0%		-5.1
2.5%		-5.1
0.5%		-5.1
0.0%	minimum	-5.1

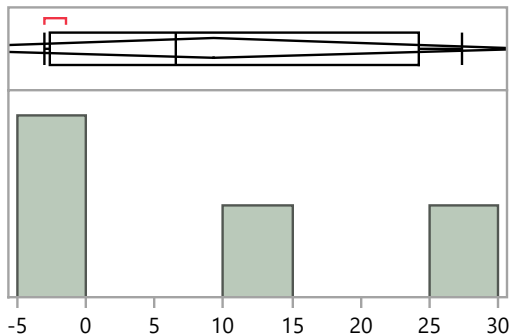
Summary Statistics

Mean	1.2
Std Dev	3.8
Std Err Mean	1.7
Upper 95% Mean	5.9
Lower 95% Mean	-3.5
N	5.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Plutonium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

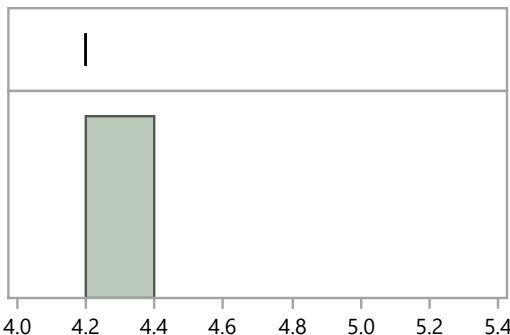
100.0%	maximum	27.4
99.5%		27.4
97.5%		27.4
90.0%		27.4
75.0%	quartile	24.2
50.0%	median	6.5
25.0%	quartile	-2.6
10.0%		-3.0
2.5%		-3.0
0.5%		-3.0
0.0%	minimum	-3.0

Summary Statistics

Mean	9.4
Std Dev	14.4
Std Err Mean	7.2
Upper 95% Mean	32.3
Lower 95% Mean	-13.6
N	4.0

Distributions Analyte_Method=Plutonium-238 Coprecipitation, acidified

Bias



Quantiles

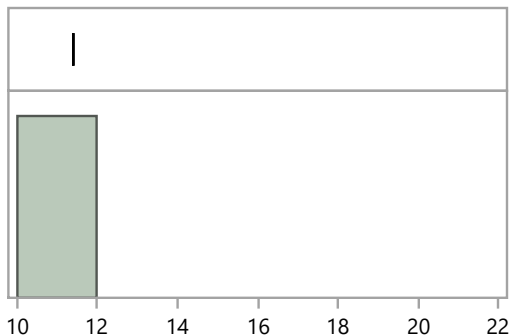
100.0%	maximum	4.2
99.5%		4.2
97.5%		4.2
90.0%		4.2
75.0%	quartile	4.2
50.0%	median	4.2
25.0%	quartile	4.2
10.0%		4.2
2.5%		4.2
0.5%		4.2
0.0%	minimum	4.2

Summary Statistics

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

Distributions Analyte_Method=Plutonium-238 Coprecipitation, straight

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

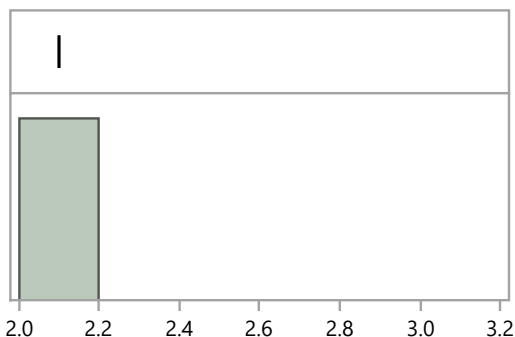
Summary Statistics

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

MaS52 Distribution by Preparation Method

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

Bias



Quantiles

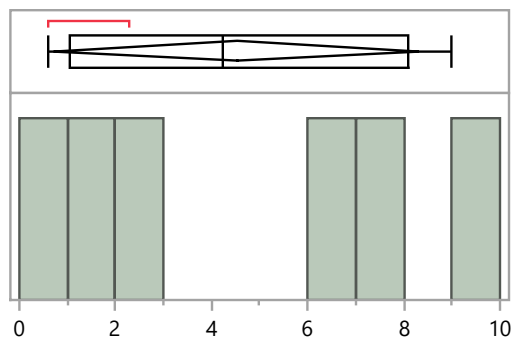
100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		2.1
75.0%	quartile	2.1
50.0%	median	2.1
25.0%	quartile	2.1
10.0%		2.1
2.5%		2.1
0.5%		2.1
0.0%	minimum	2.1

Summary Statistics

Mean	2.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Other

Bias



Quantiles

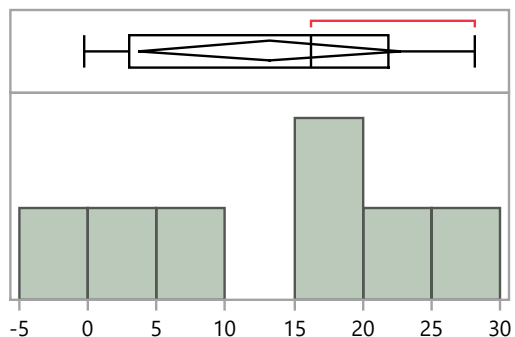
100.0%	maximum	9.0
99.5%		9.0
97.5%		9.0
90.0%		9.0
75.0%	quartile	8.1
50.0%	median	4.3
25.0%	quartile	1.1
10.0%		0.6
2.5%		0.6
0.5%		0.6
0.0%	minimum	0.6

Summary Statistics

Mean	4.5
Std Dev	3.6
Std Err Mean	1.5
Upper 95% Mean	8.3
Lower 95% Mean	0.7
N	6.0

Distributions Analyte_Method=Plutonium-238 Total dissolution by fusion

Bias

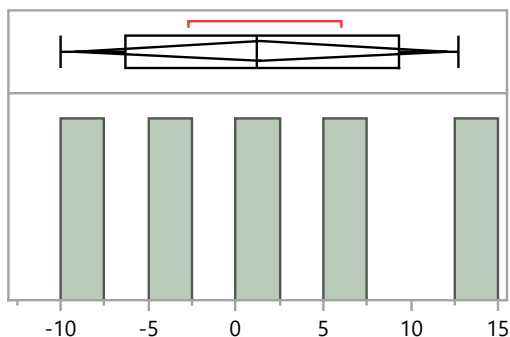


Quantiles

100.0%	maximum	28.2
99.5%		28.2
97.5%		28.2
90.0%		28.2
75.0%	quartile	21.9
50.0%	median	16.2
25.0%	quartile	3.0
10.0%		-0.3
2.5%		-0.3
0.5%		-0.3
0.0%	minimum	-0.3

Summary Statistics

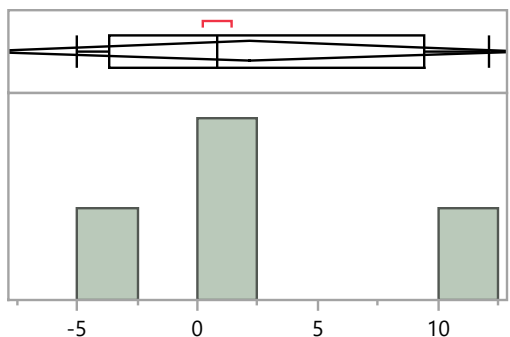
Mean	13.2
Std Dev	10.3
Std Err Mean	3.9
Upper 95% Mean	22.8
Lower 95% Mean	3.6
N	7.0

MaS52 Distribution by Preparation Method**Distributions Analyte_Method=Plutonium-239/240 Acid dissolution with hydrofluoric acid****Bias****Quantiles**

100.0%	maximum	12.7
99.5%		12.7
97.5%		12.7
90.0%		12.7
75.0%	quartile	9.4
50.0%	median	1.2
25.0%	quartile	-6.4
10.0%		-10.0
2.5%		-10.0
0.5%		-10.0
0.0%	minimum	-10.0

Summary Statistics

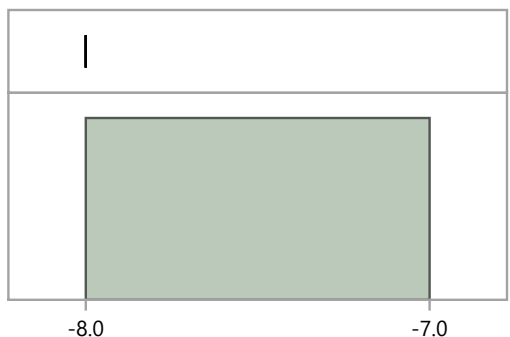
Mean	1.4
Std Dev	8.6
Std Err Mean	3.8
Upper 95% Mean	12.1
Lower 95% Mean	-9.2
N	5.0

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

100.0%	maximum	12.1
99.5%		12.1
97.5%		12.1
90.0%		12.1
75.0%	quartile	9.4
50.0%	median	0.8
25.0%	quartile	-3.7
10.0%		-5.0
2.5%		-5.0
0.5%		-5.0
0.0%	minimum	-5.0

Summary Statistics

Mean	2.2
Std Dev	7.2
Std Err Mean	3.6
Upper 95% Mean	13.6
Lower 95% Mean	-9.2
N	4.0

Distributions Analyte_Method=Plutonium-239/240 Coprecipitation, acidified**Bias****Quantiles**

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

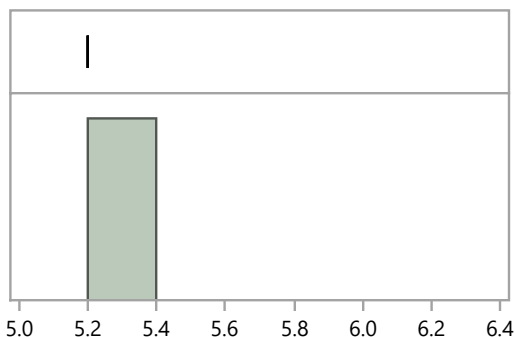
Summary Statistics

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

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Plutonium-239/240 Coprecipitation, straight

Bias



Quantiles

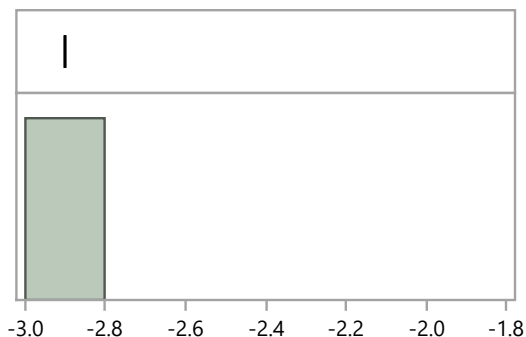
100.0%	maximum	5.2
99.5%		5.2
97.5%		5.2
90.0%		5.2
75.0%	quartile	5.2
50.0%	median	5.2
25.0%	quartile	5.2
10.0%		5.2
2.5%		5.2
0.5%		5.2
0.0%	minimum	5.2

Summary Statistics

Mean	5.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

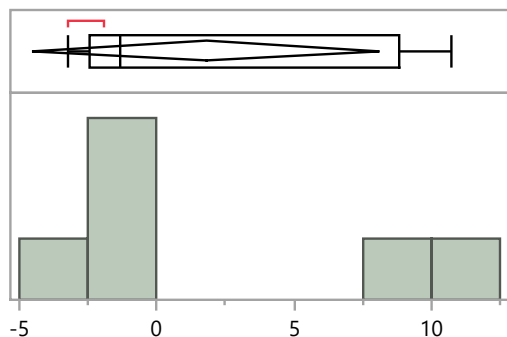
100.0%	maximum	-2.9
99.5%		-2.9
97.5%		-2.9
90.0%		-2.9
75.0%	quartile	-2.9
50.0%	median	-2.9
25.0%	quartile	-2.9
10.0%		-2.9
2.5%		-2.9
0.5%		-2.9
0.0%	minimum	-2.9

Summary Statistics

Mean	-2.9
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	10.7
99.5%		10.7
97.5%		10.7
90.0%		10.7
75.0%	quartile	8.8
50.0%	median	-1.3
25.0%	quartile	-2.5
10.0%		-3.2
2.5%		-3.2
0.5%		-3.2
0.0%	minimum	-3.2

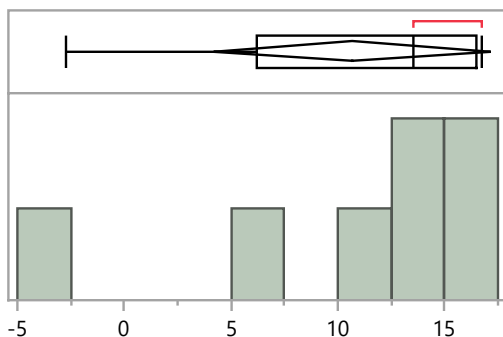
Summary Statistics

Mean	1.8
Std Dev	6.0
Std Err Mean	2.5
Upper 95% Mean	8.1
Lower 95% Mean	-4.5
N	6.0

MaS52 Distribution by Preparation Method

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

Bias



Quantiles

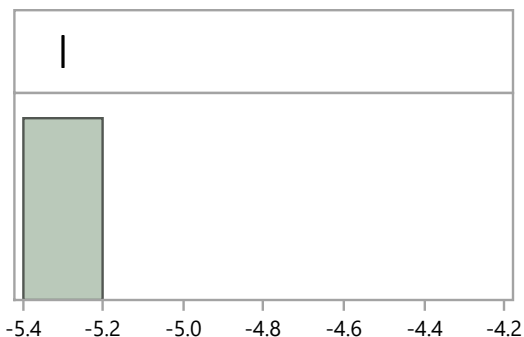
100.0%	maximum	16.7
99.5%		16.7
97.5%		16.7
90.0%		16.7
75.0%	quartile	16.5
50.0%	median	13.5
25.0%	quartile	6.2
10.0%		-2.7
2.5%		-2.7
0.5%		-2.7
0.0%	minimum	-2.7

Summary Statistics

Mean	10.7
Std Dev	7.0
Std Err Mean	2.6
Upper 95% Mean	17.1
Lower 95% Mean	4.2
N	7.0

Distributions Analyte_Method=Potassium-40 Acid leaching without hydrofluoric acid

Bias



Quantiles

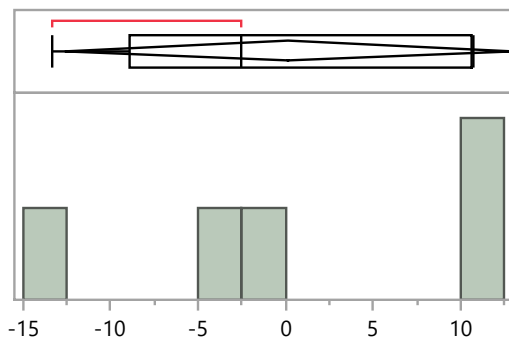
100.0%	maximum	-5.3
99.5%		-5.3
97.5%		-5.3
90.0%		-5.3
75.0%	quartile	-5.3
50.0%	median	-5.3
25.0%	quartile	-5.3
10.0%		-5.3
2.5%		-5.3
0.5%		-5.3
0.0%	minimum	-5.3

Summary Statistics

Mean	-5.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Potassium-40 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

100.0%	maximum	10.7
99.5%		10.7
97.5%		10.7
90.0%		10.7
75.0%	quartile	10.6
50.0%	median	-2.5
25.0%	quartile	-8.9
10.0%		-13.3
2.5%		-13.3
0.5%		-13.3
0.0%	minimum	-13.3

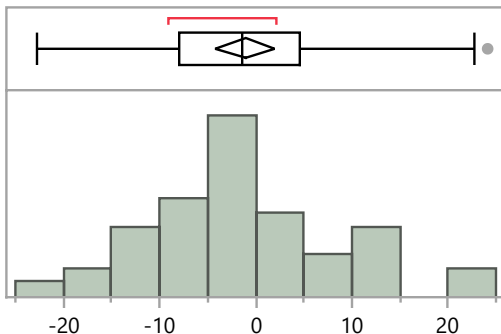
Summary Statistics

Mean	0.2
Std Dev	10.3
Std Err Mean	4.6
Upper 95% Mean	13.0
Lower 95% Mean	-12.7
N	5.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Potassium-40 No preparation - analyzed as received

Bias



Quantiles

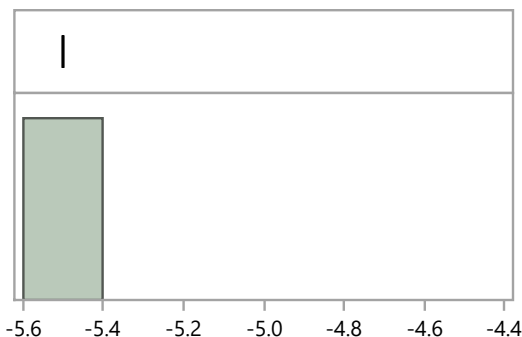
100.0%	maximum	24.1
99.5%		24.1
97.5%		23.9
90.0%		12.8
75.0%	quartile	4.7
50.0%	median	-1.4
25.0%	quartile	-8.0
10.0%		-14.1
2.5%		-22.0
0.5%		-22.7
0.0%	minimum	-22.7

Summary Statistics

Mean	-1.1
Std Dev	10.2
Std Err Mean	1.5
Upper 95% Mean	2.0
Lower 95% Mean	-4.2
N	44.0

Distributions Analyte_Method=Potassium-40 Other

Bias



Quantiles

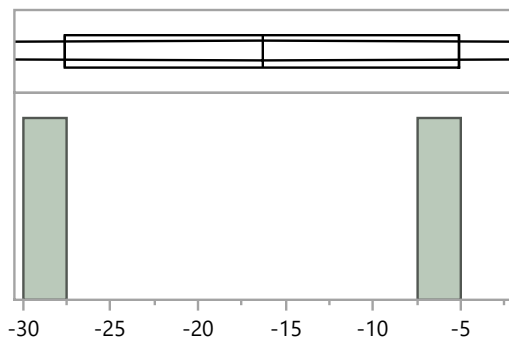
100.0%	maximum	-5.5
99.5%		-5.5
97.5%		-5.5
90.0%		-5.5
75.0%	quartile	-5.5
50.0%	median	-5.5
25.0%	quartile	-5.5
10.0%		-5.5
2.5%		-5.5
0.5%		-5.5
0.0%	minimum	-5.5

Summary Statistics

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

Distributions Analyte_Method=Strontium-90 Acid dissolution with hydrofluoric acid

Bias



Quantiles

100.0%	maximum	-5.1
99.5%		-5.1
97.5%		-5.1
90.0%		-5.1
75.0%	quartile	-5.1
50.0%	median	-16.4
25.0%	quartile	-27.6
10.0%		-27.6
2.5%		-27.6
0.5%		-27.6
0.0%	minimum	-27.6

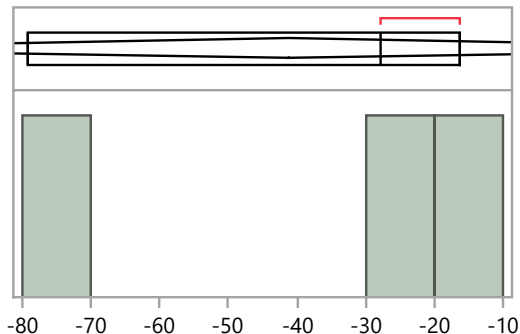
Summary Statistics

Mean	-16.4
Std Dev	15.9
Std Err Mean	11.3
Upper 95% Mean	126.6
Lower 95% Mean	-159.3
N	2.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Strontium-90 Acid leaching without hydrofluoric acid

Bias



Quantiles

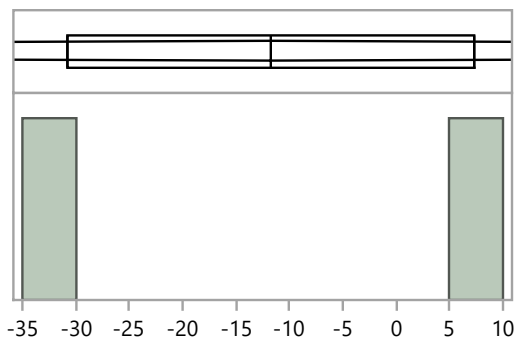
100.0%	maximum	-16.4
99.5%		-16.4
97.5%		-16.4
90.0%		-16.4
75.0%	quartile	-16.4
50.0%	median	-27.9
25.0%	quartile	-79.1
10.0%		-79.1
2.5%		-79.1
0.5%		-79.1
0.0%	minimum	-79.1

Summary Statistics

Mean	-41.1
Std Dev	33.4
Std Err Mean	19.3
Upper 95% Mean	41.8
Lower 95% Mean	-124.1
N	3.0

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

Bias



Quantiles

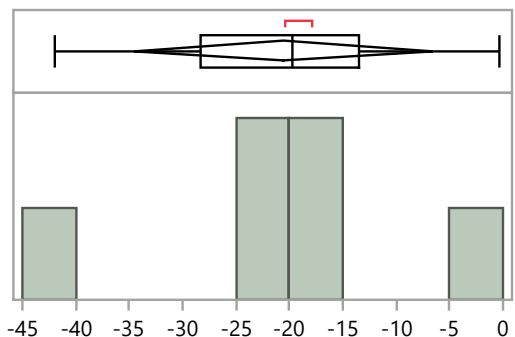
100.0%	maximum	7.2
99.5%		7.2
97.5%		7.2
90.0%		7.2
75.0%	quartile	7.2
50.0%	median	-11.8
25.0%	quartile	-30.8
10.0%		-30.8
2.5%		-30.8
0.5%		-30.8
0.0%	minimum	-30.8

Summary Statistics

Mean	-11.8
Std Dev	26.9
Std Err Mean	19.0
Upper 95% Mean	229.6
Lower 95% Mean	-253.2
N	2.0

Distributions Analyte_Method=Strontium-90 Other

Bias

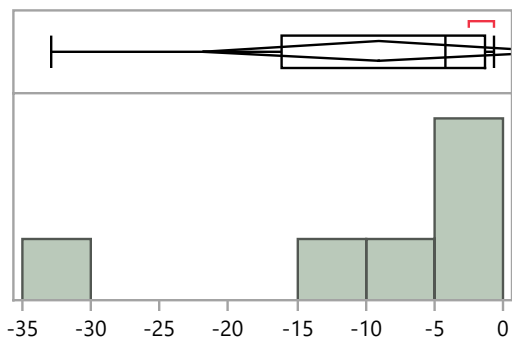


Quantiles

100.0%	maximum	-0.3
99.5%		-0.3
97.5%		-0.3
90.0%		-0.3
75.0%	quartile	-13.5
50.0%	median	-19.8
25.0%	quartile	-28.3
10.0%		-42.0
2.5%		-42.0
0.5%		-42.0
0.0%	minimum	-42.0

Summary Statistics

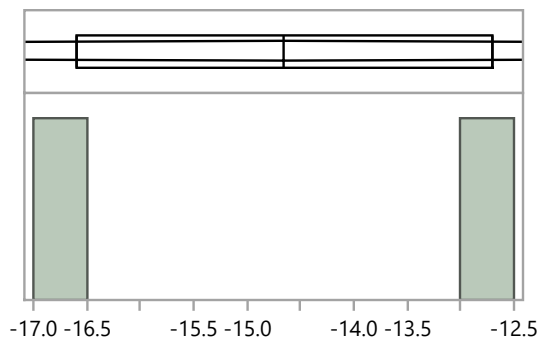
Mean	-20.6
Std Dev	13.3
Std Err Mean	5.4
Upper 95% Mean	-6.6
Lower 95% Mean	-34.6
N	6.0

MaS52 Distribution by Preparation Method**Distributions Analyte_Method=Strontium-90 Total dissolution by fusion****Bias****Quantiles**

100.0%	maximum	-0.7
99.5%		-0.7
97.5%		-0.7
90.0%		-0.7
75.0%	quartile	-1.3
50.0%	median	-4.2
25.0%	quartile	-16.2
10.0%		-32.9
2.5%		-32.9
0.5%		-32.9
0.0%	minimum	-32.9

Summary Statistics

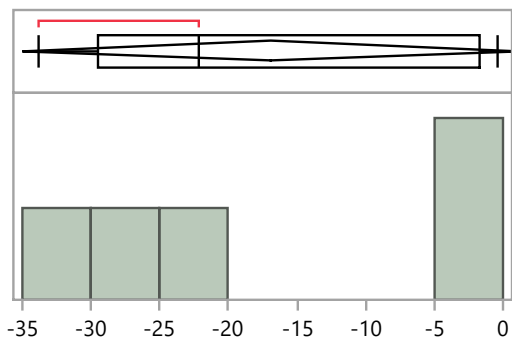
Mean	-9.0
Std Dev	12.3
Std Err Mean	5.0
Upper 95% Mean	3.9
Lower 95% Mean	-21.9
N	6.0

Distributions Analyte_Method=Technetium-99 Acid dissolution with hydrofluoric acid**Bias****Quantiles**

100.0%	maximum	-12.7
99.5%		-12.7
97.5%		-12.7
90.0%		-12.7
75.0%	quartile	-12.7
50.0%	median	-14.7
25.0%	quartile	-16.6
10.0%		-16.6
2.5%		-16.6
0.5%		-16.6
0.0%	minimum	-16.6

Summary Statistics

Mean	-14.7
Std Dev	2.8
Std Err Mean	2.0
Upper 95% Mean	10.1
Lower 95% Mean	-39.4
N	2.0

Distributions Analyte_Method=Technetium-99 Acid leaching without hydrofluoric acid**Bias****Quantiles**

100.0%	maximum	-0.4
99.5%		-0.4
97.5%		-0.4
90.0%		-0.4
75.0%	quartile	-1.7
50.0%	median	-22.2
25.0%	quartile	-29.5
10.0%		-33.8
2.5%		-33.8
0.5%		-33.8
0.0%	minimum	-33.8

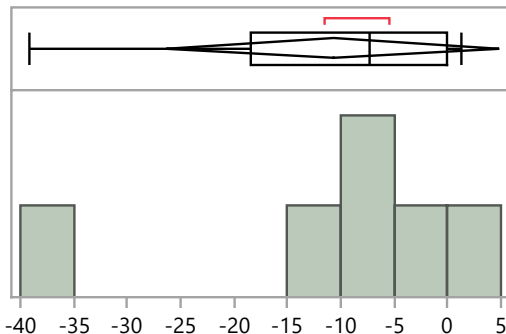
Summary Statistics

Mean	-16.9
Std Dev	14.6
Std Err Mean	6.5
Upper 95% Mean	1.2
Lower 95% Mean	-35.0
N	5.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Technetium-99 Other

Bias



Quantiles

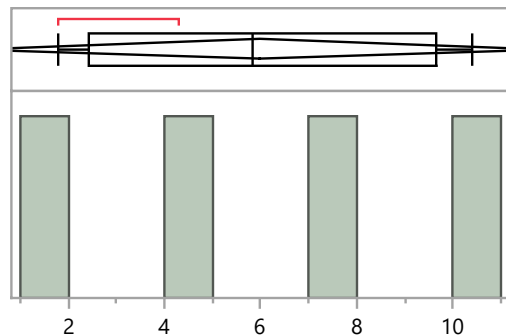
100.0%	maximum	1.2
99.5%		1.2
97.5%		1.2
90.0%		1.2
75.0%	quartile	-0.0
50.0%	median	-7.3
25.0%	quartile	-18.5
10.0%		-39.2
2.5%		-39.2
0.5%		-39.2
0.0%	minimum	-39.2

Summary Statistics

Mean	-10.8
Std Dev	14.8
Std Err Mean	6.0
Upper 95% Mean	4.7
Lower 95% Mean	-26.3
N	6.0

Distributions Analyte_Method=Thorium-228 Acid dissolution with hydrofluoric acid

Bias



Quantiles

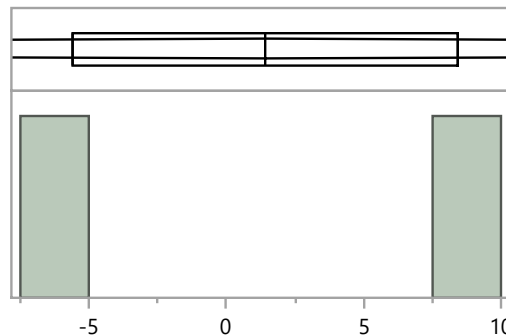
100.0%	maximum	10.4
99.5%		10.4
97.5%		10.4
90.0%		10.4
75.0%	quartile	9.7
50.0%	median	5.9
25.0%	quartile	2.4
10.0%		1.8
2.5%		1.8
0.5%		1.8
0.0%	minimum	1.8

Summary Statistics

Mean	6.0
Std Dev	3.7
Std Err Mean	1.9
Upper 95% Mean	11.9
Lower 95% Mean	0.0
N	4.0

Distributions Analyte_Method=Thorium-228 Acid leaching without hydrofluoric acid

Bias

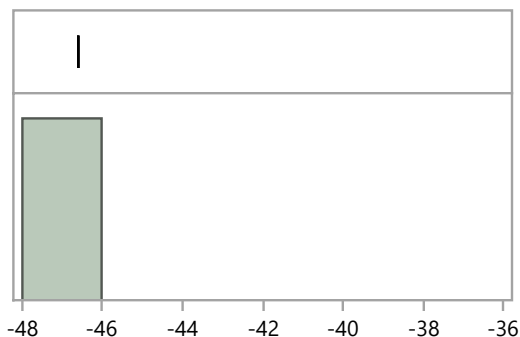


Quantiles

100.0%	maximum	8.4
99.5%		8.4
97.5%		8.4
90.0%		8.4
75.0%	quartile	8.4
50.0%	median	1.4
25.0%	quartile	-5.6
10.0%		-5.6
2.5%		-5.6
0.5%		-5.6
0.0%	minimum	-5.6

Summary Statistics

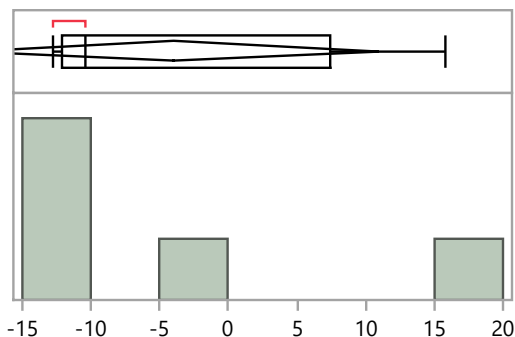
Mean	1.4
Std Dev	9.9
Std Err Mean	7.0
Upper 95% Mean	90.3
Lower 95% Mean	-87.5
N	2.0

MaS52 Distribution by Preparation Method**Distributions Analyte_Method=Thorium-228 EPA 907, Actinide Elements, 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

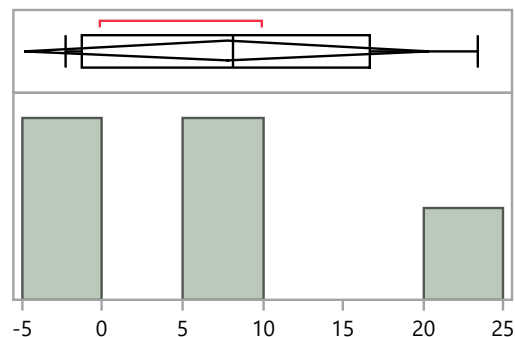
Mean	-46.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Thorium-228 Other**Bias****Quantiles**

100.0%	maximum	15.8
99.5%		15.8
97.5%		15.8
90.0%		15.8
75.0%	quartile	7.5
50.0%	median	-10.4
25.0%	quartile	-12.1
10.0%		-12.8
2.5%		-12.8
0.5%		-12.8
0.0%	minimum	-12.8

Summary Statistics

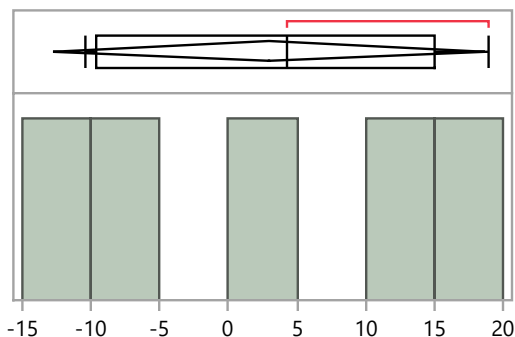
Mean	-3.9
Std Dev	12.0
Std Err Mean	5.4
Upper 95% Mean	10.9
Lower 95% Mean	-18.8
N	5.0

Distributions Analyte_Method=Thorium-228 Total dissolution by fusion**Bias****Quantiles**

100.0%	maximum	23.4
99.5%		23.4
97.5%		23.4
90.0%		23.4
75.0%	quartile	16.7
50.0%	median	8.1
25.0%	quartile	-1.3
10.0%		-2.3
2.5%		-2.3
0.5%		-2.3
0.0%	minimum	-2.3

Summary Statistics

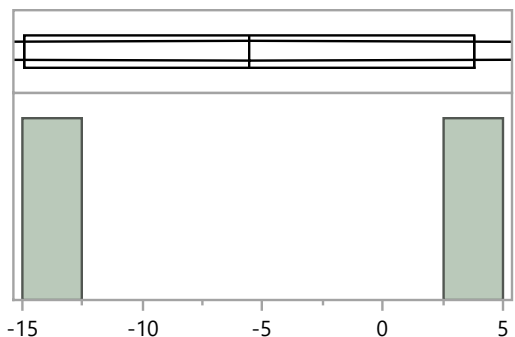
Mean	7.8
Std Dev	10.2
Std Err Mean	4.5
Upper 95% Mean	20.4
Lower 95% Mean	-4.9
N	5.0

MaS52 Distribution by Preparation Method**Distributions Analyte_Method=Thorium-230 Acid dissolution with hydrofluoric acid****Bias****Quantiles**

100.0%	maximum	18.9
99.5%		18.9
97.5%		18.9
90.0%		18.9
75.0%	quartile	15.0
50.0%	median	4.3
25.0%	quartile	-9.7
10.0%		-10.4
2.5%		-10.4
0.5%		-10.4
0.0%	minimum	-10.4

Summary Statistics

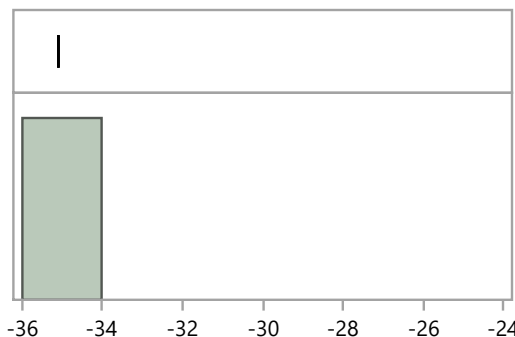
Mean	3.0
Std Dev	12.7
Std Err Mean	5.7
Upper 95% Mean	18.7
Lower 95% Mean	-12.7
N	5.0

Distributions Analyte_Method=Thorium-230 Acid leaching without hydrofluoric acid**Bias****Quantiles**

100.0%	maximum	3.8
99.5%		3.8
97.5%		3.8
90.0%		3.8
75.0%	quartile	3.8
50.0%	median	-5.6
25.0%	quartile	-14.9
10.0%		-14.9
2.5%		-14.9
0.5%		-14.9
0.0%	minimum	-14.9

Summary Statistics

Mean	-5.6
Std Dev	13.2
Std Err Mean	9.4
Upper 95% Mean	113.3
Lower 95% Mean	-124.4
N	2.0

Distributions Analyte_Method=Thorium-230 EPA 907, Actinide Elements, 600/4/80-032**Bias****Quantiles**

100.0%	maximum	-35.1
99.5%		-35.1
97.5%		-35.1
90.0%		-35.1
75.0%	quartile	-35.1
50.0%	median	-35.1
25.0%	quartile	-35.1
10.0%		-35.1
2.5%		-35.1
0.5%		-35.1
0.0%	minimum	-35.1

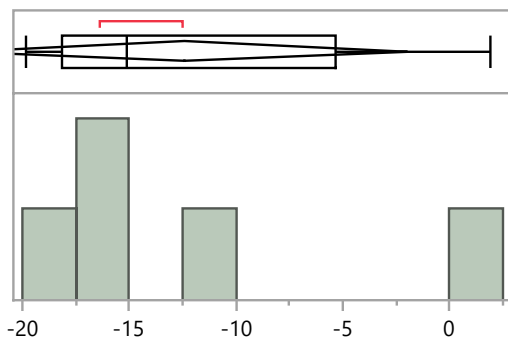
Summary Statistics

Mean	-35.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-230 Other

Bias



Quantiles

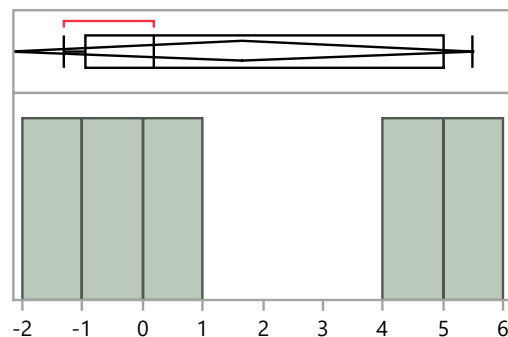
100.0%	maximum	1.9
99.5%		1.9
97.5%		1.9
90.0%		1.9
75.0%	quartile	-5.3
50.0%	median	-15.1
25.0%	quartile	-18.1
10.0%		-19.8
2.5%		-19.8
0.5%		-19.8
0.0%	minimum	-19.8

Summary Statistics

Mean	-12.4
Std Dev	8.4
Std Err Mean	3.8
Upper 95% Mean	-1.9
Lower 95% Mean	-22.8
N	5.0

Distributions Analyte_Method=Thorium-230 Total dissolution by fusion

Bias



Quantiles

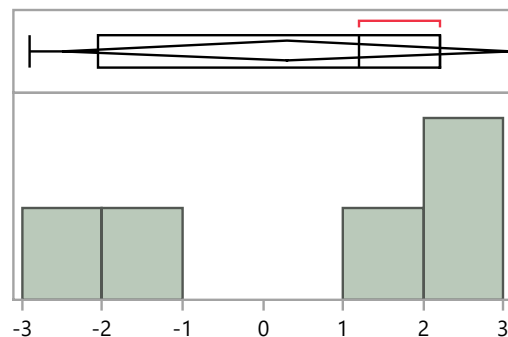
100.0%	maximum	5.5
99.5%		5.5
97.5%		5.5
90.0%		5.5
75.0%	quartile	5.0
50.0%	median	0.2
25.0%	quartile	-1.0
10.0%		-1.3
2.5%		-1.3
0.5%		-1.3
0.0%	minimum	-1.3

Summary Statistics

Mean	1.7
Std Dev	3.1
Std Err Mean	1.4
Upper 95% Mean	5.5
Lower 95% Mean	-2.2
N	5.0

Distributions Analyte_Method=Thorium-232 Acid dissolution with hydrofluoric acid

Bias



Quantiles

100.0%	maximum	2.2
99.5%		2.2
97.5%		2.2
90.0%		2.2
75.0%	quartile	2.2
50.0%	median	1.2
25.0%	quartile	-2.1
10.0%		-2.9
2.5%		-2.9
0.5%		-2.9
0.0%	minimum	-2.9

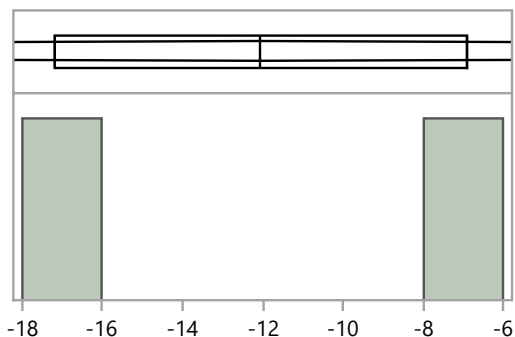
Summary Statistics

Mean	0.3
Std Dev	2.3
Std Err Mean	1.0
Upper 95% Mean	3.1
Lower 95% Mean	-2.5
N	5.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-232 Acid leaching without hydrofluoric acid

Bias



Quantiles

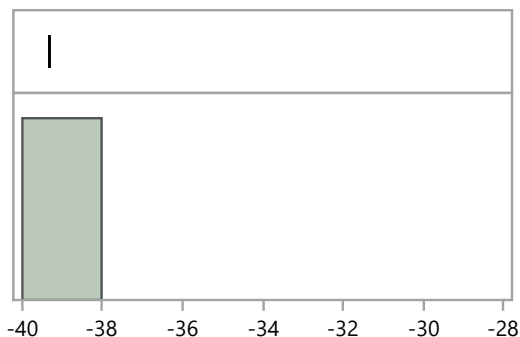
100.0%	maximum	-6.9
99.5%		-6.9
97.5%		-6.9
90.0%		-6.9
75.0%	quartile	-6.9
50.0%	median	-12.1
25.0%	quartile	-17.2
10.0%		-17.2
2.5%		-17.2
0.5%		-17.2
0.0%	minimum	-17.2

Summary Statistics

Mean	-12.1
Std Dev	7.3
Std Err Mean	5.1
Upper 95% Mean	53.4
Lower 95% Mean	-77.5
N	2.0

Distributions Analyte_Method=Thorium-232 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

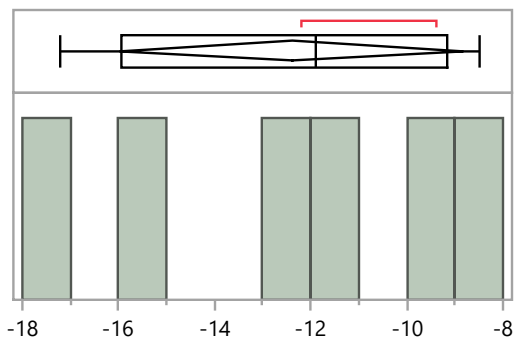
100.0%	maximum	-39.3
99.5%		-39.3
97.5%		-39.3
90.0%		-39.3
75.0%	quartile	-39.3
50.0%	median	-39.3
25.0%	quartile	-39.3
10.0%		-39.3
2.5%		-39.3
0.5%		-39.3
0.0%	minimum	-39.3

Summary Statistics

Mean	-39.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Thorium-232 Other

Bias



Quantiles

100.0%	maximum	-8.5
99.5%		-8.5
97.5%		-8.5
90.0%		-8.5
75.0%	quartile	-9.2
50.0%	median	-11.9
25.0%	quartile	-15.9
10.0%		-17.2
2.5%		-17.2
0.5%		-17.2
0.0%	minimum	-17.2

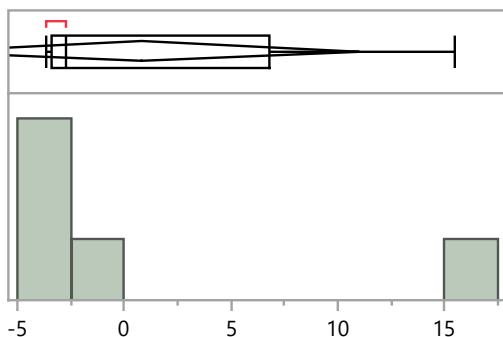
Summary Statistics

Mean	-12.4
Std Dev	3.4
Std Err Mean	1.4
Upper 95% Mean	-8.8
Lower 95% Mean	-16.0
N	6.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-232 Total dissolution by fusion

Bias



Quantiles

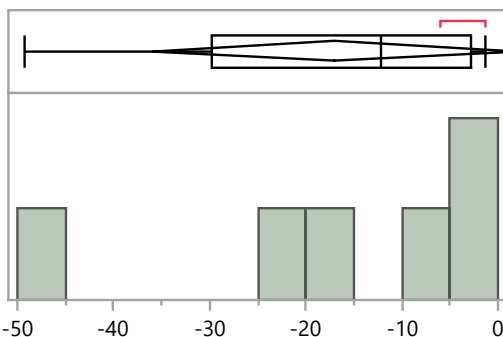
100.0%	maximum	15.5
99.5%		15.5
97.5%		15.5
90.0%		15.5
75.0%	quartile	6.8
50.0%	median	-2.7
25.0%	quartile	-3.4
10.0%		-3.6
2.5%		-3.6
0.5%		-3.6
0.0%	minimum	-3.6

Summary Statistics

Mean	0.8
Std Dev	8.2
Std Err Mean	3.7
Upper 95% Mean	11.0
Lower 95% Mean	-9.4
N	5.0

Distributions Analyte_Method=Uranium-234 Acid dissolution with hydrofluoric acid

Bias



Quantiles

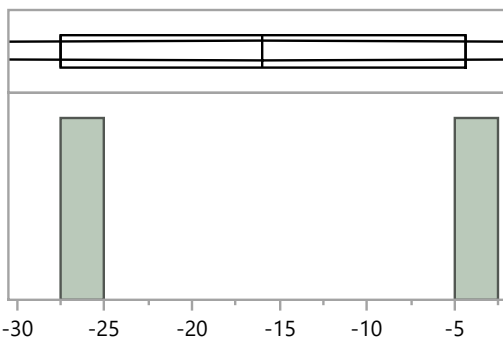
100.0%	maximum	-1.4
99.5%		-1.4
97.5%		-1.4
90.0%		-1.4
75.0%	quartile	-2.8
50.0%	median	-12.3
25.0%	quartile	-29.9
10.0%		-49.2
2.5%		-49.2
0.5%		-49.2
0.0%	minimum	-49.2

Summary Statistics

Mean	-17.0
Std Dev	18.1
Std Err Mean	7.4
Upper 95% Mean	2.0
Lower 95% Mean	-35.9
N	6.0

Distributions Analyte_Method=Uranium-234 Acid leaching without hydrofluoric acid

Bias



Quantiles

100.0%	maximum	-4.4
99.5%		-4.4
97.5%		-4.4
90.0%		-4.4
75.0%	quartile	-4.4
50.0%	median	-16.0
25.0%	quartile	-27.5
10.0%		-27.5
2.5%		-27.5
0.5%		-27.5
0.0%	minimum	-27.5

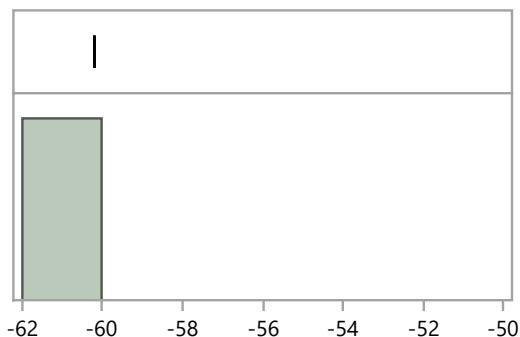
Summary Statistics

Mean	-16.0
Std Dev	16.3
Std Err Mean	11.6
Upper 95% Mean	130.8
Lower 95% Mean	-162.7
N	2.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-234 Coprecipitation, acidified

Bias



Quantiles

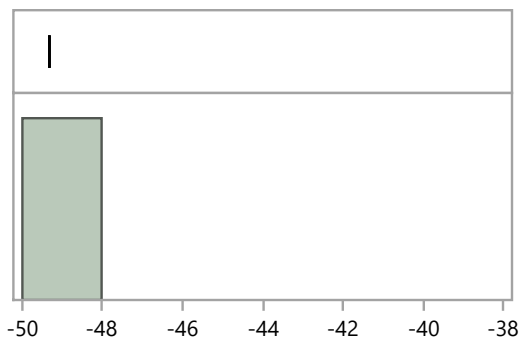
100.0%	maximum	-60.2
99.5%		-60.2
97.5%		-60.2
90.0%		-60.2
75.0%	quartile	-60.2
50.0%	median	-60.2
25.0%	quartile	-60.2
10.0%		-60.2
2.5%		-60.2
0.5%		-60.2
0.0%	minimum	-60.2

Summary Statistics

Mean	-60.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

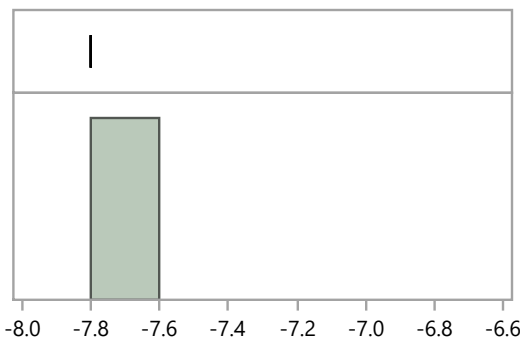
100.0%	maximum	-49.3
99.5%		-49.3
97.5%		-49.3
90.0%		-49.3
75.0%	quartile	-49.3
50.0%	median	-49.3
25.0%	quartile	-49.3
10.0%		-49.3
2.5%		-49.3
0.5%		-49.3
0.0%	minimum	-49.3

Summary Statistics

Mean	-49.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Evaporation, acidified

Bias

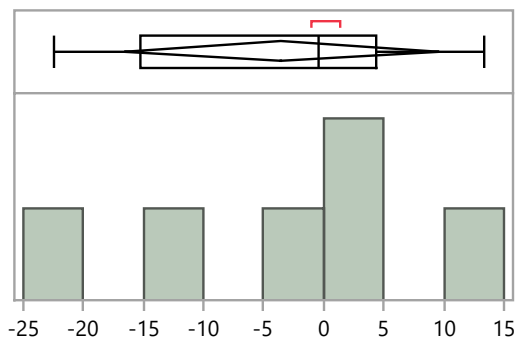


Quantiles

100.0%	maximum	-7.8
99.5%		-7.8
97.5%		-7.8
90.0%		-7.8
75.0%	quartile	-7.8
50.0%	median	-7.8
25.0%	quartile	-7.8
10.0%		-7.8
2.5%		-7.8
0.5%		-7.8
0.0%	minimum	-7.8

Summary Statistics

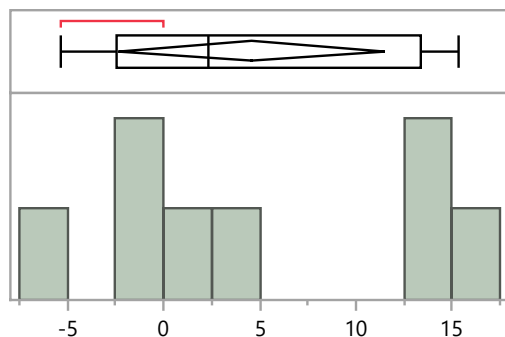
Mean	-7.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Preparation Method**Distributions Analyte_Method=Uranium-234 Other****Bias****Quantiles**

100.0%	maximum	13.4
99.5%		13.4
97.5%		13.4
90.0%		13.4
75.0%	quartile	4.4
50.0%	median	-0.4
25.0%	quartile	-15.3
10.0%		-22.5
2.5%		-22.5
0.5%		-22.5
0.0%	minimum	-22.5

Summary Statistics

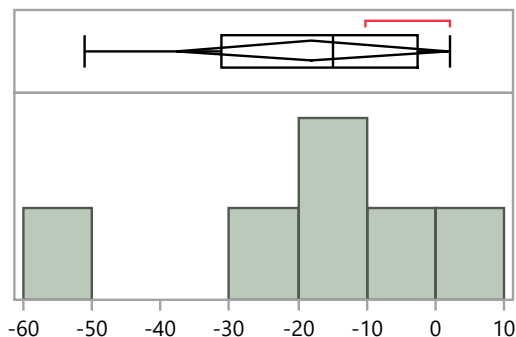
Mean	-3.6
Std Dev	12.5
Std Err Mean	5.1
Upper 95% Mean	9.5
Lower 95% Mean	-16.7
N	6.0

Distributions Analyte_Method=Uranium-234 Total dissolution by fusion**Bias****Quantiles**

100.0%	maximum	15.3
99.5%		15.3
97.5%		15.3
90.0%		15.3
75.0%	quartile	13.3
50.0%	median	2.4
25.0%	quartile	-2.4
10.0%		-5.3
2.5%		-5.3
0.5%		-5.3
0.0%	minimum	-5.3

Summary Statistics

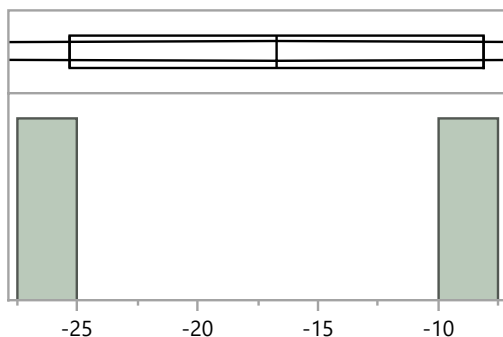
Mean	4.6
Std Dev	8.3
Std Err Mean	2.9
Upper 95% Mean	11.5
Lower 95% Mean	-2.3
N	8.0

Distributions Analyte_Method=Uranium-238 Acid dissolution with hydrofluoric acid**Bias****Quantiles**

100.0%	maximum	2.0
99.5%		2.0
97.5%		2.0
90.0%		2.0
75.0%	quartile	-2.7
50.0%	median	-15.1
25.0%	quartile	-31.1
10.0%		-51.0
2.5%		-51.0
0.5%		-51.0
0.0%	minimum	-51.0

Summary Statistics

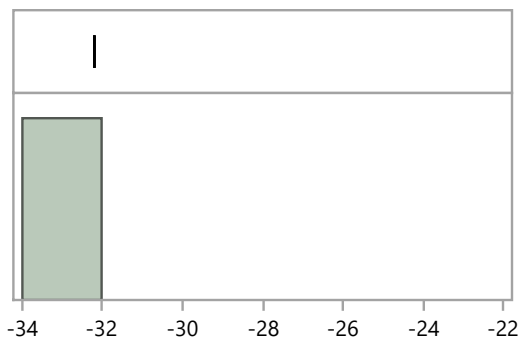
Mean	-18.0
Std Dev	18.9
Std Err Mean	7.7
Upper 95% Mean	1.9
Lower 95% Mean	-37.8
N	6.0

MaS52 Distribution by Preparation Method**Distributions Analyte_Method=Uranium-238 Acid leaching without hydrofluoric acid****Bias****Quantiles**

100.0%	maximum	-8.1
99.5%		-8.1
97.5%		-8.1
90.0%		-8.1
75.0%	quartile	-8.1
50.0%	median	-16.7
25.0%	quartile	-25.3
10.0%		-25.3
2.5%		-25.3
0.5%		-25.3
0.0%	minimum	-25.3

Summary Statistics

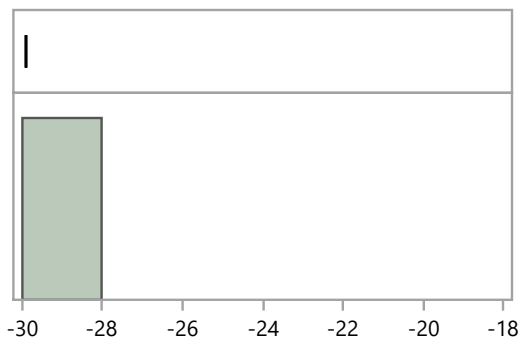
Mean	-16.7
Std Dev	12.2
Std Err Mean	8.6
Upper 95% Mean	92.6
Lower 95% Mean	-126.0
N	2.0

Distributions Analyte_Method=Uranium-238 Coprecipitation, acidified**Bias****Quantiles**

100.0%	maximum	-32.2
99.5%		-32.2
97.5%		-32.2
90.0%		-32.2
75.0%	quartile	-32.2
50.0%	median	-32.2
25.0%	quartile	-32.2
10.0%		-32.2
2.5%		-32.2
0.5%		-32.2
0.0%	minimum	-32.2

Summary Statistics

Mean	-32.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

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

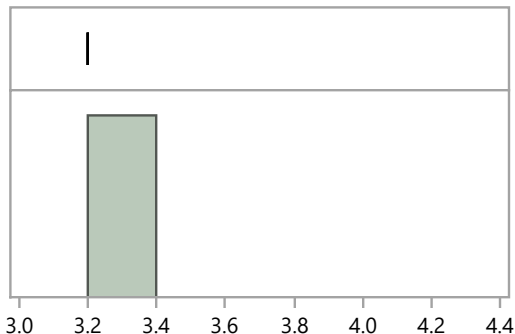
Summary Statistics

Mean	-29.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-238 Evaporation, acidified

Bias



Quantiles

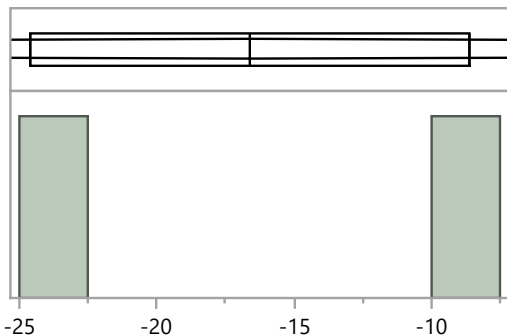
100.0%	maximum	3.2
99.5%		3.2
97.5%		3.2
90.0%		3.2
75.0%	quartile	3.2
50.0%	median	3.2
25.0%	quartile	3.2
10.0%		3.2
2.5%		3.2
0.5%		3.2
0.0%	minimum	3.2

Summary Statistics

Mean	3.2
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

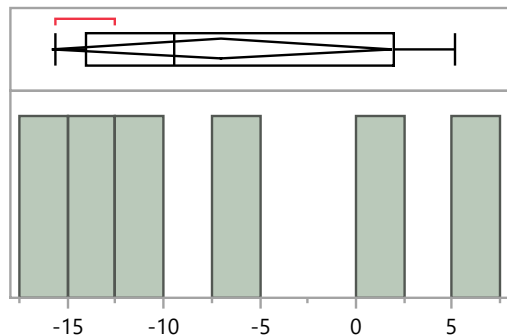
100.0%	maximum	-8.6
99.5%		-8.6
97.5%		-8.6
90.0%		-8.6
75.0%	quartile	-8.6
50.0%	median	-16.6
25.0%	quartile	-24.6
10.0%		-24.6
2.5%		-24.6
0.5%		-24.6
0.0%	minimum	-24.6

Summary Statistics

Mean	-16.6
Std Dev	11.3
Std Err Mean	8.0
Upper 95% Mean	85.0
Lower 95% Mean	-118.2
N	2.0

Distributions Analyte_Method=Uranium-238 Other

Bias



Quantiles

100.0%	maximum	5.1
99.5%		5.1
97.5%		5.1
90.0%		5.1
75.0%	quartile	2.0
50.0%	median	-9.4
25.0%	quartile	-14.0
10.0%		-15.6
2.5%		-15.6
0.5%		-15.6
0.0%	minimum	-15.6

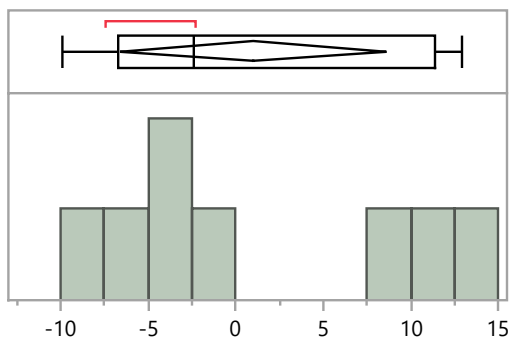
Summary Statistics

Mean	-7.0
Std Dev	8.4
Std Err Mean	3.4
Upper 95% Mean	1.9
Lower 95% Mean	-15.8
N	6.0

MaS52 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-238 Total dissolution by fusion

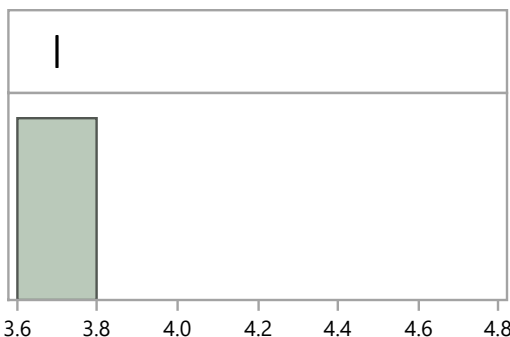
Bias



Quantiles			Summary Statistics	
100.0%	maximum	12.9	Mean	1.0
99.5%		12.9	Std Dev	9.1
97.5%		12.9	Std Err Mean	3.2
90.0%		12.9	Upper 95% Mean	8.6
75.0%	quartile	11.4	Lower 95% Mean	-6.6
50.0%	median	-2.5	N	8.0
25.0%	quartile	-6.7		
10.0%		-9.9		
2.5%		-9.9		
0.5%		-9.9		
0.0%	minimum	-9.9		

Distributions Analyte_Method=Zinc-65 Acid leaching without hydrofluoric acid

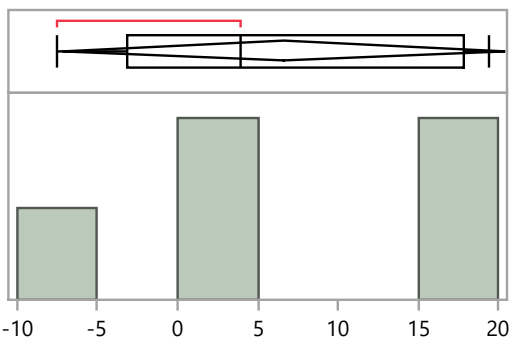
Bias



Quantiles			Summary Statistics	
100.0%	maximum	3.7	Mean	3.7
99.5%		3.7	Std Dev	.
97.5%		3.7	Std Err Mean	.
90.0%		3.7	Upper 95% Mean	.
75.0%	quartile	3.7	Lower 95% Mean	.
50.0%	median	3.7	N	1.0
25.0%	quartile	3.7		
10.0%		3.7		
2.5%		3.7		
0.5%		3.7		
0.0%	minimum	3.7		

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

Bias

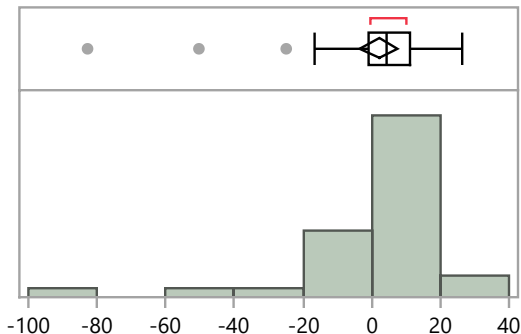


Quantiles			Summary Statistics	
100.0%	maximum	19.4	Mean	6.6
99.5%		19.4	Std Dev	11.1
97.5%		19.4	Std Err Mean	5.0
90.0%		19.4	Upper 95% Mean	20.4
75.0%	quartile	17.8	Lower 95% Mean	-7.1
50.0%	median	3.9	N	5.0
25.0%	quartile	-3.2		
10.0%		-7.5		
2.5%		-7.5		
0.5%		-7.5		
0.0%	minimum	-7.5		

MaS52 Distribution by Preparation Method

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

Bias



Quantiles

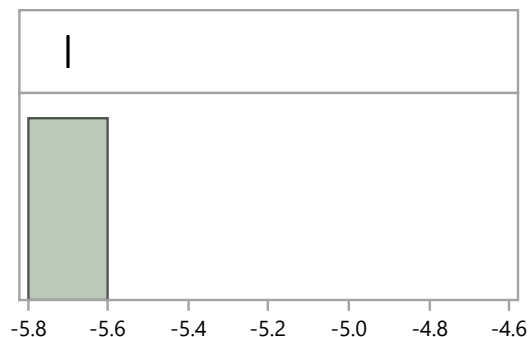
100.0%	maximum	26.1
99.5%		26.1
97.5%		25.9
90.0%		18.7
75.0%	quartile	11.0
50.0%	median	4.3
25.0%	quartile	-0.7
10.0%		-11.5
2.5%		-78.7
0.5%		-82.7
0.0%	minimum	-82.7

Summary Statistics

Mean	2.1
Std Dev	18.4
Std Err Mean	2.8
Upper 95% Mean	7.7
Lower 95% Mean	-3.5
N	44.0

Distributions Analyte_Method=Zinc-65 Other

Bias



Quantiles

100.0%	maximum	-5.7
99.5%		-5.7
97.5%		-5.7
90.0%		-5.7
75.0%	quartile	-5.7
50.0%	median	-5.7
25.0%	quartile	-5.7
10.0%		-5.7
2.5%		-5.7
0.5%		-5.7
0.0%	minimum	-5.7

Summary Statistics

Mean	-5.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0