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.

MaS51 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	Jacobs Clean Energy Limited - Analytical Services	MaS
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	MaS
ARSL01	ARS	MaS
ASUK99	AWE (Aldermaston)	MaS
AY1201	Consolidated Nuclear Security, LLC, ACO Laboratory	MaS
BY1201	Consolidated Nuclear Security, LLC, ACO, Production Laboratory	MaS
CDHS01	California Department of Public Health	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 Dept. Health and Environmental Control Radiological Laboratory	MaS
HPAC99	UKHSA, RCE Glasgow	MaS
HPAL01	Los Alamos National Laboratory	MaS
IAEA20	IAEA Marine Environment Laboratories, Radiometrics Laboratory	MaS
IAEA99	International Atomic Energy Agency	MaS
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	MaS
ISUE01	ISU Environmental Monitoring Laboratory	MaS
JLNN01	Jefferson Laboratory	MaS
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	MaS
MART01	Fluor-BWXT Portsmouth LLC, Analytical Laboratory	MaS
MART03	Radioactive Material Analysis Laboratory	MaS
NARL01	National Analytical Radiation Environmental Laboratory	MaS
NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	MaS
NJDH01	New Jersey Dept. of Health, ECLS	MaS
NOCS99	National Oceanography Centre, Southampton	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
SANC99	RadioAnalysis, South Africa Nuclear Energy Corp.	MaS

MaS51 Participating Laboratories

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
TELE02	Microbac Laboratories Inc. - Northbrook	MaS
TMAO01	EBERLINE Analytical Corporation	MaS
TNUT01	St. Louis USACE FUSRAP Laboratory	MaS
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	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
ARGO01	Idaho National Laboratory	MaS
ISUP01	ISU - Department of Physics/Health Physics/EAL	MaS
MDPH01	MDPH-Radiation Control Program	MaS
MSDH01	Mississippi State Dept of Health	MaS
RPSC01	Radiation Protection Service	MaS
UNTE01	UniTech-235	MaS

Study Reference Values

MAPEP-24-MaS51: Radiological and inorganic combined soil standard
Radiological Reference Date: 08/01/2024

Inorganic				Units: (mg/kg)
Analyte	Reference Value	Reference Uncertainty	Tot Mtl Ref Val	Tot Mtl Ref Unc
Antimony	6.47	0.16	7.78	0.10
Arsenic	26.5	0.5	26.7	0.5
Barium	218	7	676	16
Beryllium	12.9	0.2	13.6	0.2
Cadmium	3.14	0.06	3.16	0.06
Chromium	45.6	1.0	77	2
Cobalt	27.3	0.5	29.8	0.6
Copper	50.7	1.0	56.8	1.4
Lead	22.0	0.4	27.4	0.6
Mercury	0.182	0.004	0.182	0.004
Nickel	42.8	0.9	49.8	1.4
Selenium	5.65	0.12	5.84	0.12
Silver	3.37	0.07	3.55	0.08
Technetium-99	2.73E-4	8E-06		
Thallium	2.02	0.06	2.76	0.06
Uranium-235	0.0407	0.0014		
Uranium-238	13.2	0.4		
Uranium-Total	13.3	0.4		
Vanadium	44.7	1.5	82	2
Zinc	110	3	135	5

Radiological			Units: (Bq/kg)
Analyte	Reference Value	Reference Uncertainty	
Americium-241	0.26	0.08	
Cesium-134	417	13	
Cesium-137	1650	50	
Cobalt-57	330	10	
Cobalt-60	700	20	
Iron-55	780	20	
Manganese-54	113	4	
Nickel-63	1450	50	
Plutonium-238	17.8	0.6	
Plutonium-239/240	50.0	1.6	
Potassium-40	525	15	
Strontium-90	487	16	
Technetium-99	171	5	
Thorium-228	43.3	1.5	
Thorium-230	44.0	1.5	
Thorium-232	42.6	1.5	
Uranium-234	50.0	1.6	
Uranium-238	165	5	
Zinc-65	415	13	

Sample Statistical Summary

MAPEP-24-MaS51: Radiological and inorganic combined soil standard
Radiological Reference Date: 08/01/2024

Inorganic

Units: (mg/kg)

Analyte	T(1)	A(2)	Grand(3) Mean	Standard Deviation	Reference Value	Reference Uncertainty	Acceptance Range
Antimony	8	6			6.47	0.16	4.53 - 8.41
Arsenic	9	9	25.7	3.3	26.5	0.5	18.6 - 34.5
Barium	8	8	222	15	218	7	153 - 283
Beryllium	9	9	12.6	1.6	12.9	0.2	9.0 - 16.8
Cadmium	9	9	3.08	0.26	3.14	0.06	2.20 - 4.08
Chromium	9	9	46.7	1.8	45.6	1.0	31.9 - 59.3
Cobalt	8	8	25.6	1.5	27.3	0.5	19.1 - 35.5
Copper	8	8	48.9	6.2	50.7	1.0	35.5 - 65.9
Lead	9	9	22.3	2.8	22.0	0.4	15.4 - 28.6
Mercury	9	8	0.163	0.009	0.182	0.004	0.127 - 0.237
Nickel	9	9	42.4	3.3	42.8	0.9	30.0 - 55.6
Selenium	8	6	5.45	0.42	5.65	0.12	3.96 - 7.35
Silver	9	9	3.27	0.49	3.37	0.07	2.36 - 4.38
Technetium-99	2	2			2.73E-4	8E-06	1.91E-4 - 3.55E-4
Thallium	9	8	2.10	0.29	2.02	0.06	1.41 - 2.63
Uranium-235	11	11	0.0392	0.0051	0.0407	0.0014	0.0285 - 0.0529
Uranium-238	11	11	12.7	1.1	13.2	0.4	9.2 - 17.2
Uranium-Total	13	12	12.9	1.5	13.3	0.4	9.3 - 17.3
Vanadium	9	9	47.5	4.1	44.7	1.5	31.3 - 58.1
Zinc	9	9	115	9	110	3	77 - 143

Radiological

Units: (Bq/kg)

Analyte	T(1)	A(2)	Grand(3) Mean	Standard Deviation	Reference Value	Reference Uncertainty	Acceptance Range
Americium-241	29	26	0.58	0.87	0.26	0.08	Sensitivity Evaluation
Cesium-134	50	45	411	37	417	13	292 - 542
Cesium-137	50	48	1686	125	1650	50	1155 - 2145
Cobalt-57	50	45	334	26	330	10	231 - 429
Cobalt-60	50	48	702	49	700	20	490 - 910
Iron-55	9	5			780	20	546 - 1014
Manganese-54	50	47	116	9	113	4	79 - 147
Nickel-63	11	10	1317	148	1450	50	1015 - 1885
Plutonium-238	30	23	18.5	1.2	17.8	0.6	12.5 - 23.1
Plutonium-239/240	30	21	48.2	4.2	50.0	1.6	35.0 - 65.0
Potassium-40	50	46	522	45	525	15	368 - 683
Strontium-90	25	21	433	48	487	16	341 - 633
Technetium-99	16	13	152	20	171	5	120 - 222
Thorium-228	21	19	44.0	5.5	43.3	1.5	30.3 - 56.3
Thorium-230	20	19	44.6	3.9	44.0	1.5	30.8 - 57.2
Thorium-232	23	20	42.0	4.1	42.6	1.5	29.8 - 55.4
Uranium-234	30	26	48.1	4.7	50.0	1.6	35.0 - 65.0
Uranium-238	32	29	154	13	165	5	116 - 215
Zinc-65	50	46	427	39	415	13	291 - 540

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..... |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

Flag Summary Report

MAPEP-24-MaS51: Radiological and inorganic combined soil standard

Radiological Reference Date: 08/01/2024

Inorganic

Analyte	A	W	RW	N
Antimony	4	2		2
Arsenic	9			
Barium	8			
Beryllium	8	1		
Cadmium	9			
Chromium	9			
Cobalt	8			
Copper	8			
Lead	8	1		
Mercury	8			1
Nickel	9			
Selenium	6			1
Silver	6	3		
Thallium	5	3		1
Uranium-Total	11	1		1
Uranium-235	10	1		
Uranium-238	11			
Vanadium	8	1		
Zinc	9			
Technetium-99	2			

Radiological

Analyte	A	W	RW	N
Americium-241	26			3
Cesium-134	43	2		3
Cesium-137	46	2		2
Cobalt-57	44	1		5
Cobalt-60	47	1		2
Iron-55	4	1		4
Manganese-54	44	3		3
Nickel-63	7	3		1
Plutonium-238	23			7
Plutonium-239/240	20	1		9
Potassium-40	45	1		4
Strontium-90	16	5		4
Technetium-99	10	3		3
Thorium-228	17	2		2
Thorium-230	19			1
Thorium-232	19	1		3
Uranium-234	25	1		4
Uranium-238	28	1		3
Zinc-65	42	4		4

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.1	0.26	A	(17)		Sensitivity Evaluation	0.05	
Cesium-134	2.7700	417	N		-99.3	292 - 542	0.1610	A
Cesium-137	2.1200	1650	N		-99.9	1155 - 2145	0.0901	A
Cobalt-57	0.1	330	N		-100.0	231 - 429	0.05	N
Cobalt-60	2.0400	700	N		-99.7	490 - 910	0.6940	N
Iron-55	0.1	780	N		-100.0	546 - 1014	0.05	N
Manganese-54	4.1400	113	N		-96.3	79 - 147	0.1270	A
Nickel-63	0.1	1450	N		-100.0	1015 - 1885	0.05	N
Plutonium-238	0.1	17.8	N		-99.4	12.5 - 23.1	0.05	N
Plutonium-239/240	0.1	50.0	N		-99.8	35.0 - 65.0	0.05	N
Potassium-40	1.2200	525	N		-99.8	368 - 683	0.6990	N
Strontium-90	0.1	487	N		-100.0	341 - 633	0.05	N
Technetium-99	0.1	171	N		-99.9	120 - 222	0.05	N
Thorium-228	0.1	43.3	N		-99.8	30.3 - 56.3	0.05	N
Thorium-230	0.1	44.0	N		-99.8	30.8 - 57.2	0.05	N
Thorium-232	0.1	42.6	N		-99.8	29.8 - 55.4	0.05	N
Uranium-234	0.1	50.0	N		-99.8	35.0 - 65.0	0.05	N
Uranium-238	0.1	165	N		-99.9	116 - 215	0.05	N
Zinc-65	10.4000	415	N		-97.5	291 - 540	0.3210	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	414	417	A		-0.7	292 - 542	29	A
Cesium-137	1872	1650	A		13.5	1155 - 2145	191	A
Cobalt-57	370	330	A		12.1	231 - 429	50	A
Cobalt-60	684	700	A		-2.3	490 - 910	39	A
Iron-55	NR	780				546 - 1014		
Manganese-54	123	113	A		8.9	79 - 147	12	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	523	525	A		-0.4	368 - 683	50	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	442	415	A		6.5	291 - 540	36	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.5	0.26	A	(17)		Sensitivity Evaluation	0.4	
Cesium-134	400	417	A		-4.1	292 - 542	11	A
Cesium-137	1580	1650	A		-4.2	1155 - 2145	41	A
Cobalt-57	325	330	A		-1.5	231 - 429	11	A
Cobalt-60	662	700	A		-5.4	490 - 910	14	A
Iron-55	NR	780				546 - 1014		
Manganese-54	107	113	A		-5.3	79 - 147	4	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.4	17.8	A		3.4	12.5 - 23.1	2.1	A
Plutonium-239/240	46.4	50.0	A		-7.2	35.0 - 65.0	3.7	A
Potassium-40	455	525	A		-13.3	368 - 683	23	A
Strontium-90	384	487	W		-21.2	341 - 633	19	A
Technetium-99	NR	171				120 - 222		
Thorium-228	49.7	43.3	A		14.8	30.3 - 56.3	4.0	A
Thorium-230	45.7	44.0	A		3.9	30.8 - 57.2	3.7	A
Thorium-232	43.2	42.6	A		1.4	29.8 - 55.4	3.6	A
Uranium-234	50.0	50.0	A		0.0	35.0 - 65.0	4.4	A
Uranium-238	152.3	165	A		-7.7	116 - 215	8.9	A
Zinc-65	398	415	A		-4.1	291 - 540	11	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(AMEC99) Jacobs Clean Energy Limited - Analytical Services

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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.41	0.26	A	(17)		Sensitivity Evaluation	0.42	
Cesium-134	388	417	A		-7.0	292 - 542	14	A
Cesium-137	1648	1650	A		-0.1	1155 - 2145	56	A
Cobalt-57	321	330	A		-2.7	231 - 429	12	A
Cobalt-60	686	700	A		-2.0	490 - 910	23	A
Iron-55	NR	780				546 - 1014		
Manganese-54	115.3	113	A		2.0	79 - 147	4.9	A
Nickel-63	1390	1450	A		-4.1	1015 - 1885	79	A
Plutonium-238	17.43	17.8	A		-2.1	12.5 - 23.1	0.92	A
Plutonium-239/240	48.3	50.0	A		-3.4	35.0 - 65.0	1.7	A
Potassium-40	515	525	A		-1.9	368 - 683	22	A
Strontium-90	427	487	A		-12.3	341 - 633	26	A
Technetium-99	127	171	W		-25.7	120 - 222	16	A
Thorium-228	40.1	43.3	A		-7.4	30.3 - 56.3	1.7	A
Thorium-230	48.2	44.0	A		9.5	30.8 - 57.2	1.9	A
Thorium-232	36.5	42.6	A		-14.3	29.8 - 55.4	1.6	A
Uranium-234	43.9	50.0	A		-12.2	35.0 - 65.0	1.5	A
Uranium-238	148.0	165	A		-10.3	116 - 215	4.1	A
Zinc-65	432	415	A		4.1	291 - 540	16	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	284.2	417	N		-31.8	292 - 542	5.7	A
Cesium-137	1179.0	1650	W		-28.5	1155 - 2145	23.5	N
Cobalt-57	224.9	330	N		-31.8	231 - 429	5.6	A
Cobalt-60	505.6	700	W		-27.8	490 - 910	9.7	N
Iron-55	NR	780				546 - 1014		
Manganese-54	81.3	113	W		-28.1	79 - 147	1.9	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	353.0	525	N		-32.8	368 - 683	8.9	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	308.9	415	W		-25.6	291 - 540	9.2	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	3.608	0.26	N	(4)		Sensitivity Evaluation	.782	
Cesium-134	365.9	417	A		-12.3	292 - 542	12.077	A
Cesium-137	1576.7	1650	A		-4.4	1155 - 2145	35.335	A
Cobalt-57	310.29	330	A		-6.0	231 - 429	10.99	A
Cobalt-60	686.75	700	A		-1.9	490 - 910	13.202	N
Iron-55	NR	780				546 - 1014		
Manganese-54	113	113	A		0.0	79 - 147	3.973	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	21.353	17.8	A		20.0	12.5 - 23.1	2.639	A
Plutonium-239/240	.649	50.0	N		-98.7	35.0 - 65.0	.65	N
Potassium-40	543.32	525	A		3.5	368 - 683	20.78	A
Strontium-90	430.119	487	A		-11.7	341 - 633	36.837	A
Technetium-99	140.764	171	A		-17.7	120 - 222	21.215	W
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	28.367	50.0	N		-43.3	35.0 - 65.0	3.091	A
Uranium-238	119.716	165	W		-27.4	116 - 215	8.968	A
Zinc-65	420.9	415	A		1.4	291 - 540	14.116	A

Radiological Reference Date: August 1, 2024

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:

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(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(ASUK99) AWE (Aldermaston)
A38.1 AWE
Reading, Berkshire RG7 4PR

Inorganic								Units: (mg/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	NR	780				546 - 1014		
Manganese-54	NR	113				79 - 147		
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	19.5276	17.8	A		9.7	12.5 - 23.1	3.1315	W
Plutonium-239/240	46.8148	50.0	A		-6.4	35.0 - 65.0	6.9618	A
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	41.8347	50.0	A		-16.3	35.0 - 65.0	6.9384	W
Uranium-238	159.4034	165	A		-3.4	116 - 215	24.9416	W
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	7.88	6.47	W		21.8	4.53 - 8.41	0.0528	N
Arsenic	26.5	26.5	A		0.0	18.6 - 34.5	0.0562	N
Barium	242	218	A		11.0	153 - 283	0.0407	N
Beryllium	14.2	12.9	A		10.1	9.0 - 16.8	0.0623	N
Cadmium	3.28	3.14	A		4.5	2.20 - 4.08	.1114	A
Chromium	48.4	45.6	A		6.1	31.9 - 59.3	0.0315	N
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	23.3	22.0	A		5.9	15.4 - 28.6	0.0652	N
Mercury	0.170	0.182	A		-6.6	0.127 - 0.237	0.0178	A
Nickel	47.3	42.8	A		10.5	30.0 - 55.6	0.0494	N
Selenium	5.32	5.65	A		-5.8	3.96 - 7.35	.1622	A
Silver	3.17	3.37	A		-5.9	2.36 - 4.38	0.1022	A
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	2.48	2.02	W		22.8	1.41 - 2.63	0.123	A
Uranium-235	0.051	0.0407	W		25.3	0.0285 - 0.0529	0.0051	A
Uranium-238	13.66	13.2	A		3.5	9.2 - 17.2	0.5	A
Uranium-Total	13.71	13.3	A		3.1	9.3 - 17.3	0.5	A
Vanadium	48.1	44.7	A		7.6	31.3 - 58.1	0.038	N
Zinc	126	110	A		14.5	77 - 143	0.0626	N

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.33	0.26	A	(17)		Sensitivity Evaluation	0.61	
Cesium-134	NR	417		(6)		292 - 542		
Cesium-137	1782	1650	A		8.0	1155 - 2145	55	A
Cobalt-57	369	330	A		11.8	231 - 429	10	A
Cobalt-60	752	700	A		7.4	490 - 910	15	N
Iron-55	NR	780				546 - 1014		
Manganese-54	127	113	A		12.4	79 - 147	39	N
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	15.92	17.8	A		-10.6	12.5 - 23.1	1.63	A
Plutonium-239/240	52.54	50.0	A		5.1	35.0 - 65.0	3.97	A
Potassium-40	600	525	A		14.3	368 - 683	50	A
Strontium-90	344	487	W		-29.4	341 - 633	14	A
Technetium-99	143	171	A		-16.4	120 - 222	22	W
Thorium-228	41.44	43.3	A		-4.3	30.3 - 56.3	4.02	A
Thorium-230	43.11	44.0	A		-2.0	30.8 - 57.2	4.24	A
Thorium-232	39.59	42.6	A		-7.1	29.8 - 55.4	3.90	A
Uranium-234	51.99	50.0	A		4.0	35.0 - 65.0	3.5	A
Uranium-238	156.88	165	A		-4.9	116 - 215	8.5	A
Zinc-65	473	415	A		14.0	291 - 540	67	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.29	0.26	A	(17)		Sensitivity Evaluation	1.02	
Cesium-134	NR	417		(6)		292 - 542		
Cesium-137	1753.33	1650	A		6.3	1155 - 2145	25.32	N
Cobalt-57	355	330	A		7.6	231 - 429	2.74	N
Cobalt-60	696	700	A		-0.6	490 - 910	13.23	N
Iron-55	NR	780				546 - 1014		
Manganese-54	123.7	113	A		9.5	79 - 147	2.17	N
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.5	17.8	A		3.9	12.5 - 23.1	2.26	A
Plutonium-239/240	50.4	50.0	A		0.8	35.0 - 65.0	4.56	A
Potassium-40	586	525	A		11.6	368 - 683	14.9	A
Strontium-90	404.89	487	A		-16.9	341 - 633	27.75	A
Technetium-99	268	171	N		56.7	120 - 222	17.74	A
Thorium-228	41.6	43.3	A		-3.9	30.3 - 56.3	7.05	W
Thorium-230	41.0	44.0	A		-6.8	30.8 - 57.2	7.10	W
Thorium-232	40.9	42.6	A		-4.0	29.8 - 55.4	6.95	W
Uranium-234	50.9	50.0	A		1.8	35.0 - 65.0	3.98	A
Uranium-238	153	165	A		-7.3	116 - 215	9.30	A
Zinc-65	464	415	A		11.8	291 - 540	8.9	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(CDHS01) California Department of Public Health

Drinking Water & Radiation Lab.

Richmond, CA 94804-6403

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.105	0.26	A	(17)		Sensitivity Evaluation	0.466	
Cesium-134	498	417	A		19.4	292 - 542	12.2	A
Cesium-137	1918	1650	A		16.2	1155 - 2145	44.7	A
Cobalt-57	383	330	A		16.1	231 - 429	6.68	N
Cobalt-60	783	700	A		11.9	490 - 910	10.7	N
Iron-55	698	780	A		-10.5	546 - 1014	38.2	A
Manganese-54	132	113	A		16.8	79 - 147	2.87	A
Nickel-63	1442	1450	A		-0.6	1015 - 1885	39.8	A
Plutonium-238	17.7	17.8	A		-0.6	12.5 - 23.1	0.870	A
Plutonium-239/240	48.9	50.0	A		-2.2	35.0 - 65.0	1.57	A
Potassium-40	630	525	A		20.0	368 - 683	17.3	A
Strontium-90	404	487	A		-17.0	341 - 633	30.2	A
Technetium-99	141	171	A		-17.5	120 - 222	15.6	A
Thorium-228	44.2	43.3	A		2.1	30.3 - 56.3	7.11	W
Thorium-230	46.1	44.0	A		4.8	30.8 - 57.2	2.25	A
Thorium-232	43.6	42.6	A		2.3	29.8 - 55.4	2.14	A
Uranium-234	40.5	50.0	A		-19.0	35.0 - 65.0	14.1	N
Uranium-238	143	165	A		-13.3	116 - 215	11.0	A
Zinc-65	432	415	A		4.1	291 - 540	8.11	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	3.99E+02	417	A		-4.3	292 - 542	1.05E+01	A
Cesium-137	1.61E+03	1650	A		-2.4	1155 - 2145	7.03E+01	A
Cobalt-57	3.22E+02	330	A		-2.4	231 - 429	1.09E+01	A
Cobalt-60	6.71E+02	700	A		-4.1	490 - 910	1.92E+01	A
Iron-55	NR	780				546 - 1014		
Manganese-54	1.12E+02	113	A		-0.9	79 - 147	6.64E+00	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	2.09E+01	17.8	A		17.4	12.5 - 23.1	1.64E+00	A
Plutonium-239/240	5.06E+01	50.0	A		1.2	35.0 - 65.0	2.80E+00	A
Potassium-40	4.76E+02	525	A		-9.3	368 - 683	4.08E+01	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	3.84E+02	415	A		-7.5	291 - 540	2.01E+01	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	7.02E-01	0.26	A	(17)		Sensitivity Evaluation	6.27E-01	
Cesium-134	NR	417	N	(25)		292 - 542		
Cesium-137	2.41E+03	1650	N		46.1	1155 - 2145	3.54E+01	N
Cobalt-57	NR	330	N	(25)		231 - 429		
Cobalt-60	9.55E+02	700	N		36.4	490 - 910	1.46E+01	N
Iron-55	NR	780				546 - 1014		
Manganese-54	NR	113	N	(25)		79 - 147		
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	2.54E+01	17.8	N		42.7	12.5 - 23.1	4.29E+00	W
Plutonium-239/240	6.65E+01	50.0	N		33.0	35.0 - 65.0	9.44E+00	A
Potassium-40	7.50E+02	525	N		42.9	368 - 683	1.75E+01	A
Strontium-90	3.51E+02	487	W		-27.9	341 - 633	2.02E+00	N
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	6.98E+01	50.0	N		39.6	35.0 - 65.0	2.67E+01	N
Uranium-238	2.30E+02	165	N		39.4	116 - 215	3.82E+01	W
Zinc-65	NR	415	N	(25)		291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	407	417	A		-2.4	292 - 542	8.98	A
Cesium-137	1600	1650	A		-3.0	1155 - 2145	95.8	A
Cobalt-57	306	330	A		-7.3	231 - 429	21.8	A
Cobalt-60	699	700	A		-0.1	490 - 910	18.0	A
Iron-55	NR	780				546 - 1014		
Manganese-54	110	113	A		-2.7	79 - 147	6.73	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	477	525	A		-9.1	368 - 683	29.0	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	407	415	A		-1.9	291 - 540	17.7	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	405	417	A		-2.9	292 - 542	20.83	A
Cesium-137	1622	1650	A		-1.7	1155 - 2145	83.40	A
Cobalt-57	324.4	330	A		-1.7	231 - 429	16.76	A
Cobalt-60	683.7	700	A		-2.3	490 - 910	35.13	A
Iron-55	784.5	780	A		0.6	546 - 1014	23.7	A
Manganese-54	110.2	113	A		-2.5	79 - 147	5.71	A
Nickel-63	1357	1450	A		-6.4	1015 - 1885	30.53	A
Plutonium-238	17.18	17.8	A		-3.5	12.5 - 23.1	1.023	A
Plutonium-239/240	46.975	50.0	A		-6.1	35.0 - 65.0	2.466	A
Potassium-40	489.5	525	A		-6.8	368 - 683	26.13	A
Strontium-90	375.7	487	W		-22.9	341 - 633	23.53	A
Technetium-99	152.7	171	A		-10.7	120 - 222	5.485	A
Thorium-228	45.00	43.3	A		3.9	30.3 - 56.3	3.226	A
Thorium-230	38.50	44.0	A		-12.5	30.8 - 57.2	2.806	A
Thorium-232	40.88	42.6	A		-4.0	29.8 - 55.4	2.971	A
Uranium-234	48.38	50.0	A		-3.2	35.0 - 65.0	2.499	A
Uranium-238	154.1	165	A		-6.6	116 - 215	7.385	A
Zinc-65	406.7	415	A		-2.0	291 - 540	20.96	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	0.16	0.182	A		-12.1	0.127 - 0.237	0.008678144	A
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	NR	780				546 - 1014		
Manganese-54	NR	113				79 - 147		
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	0.0410	0.0407	A		0.7	0.0285 - 0.0529	0.0016	A
Uranium-238	13.1	13.2	A		-0.8	9.2 - 17.2	0.4	A
Uranium-Total	13.1	13.3	A		-1.5	9.3 - 17.3	0.4	A
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.11	0.26	A	(17)		Sensitivity Evaluation	0.57	
Cesium-134	500	417	A		19.9	292 - 542	4	N
Cesium-137	1780	1650	A		7.9	1155 - 2145	20	N
Cobalt-57	350	330	A		6.1	231 - 429	3	N
Cobalt-60	744	700	A		6.3	490 - 910	4	N
Iron-55	NR	780				546 - 1014		
Manganese-54	118	113	A		4.4	79 - 147	10	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.9	17.8	A		6.2	12.5 - 23.1	1.9	A
Plutonium-239/240	40.3	50.0	A		-19.4	35.0 - 65.0	2.8	A
Potassium-40	518	525	A		-1.3	368 - 683	28	A
Strontium-90	455	487	A		-6.6	341 - 633	13	A
Technetium-99	NR	171				120 - 222		
Thorium-228	42.2	43.3	A		-2.5	30.3 - 56.3	4.5	A
Thorium-230	48.1	44.0	A		9.3	30.8 - 57.2	4.9	A
Thorium-232	41.1	42.6	A		-3.5	29.8 - 55.4	3.8	A
Uranium-234	47.7	50.0	A		-4.6	35.0 - 65.0	4.7	A
Uranium-238	168	165	A		1.8	116 - 215	11	A
Zinc-65	429	415	A		3.4	291 - 540	6	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	22.6	26.5	A		-14.7	18.6 - 34.5	0.72	A
Barium	NR	218				153 - 283		
Beryllium	12.3	12.9	A		-4.7	9.0 - 16.8	0.4	A
Cadmium	3.16	3.14	A		0.6	2.20 - 4.08	0.05	N
Chromium	46.3	45.6	A		1.5	31.9 - 59.3	.98	A
Cobalt	26.1	27.3	A		-4.4	19.1 - 35.5	0.6	A
Copper	40.7	50.7	A		-19.7	35.5 - 65.9	1.5	A
Lead	24.4	22.0	A		10.9	15.4 - 28.6	0.2	N
Mercury	NR	0.182				0.127 - 0.237		
Nickel	38.4	42.8	A		-10.3	30.0 - 55.6	1.8	A
Selenium	NR	5.65				3.96 - 7.35		
Silver	3.9	3.37	A		15.7	2.36 - 4.38	0.12	A
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	2.80	2.02	N		38.6	1.41 - 2.63	0.03	N
Uranium-235	0.0342	0.0407	A		-16.0	0.0285 - 0.0529	0.005	A
Uranium-238	12.31	13.2	A		-6.7	9.2 - 17.2	0.1	N
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	47.1	44.7	A		5.4	31.3 - 58.1	0.05	N
Zinc	112.5	110	A		2.3	77 - 143	3.7	A

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.23	0.26	A	(17)		Sensitivity Evaluation	1.23	
Cesium-134	445	417	A		6.7	292 - 542	22	A
Cesium-137	1764	1650	A		6.9	1155 - 2145	106	A
Cobalt-57	373	330	A		13.0	231 - 429	19	A
Cobalt-60	784	700	A		12.0	490 - 910	39	A
Iron-55	NR	780				546 - 1014		
Manganese-54	122	113	A		8.0	79 - 147	9	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.87	17.8	A		6.0	12.5 - 23.1	1.61	A
Plutonium-239/240	46.84	50.0	A		-6.3	35.0 - 65.0	1.56	A
Potassium-40	515	525	A		-1.9	368 - 683	32	A
Strontium-90	503	487	A		3.3	341 - 633	19	A
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	52.59	50.0	A		5.2	35.0 - 65.0	1.72	A
Uranium-238	165.34	165	A		0.2	116 - 215	4.25	A
Zinc-65	465	415	A		12.0	291 - 540	29	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	13.4	6.47	N		107.1	4.53 - 8.41	0.67	A
Arsenic	29.7	26.5	A		12.1	18.6 - 34.5	2.7	A
Barium	211	218	A		-3.2	153 - 283	13.05	A
Beryllium	13.2	12.9	A		2.3	9.0 - 16.8	0.431	A
Cadmium	3.02	3.14	A		-3.8	2.20 - 4.08	0.1341	A
Chromium	45.66	45.6	A		0.1	31.9 - 59.3	2.90	A
Cobalt	26.5	27.3	A		-2.9	19.1 - 35.5	3.0	A
Copper	57.4	50.7	A		13.2	35.5 - 65.9	3.34	A
Lead	27.4	22.0	W		24.5	15.4 - 28.6	3.56	A
Mercury	0.15	0.182	A		-17.6	0.127 - 0.237	0.0075	A
Nickel	42.6	42.8	A		-0.5	30.0 - 55.6	1.43	A
Selenium	3.11	5.65	N		-45.0	3.96 - 7.35	0.34	A
Silver	3.20	3.37	A		-5.0	2.36 - 4.38	0.1799	A
Technetium-99	0.00024	2.73E-04	A		-12.1	1.91E-4 - 3.55E-4	0.000012	A
Thallium	1.87	2.02	A		-7.4	1.41 - 2.63	0.09	A
Uranium-235	0.0421	0.0407	A		3.4	0.0285 - 0.0529	0.00211	A
Uranium-238	14.3	13.2	A		8.3	9.2 - 17.2	0.714	A
Uranium-Total	14.3	13.3	A		7.5	9.3 - 17.3	0.716	A
Vanadium	42.6	44.7	A		-4.7	31.3 - 58.1	2.57	A
Zinc	113.6	110	A		3.3	77 - 143	7.16	A

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	NR	780				546 - 1014		
Manganese-54	NR	113				79 - 147		
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171	N	(28)		120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.994	0.26	A	(17)		Sensitivity Evaluation	2.52	
Cesium-134	414.34	417	A		-0.6	292 - 542	6.61	N
Cesium-137	1543.33	1650	A		-6.5	1155 - 2145	88.1	A
Cobalt-57	275	330	A		-16.7	231 - 429	6.32	A
Cobalt-60	633	700	A		-9.6	490 - 910	13.33	A
Iron-55	NR	780				546 - 1014		
Manganese-54	104	113	A		-8.0	79 - 147	2.4	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	33.78	17.8	N		89.8	12.5 - 23.1	5.1	W
Plutonium-239/240	4.08	50.0	N		-91.8	35.0 - 65.0	1.8	N
Potassium-40	483	525	A		-8.0	368 - 683	18.6	A
Strontium-90	501.24	487	A		2.9	341 - 633	31.72	A
Technetium-99	NR	171				120 - 222		
Thorium-228	56.01	43.3	W		29.4	30.3 - 56.3	19.1	N
Thorium-230	45.83	44.0	A		4.2	30.8 - 57.2	15.3	N
Thorium-232	46.49	42.6	A		9.1	29.8 - 55.4	15.5	N
Uranium-234	43.83	50.0	A		-12.3	35.0 - 65.0	5.1	A
Uranium-238	155.67	165	A		-5.7	116 - 215	16.2	A
Zinc-65	383	415	A		-7.7	291 - 540	9.99	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
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(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.48	0.26	A	(17)		Sensitivity Evaluation	2.53	
Cesium-134	437.14	417	A		4.8	292 - 542	5.22	N
Cesium-137	1629.07	1650	A		-1.3	1155 - 2145	15.27	N
Cobalt-57	304.48	330	A		-7.7	231 - 429	4.62	N
Cobalt-60	685.96	700	A		-2.0	490 - 910	9.24	N
Iron-55	NR	780				546 - 1014		
Manganese-54	113.56	113	A		0.5	79 - 147	2.18	N
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	537.27	525	A		2.3	368 - 683	12.46	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	150.79	165	A		-8.6	116 - 215	4.2	A
Zinc-65	447.56	415	A		7.8	291 - 540	8.81	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	5.21	6.47	A		-19.5	4.53 - 8.41	0.364	A
Arsenic	30.1	26.5	A		13.6	18.6 - 34.5	2.01	A
Barium	223	218	A		2.3	153 - 283	14.9	A
Beryllium	14.2	12.9	A		10.1	9.0 - 16.8	0.949	A
Cadmium	3.20	3.14	A		1.9	2.20 - 4.08	0.215	A
Chromium	48.7	45.6	A		6.8	31.9 - 59.3	3.24	A
Cobalt	27.6	27.3	A		1.1	19.1 - 35.5	1.84	A
Copper	56.0	50.7	A		10.5	35.5 - 65.9	3.73	A
Lead	22.5	22.0	A		2.3	15.4 - 28.6	1.51	A
Mercury	0.160	0.182	A		-12.1	0.127 - 0.237	0.0109	A
Nickel	43.9	42.8	A		2.6	30.0 - 55.6	2.92	A
Selenium	5.90	5.65	A		4.4	3.96 - 7.35	0.409	A
Silver	4.06	3.37	W		20.5	2.36 - 4.38	0.273	A
Technetium-99	0.000307	2.73E-04	A		12.5	1.91E-4 - 3.55E-4	3.82E-5	A
Thallium	2.11	2.02	A		4.5	1.41 - 2.63	0.148	A
Uranium-235	0.0366	0.0407	A		-10.1	0.0285 - 0.0529	0.00253	A
Uranium-238	11.7	13.2	A		-11.4	9.2 - 17.2	0.688	A
Uranium-Total	11.73	13.3	A		-11.8	9.3 - 17.3	0.688	A
Vanadium	46.7	44.7	A		4.5	31.3 - 58.1	3.12	A
Zinc	117	110	A		6.4	77 - 143	7.80	A

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	2.42	0.26	A	(17)		Sensitivity Evaluation	1.20	
Cesium-134	375	417	A		-10.1	292 - 542	20.8	A
Cesium-137	1790	1650	A		8.5	1155 - 2145	85.9	A
Cobalt-57	399	330	W		20.9	231 - 429	15.5	A
Cobalt-60	699	700	A		-0.1	490 - 910	36.4	A
Iron-55	873	780	A		11.9	546 - 1014	152	W
Manganese-54	125	113	A		10.6	79 - 147	7.29	A
Nickel-63	1130	1450	W		-22.1	1015 - 1885	121	A
Plutonium-238	17.0	17.8	A		-4.5	12.5 - 23.1	1.14	A
Plutonium-239/240	49.6	50.0	A		-0.8	35.0 - 65.0	2.37	A
Potassium-40	562	525	A		7.0	368 - 683	30.8	A
Strontium-90	388	487	W		-20.3	341 - 633	36.4	A
Technetium-99	204	171	A		19.3	120 - 222	19.7	A
Thorium-228	45.4	43.3	A		4.9	30.3 - 56.3	4.21	A
Thorium-230	43.3	44.0	A		-1.6	30.8 - 57.2	4.12	A
Thorium-232	41.9	42.6	A		-1.6	29.8 - 55.4	3.86	A
Uranium-234	46.1	50.0	A		-7.8	35.0 - 65.0	3.64	A
Uranium-238	150	165	A		-9.1	116 - 215	9.01	A
Zinc-65	476	415	A		14.7	291 - 540	23.0	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	484.27	417	A		16.1	292 - 542	27.87	A
Cesium-137	1955.62	1650	A		18.5	1155 - 2145	125.77	A
Cobalt-57	376.35	330	A		14.0	231 - 429	27.93	A
Cobalt-60	776.98	700	A		11.0	490 - 910	48.76	A
Iron-55	NR	780				546 - 1014		
Manganese-54	136.03	113	W		20.4	79 - 147	9.47	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	662.22	525	W		26.1	368 - 683	47.23	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	518.92	415	W		25.0	291 - 540	34.1	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(HECR01) SC Dept. Health and Environmental Control Radiological Laboratory
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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	415.0	417	A		-0.5	292 - 542	16.84	A
Cesium-137	1689	1650	A		2.4	1155 - 2145	165.7	A
Cobalt-57	329.1	330	A		-0.3	231 - 429	18.74	A
Cobalt-60	706.8	700	A		1.0	490 - 910	41.18	A
Iron-55	NR	780				546 - 1014		
Manganese-54	119.6	113	A		5.8	79 - 147	12.39	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	563.2	525	A		7.3	368 - 683	49.21	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	455.4	415	A		9.7	291 - 540	33.53	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.001	0.26	N	(2)		Sensitivity Evaluation	0.001	
Cesium-134	391.2	417	A		-6.2	292 - 542	23.6	A
Cesium-137	1594.5	1650	A		-3.4	1155 - 2145	98.0	A
Cobalt-57	303.8	330	A		-7.9	231 - 429	18.7	A
Cobalt-60	688.1	700	A		-1.7	490 - 910	41.9	A
Iron-55	9	780	N		-98.8	546 - 1014	9	N
Manganese-54	109.3	113	A		-3.3	79 - 147	6.8	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	0.021	17.8	N		-99.9	12.5 - 23.1	0.002	A
Plutonium-239/240	0.045	50.0	N		-99.9	35.0 - 65.0	0.004	A
Potassium-40	502	525	A		-4.4	368 - 683	32	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	48.2	50.0	A		-3.6	35.0 - 65.0	2.7	A
Uranium-238	166	165	A		0.6	116 - 215	9	A
Zinc-65	411.4	415	A		-0.9	291 - 540	25.5	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(HPAL01) Los Alamos National Laboratory
Josh Chandler, z338219 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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	357.8	417	A		-14.2	292 - 542	12.11	A
Cesium-137	1613.33	1650	A		-2.2	1155 - 2145	53.58	A
Cobalt-57	315.8	330	A		-4.3	231 - 429	18.26	A
Cobalt-60	628.67	700	A		-10.2	490 - 910	19.73	A
Iron-55	NR	780				546 - 1014		
Manganese-54	114.18	113	A		1.0	79 - 147	4.65	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	525.75	525	A		0.1	368 - 683	30.25	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	45.41	42.6	A		6.6	29.8 - 55.4	7.59	W
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	164.63	165	A		-0.2	116 - 215	13.22	A
Zinc-65	420.93	415	A		1.4	291 - 540	15.01	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(IAEA20) IAEA Marine Environment Laboratories, Radiometrics Laboratory
4a, Quai Antoine 1er
Monaco, Monaco 98000

Inorganic								Units: (mg/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	394	417	A		-5.5	292 - 542	20	A
Cesium-137	1630	1650	A		-1.2	1155 - 2145	80	A
Cobalt-57	326	330	A		-1.2	231 - 429	15	A
Cobalt-60	683	700	A		-2.4	490 - 910	28	A
Iron-55	NR	780				546 - 1014		
Manganese-54	111.4	113	A		-1.4	79 - 147	5.5	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	472	525	A		-10.1	368 - 683	27	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	410	415	A		-1.2	291 - 540	21	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	0.0416	0.0407	A		2.2	0.0285 - 0.0529	0.0020	A
Uranium-238	13.73	13.2	A		4.0	9.2 - 17.2	0.61	A
Uranium-Total	13.78	13.3	A		3.6	9.3 - 17.3	0.61	A
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.330	0.26	A	(17)		Sensitivity Evaluation	0.962	
Cesium-134	420	417	A		0.7	292 - 542	12	A
Cesium-137	1697	1650	A		2.8	1155 - 2145	45	A
Cobalt-57	337	330	A		2.1	231 - 429	10	A
Cobalt-60	718	700	A		2.6	490 - 910	22	A
Iron-55	NR	780				546 - 1014		
Manganese-54	116	113	A		2.7	79 - 147	4	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.5	17.8	A		3.9	12.5 - 23.1	1.1	A
Plutonium-239/240	47.7	50.0	A		-4.6	35.0 - 65.0	1.9	A
Potassium-40	502	525	A		-4.4	368 - 683	20	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	50.4	50.0	A		0.8	35.0 - 65.0	2.6	A
Uranium-238	162	165	A		-1.8	116 - 215	5	A
Zinc-65	442	415	A		6.5	291 - 540	12	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.6774	0.26	A	(17)		Sensitivity Evaluation	0.3120	
Cesium-134	415.0	417	A		-0.5	292 - 542	3.5	N
Cesium-137	1730.0	1650	A		4.8	1155 - 2145	23.8	N
Cobalt-57	326.0	330	A		-1.2	231 - 429	4.0	N
Cobalt-60	724.0	700	A		3.4	490 - 910	7.0	N
Iron-55	NR	780				546 - 1014		
Manganese-54	117.0	113	A		3.5	79 - 147	2.6	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.37	17.8	A		3.2	12.5 - 23.1	1.338	A
Plutonium-239/240	50.23	50.0	A		0.5	35.0 - 65.0	2.545	A
Potassium-40	521.0	525	A		-0.8	368 - 683	15.4	A
Strontium-90	470.3	487	A		-3.4	341 - 633	26.4	A
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3	N	(28)		30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6	N	(28)		29.8 - 55.4		
Uranium-234	51.27	50.0	A		2.5	35.0 - 65.0	2.520	A
Uranium-238	158.3	165	A		-4.1	116 - 215	5.816	A
Zinc-65	441.0	415	A		6.3	291 - 540	7.2	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(ISUE01) ISU Environmental Monitoring Laboratory
785 5th 8th Ave Rm B107
Pocatello, Idaho 83209

Inorganic								Units: (mg/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	369.1	417	A		-11.5	292 - 542	11.63	A
Cesium-137	1767.9	1650	A		7.1	1155 - 2145	106.8	A
Cobalt-57	270.0	330	A		-18.2	231 - 429	20.0	A
Cobalt-60	697.1	700	A		-0.4	490 - 910	20.7	A
Iron-55	NR	780				546 - 1014		
Manganese-54	129.0	113	A		14.2	79 - 147	8.2	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	512.8	525	A		-2.3	368 - 683	35.5	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	417.3	415	A		0.6	291 - 540	21.3	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.158	0.26	A			Sensitivity Evaluation	0.35733	
Cesium-134	400.5	417	A		-4.0	292 - 542	31.2225	A
Cesium-137	1775	1650	A		7.6	1155 - 2145	27.3505	N
Cobalt-57	363.5	330	A		10.2	231 - 429	7.29285	A
Cobalt-60	735	700	A		5.0	490 - 910	10.013	N
Iron-55	NR	780				546 - 1014		
Manganese-54	124	113	A		9.7	79 - 147	1.78385	N
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	548	525	A		4.4	368 - 683	11.7808	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	735	415	N		77.1	291 - 540	6.2421	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	464.40	417	A		11.4	292 - 542	7.87	N
Cesium-137	2036.00	1650	W		23.4	1155 - 2145	32.10	N
Cobalt-57	437.80	330	N		32.7	231 - 429	9.34	A
Cobalt-60	830.60	700	A		18.7	490 - 910	13.19	N
Iron-55	NR	780				546 - 1014		
Manganese-54	141.20	113	W		25.0	79 - 147	4.50	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	579.6	525	A		10.4	368 - 683	22.7	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	525.60	415	W		26.7	291 - 540	11.35	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	0.0341	0.0407	A		-16.2	0.0285 - 0.0529	0.00351	A
Uranium-238	11.607	13.2	A		-12.1	9.2 - 17.2	1.196	A
Uranium-Total	11.641	13.3	A		-12.5	9.3 - 17.3	1.199	A
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.2127	0.26	A	(17)		Sensitivity Evaluation	0.1414	
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	NR	780				546 - 1014		
Manganese-54	NR	113				79 - 147		
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	17.68	17.8	A		-0.7	12.5 - 23.1	1.118	A
Plutonium-239/240	47.75	50.0	A		-4.5	35.0 - 65.0	2.458	A
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	159	171	A		-7.0	120 - 222	4.64	A
Thorium-228	42.55	43.3	A		-1.7	30.3 - 56.3	1.565	A
Thorium-230	40.59	44.0	A		-7.8	30.8 - 57.2	1.504	A
Thorium-232	41.06	42.6	A		-3.6	29.8 - 55.4	1.512	A
Uranium-234	42.71	50.0	A		-14.6	35.0 - 65.0	2.937	A
Uranium-238	143.5	165	A		-13.0	116 - 215	8.175	A
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	7.03	6.47	A		8.7	4.53 - 8.41	0.70	A
Arsenic	27.8	26.5	A		4.9	18.6 - 34.5	2.8	A
Barium	229	218	A		5.0	153 - 283	23	A
Beryllium	13.2	12.9	A		2.3	9.0 - 16.8	1.3	A
Cadmium	3.33	3.14	A		6.1	2.20 - 4.08	0.33	A
Chromium	48.6	45.6	A		6.6	31.9 - 59.3	4.9	A
Cobalt	24.0	27.3	A		-12.1	19.1 - 35.5	2.4	A
Copper	46.5	50.7	A		-8.3	35.5 - 65.9	4.7	A
Lead	22.0	22.0	A		0.0	15.4 - 28.6	2.2	A
Mercury	0.274	0.182	N		50.5	0.127 - 0.237	0.055	W
Nickel	45.4	42.8	A		6.1	30.0 - 55.6	4.5	A
Selenium	6.04	5.65	A		6.9	3.96 - 7.35	0.60	A
Silver	3.20	3.37	A		-5.0	2.36 - 4.38	0.32	A
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	1.98	2.02	A		-2.0	1.41 - 2.63	0.20	A
Uranium-235	0.043	0.0407	A		5.7	0.0285 - 0.0529	0.004	A
Uranium-238	14.3	13.2	A		8.3	9.2 - 17.2	1.4	A
Uranium-Total	14.3	13.3	A		7.5	9.3 - 17.3	1.4	A
Vanadium	47.8	44.7	A		6.9	31.3 - 58.1	4.8	A
Zinc	123	110	A		11.8	77 - 143	12	A

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	398.1	417	A		-4.5	292 - 542	3.8	N
Cesium-137	1638	1650	A		-0.7	1155 - 2145	23	N
Cobalt-57	331.3	330	A		0.4	231 - 429	4.1	N
Cobalt-60	705.7	700	A		0.8	490 - 910	8.3	N
Iron-55	NR	780				546 - 1014		
Manganese-54	106.3	113	A		-5.9	79 - 147	2.5	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	483	525	A		-8.0	368 - 683	14	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	386.5	415	A		-6.9	291 - 540	7.2	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.389	0.26	A	(17)		Sensitivity Evaluation	0.248	
Cesium-134	414	417	A		-0.7	292 - 542	22.6	A
Cesium-137	1660	1650	A		0.6	1155 - 2145	90.4	A
Cobalt-57	317	330	A		-3.9	231 - 429	17.4	A
Cobalt-60	683	700	A		-2.4	490 - 910	36.8	A
Iron-55	NR	780				546 - 1014		
Manganese-54	113	113	A		0.0	79 - 147	6.27	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.7	17.8	A		5.1	12.5 - 23.1	1.72	A
Plutonium-239/240	53.0	50.0	A		6.0	35.0 - 65.0	3.48	A
Potassium-40	536	525	A		2.1	368 - 683	30.1	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	37.7	43.3	A		-12.9	30.3 - 56.3	3.66	A
Thorium-230	48.9	44.0	A		11.1	30.8 - 57.2	4.52	A
Thorium-232	38.9	42.6	A		-8.7	29.8 - 55.4	3.73	A
Uranium-234	49.9	50.0	A		-0.2	35.0 - 65.0	3.82	A
Uranium-238	158	165	A		-4.2	116 - 215	9.69	A
Zinc-65	450	415	A		8.4	291 - 540	24.6	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	5.51	6.47	A		-14.8	4.53 - 8.41	0.231	A
Arsenic	22.5	26.5	A		-15.1	18.6 - 34.5	1.07	A
Barium	224	218	A		2.8	153 - 283	2.79	N
Beryllium	10.9	12.9	A		-15.5	9.0 - 16.8	0.24	A
Cadmium	2.88	3.14	A		-8.3	2.20 - 4.08	0.06	A
Chromium	46.9	45.6	A		2.9	31.9 - 59.3	0.58	N
Cobalt	25.9	27.3	A		-5.1	19.1 - 35.5	0.32	N
Copper	51.1	50.7	A		0.8	35.5 - 65.9	0.63	N
Lead	21.0	22.0	A		-4.5	15.4 - 28.6	0.47	A
Mercury	0.163	0.182	A		-10.4	0.127 - 0.237	0.012	A
Nickel	42.9	42.8	A		0.2	30.0 - 55.6	0.52	N
Selenium	5.08	5.65	A		-10.1	3.96 - 7.35	0.247	A
Silver	2.88	3.37	A		-14.5	2.36 - 4.38	0.06	A
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	1.97	2.02	A		-2.5	1.41 - 2.63	0.04	A
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	56.5	44.7	W		26.4	31.3 - 58.1	0.71	N
Zinc	105	110	A		-4.5	77 - 143	2.38	A

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.71	0.26	A	(17)		Sensitivity Evaluation	3.11	
Cesium-134	394	417	A		-5.5	292 - 542	17.5	A
Cesium-137	1738	1650	A		5.3	1155 - 2145	72.9	A
Cobalt-57	346	330	A		4.8	231 - 429	13.5	A
Cobalt-60	734	700	A		4.9	490 - 910	30.8	A
Iron-55	998	780	W		27.9	546 - 1014	125	A
Manganese-54	120	113	A		6.2	79 - 147	5.5	A
Nickel-63	1563	1450	A		7.8	1015 - 1885	163	A
Plutonium-238	18.6	17.8	A		4.5	12.5 - 23.1	6.18	N
Plutonium-239/240	50.65	50.0	A		1.3	35.0 - 65.0	4.65	A
Potassium-40	534	525	A		1.7	368 - 683	24.9	A
Strontium-90	466	487	A		-4.3	341 - 633	43.4	A
Technetium-99	160	171	A		-6.4	120 - 222	32.8	W
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	43.4	50.0	A		-13.2	35.0 - 65.0	4.3	A
Uranium-238	152	165	A		-7.9	116 - 215	8.99	A
Zinc-65	467	415	A		12.5	291 - 540	17.5	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	426	417	A		2.2	292 - 542	25.7	A
Cesium-137	1770	1650	A		7.3	1155 - 2145	106	A
Cobalt-57	344	330	A		4.2	231 - 429	34.5	A
Cobalt-60	718	700	A		2.6	490 - 910	28.8	A
Iron-55	NR	780				546 - 1014		
Manganese-54	118	113	A		4.4	79 - 147	7.16	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	512.5	525	A		-2.4	368 - 683	11.1	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	442	415	A		6.5	291 - 540	17.8	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(NOCS99) National Oceanography Centre, Southampton
GAU-Radioanalytical
Southampton, Hampshire SO14 3ZH

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	5.6	7.78	W	(5)	-28.0	5.45 - 10.11	0.7	A
Arsenic	26	26.7	A	(5)	-2.6	18.7 - 34.7	3	A
Barium	740	676	A	(5)	9.5	473 - 879	70	A
Beryllium	14	13.6	A	(5)	2.9	9.5 - 17.7	2	A
Cadmium	3.0	3.16	A	(5)	-5.1	2.21 - 4.11	0.3	A
Chromium	79	77	A	(5)	2.6	53.9 - 100.1	7	A
Cobalt	28	29.8	A	(5)	-6.0	20.9 - 38.7	3	A
Copper	60	56.8	A	(5)	5.6	39.8 - 73.8	5	A
Lead	25	27.4	A	(5)	-8.8	19.2 - 35.6	3	A
Mercury	0.18	0.182	A		-1.1	0.127 - 0.237	0.01	A
Nickel	49	49.8	A	(5)	-1.6	34.9 - 64.7	5	A
Selenium	30	5.65		(4)	413.7	3.96 - 7.35	300	N
Silver	2.6	3.55	W	(5)	-26.8	2.49 - 4.62	0.3	A
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	2	2.76	W	(5)	-27.5	1.93 - 3.59	1	N
Uranium-235	0.036	0.0407	A		-11.5	0.0285 - 0.0529	0.004	A
Uranium-238	12	13.2	A		-9.1	9.2 - 17.2	1	A
Uranium-Total	12	13.3	A		-9.8	9.3 - 17.3	1	A
Vanadium	90	82	A	(5)	9.8	57.4 - 106.6	10	A
Zinc	140	135	A	(5)	3.7	95 - 176	20	A

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1	0.26	A	(17)		Sensitivity Evaluation	10	
Cesium-134	450	417	A		7.9	292 - 542	20	A
Cesium-137	1690	1650	A		2.4	1155 - 2145	50	A
Cobalt-57	340	330	A		3.0	231 - 429	10	A
Cobalt-60	730	700	A		4.3	490 - 910	20	A
Iron-55	730	780	A		-6.4	546 - 1014	40	A
Manganese-54	112	113	A		-0.9	79 - 147	3	A
Nickel-63	1300	1450	A		-10.3	1015 - 1885	50	A
Plutonium-238	9.8	17.8	N		-44.9	12.5 - 23.1	0.7	A
Plutonium-239/240	9.7	50.0	N		-80.6	35.0 - 65.0	0.7	A
Potassium-40	430	525	A		-18.1	368 - 683	20	A
Strontium-90	440	487	A		-9.7	341 - 633	30	A
Technetium-99	160	171	A		-6.4	120 - 222	20	A
Thorium-228	56	43.3	W		29.3	30.3 - 56.3	3	A
Thorium-230	50	44.0	A		13.6	30.8 - 57.2	3	A
Thorium-232	47	42.6	A		10.3	29.8 - 55.4	2	A
Uranium-234	44	50.0	A		-12.0	35.0 - 65.0	3	A
Uranium-238	140	165	A		-15.2	116 - 215	5	A
Zinc-65	410	415	A		-1.2	291 - 540	10	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	2.5	0.26	A	(17)		Sensitivity Evaluation	1.2	
Cesium-134	415	417	A		-0.5	292 - 542	17	A
Cesium-137	1654	1650	A		0.2	1155 - 2145	67	A
Cobalt-57	343	330	A		3.9	231 - 429	16	A
Cobalt-60	707	700	A		1.0	490 - 910	31	A
Iron-55	NR	780				546 - 1014		
Manganese-54	113	113	A		0.0	79 - 147	5	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	19.0	17.8	A		6.7	12.5 - 23.1	1.6	A
Plutonium-239/240	40.1	50.0	A		-19.8	35.0 - 65.0	2.5	A
Potassium-40	505	525	A		-3.8	368 - 683	27	A
Strontium-90	499	487	A		2.5	341 - 633	29	A
Technetium-99	NR	171				120 - 222		
Thorium-228	37.7	43.3	A		-12.9	30.3 - 56.3	3.1	A
Thorium-230	42.6	44.0	A		-3.2	30.8 - 57.2	3.3	A
Thorium-232	32.5	42.6	W		-23.7	29.8 - 55.4	3.9	A
Uranium-234	48.5	50.0	A		-3.0	35.0 - 65.0	3.1	A
Uranium-238	136.3	165	A		-17.4	116 - 215	5.9	A
Zinc-65	412	415	A		-0.7	291 - 540	18	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	431	417	A		3.4	292 - 542	12.4	A
Cesium-137	1690	1650	A		2.4	1155 - 2145	102	A
Cobalt-57	368	330	A		11.5	231 - 429	25.4	A
Cobalt-60	704	700	A		0.6	490 - 910	20	A
Iron-55	NR	780				546 - 1014		
Manganese-54	114	113	A		0.9	79 - 147	7.04	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	480	525	A		-8.6	368 - 683	21.7	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	422	415	A		1.7	291 - 540	18.5	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	4.34	6.47	N		-32.9	4.53 - 8.41	3	N
Arsenic	22	26.5	A		-17.0	18.6 - 34.5	1	A
Barium	196	218	A		-10.1	153 - 283	2.5	N
Beryllium	9.78	12.9	W		-24.2	9.0 - 16.8	2.5	W
Cadmium	2.55	3.14	A		-18.8	2.20 - 4.08	1	N
Chromium	43.6	45.6	A		-4.4	31.9 - 59.3	5	A
Cobalt	23.2	27.3	A		-15.0	19.1 - 35.5	1	A
Copper	44	50.7	A		-13.2	35.5 - 65.9	5	A
Lead	18.5	22.0	A		-15.9	15.4 - 28.6	2	A
Mercury	0.169	0.182	A		-7.1	0.127 - 0.237	0.04	W
Nickel	37.6	42.8	A		-12.2	30.0 - 55.6	2.5	A
Selenium	5.2	5.65	A		-8.0	3.96 - 7.35	2.5	N
Silver	2.56	3.37	W		-24.0	2.36 - 4.38	0.5	W
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	1.78	2.02	A		-11.9	1.41 - 2.63	2	N
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	8.88	13.3	N		-33.2	9.3 - 17.3	0.186	A
Vanadium	45.4	44.7	A		1.6	31.3 - 58.1	2.5	A
Zinc	101	110	A		-8.2	77 - 143	25	W

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.653	0.26	A	(17)		Sensitivity Evaluation	0.784	
Cesium-134	405	417	A		-2.9	292 - 542	25.1	A
Cesium-137	1720	1650	A		4.2	1155 - 2145	105	A
Cobalt-57	328	330	A		-0.6	231 - 429	20.2	A
Cobalt-60	711	700	A		1.6	490 - 910	44.8	A
Iron-55	NR	780				546 - 1014		
Manganese-54	118	113	A		4.4	79 - 147	8.91	A
Nickel-63	1400	1450	A		-3.4	1015 - 1885	143	A
Plutonium-238	19.7	17.8	A		10.7	12.5 - 23.1	4.03	W
Plutonium-239/240	1.66	50.0	N		-96.7	35.0 - 65.0	1.43	N
Potassium-40	549	525	A		4.6	368 - 683	47.4	A
Strontium-90	403	487	A		-17.2	341 - 633	13.9	A
Technetium-99	164	171	A		-4.1	120 - 222	25.2	W
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	46.8	50.0	A		-6.4	35.0 - 65.0	8.89	W
Uranium-238	139	165	A		-15.8	116 - 215	15.1	A
Zinc-65	456	415	A		9.9	291 - 540	31.8	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	408	417	A		-2.2	292 - 542	17	A
Cesium-137	1651	1650	A		0.1	1155 - 2145	78	A
Cobalt-57	323	330	A		-2.1	231 - 429	14	A
Cobalt-60	696	700	A		-0.6	490 - 910	26	A
Iron-55	NR	780				546 - 1014		
Manganese-54	113.1	113	A		0.1	79 - 147	4.9	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.32	17.8	A		2.9	12.5 - 23.1	1.44	A
Plutonium-239/240	50.10	50.0	A		0.2	35.0 - 65.0	2.86	A
Potassium-40	482	525	A		-8.2	368 - 683	22	A
Strontium-90	337.38	487	N		-30.7	341 - 633	11.84	A
Technetium-99	NR	171				120 - 222		
Thorium-228	43.46	43.3	A		0.4	30.3 - 56.3	2.78	A
Thorium-230	38.34	44.0	A		-12.9	30.8 - 57.2	2.54	A
Thorium-232	38.08	42.6	A		-10.6	29.8 - 55.4	2.51	A
Uranium-234	52.0	50.0	A		4.0	35.0 - 65.0	2.4	A
Uranium-238	173.1	165	A		4.9	116 - 215	6.4	A
Zinc-65	417	415	A		0.5	291 - 540	18	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.11	6.47	A		-5.6	4.53 - 8.41	0.813	A
Arsenic	24.5	26.5	A		-7.5	18.6 - 34.5	2.49	A
Barium	229	218	A		5.0	153 - 283	18.0	A
Beryllium	13.1	12.9	A		1.6	9.0 - 16.8	1.60	A
Cadmium	3.25	3.14	A		3.5	2.20 - 4.08	0.239	A
Chromium	45.7	45.6	A		0.2	31.9 - 59.3	4.70	A
Cobalt	25.9	27.3	A		-5.1	19.1 - 35.5	2.77	A
Copper	46.7	50.7	A		-7.9	35.5 - 65.9	4.99	A
Lead	19.3	22.0	A		-12.3	15.4 - 28.6	1.76	A
Mercury	0.155	0.182	A		-14.8	0.127 - 0.237	0.018	A
Nickel	41.2	42.8	A		-3.7	30.0 - 55.6	3.74	A
Selenium	5.14	5.65	A		-9.0	3.96 - 7.35	0.448	A
Silver	3.20	3.37	A		-5.0	2.36 - 4.38	0.337	A
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	2.51	2.02	W		24.3	1.41 - 2.63	0.207	A
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	11.1	13.3	A		-16.5	9.3 - 17.3	1.15	A
Vanadium	45.4	44.7	A		1.6	31.3 - 58.1	6.01	A
Zinc	121	110	A		10.0	77 - 143	17.5	A

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	NR	780				546 - 1014		
Manganese-54	NR	113				79 - 147		
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(SANC99) RadioAnalysis, South Africa Nuclear Energy Corp.
Sample Receipt Gate 1
Pretoria, Gauteng 0001

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	16.1	13.3	W		21.1	9.3 - 17.3	0.9	A
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	400	417	A		-4.1	292 - 542	14	A
Cesium-137	1707	1650	A		3.5	1155 - 2145	80	A
Cobalt-57	342	330	A		3.6	231 - 429	20	A
Cobalt-60	672	700	A		-4.0	490 - 910	23	A
Iron-55	NR	780				546 - 1014		
Manganese-54	117	113	A		3.5	79 - 147	10	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	524	525	A		-0.2	368 - 683	45	A
Strontium-90	333	487	N		-31.6	341 - 633	47	A
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	28.9	42.6	N		-32.2	29.8 - 55.4	1.3	A
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	405	415	A		-2.4	291 - 540	20	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.87	0.26	A	(17)		Sensitivity Evaluation	0.33	
Cesium-134	392	417	A		-6.0	292 - 542	57	A
Cesium-137	1570	1650	A		-4.8	1155 - 2145	304	W
Cobalt-57	314	330	A		-4.8	231 - 429	49	W
Cobalt-60	663	700	A		-5.3	490 - 910	67	A
Iron-55	NR	780				546 - 1014		
Manganese-54	111	113	A		-1.8	79 - 147	24	W
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	17.9	17.8	A		0.6	12.5 - 23.1	1.5	A
Plutonium-239/240	55.0	50.0	A		10.0	35.0 - 65.0	3.1	A
Potassium-40	514	525	A		-2.1	368 - 683	99	W
Strontium-90	435	487	A		-10.7	341 - 633	25	A
Technetium-99	NR	171				120 - 222		
Thorium-228	45.6	43.3	A		5.3	30.3 - 56.3	3.8	A
Thorium-230	40.3	44.0	A		-8.4	30.8 - 57.2	3.5	A
Thorium-232	42.2	42.6	A		-0.9	29.8 - 55.4	3.4	A
Uranium-234	54.4	50.0	A		8.8	35.0 - 65.0	3.3	A
Uranium-238	172.5	165	A		4.5	116 - 215	8.6	A
Zinc-65	415	415	A		0.0	291 - 540	80	W

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	386.09	417	A		-7.4	292 - 542	38.61	A
Cesium-137	1649.58	1650	A		0.0	1155 - 2145	164.96	A
Cobalt-57	322.7	330	A		-2.2	231 - 429	32.27	A
Cobalt-60	682.34	700	A		-2.5	490 - 910	68.23	A
Iron-55	NR	780				546 - 1014		
Manganese-54	114.18	113	A		1.0	79 - 147	11.42	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	484.57	525	A		-7.7	368 - 683	48.46	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	422.75	415	A		1.9	291 - 540	42.27	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	0.0358	0.0407	A		-12.0	0.0285 - 0.0529	0.00778	W
Uranium-238	11.2	13.2	A		-15.2	9.2 - 17.2	1.79	W
Uranium-Total	11.3	13.3	A		-15.0	9.3 - 17.3	1.81	W
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	538	780	N		-31.0	546 - 1014	65.1	A
Manganese-54	NR	113				79 - 147		
Nickel-63	1330	1450	A		-8.3	1015 - 1885	81.5	A
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	136	171	W		-20.5	120 - 222	9.81	A
Thorium-228	49.6	43.3	A		14.6	30.3 - 56.3	4.00	A
Thorium-230	44.4	44.0	A		0.9	30.8 - 57.2	3.63	A
Thorium-232	45.6	42.6	A		7.0	29.8 - 55.4	3.69	A
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	3.99E+02	417	A		-4.3	292 - 542	2.59E+01	A
Cesium-137	1.58E+03	1650	A		-4.2	1155 - 2145	9.51E+01	A
Cobalt-57	3.09E+02	330	A		-6.4	231 - 429	3.10E+01	A
Cobalt-60	6.61E+02	700	A		-5.6	490 - 910	2.67E+01	A
Iron-55	NR	780				546 - 1014		
Manganese-54	1.08E+02	113	A		-4.4	79 - 147	6.68E+00	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	4.76E+02	525	A		-9.3	368 - 683	2.11E+01	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	3.89E+02	415	A		-6.3	291 - 540	1.75E+01	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	412.6	417	A		-1.1	292 - 542	3.5	N
Cesium-137	1652.7	1650	A		0.2	1155 - 2145	20	N
Cobalt-57	317.3	330	A		-3.8	231 - 429	6.1	N
Cobalt-60	696.2	700	A		-0.5	490 - 910	6.2	N
Iron-55	NR	780				546 - 1014		
Manganese-54	111.4	113	A		-1.4	79 - 147	2.8	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	NR	525	N	(25)		368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	400.4	415	A		-3.5	291 - 540	6.8	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	402.6	417	A		-3.5	292 - 542	7.2	N
Cesium-137	1650	1650	A		0.0	1155 - 2145	47	A
Cobalt-57	330.5	330	A		0.2	231 - 429	8.0	A
Cobalt-60	681	700	A		-2.7	490 - 910	13	N
Iron-55	NR	780				546 - 1014		
Manganese-54	117.0	113	A		3.5	79 - 147	5.0	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	505	525	A		-3.8	368 - 683	30	A
Strontium-90	463	487	A		-4.9	341 - 633	19	A
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0	N	(28)		35.0 - 65.0		
Uranium-238	NR	165	N	(28)		116 - 215		
Zinc-65	429	415	A		3.4	291 - 540	15	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	NR	780	N	(28)		546 - 1014		
Manganese-54	NR	113				79 - 147		
Nickel-63	1140	1450	W		-21.4	1015 - 1885	21.5	N
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	155	171	A		-9.4	120 - 222	22.7	A
Thorium-228	38.0	43.3	A		-12.2	30.3 - 56.3	8.21	W
Thorium-230	46.1	44.0	A		4.8	30.8 - 57.2	9.27	W
Thorium-232	38.9	42.6	A		-8.7	29.8 - 55.4	8.11	W
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(TELE02) Microbac Laboratories Inc. - Northbrook
700 Landwehr Road
Northbrook, IL 60062-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	330	417	W		-20.9	292 - 542	4	N
Cesium-137	1650	1650	A		0.0	1155 - 2145	11	N
Cobalt-57	311	330	A		-5.8	231 - 429	5	N
Cobalt-60	669	700	A		-4.4	490 - 910	7	N
Iron-55	NR	780				546 - 1014		
Manganese-54	116	113	A		2.7	79 - 147	5	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	531	525	A		1.1	368 - 683	31	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	330	415	W		-20.5	291 - 540	8	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.75	0.26	A	(17)		Sensitivity Evaluation	1.6	
Cesium-134	368.51	417	A		-11.6	292 - 542	26.11	A
Cesium-137	1718.41	1650	A		4.1	1155 - 2145	150.96	A
Cobalt-57	360.65	330	A		9.3	231 - 429	29.46	A
Cobalt-60	732.24	700	A		4.6	490 - 910	44.14	A
Iron-55	NR	780				546 - 1014		
Manganese-54	116.51	113	A		3.1	79 - 147	20.76	W
Nickel-63	1119.15	1450	W		-22.8	1015 - 1885	146.90	A
Plutonium-238	38.70	17.8	N		117.4	12.5 - 23.1	9.77	W
Plutonium-239/240	2.93	50.0	N		-94.1	35.0 - 65.0	3.41	N
Potassium-40	556.11	525	A		5.9	368 - 683	82.32	A
Strontium-90	461.28	487	A		-5.3	341 - 633	29.99	A
Technetium-99	128.17	171	W		-25.0	120 - 222	29.91	W
Thorium-228	41.84	43.3	A		-3.4	30.3 - 56.3	10.84	W
Thorium-230	43.83	44.0	A		-0.4	30.8 - 57.2	10.76	W
Thorium-232	45.01	42.6	A		5.7	29.8 - 55.4	10.91	W
Uranium-234	41.77	50.0	A		-16.5	35.0 - 65.0	9.71	W
Uranium-238	141.65	165	A		-14.2	116 - 215	20.79	A
Zinc-65	432.29	415	A		4.2	291 - 540	55.06	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.17	0.26	A	(17)		Sensitivity Evaluation	1.146	
Cesium-134	373.77	417	A		-10.4	292 - 542	5.673	N
Cesium-137	1753.60	1650	A		6.3	1155 - 2145	46.122	A
Cobalt-57	343.42	330	A		4.1	231 - 429	6.419	N
Cobalt-60	720.82	700	A		3.0	490 - 910	12.627	N
Iron-55	NR	780				546 - 1014		
Manganese-54	122.12	113	A		8.1	79 - 147	3.271	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	9.2342	17.8	N		-48.1	12.5 - 23.1	2.7169	W
Plutonium-239/240	38.7263	50.0	W		-22.5	35.0 - 65.0	5.4404	A
Potassium-40	587.51	525	A		11.9	368 - 683	18.261	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	37.706	43.3	A		-12.9	30.3 - 56.3	7.085	W
Thorium-230	52.631	44.0	A		19.6	30.8 - 57.2	8.549	W
Thorium-232	50.611	42.6	A		18.8	29.8 - 55.4	8.396	W
Uranium-234	61.129	50.0	W		22.3	35.0 - 65.0	6.448	A
Uranium-238	174.235	165	A		5.6	116 - 215	12.995	A
Zinc-65	481.25	415	A		16.0	291 - 540	12.127	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH

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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	511.36	417	W		22.6	292 - 542	36.132	A
Cesium-137	1652.10	1650	A		0.1	1155 - 2145	116.33	A
Cobalt-57	832.37	330	N		152.2	231 - 429	66.882	A
Cobalt-60	774.13	700	A		10.6	490 - 910	51.591	A
Iron-55	NR	780				546 - 1014		
Manganese-54	272.36	113	N		141.0	79 - 147	20.301	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	544.49	525	A		3.7	368 - 683	40.050	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	1216.20	415	N		193.1	291 - 540	82.551	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-1.49	0.26	A	(17)		Sensitivity Evaluation	4.79	
Cesium-134	420.03	417	A		0.7	292 - 542	9.26	A
Cesium-137	1650.39	1650	A		0.0	1155 - 2145	99.17	A
Cobalt-57	339.03	330	A		2.7	231 - 429	24.46	A
Cobalt-60	729.32	700	A		4.2	490 - 910	20.70	A
Iron-55	NR	780				546 - 1014		
Manganese-54	111.19	113	A		-1.6	79 - 147	5.88	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	487.36	525	A		-7.2	368 - 683	21.19	A
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	405.91	415	A		-2.2	291 - 540	16.70	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	6.93E-001	0.26	A	(17)		Sensitivity Evaluation	4.08E-001	
Cesium-134	4.07E+002	417	A		-2.4	292 - 542	4.06E+000	N
Cesium-137	1.65E+003	1650	A		0.0	1155 - 2145	1.31E+001	N
Cobalt-57	3.32E+002	330	A		0.6	231 - 429	6.33E+000	N
Cobalt-60	6.94E+002	700	A		-0.9	490 - 910	7.14E+000	N
Iron-55	NR	780				546 - 1014		
Manganese-54	1.10E+002	113	A		-2.7	79 - 147	1.65E+000	N
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	1.79E+001	17.8	A		0.6	12.5 - 23.1	2.30E+000	A
Plutonium-239/240	5.10E+001	50.0	A		2.0	35.0 - 65.0	5.62E+000	A
Potassium-40	4.95E+002	525	A		-5.7	368 - 683	1.09E+001	A
Strontium-90	4.81E+002	487	A		-1.2	341 - 633	4.03E+001	A
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	5.12E+001	50.0	A		2.4	35.0 - 65.0	7.13E+000	A
Uranium-238	1.64E+002	165	A		-0.6	116 - 215	2.19E+001	A
Zinc-65	4.20E+002	415	A		1.2	291 - 540	5.41E+000	N

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP Series 51

(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	NR	0.0407				0.0285 - 0.0529		
Uranium-238	NR	13.2				9.2 - 17.2		
Uranium-Total	NR	13.3				9.3 - 17.3		
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26	N	(18)		Sensitivity Evaluation		
Cesium-134	396	417	A		-5.0	292 - 542	7.65	N
Cesium-137	1710	1650	A		3.6	1155 - 2145	50.9	A
Cobalt-57	332	330	A		0.6	231 - 429	7.36	A
Cobalt-60	703	700	A		0.4	490 - 910	42.9	A
Iron-55	NR	780				546 - 1014		
Manganese-54	118	113	A		4.4	79 - 147	5.05	A
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	18.36	17.8	A		3.1	12.5 - 23.1	2.498	A
Plutonium-239/240	4.34	50.0	N		-91.3	35.0 - 65.0	1.101	W
Potassium-40	508	525	A		-3.2	368 - 683	44.5	A
Strontium-90	334.2	487	N		-31.4	341 - 633	16.2	A
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	46.05	50.0	A		-7.9	35.0 - 65.0	3.647	A
Uranium-238	132.6	165	A		-19.6	116 - 215	7.269	A
Zinc-65	441	415	A		6.3	291 - 540	35.4	A

Radiological Reference Date: August 1, 2024

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:

(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Laboratory Results For MAPEP Series 51
(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	6.47				4.53 - 8.41		
Arsenic	NR	26.5				18.6 - 34.5		
Barium	NR	218				153 - 283		
Beryllium	NR	12.9				9.0 - 16.8		
Cadmium	NR	3.14				2.20 - 4.08		
Chromium	NR	45.6				31.9 - 59.3		
Cobalt	NR	27.3				19.1 - 35.5		
Copper	NR	50.7				35.5 - 65.9		
Lead	NR	22.0				15.4 - 28.6		
Mercury	NR	0.182				0.127 - 0.237		
Nickel	NR	42.8				30.0 - 55.6		
Selenium	NR	5.65				3.96 - 7.35		
Silver	NR	3.37				2.36 - 4.38		
Technetium-99	NR	2.73E-04				1.91E-4 - 3.55E-4		
Thallium	NR	2.02				1.41 - 2.63		
Uranium-235	0.036	0.0407	A		-11.5	0.0285 - 0.0529	0.007	W
Uranium-238	11.93	13.2	A		-9.6	9.2 - 17.2	0.7	A
Uranium-Total	12	13.3	A		-9.8	9.3 - 17.3	0.7	A
Vanadium	NR	44.7				31.3 - 58.1		
Zinc	NR	110				77 - 143		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.26				Sensitivity Evaluation		
Cesium-134	NR	417				292 - 542		
Cesium-137	NR	1650				1155 - 2145		
Cobalt-57	NR	330				231 - 429		
Cobalt-60	NR	700				490 - 910		
Iron-55	NR	780				546 - 1014		
Manganese-54	NR	113				79 - 147		
Nickel-63	NR	1450				1015 - 1885		
Plutonium-238	NR	17.8				12.5 - 23.1		
Plutonium-239/240	NR	50.0				35.0 - 65.0		
Potassium-40	NR	525				368 - 683		
Strontium-90	NR	487				341 - 633		
Technetium-99	NR	171				120 - 222		
Thorium-228	NR	43.3				30.3 - 56.3		
Thorium-230	NR	44.0				30.8 - 57.2		
Thorium-232	NR	42.6				29.8 - 55.4		
Uranium-234	NR	50.0				35.0 - 65.0		
Uranium-238	NR	165				116 - 215		
Zinc-65	NR	415				291 - 540		

Radiological Reference Date: August 1, 2024

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%

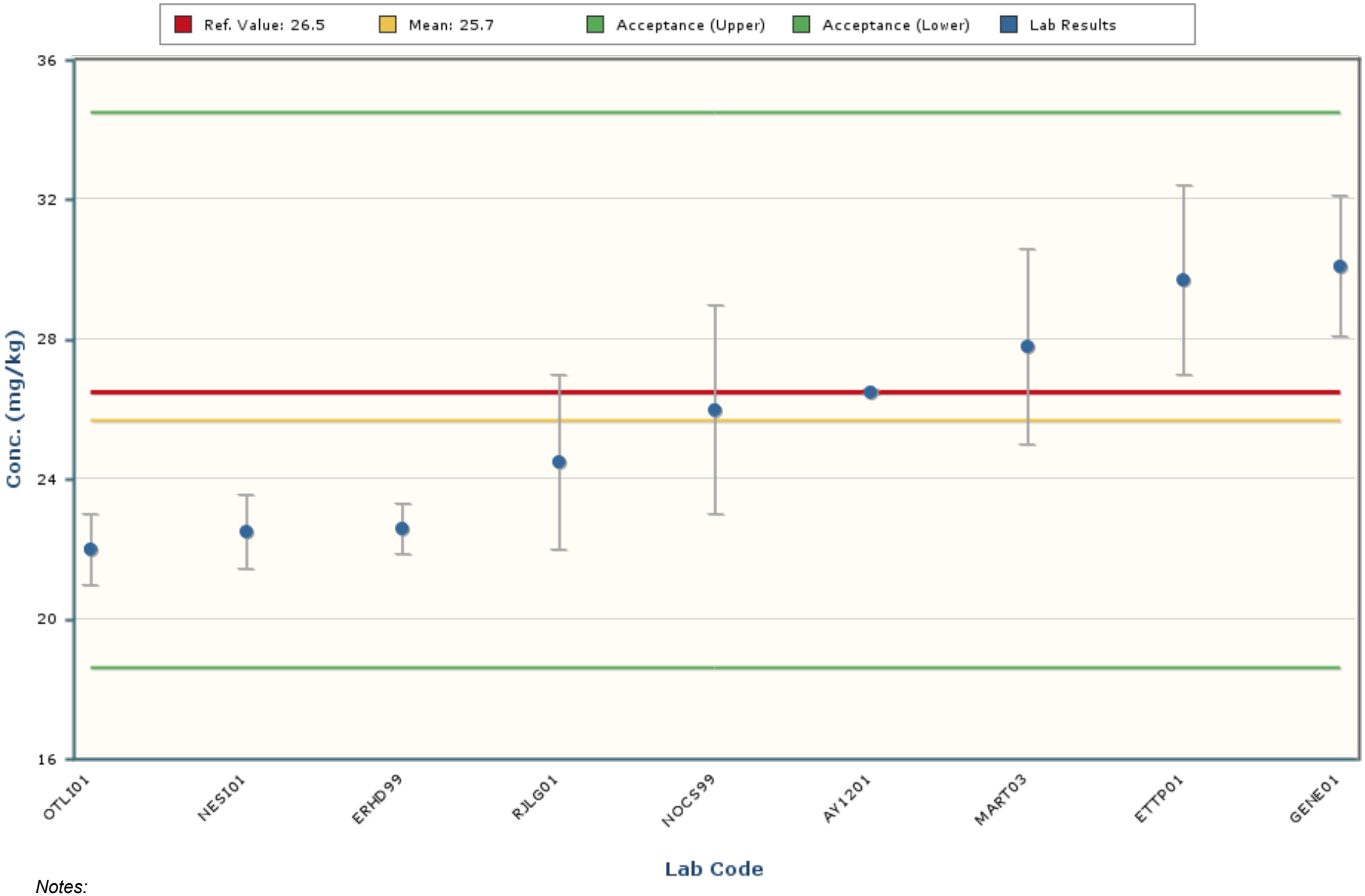
NOT ACCEPTABLE.....RP > 30%

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

Notes:

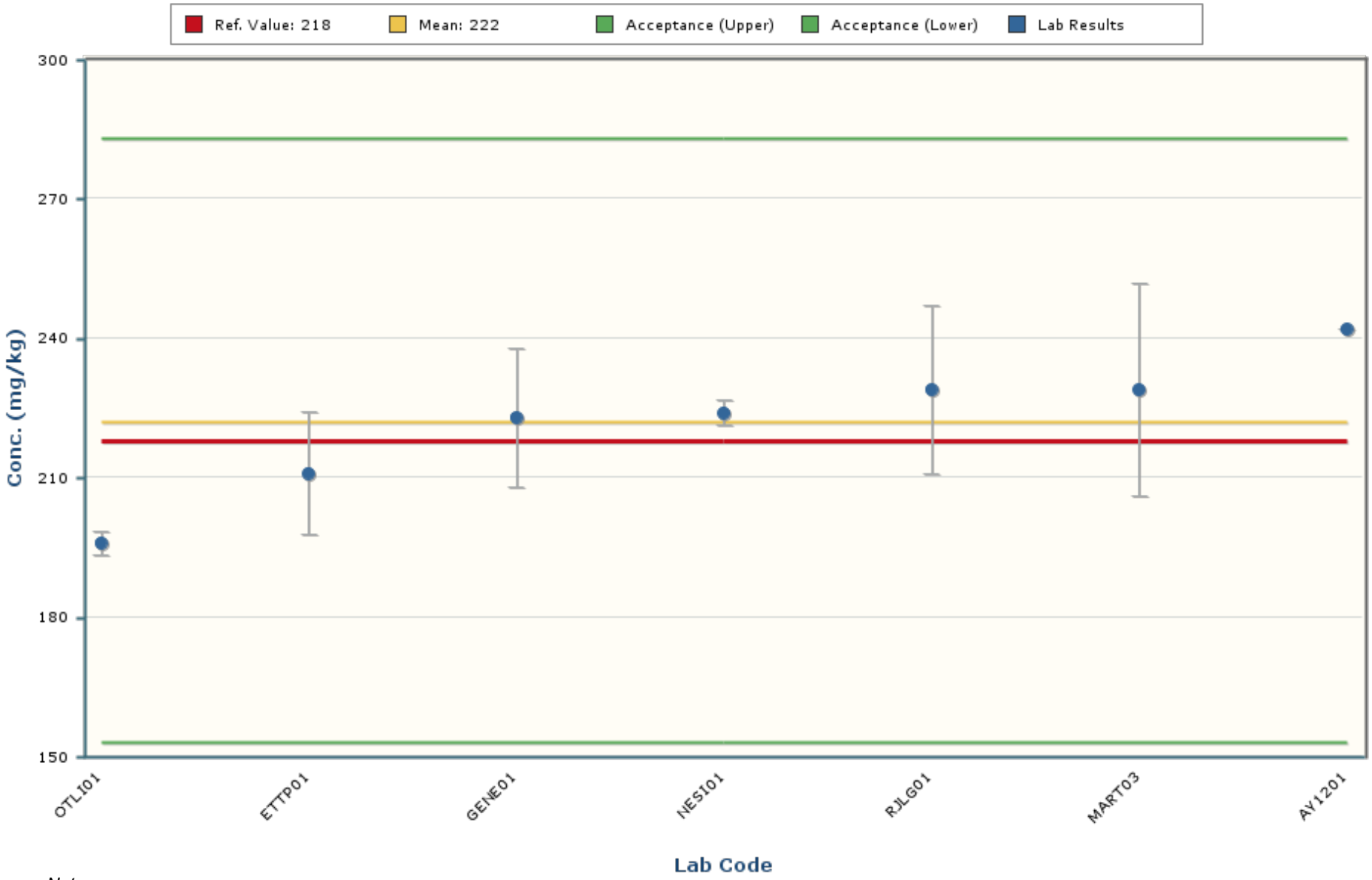
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported
(25) = Result not reported with other gamma results
(28) = Not Reporting Previously Reported Analyte

Arsenic
MAPEP-24-MaS51



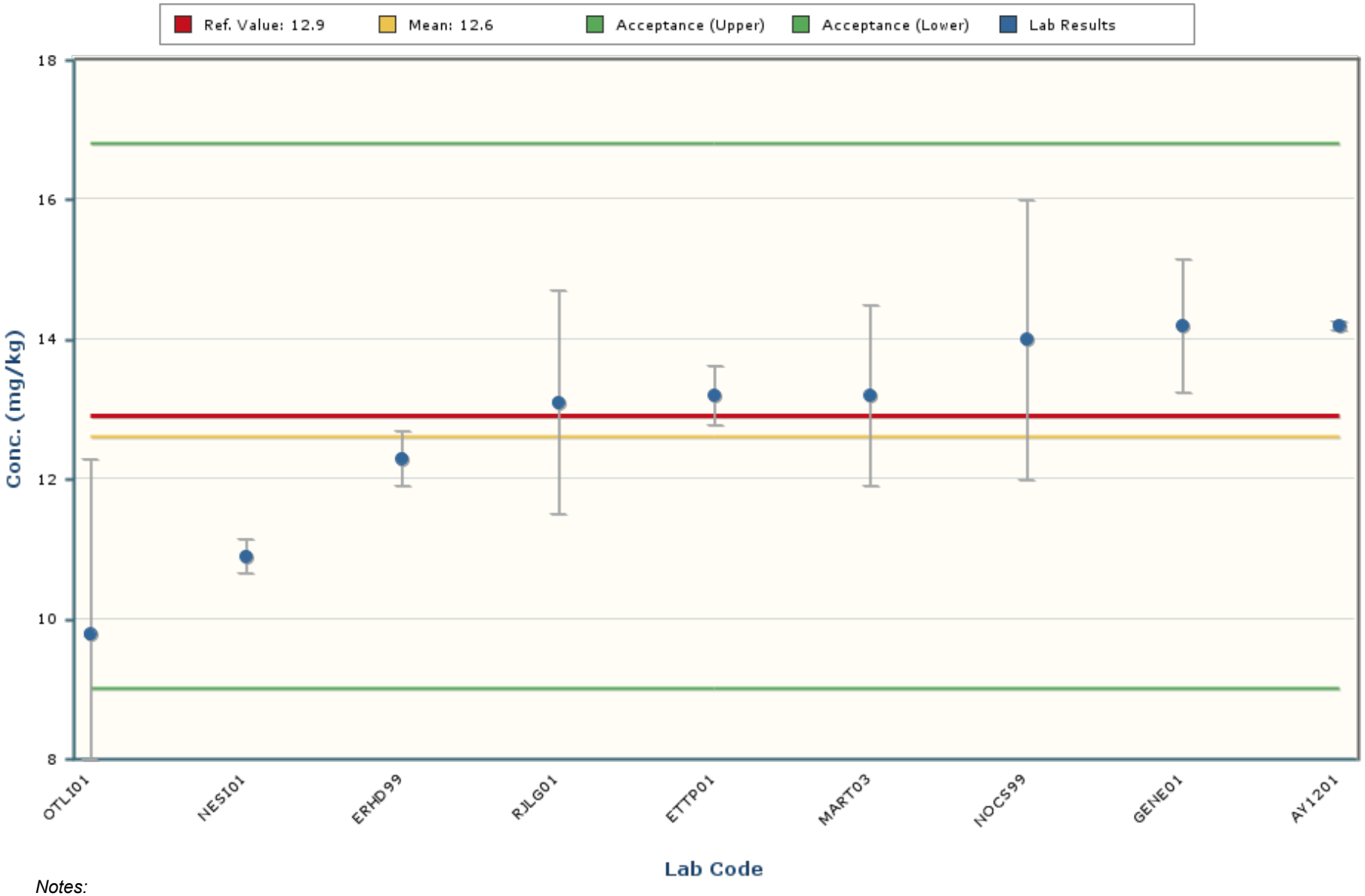
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 9.3 and 42.1 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Barium
MAPEP-24-MaS51



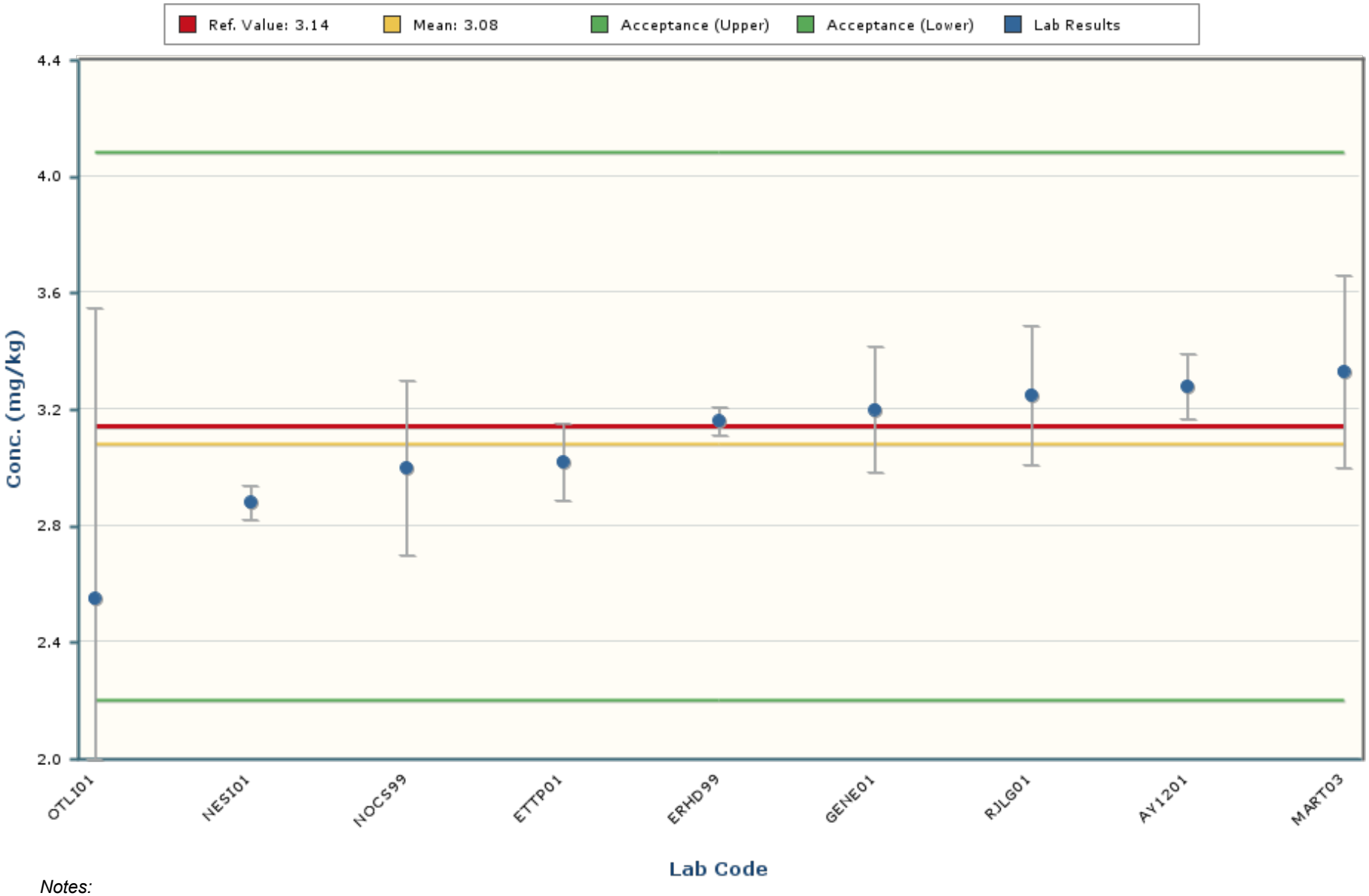
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 148 and 296 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Beryllium
MAPEP-24-MaS51



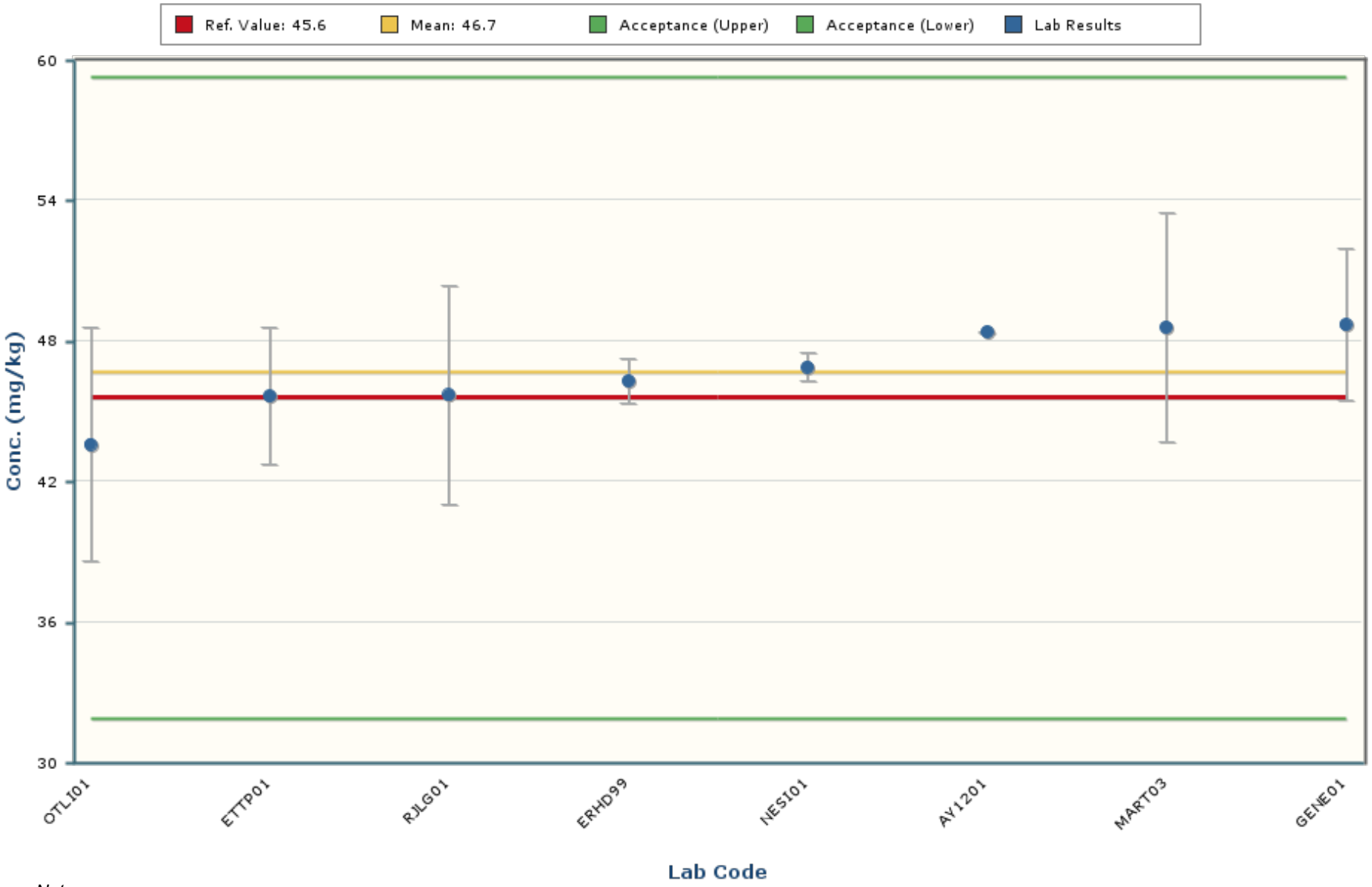
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 4.8 and 20.4 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Cadmium
MAPEP-24-MaS51



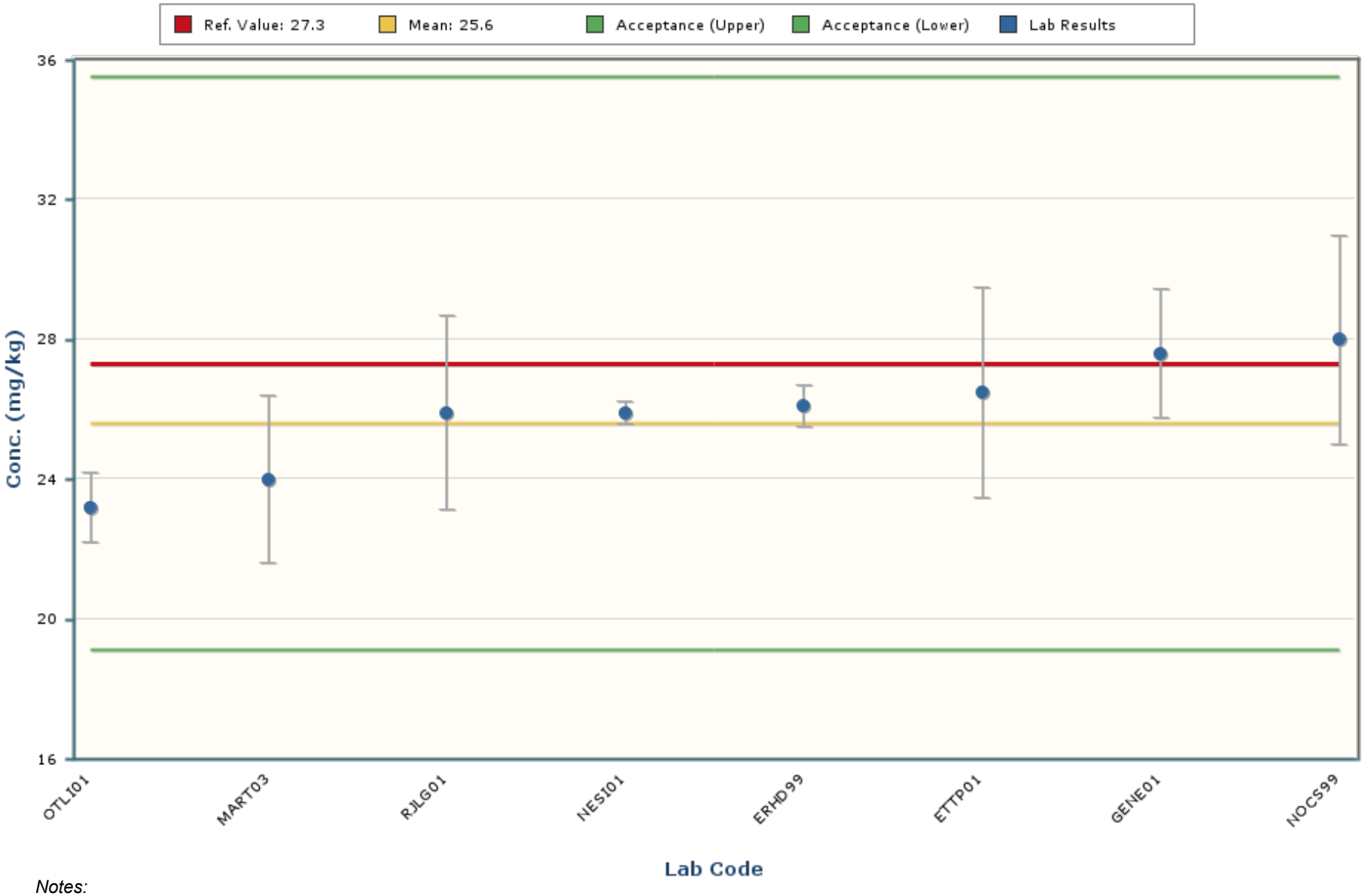
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 1.78 and 4.39 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Chromium
MAPEP-24-MaS51



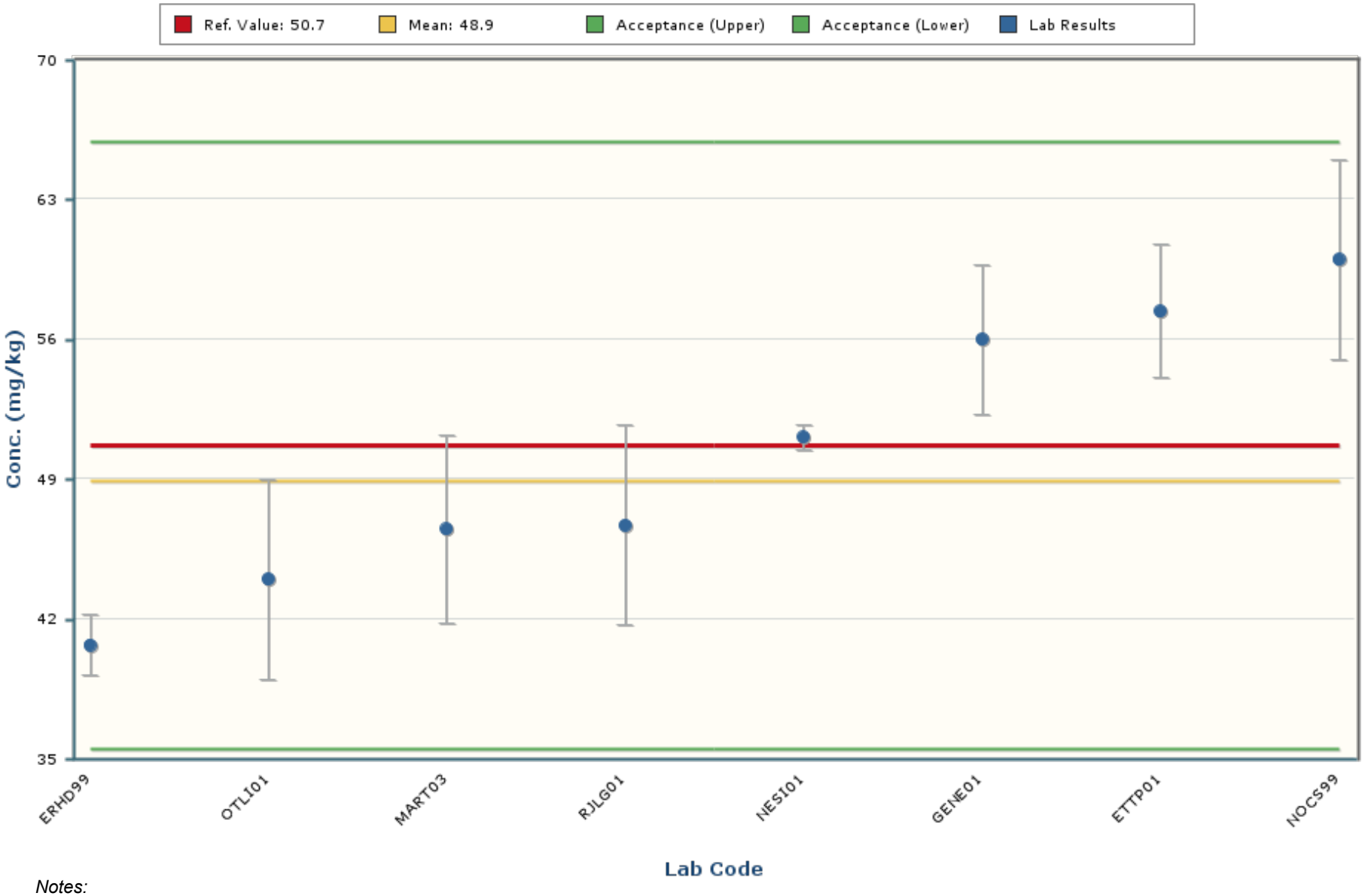
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 37.8 and 55.7 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Cobalt
MAPEP-24-MaS51



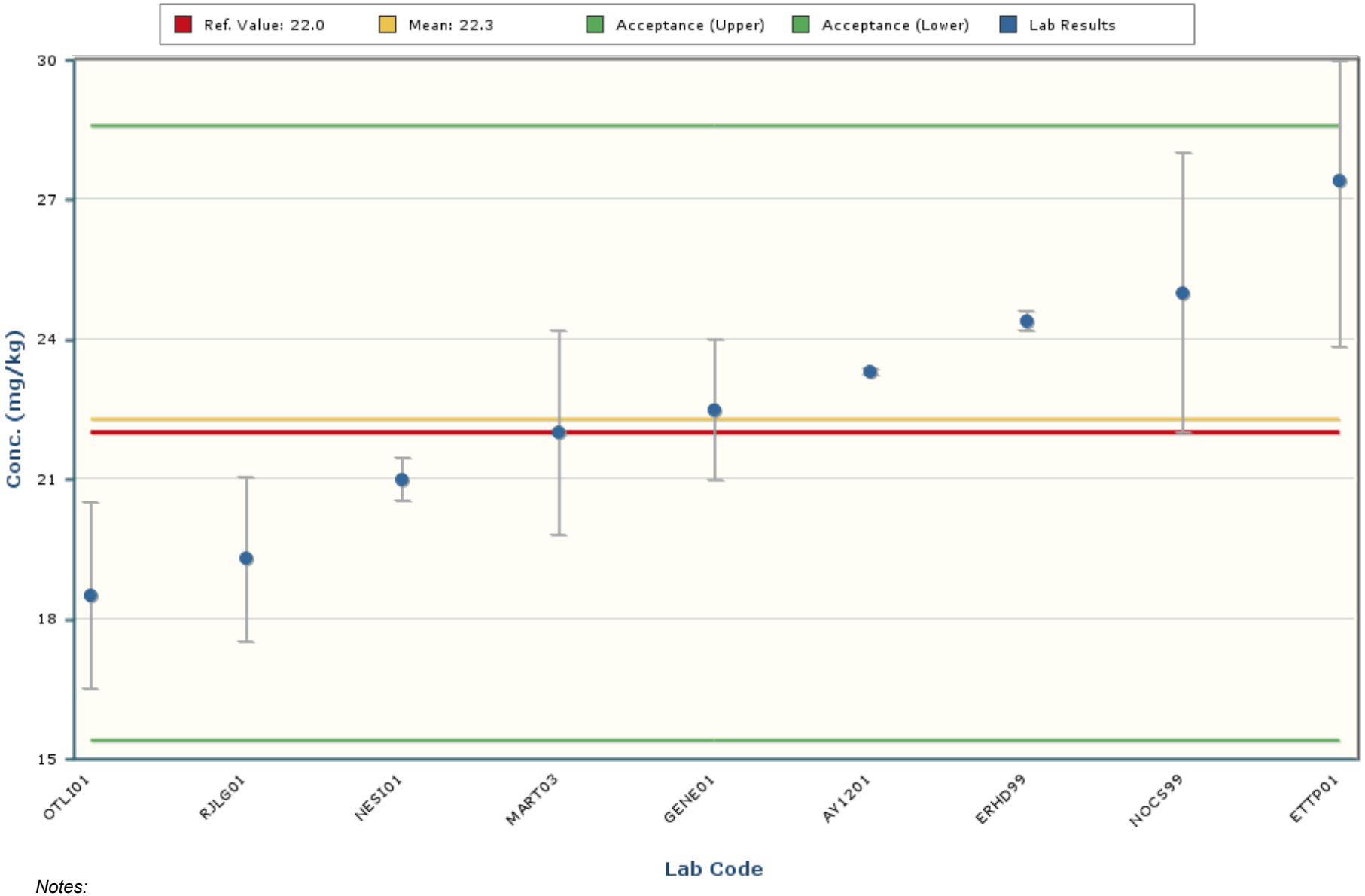
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 18.1 and 33.1 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Copper
MAPEP-24-MaS51



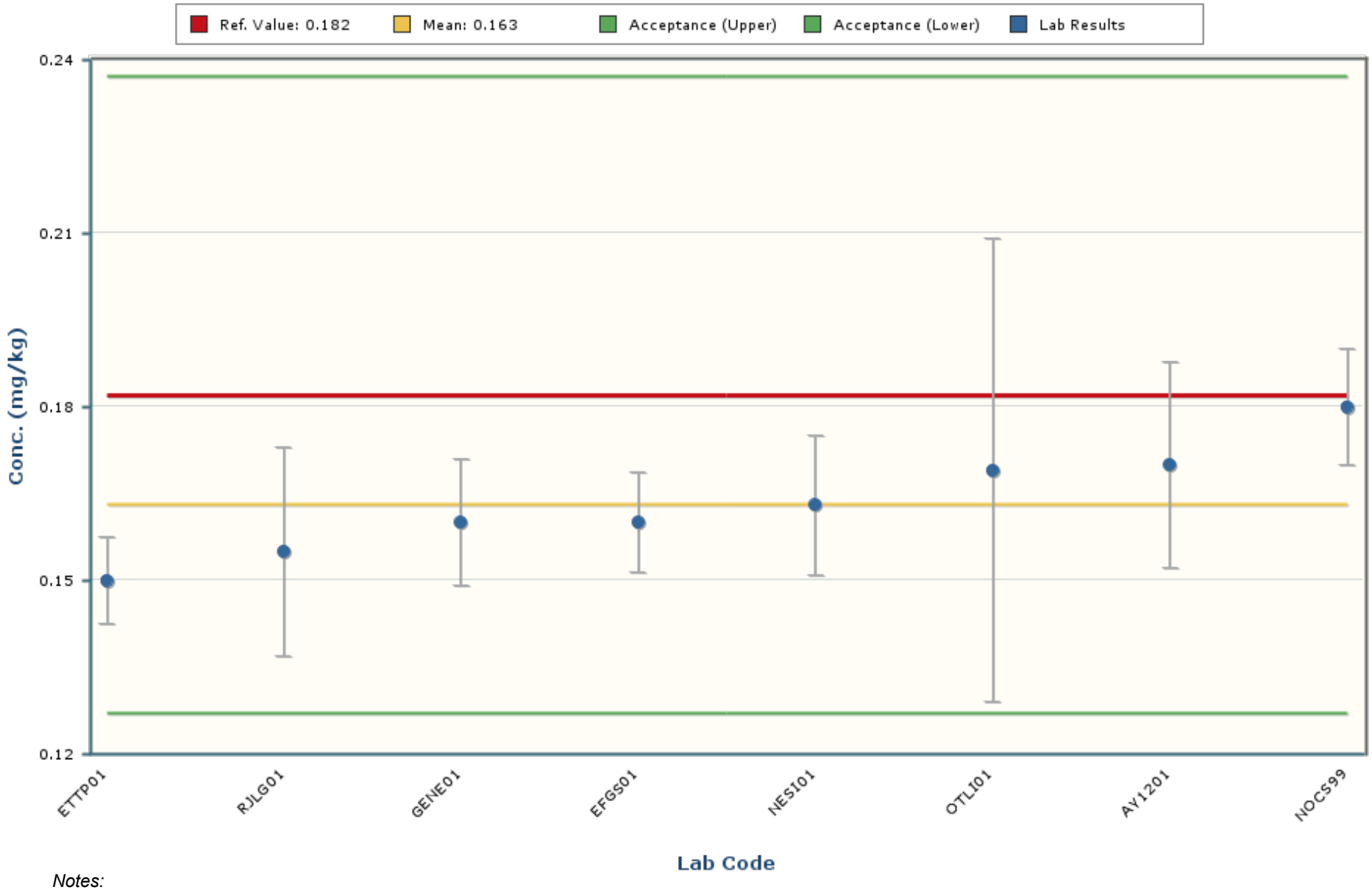
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 18.0 and 79.8 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Lead
MAPEP-24-MaS51



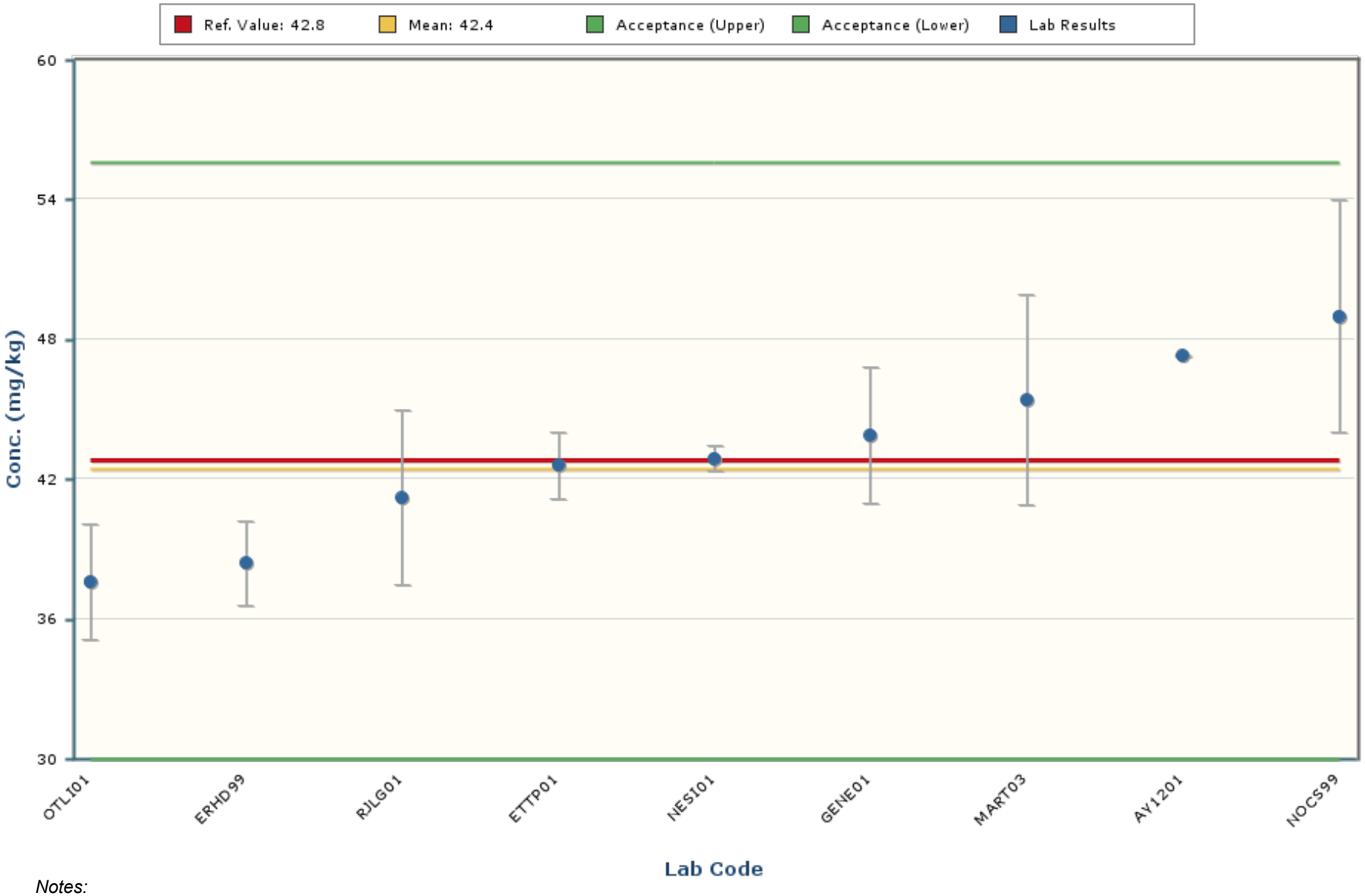
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 8.1 and 36.5 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Mercury
MAPEP-24-MaS51



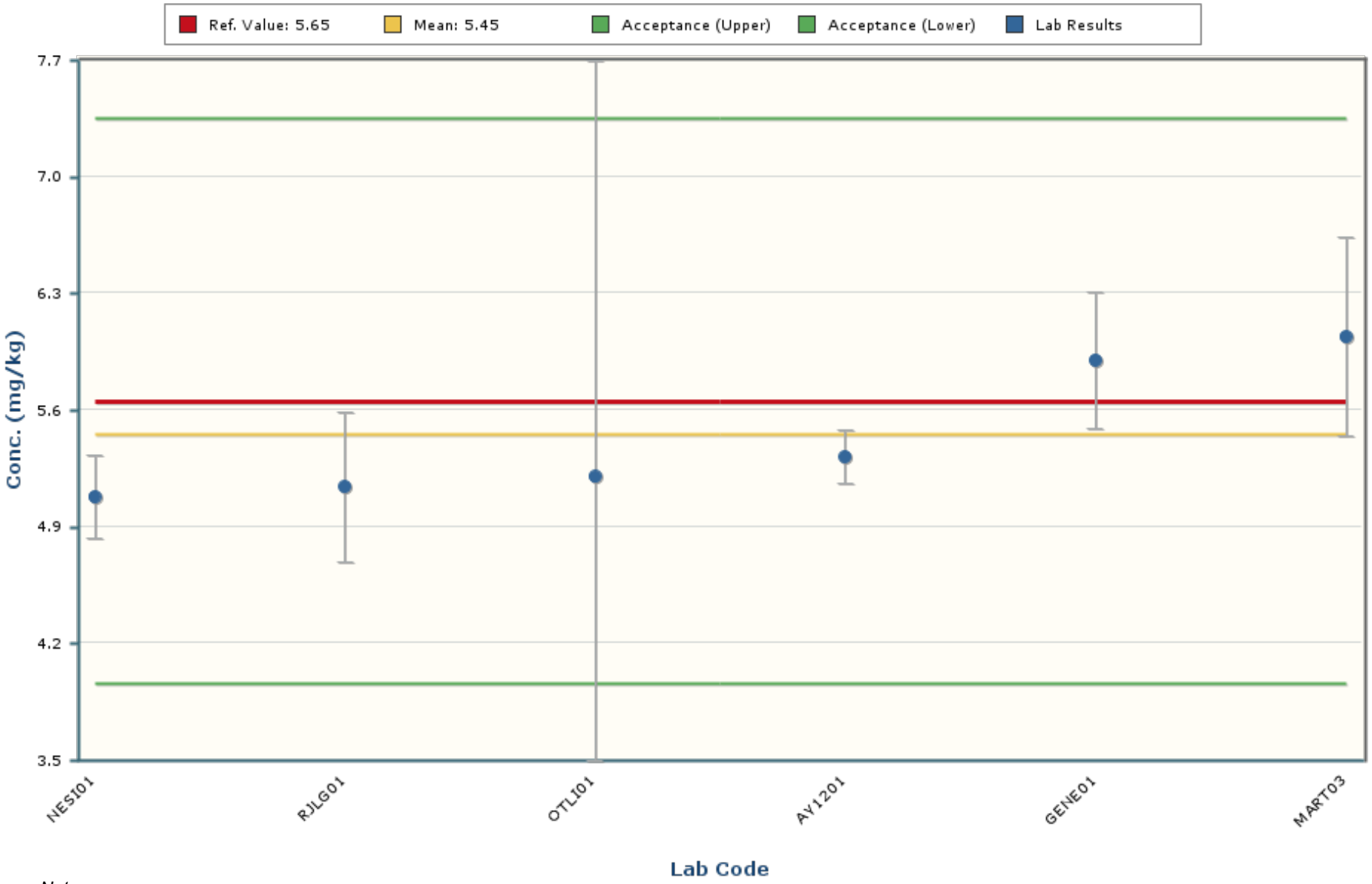
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 0.116 and 0.211 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Nickel
MAPEP-24-MaS51



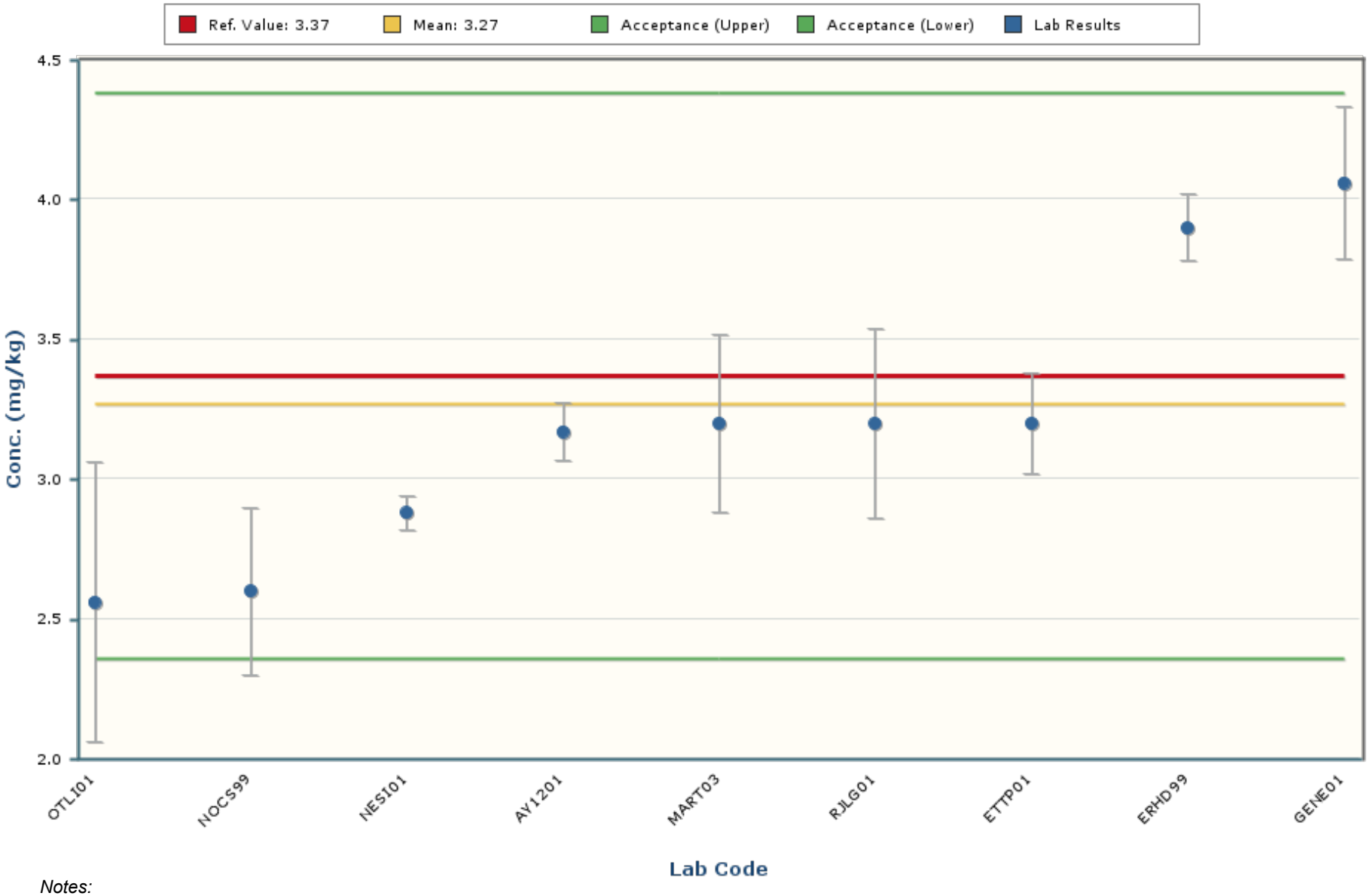
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 25.9 and 58.9 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Selenium
MAPEP-24-MaS51



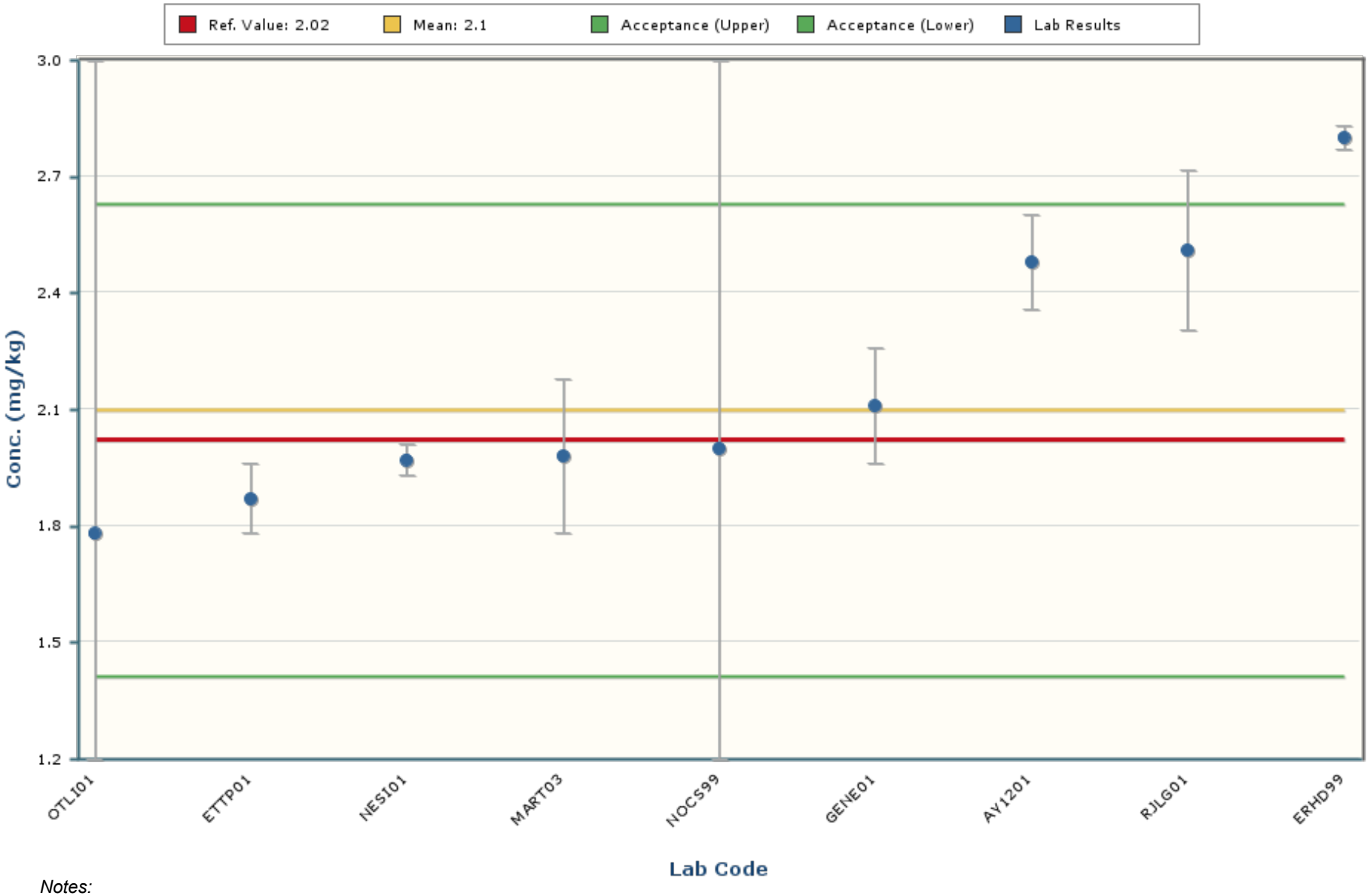
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 3.37 and 7.52 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Silver
MAPEP-24-MaS51



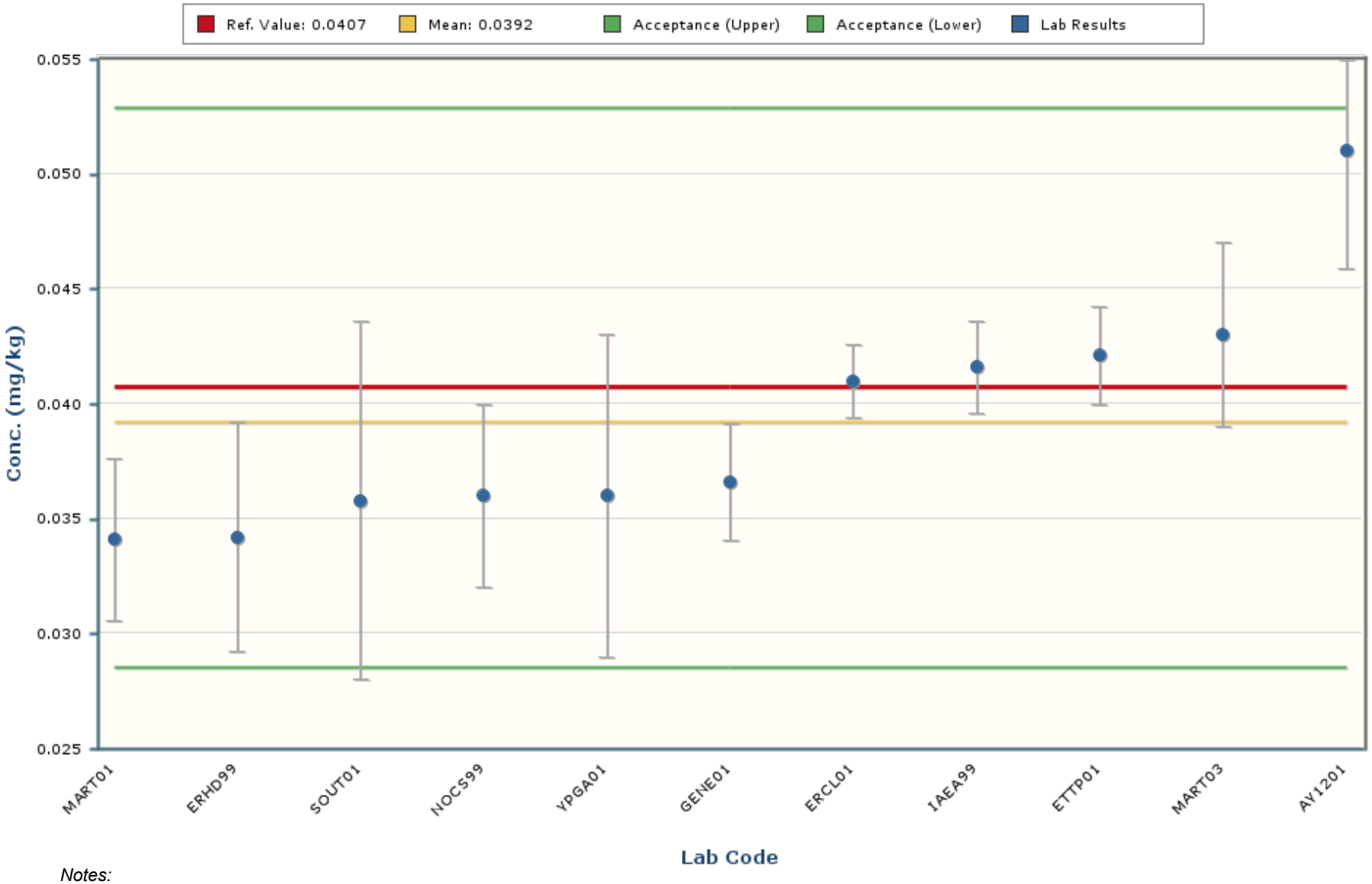
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 0.81 and 5.74 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Thallium
MAPEP-24-MaS51



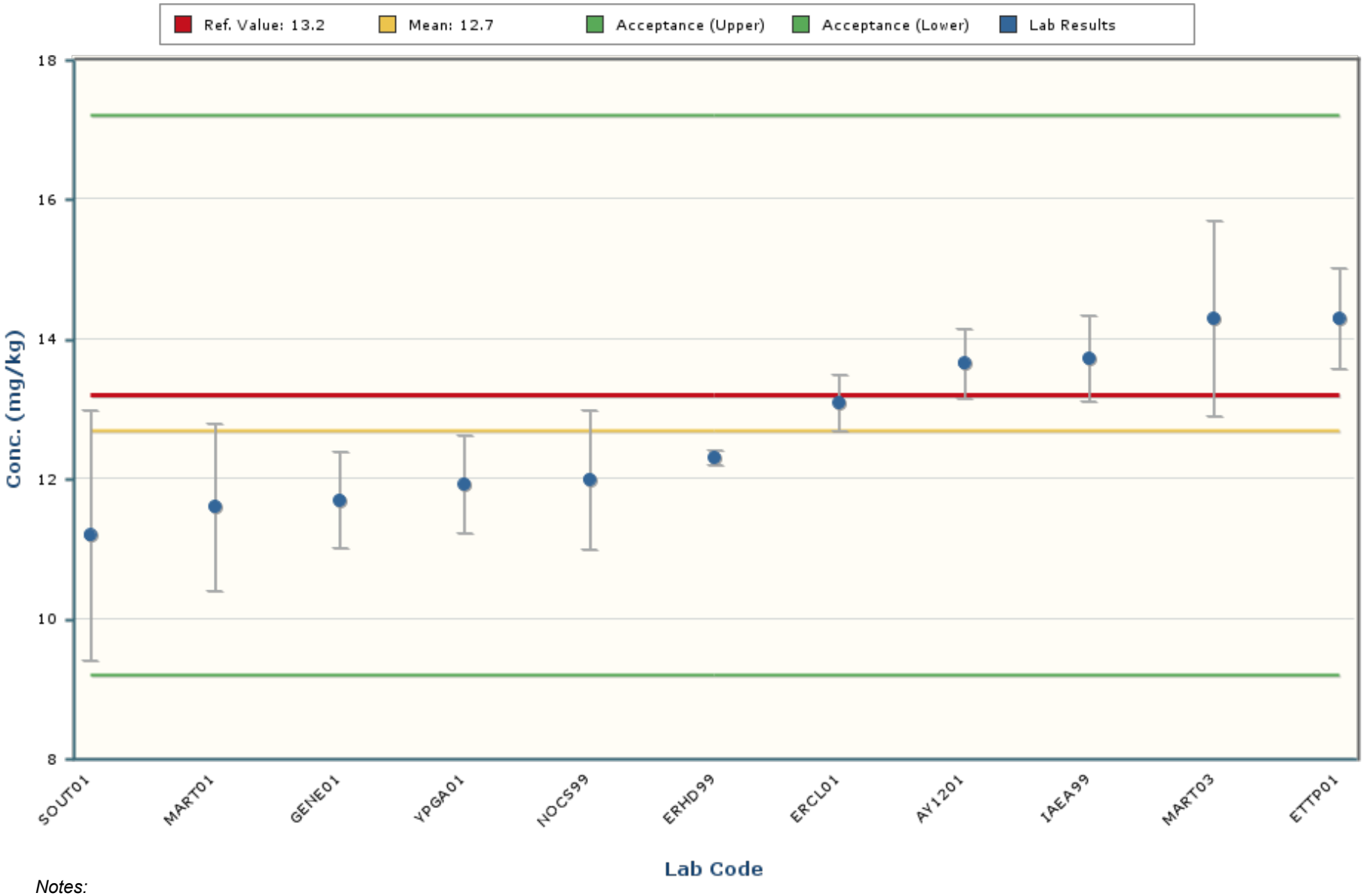
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 0.66 and 3.54 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Uranium-235
MAPEP-24-MaS51



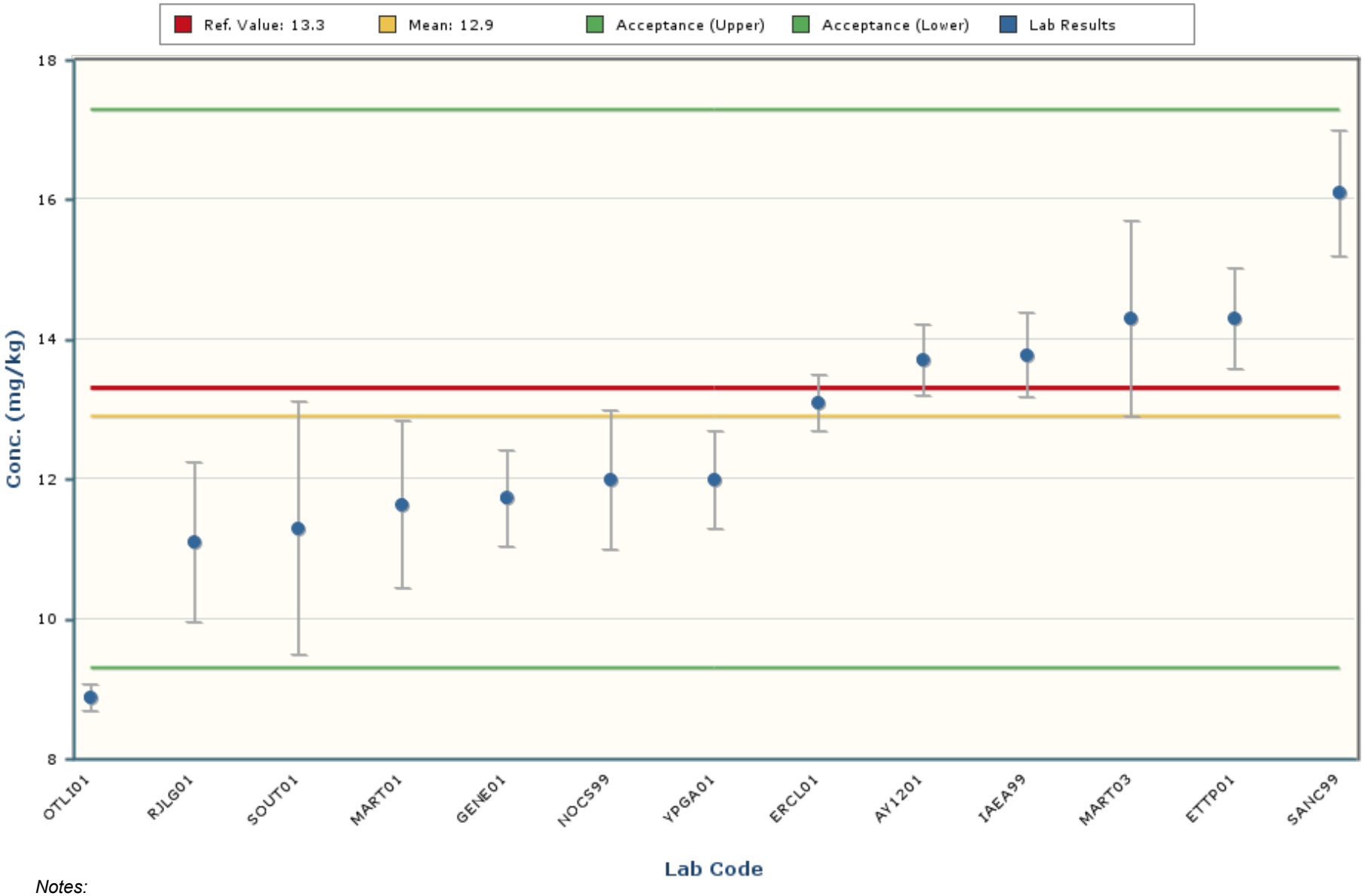
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 0.0137 and 0.0648 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Uranium-238
MAPEP-24-MaS51



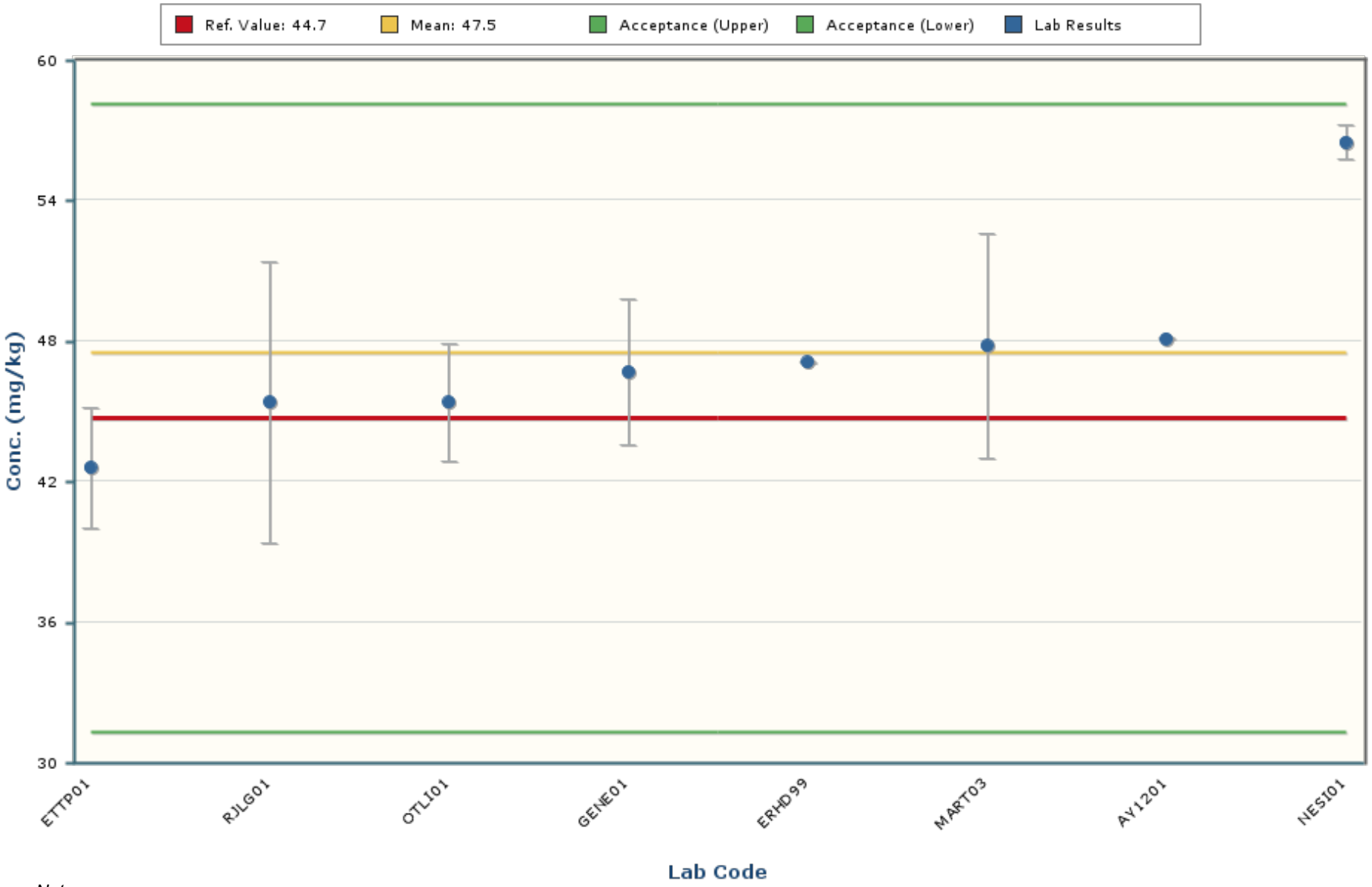
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 7.0 and 18.4 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Uranium-Total
MAPEP-24-MaS51



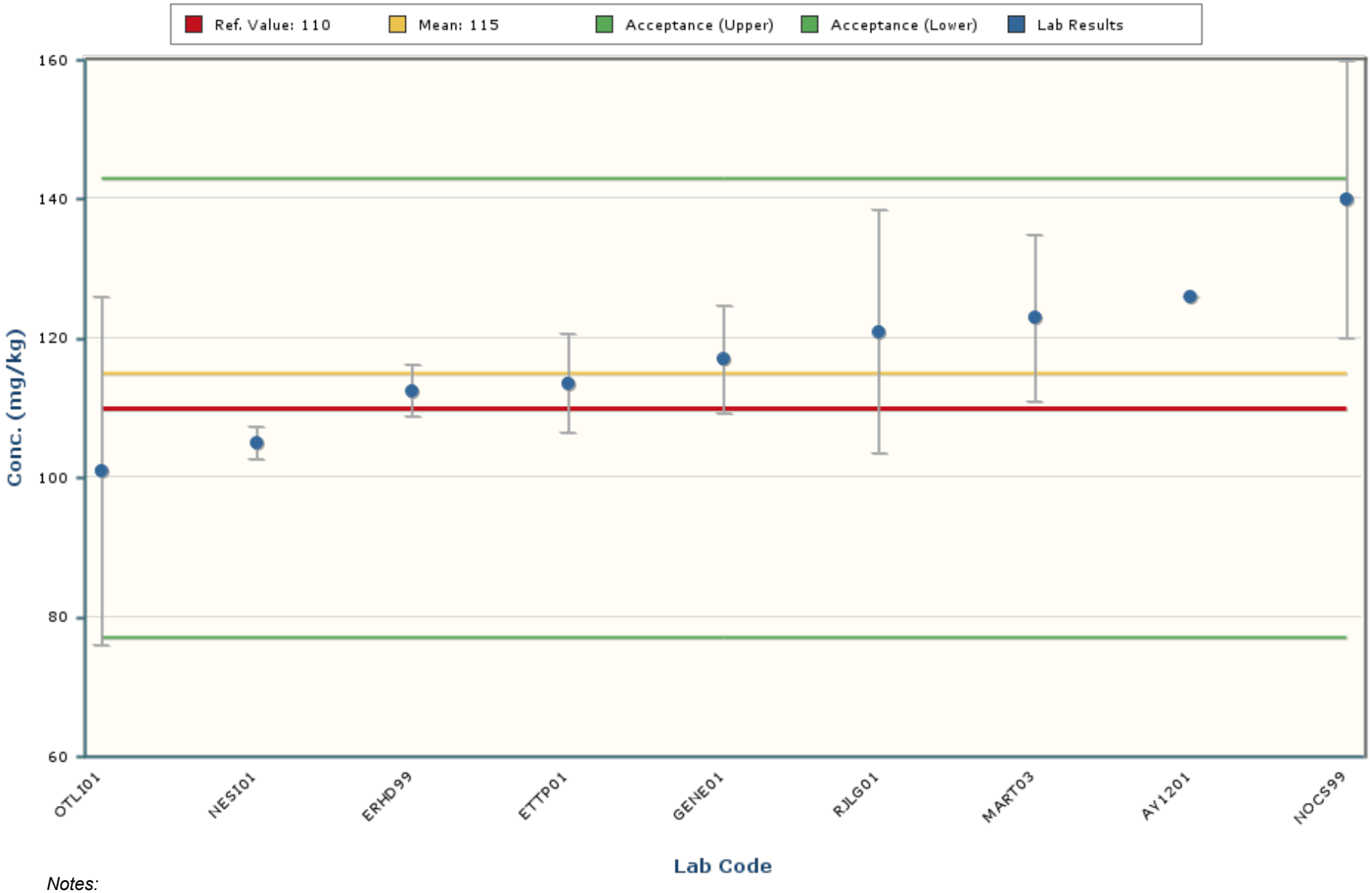
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 5.2 and 20.6 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Vanadium
MAPEP-24-MaS51



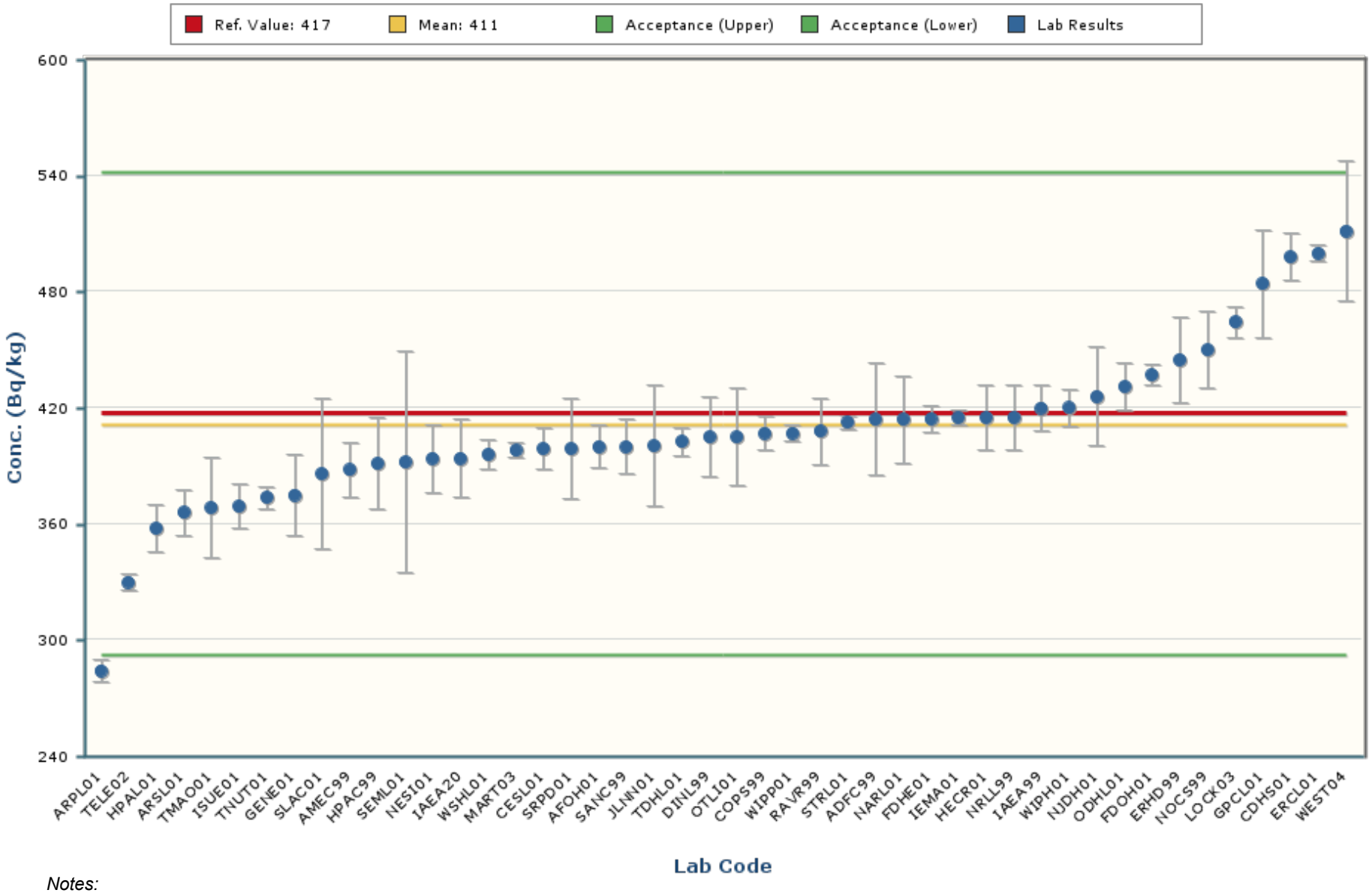
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 27.2 and 67.7 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Zinc
MAPEP-24-MaS51



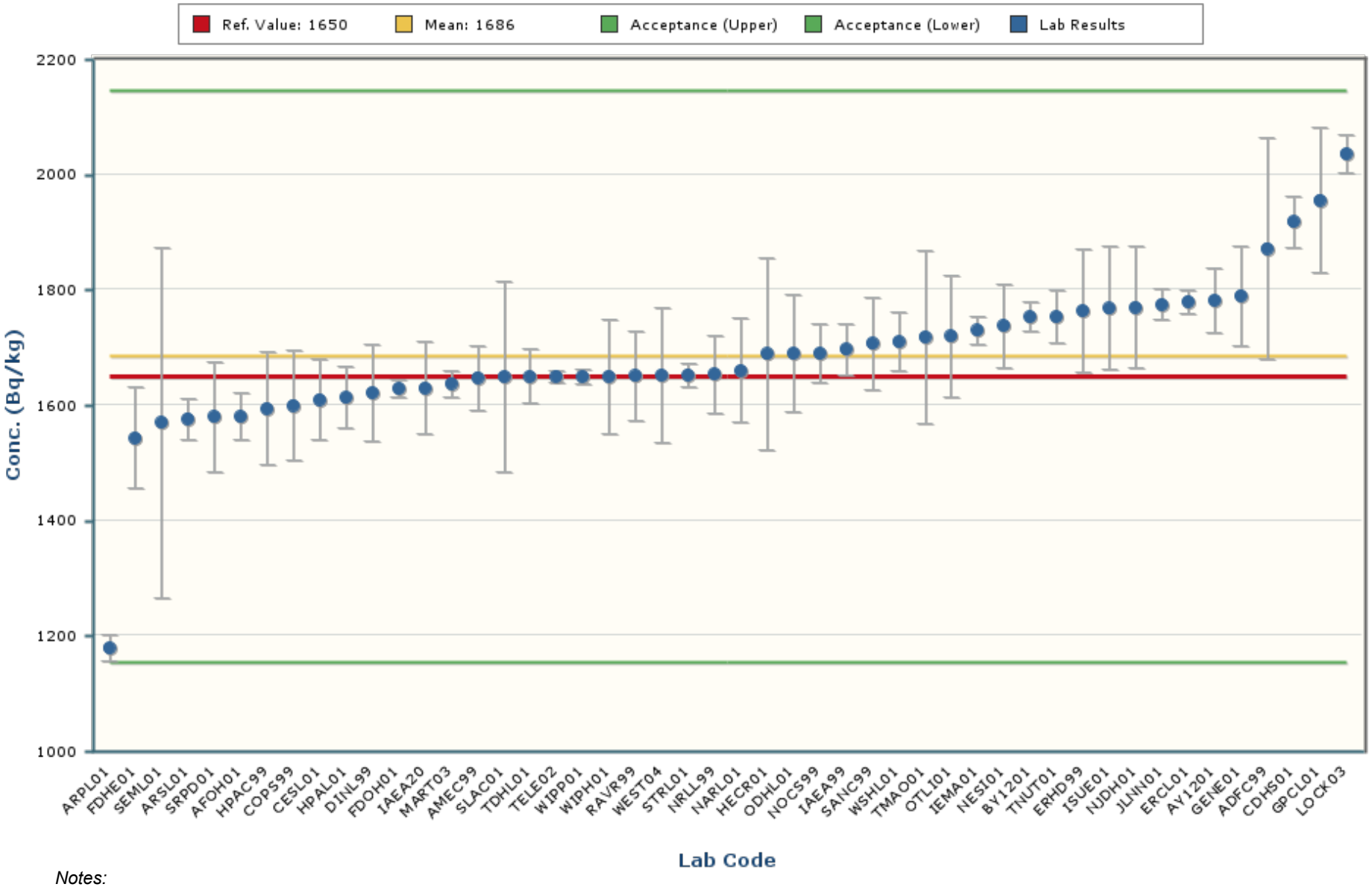
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 71 and 158 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Cesium-134
MAPEP-24-MaS51



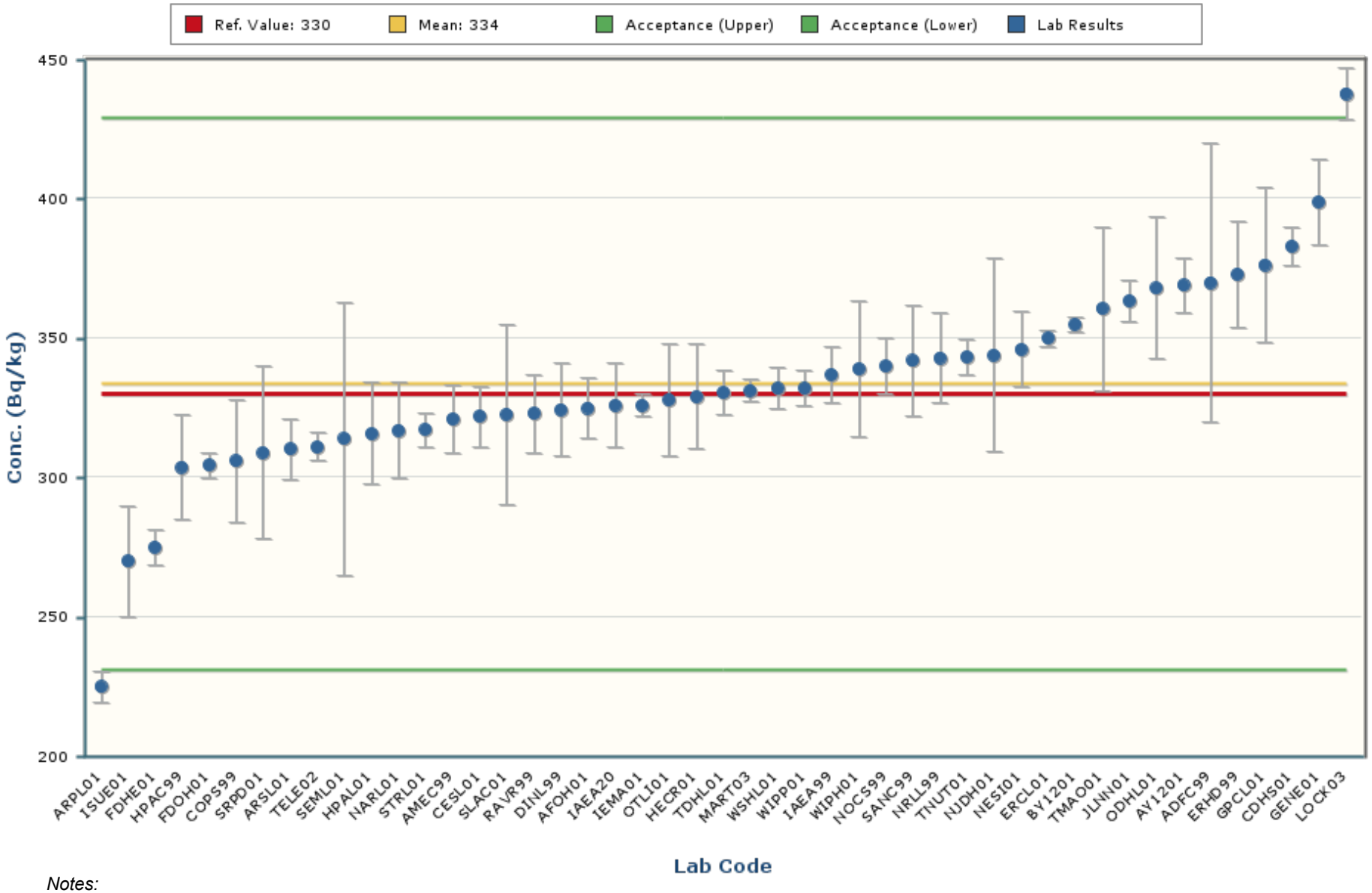
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 227 and 595 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Cesium-137
MAPEP-24-MaS51



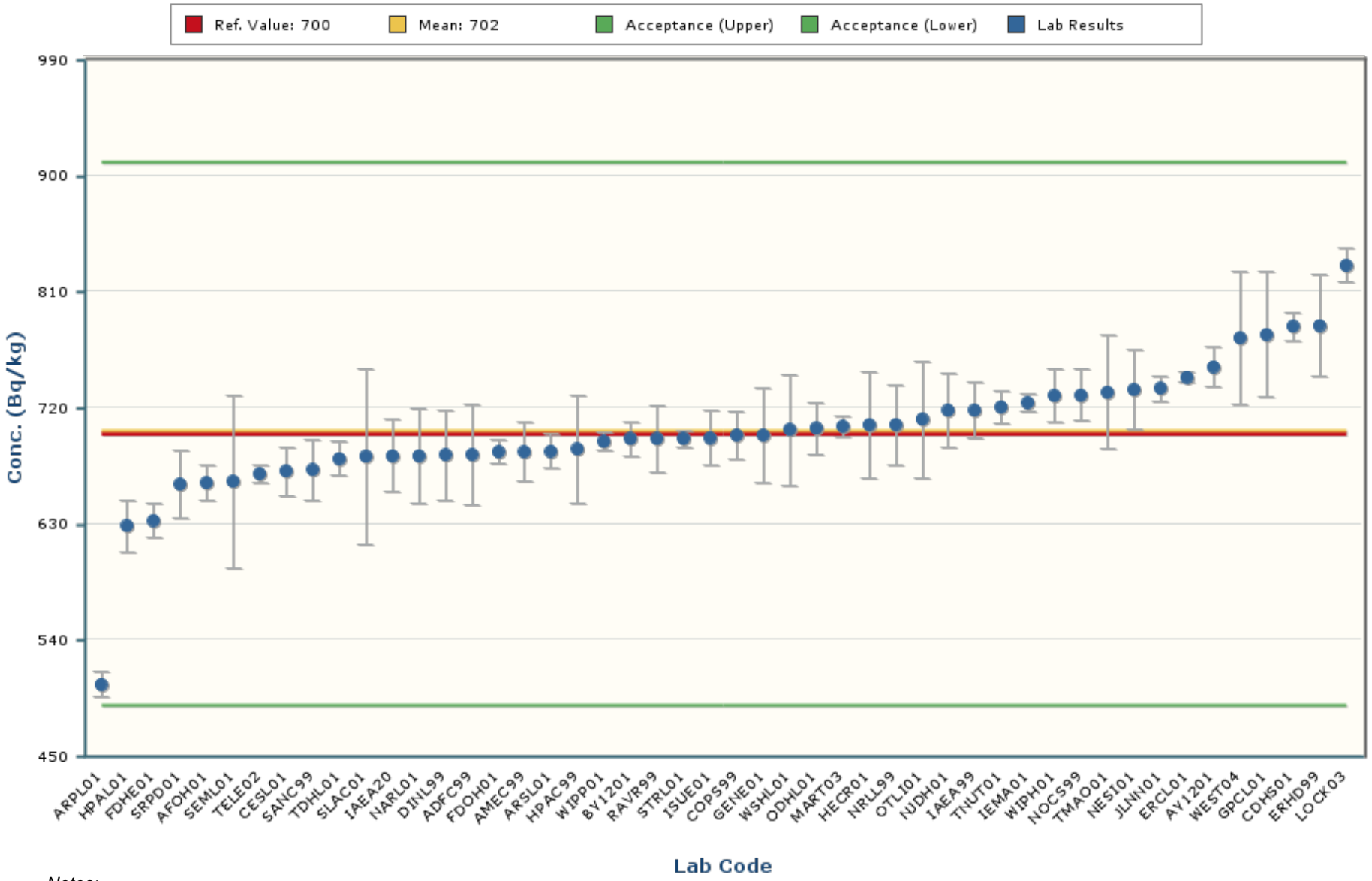
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 1061 and 2312 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Cobalt-57
MAPEP-24-MaS51



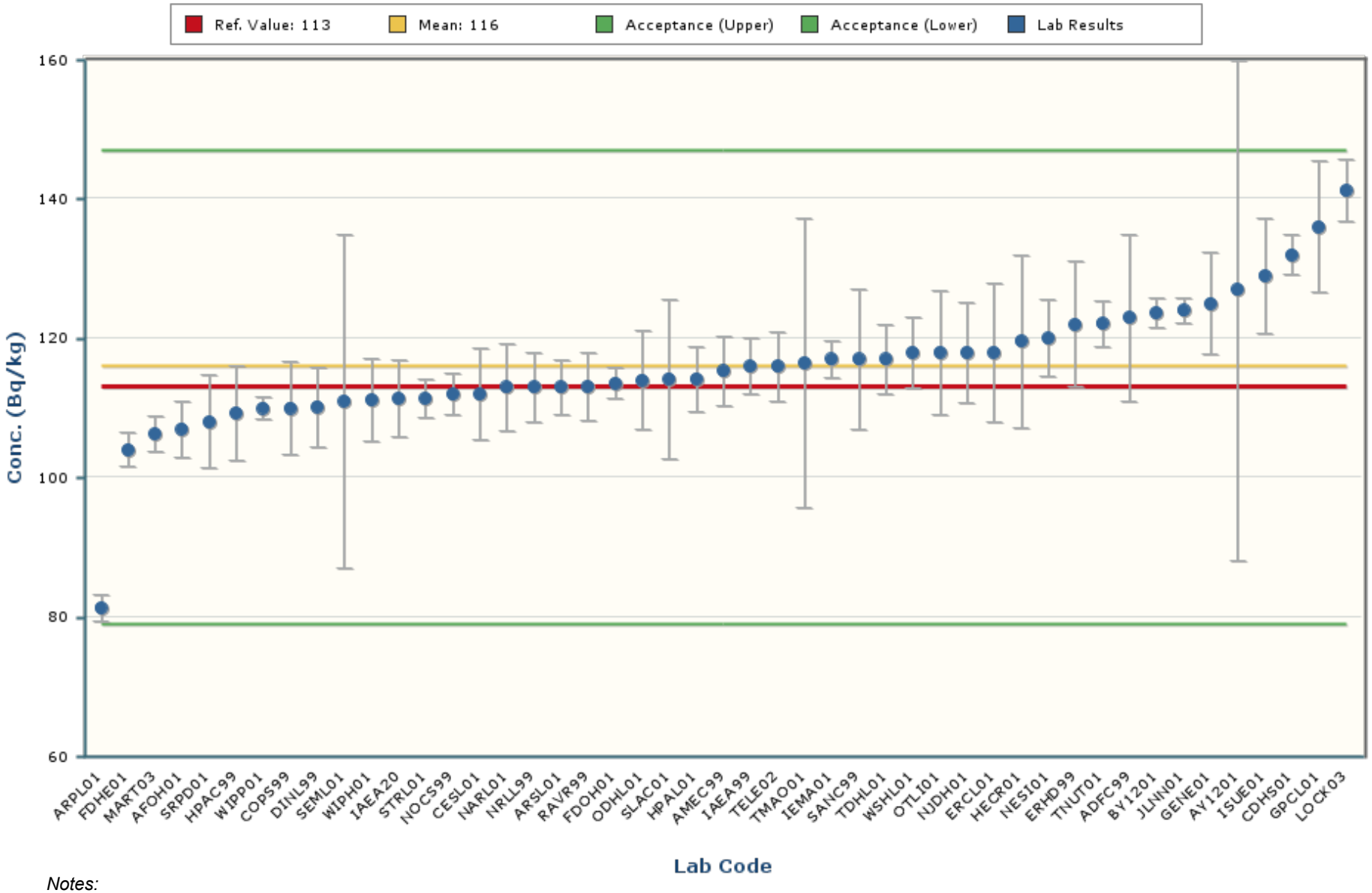
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 202 and 466 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Cobalt-60
MAPEP-24-MaS51



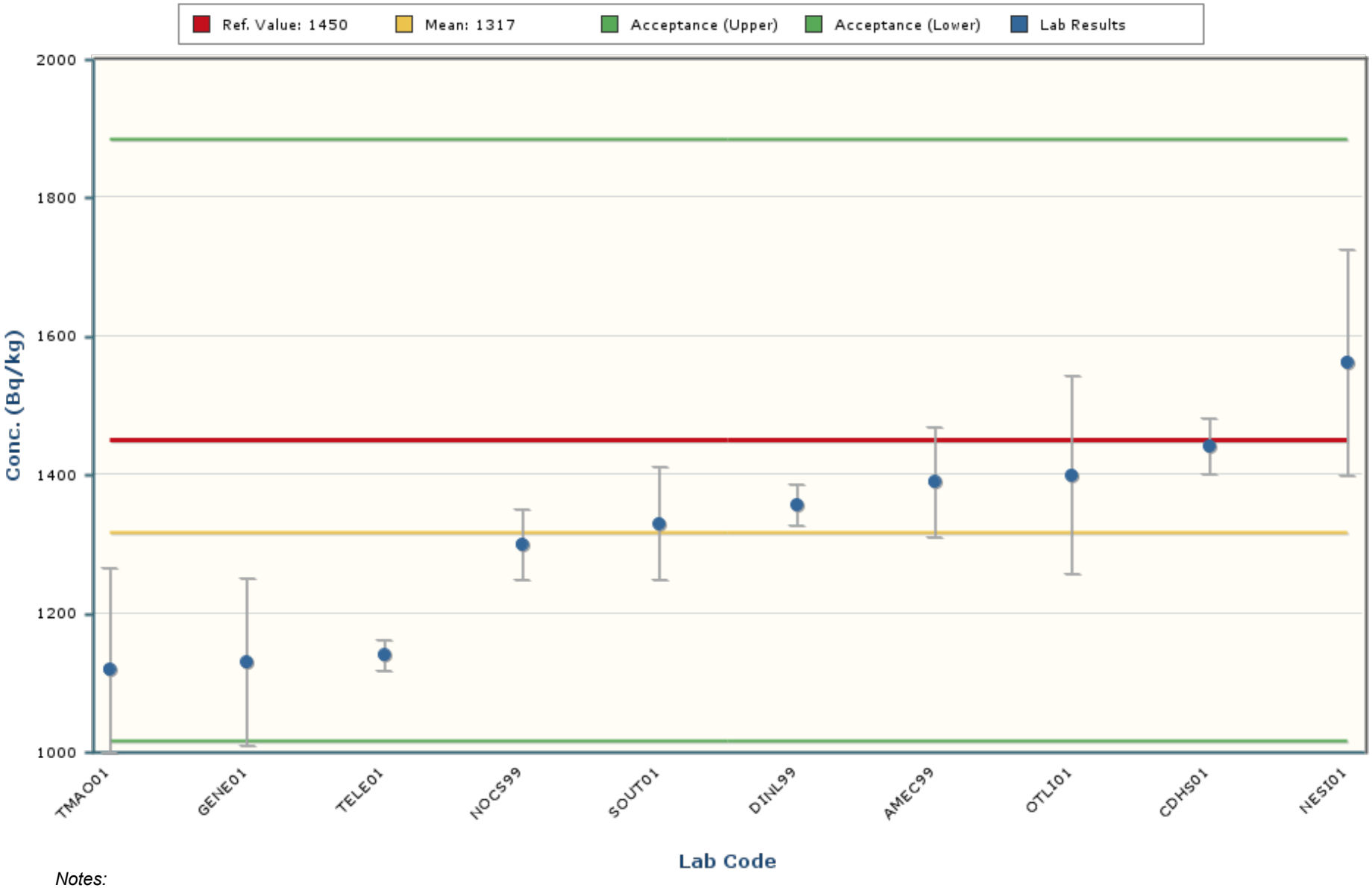
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 460 and 945 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Manganese-54
MAPEP-24-MaS51



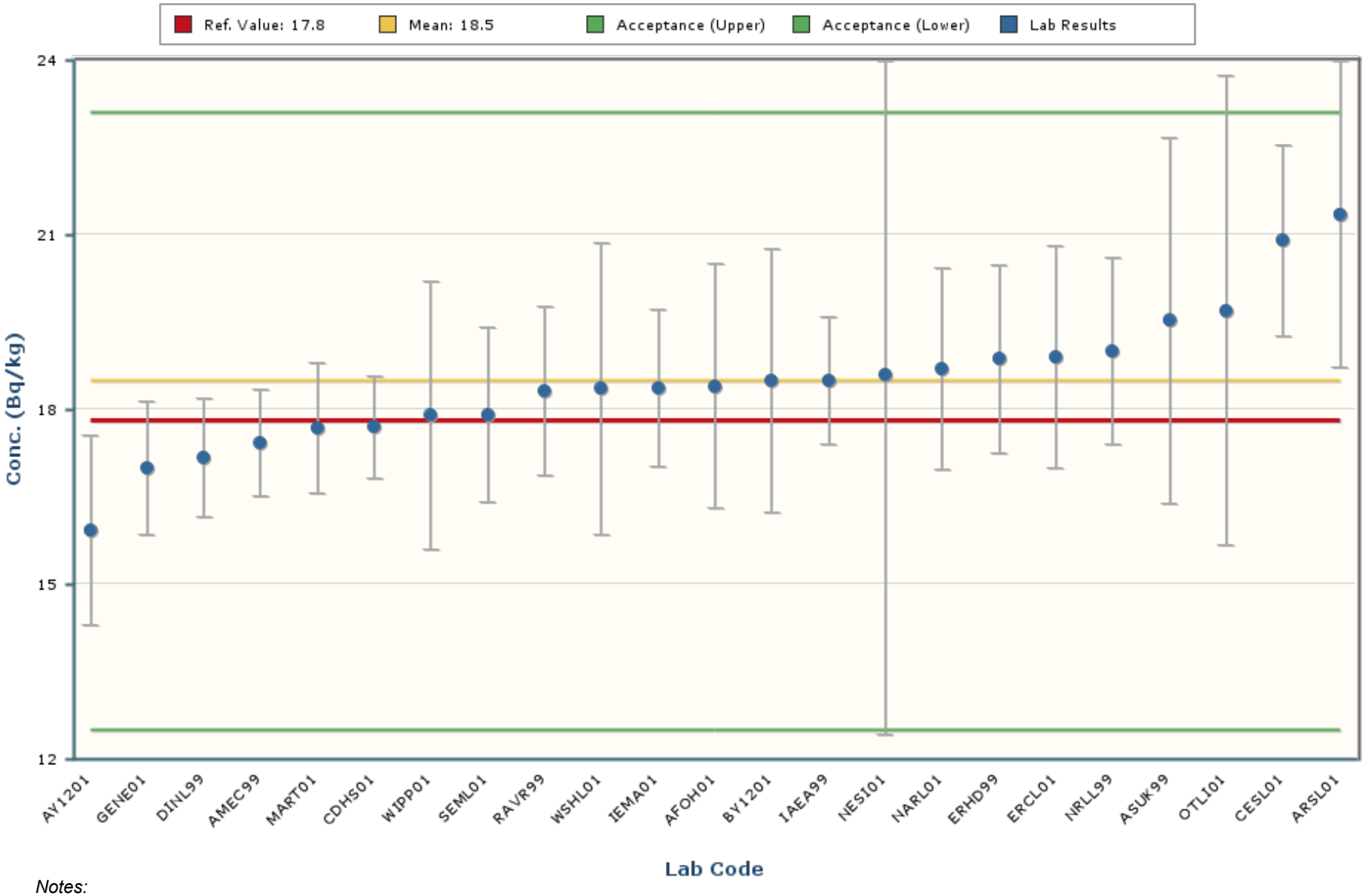
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 70 and 162 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Nickel-63
MAPEP-24-MaS51



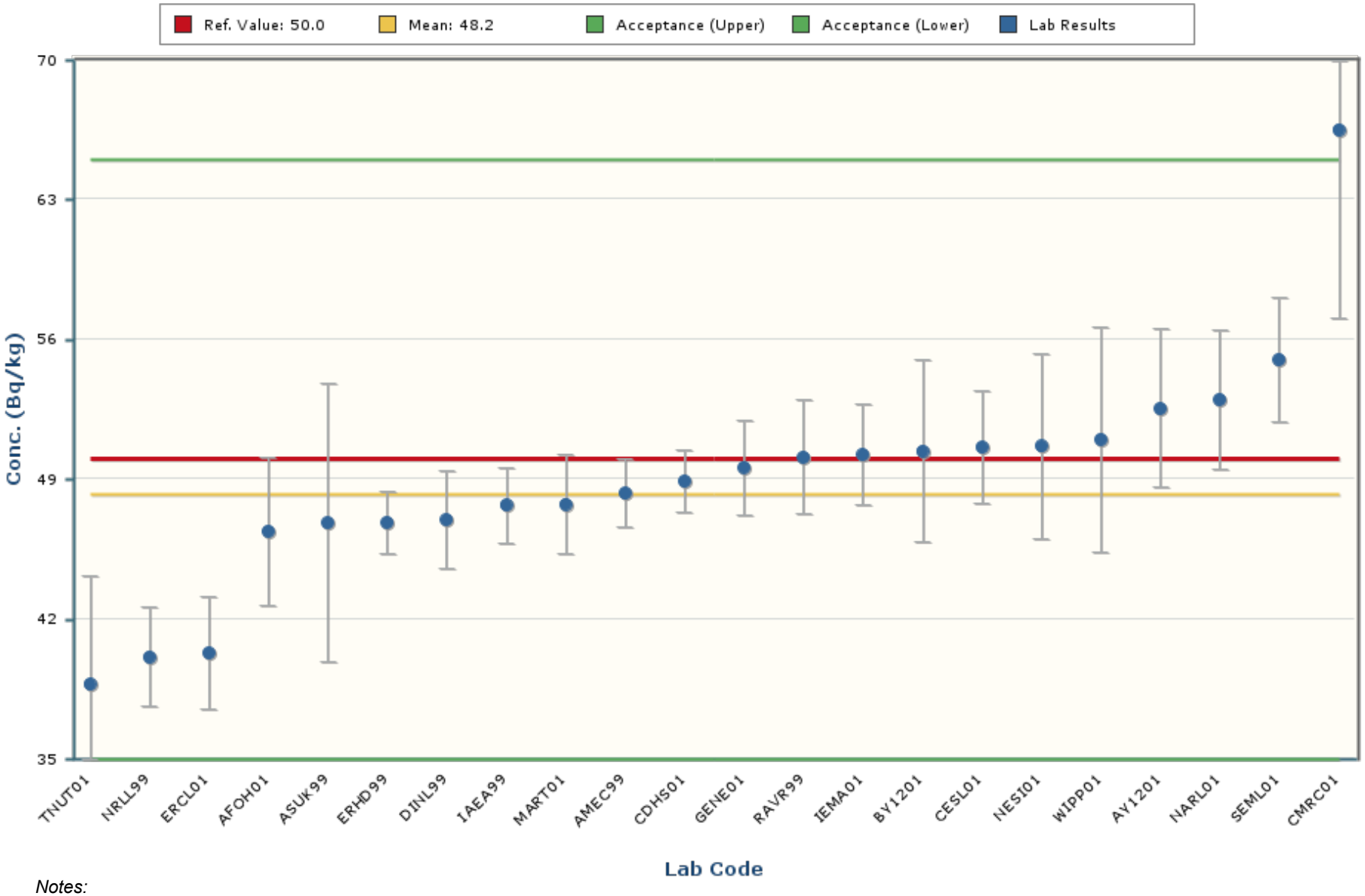
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 580 and 2055 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Plutonium-238
MAPEP-24-MaS51



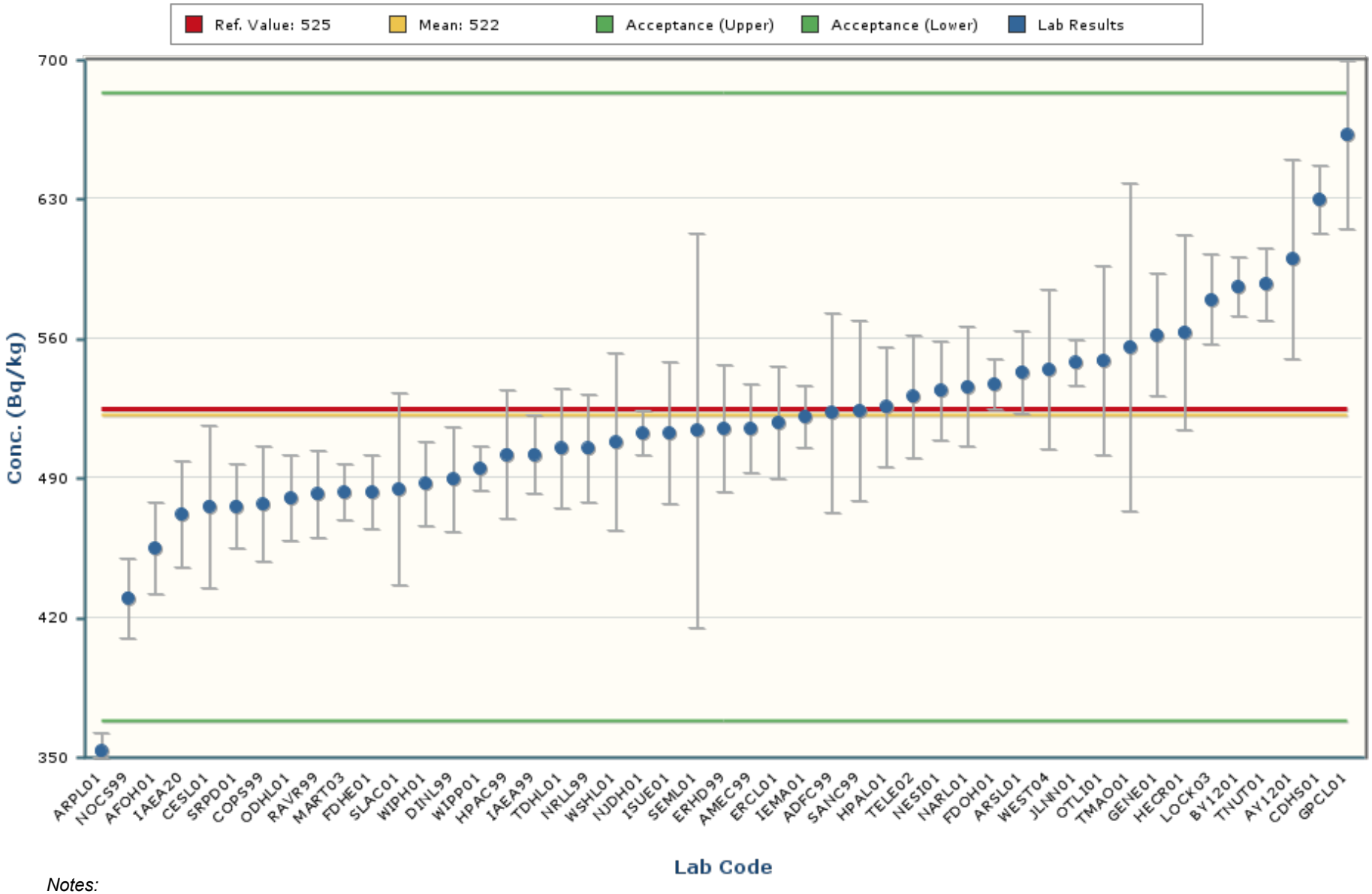
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 12.5 and 24.4 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Plutonium-239/240
MAPEP-24-MaS51



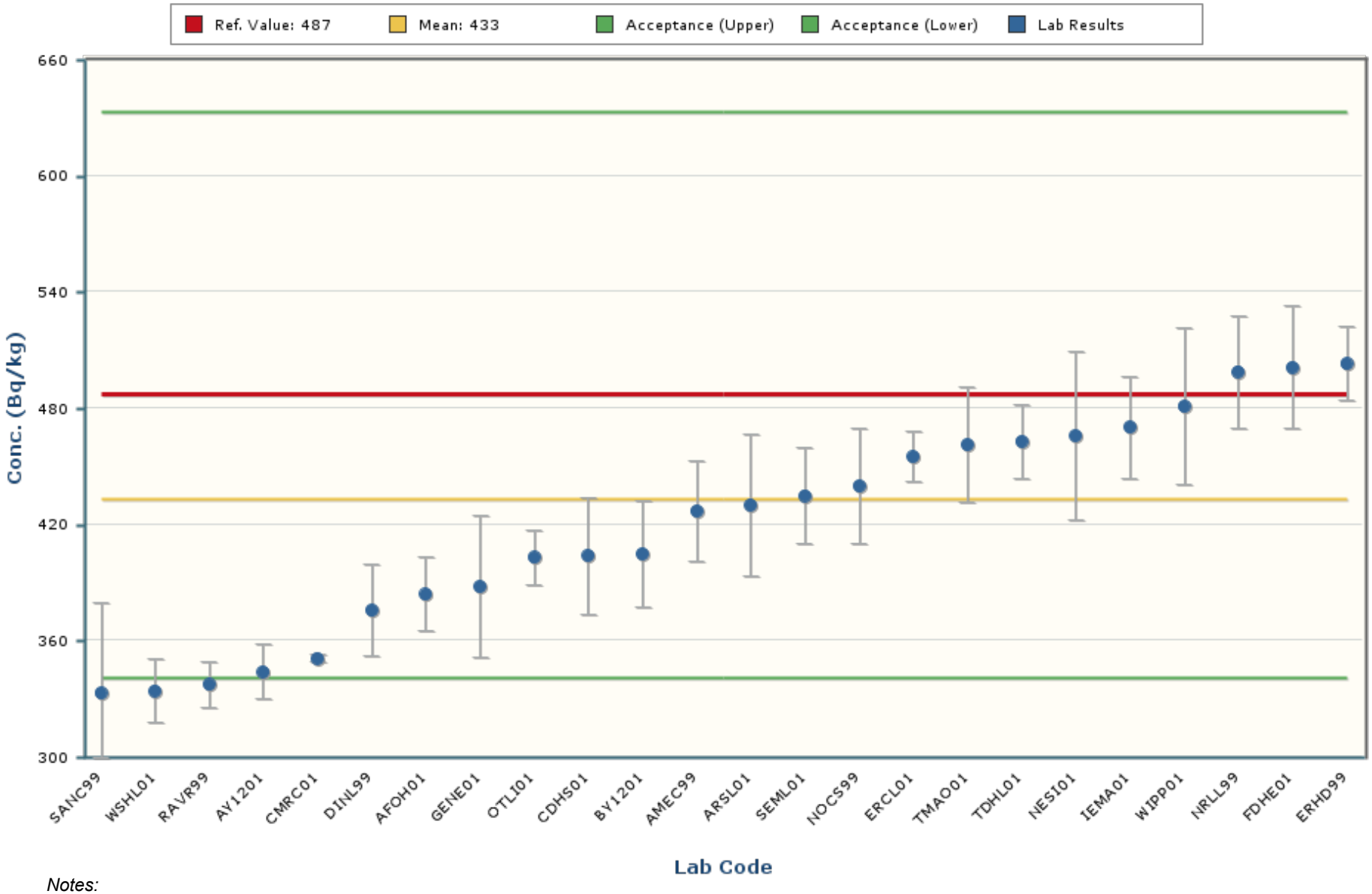
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 27.3 and 69.1 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Potassium-40
MAPEP-24-MaS51



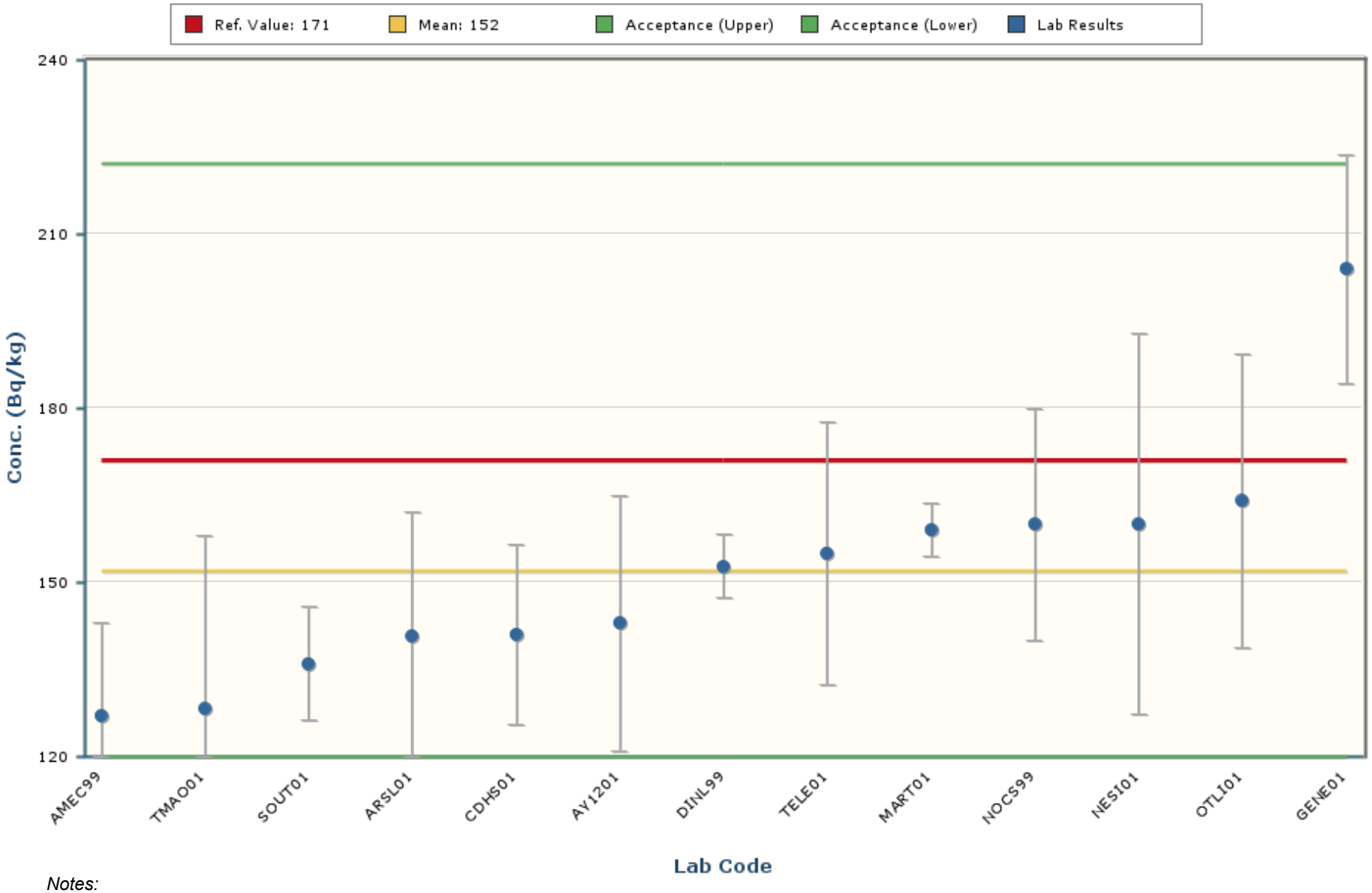
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 297 and 747 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Strontium-90
MAPEP-24-MaS51



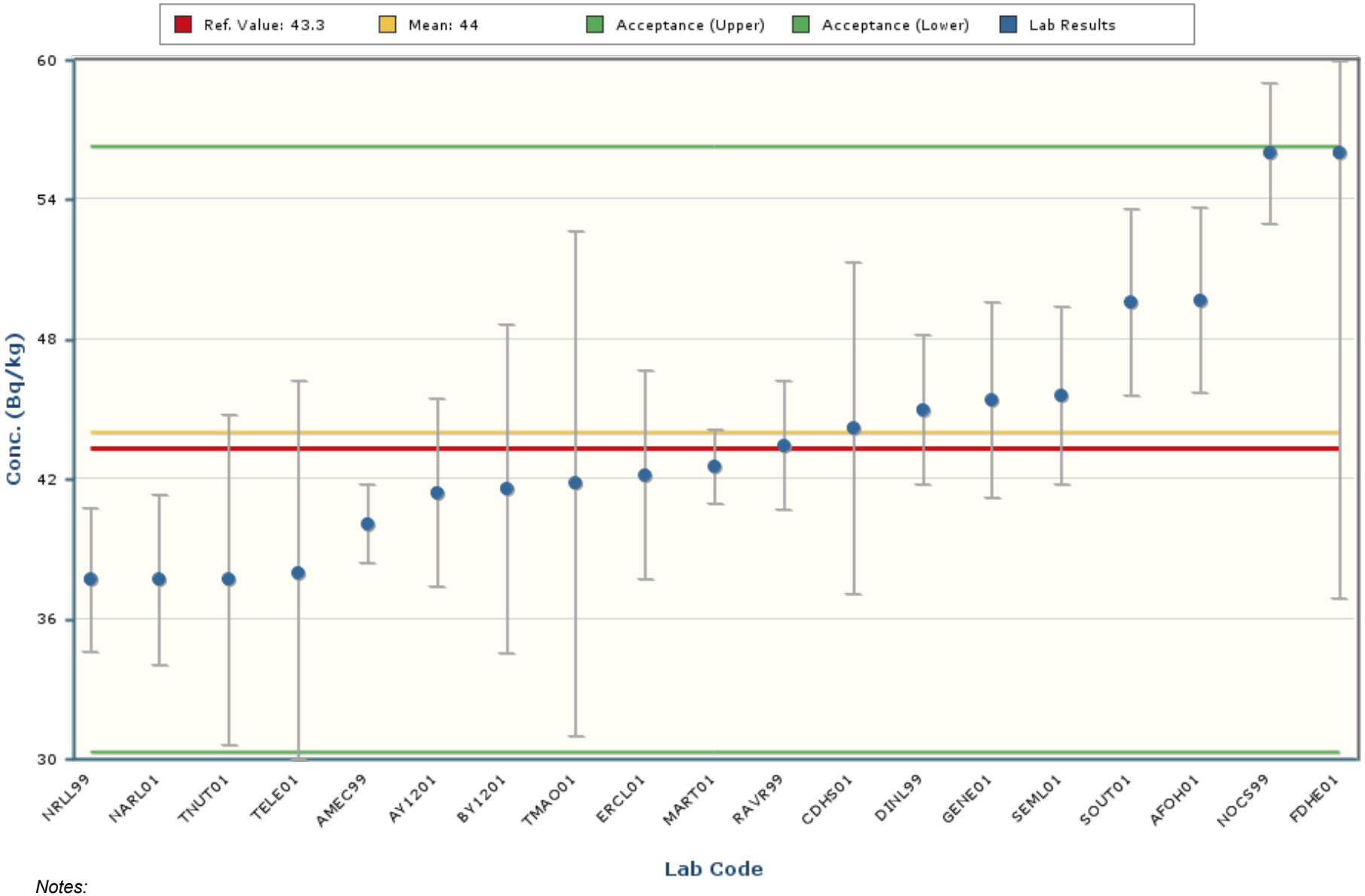
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 193 and 672 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Technetium-99
MAPEP-24-MaS51



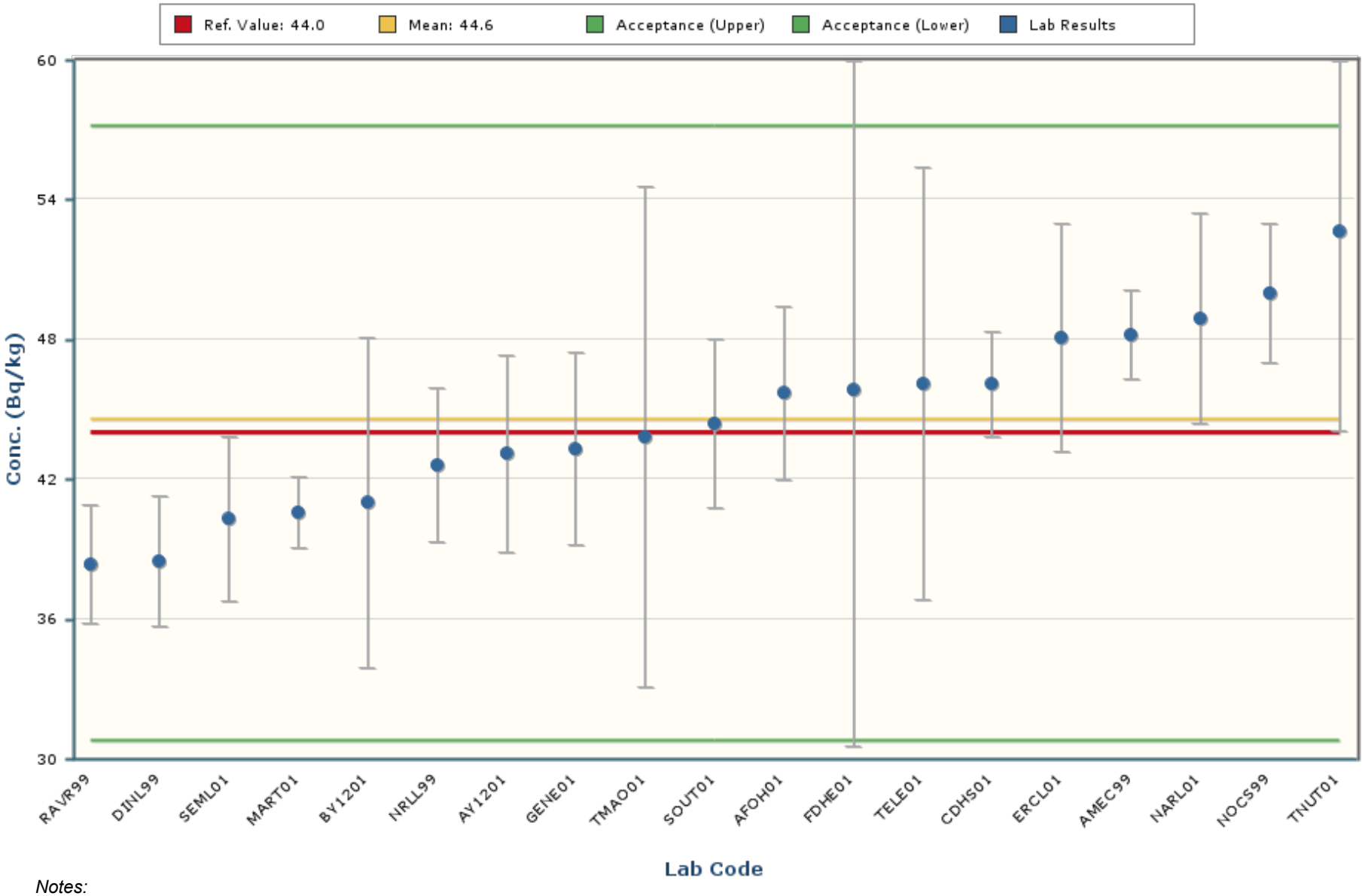
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 51 and 252 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Thorium-228
MAPEP-24-MaS51



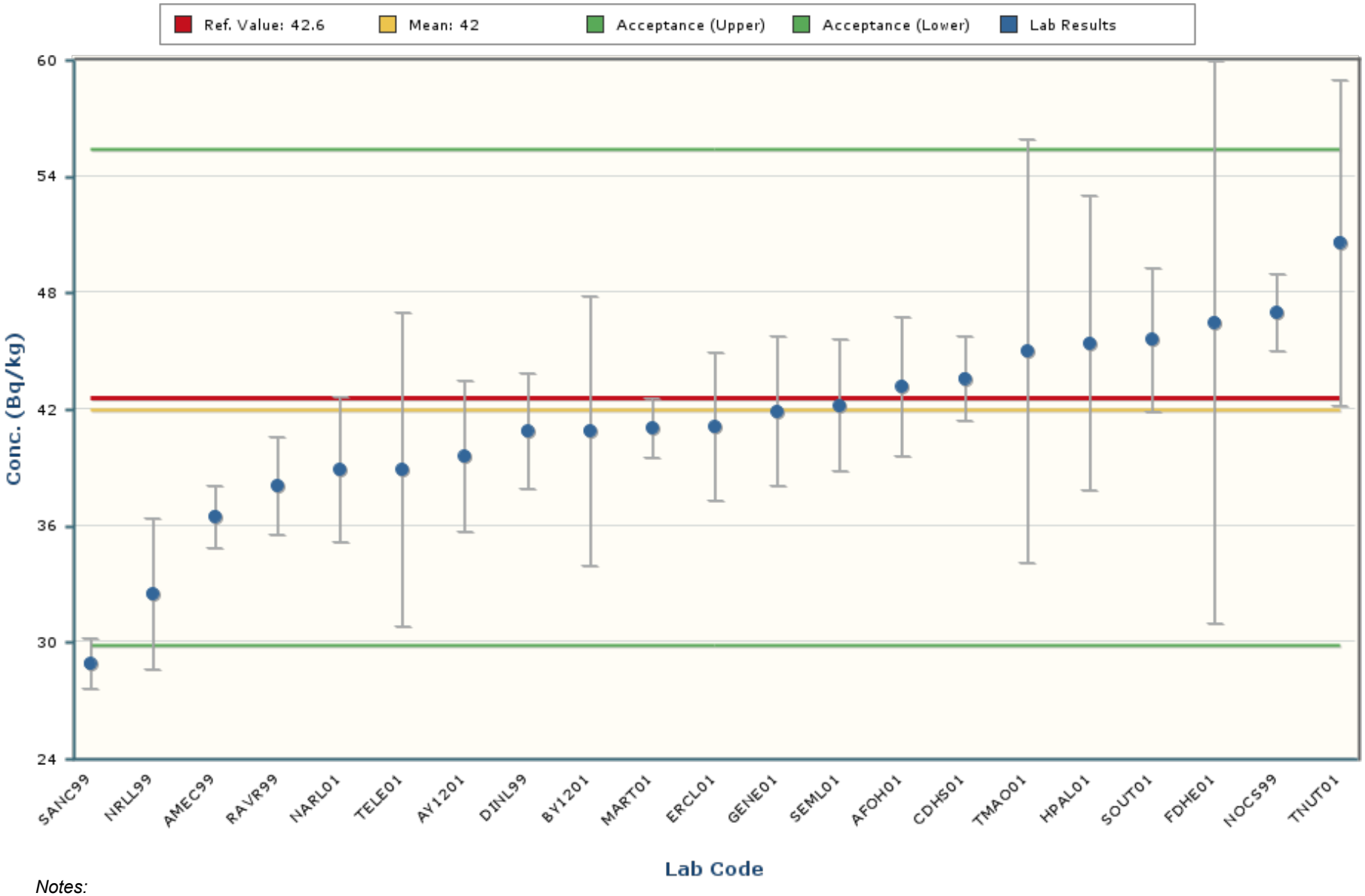
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 16.3 and 71.6 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Thorium-230
MAPEP-24-MaS51



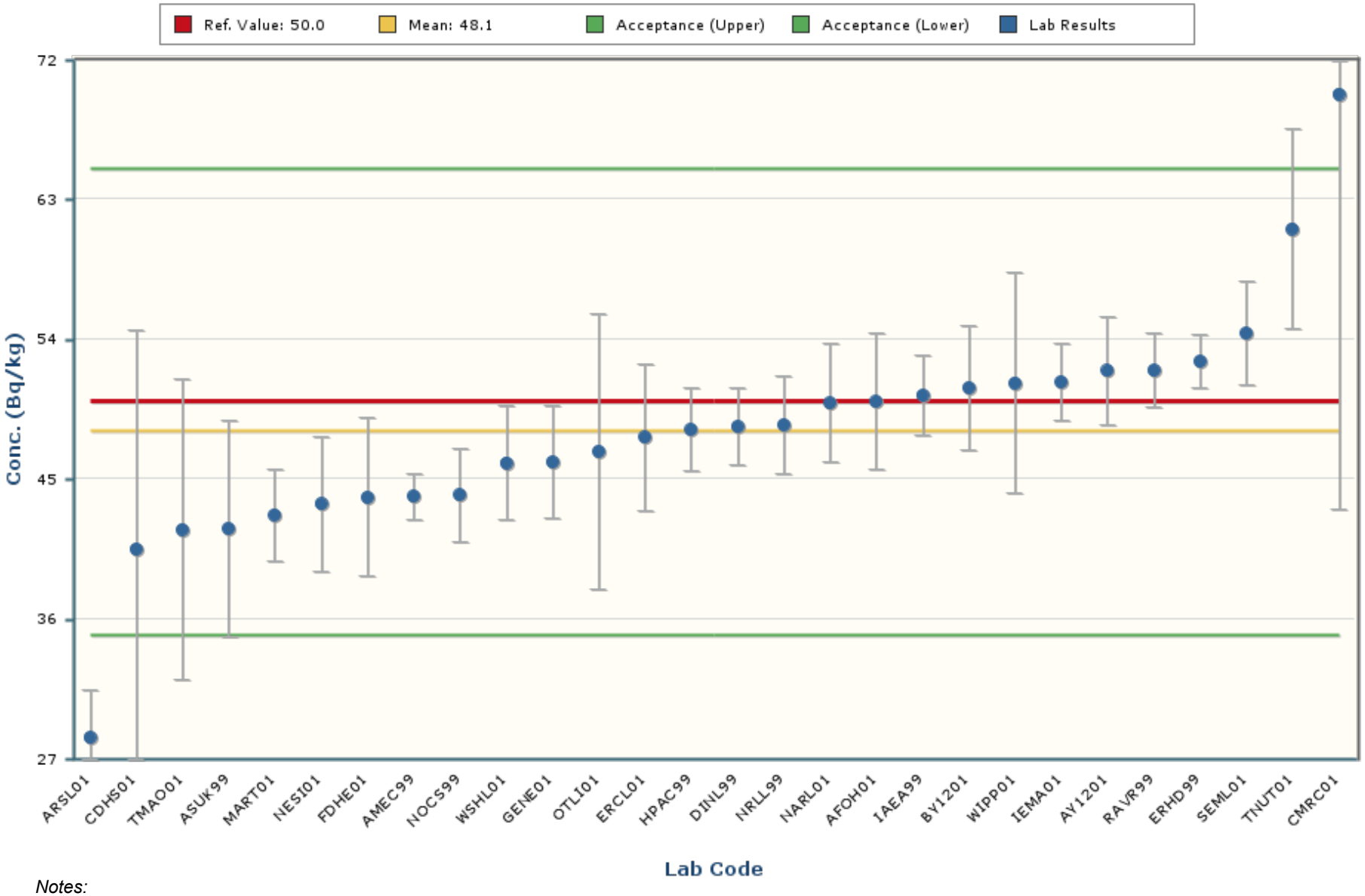
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 25.0 and 64.2 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Thorium-232
MAPEP-24-MaS51



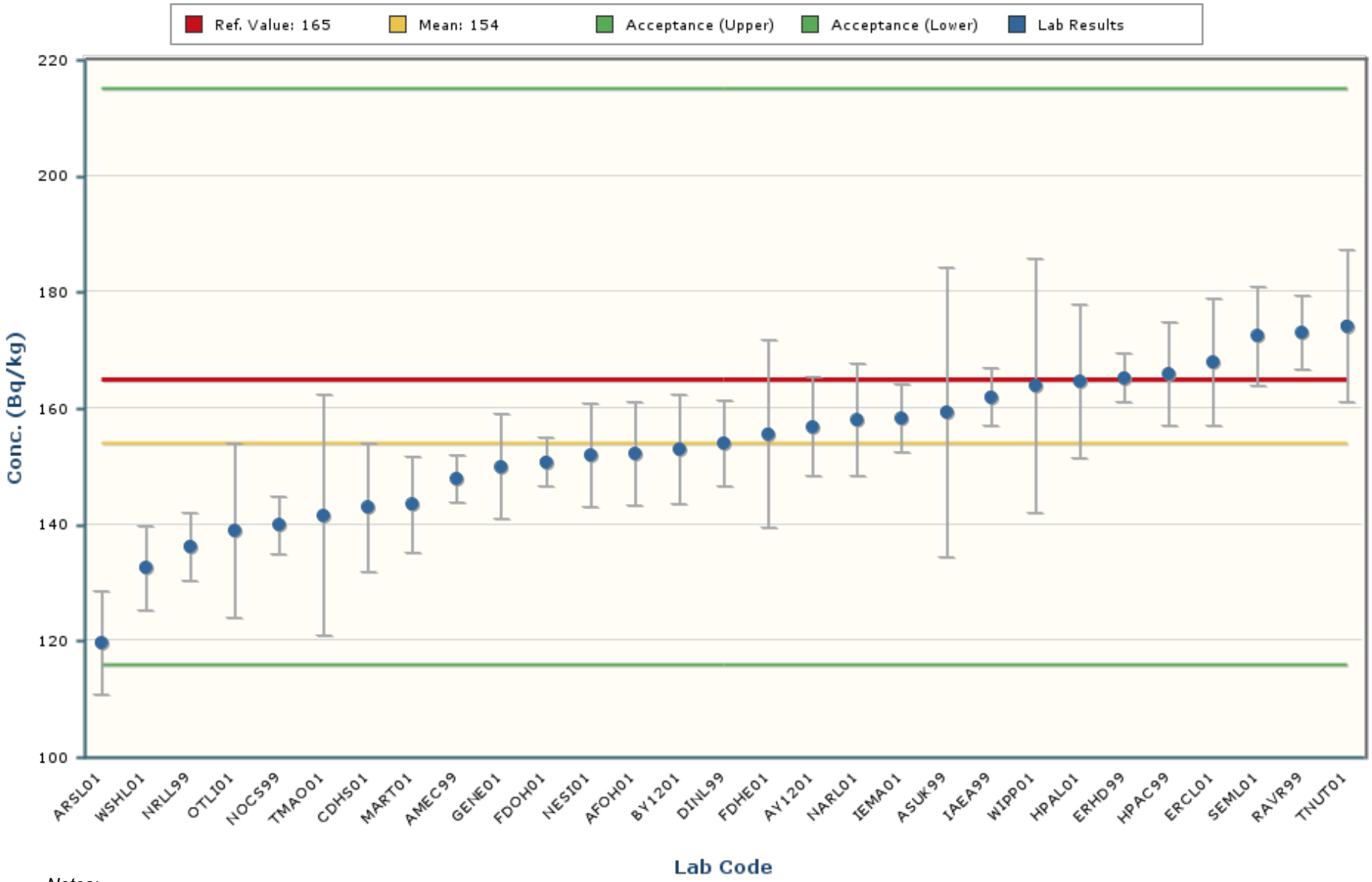
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 21.4 and 62.6 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Uranium-234
MAPEP-24-MaS51



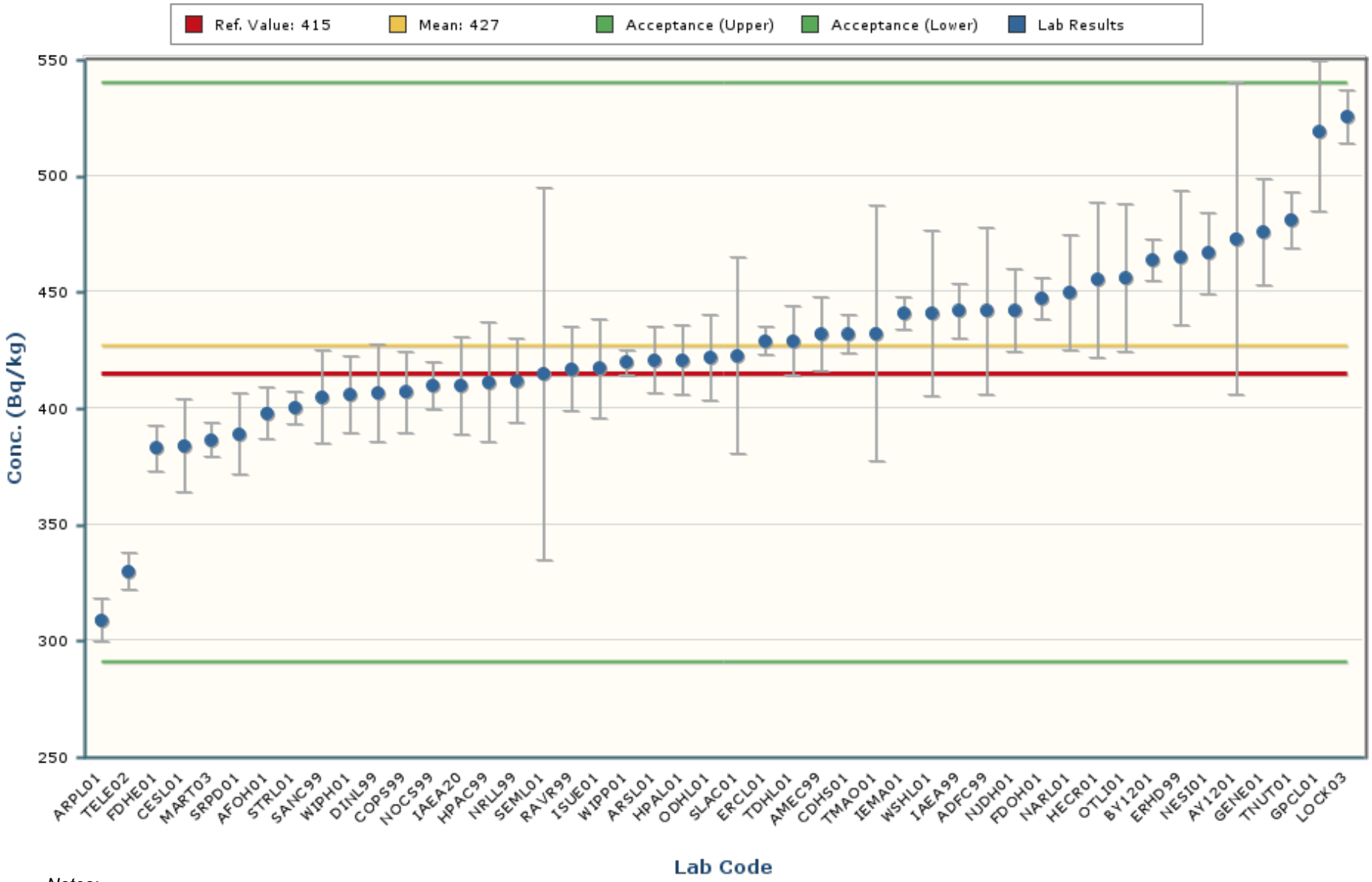
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 24.6 and 71.5 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Uranium-238
MAPEP-24-MaS51



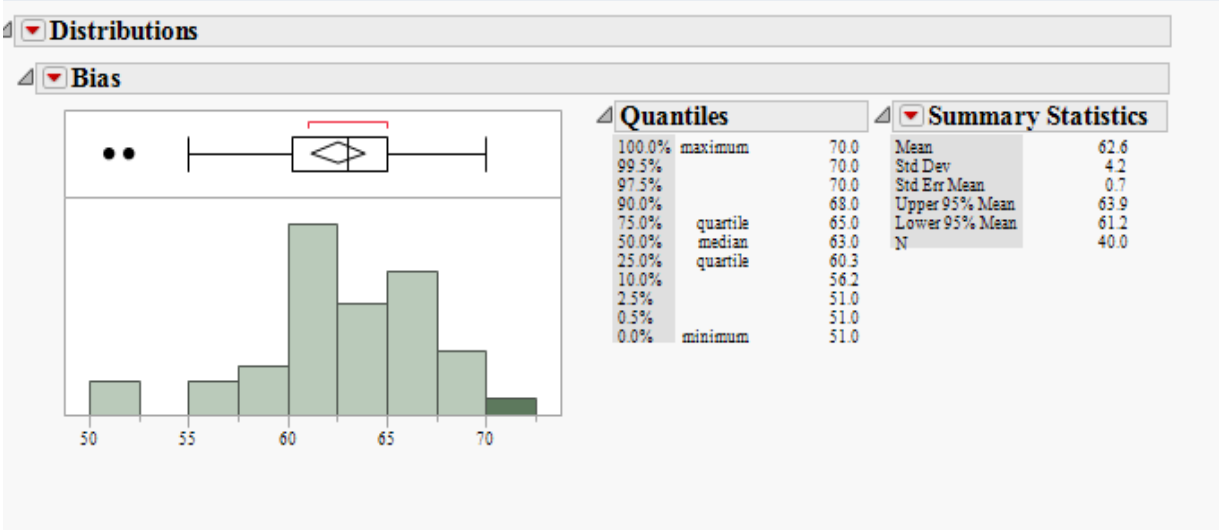
Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 88 and 219 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

Zinc-65
MAPEP-24-MaS51



Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 231 and 623 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± 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.

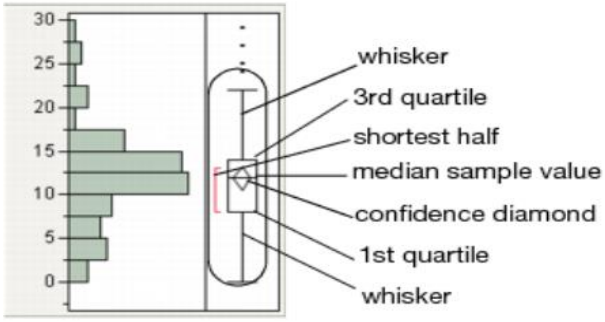


Outlier Box Plot

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)



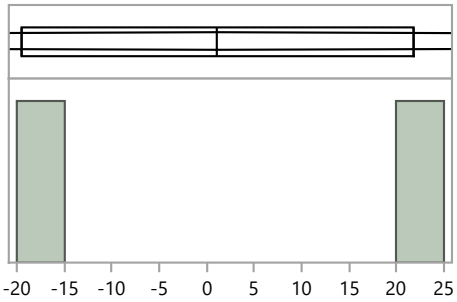
If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

Ref. "SAS Institute Inc. 2016. JMP® 13 Basic Analysis. Cary, NC: SAS Institute Inc."

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Antimony Inductively Coupled Plasma Emission Spectrometry

Bias

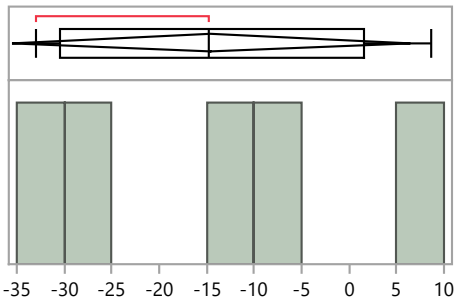


Quantiles		
100.0%	maximum	21.8
99.5%		21.8
97.5%		21.8
90.0%		21.8
75.0%	quartile	21.8
50.0%	median	1.2
25.0%	quartile	-19.5
10.0%		-19.5
2.5%		-19.5
0.5%		-19.5
0.0%	minimum	-19.5

Summary Statistics	
Mean	1.2
Std Dev	29.2
Std Err Mean	20.7
Upper 95% Mean	263.5
Lower 95% Mean	-261.2
N	2.0

Distributions Analyte_Detection=Antimony Inductively Coupled Plasma Mass Spectrometry

Bias

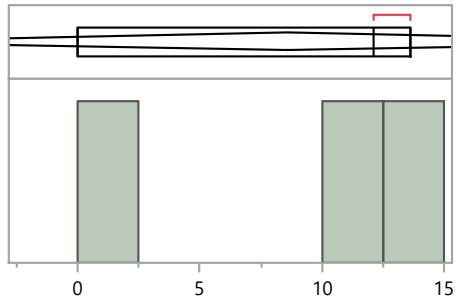


Quantiles		
100.0%	maximum	8.7
99.5%		8.7
97.5%		8.7
90.0%		8.7
75.0%	quartile	1.6
50.0%	median	-14.8
25.0%	quartile	-30.5
10.0%		-32.9
2.5%		-32.9
0.5%		-32.9
0.0%	minimum	-32.9

Summary Statistics	
Mean	-14.5
Std Dev	16.9
Std Err Mean	7.5
Upper 95% Mean	6.4
Lower 95% Mean	-35.5
N	5.0

Distributions Analyte_Detection=Arsenic Inductively Coupled Plasma Emission Spectrometry

Bias



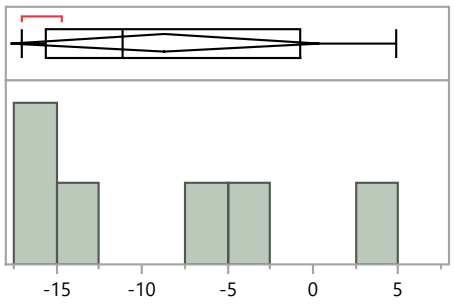
Quantiles		
100.0%	maximum	13.6
99.5%		13.6
97.5%		13.6
90.0%		13.6
75.0%	quartile	13.6
50.0%	median	12.1
25.0%	quartile	0.0
10.0%		0.0
2.5%		0.0
0.5%		0.0
0.0%	minimum	0.0

Summary Statistics	
Mean	8.6
Std Dev	7.5
Std Err Mean	4.3
Upper 95% Mean	27.1
Lower 95% Mean	-10.0
N	3.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Arsenic Inductively Coupled Plasma Mass Spectrometry

Bias

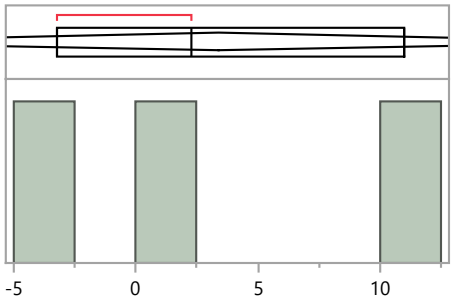


Quantiles		
100.0%	maximum	4.9
99.5%		4.9
97.5%		4.9
90.0%		4.9
75.0%	quartile	-0.7
50.0%	median	-11.1
25.0%	quartile	-15.6
10.0%		-17.0
2.5%		-17.0
0.5%		-17.0
0.0%	minimum	-17.0

Summary Statistics	
Mean	-8.7
Std Dev	8.6
Std Err Mean	3.5
Upper 95% Mean	0.4
Lower 95% Mean	-17.7
N	6.0

Distributions Analyte_Detection=Barium Inductively Coupled Plasma Emission Spectrometry

Bias

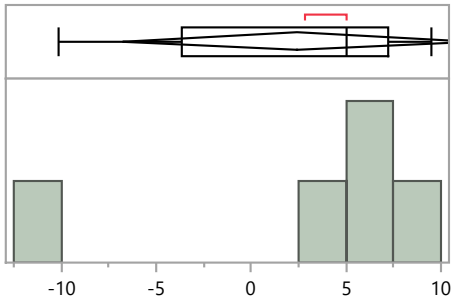


Quantiles		
100.0%	maximum	11.0
99.5%		11.0
97.5%		11.0
90.0%		11.0
75.0%	quartile	11.0
50.0%	median	2.3
25.0%	quartile	-3.2
10.0%		-3.2
2.5%		-3.2
0.5%		-3.2
0.0%	minimum	-3.2

Summary Statistics	
Mean	3.4
Std Dev	7.2
Std Err Mean	4.1
Upper 95% Mean	21.2
Lower 95% Mean	-14.4
N	3.0

Distributions Analyte_Detection=Barium Inductively Coupled Plasma Mass Spectrometry

Bias



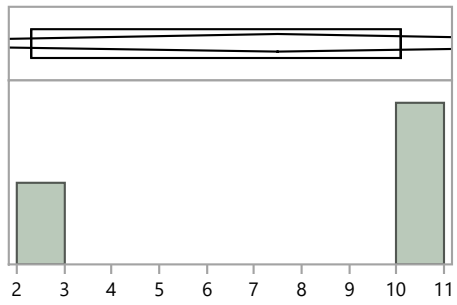
Quantiles		
100.0%	maximum	9.5
99.5%		9.5
97.5%		9.5
90.0%		9.5
75.0%	quartile	7.3
50.0%	median	5.0
25.0%	quartile	-3.7
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

Summary Statistics	
Mean	2.4
Std Dev	7.4
Std Err Mean	3.3
Upper 95% Mean	11.7
Lower 95% Mean	-6.8
N	5.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Beryllium Inductively Coupled Plasma Emission Spectrometry

Bias

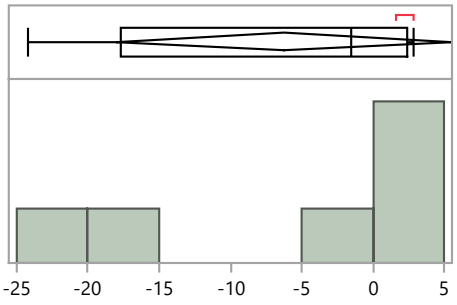


Quantiles		
100.0%	maximum	10.1
99.5%		10.1
97.5%		10.1
90.0%		10.1
75.0%	quartile	10.1
50.0%	median	10.1
25.0%	quartile	2.3
10.0%		2.3
2.5%		2.3
0.5%		2.3
0.0%	minimum	2.3

Summary Statistics	
Mean	7.5
Std Dev	4.5
Std Err Mean	2.6
Upper 95% Mean	18.7
Lower 95% Mean	-3.7
N	3.0

Distributions Analyte_Detection=Beryllium Inductively Coupled Plasma Mass Spectrometry

Bias

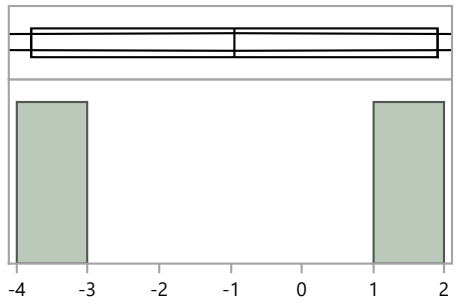


Quantiles		
100.0%	maximum	2.9
99.5%		2.9
97.5%		2.9
90.0%		2.9
75.0%	quartile	2.5
50.0%	median	-1.6
25.0%	quartile	-17.7
10.0%		-24.2
2.5%		-24.2
0.5%		-24.2
0.0%	minimum	-24.2

Summary Statistics	
Mean	-6.3
Std Dev	11.2
Std Err Mean	4.6
Upper 95% Mean	5.5
Lower 95% Mean	-18.0
N	6.0

Distributions Analyte_Detection=Cadmium Inductively Coupled Plasma Emission Spectrometry

Bias



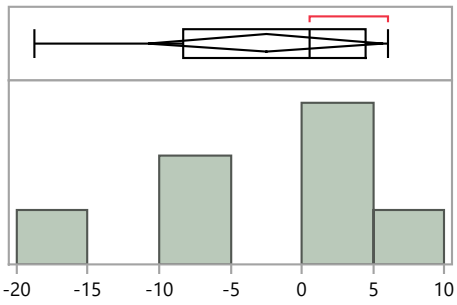
Quantiles		
100.0%	maximum	1.9
99.5%		1.9
97.5%		1.9
90.0%		1.9
75.0%	quartile	1.9
50.0%	median	-1.0
25.0%	quartile	-3.8
10.0%		-3.8
2.5%		-3.8
0.5%		-3.8
0.0%	minimum	-3.8

Summary Statistics	
Mean	-1.0
Std Dev	4.0
Std Err Mean	2.9
Upper 95% Mean	35.3
Lower 95% Mean	-37.2
N	2.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Cadmium Inductively Coupled Plasma Mass Spectrometry

Bias

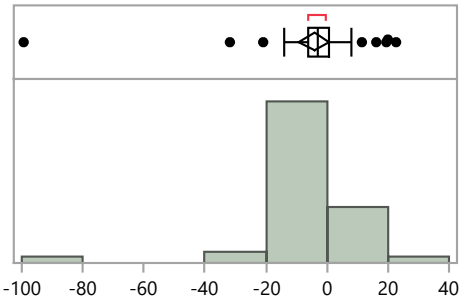


Quantiles		
100.0%	maximum	6.1
99.5%		6.1
97.5%		6.1
90.0%		6.1
75.0%	quartile	4.5
50.0%	median	0.6
25.0%	quartile	-8.3
10.0%		-18.8
2.5%		-18.8
0.5%		-18.8
0.0%	minimum	-18.8

Summary Statistics	
Mean	-2.5
Std Dev	8.9
Std Err Mean	3.4
Upper 95% Mean	5.7
Lower 95% Mean	-10.7
N	7.0

Distributions Analyte_Detection=Cesium-134 Gamma Spectrometry

Bias

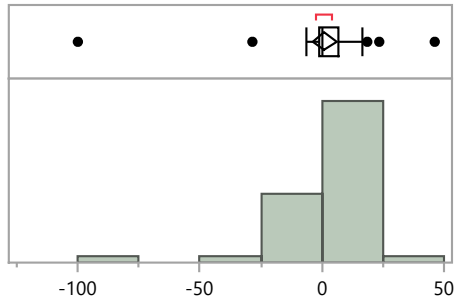


Quantiles		
100.0%	maximum	22.6
99.5%		22.6
97.5%		22.1
90.0%		12.3
75.0%	quartile	0.7
50.0%	median	-2.9
25.0%	quartile	-6.2
10.0%		-12.7
2.5%		-85.8
0.5%		-99.3
0.0%	minimum	-99.3

Summary Statistics	
Mean	-4.2
Std Dev	17.2
Std Err Mean	2.5
Upper 95% Mean	0.9
Lower 95% Mean	-9.2
N	47.0

Distributions Analyte_Detection=Cesium-137 Gamma Spectrometry

Bias



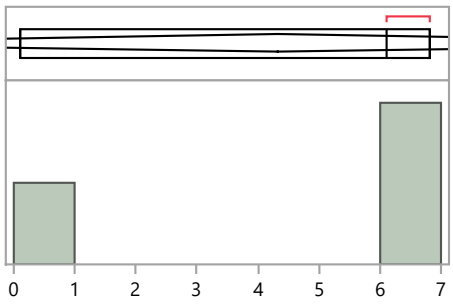
Quantiles		
100.0%	maximum	46.1
99.5%		46.1
97.5%		39.9
90.0%		13.0
75.0%	quartile	6.5
50.0%	median	0.4
25.0%	quartile	-1.4
10.0%		-4.4
2.5%		-80.3
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	1.0
Std Dev	17.5
Std Err Mean	2.5
Upper 95% Mean	6.0
Lower 95% Mean	-3.9
N	50.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Chromium Inductively Coupled Plasma Emission Spectrometry

Bias

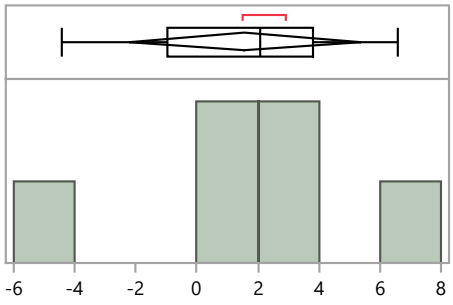


Quantiles		
100.0%	maximum	6.8
99.5%		6.8
97.5%		6.8
90.0%		6.8
75.0%	quartile	6.8
50.0%	median	6.1
25.0%	quartile	0.1
10.0%		0.1
2.5%		0.1
0.5%		0.1
0.0%	minimum	0.1

Summary Statistics	
Mean	4.3
Std Dev	3.7
Std Err Mean	2.1
Upper 95% Mean	13.5
Lower 95% Mean	-4.8
N	3.0

Distributions Analyte_Detection=Chromium Inductively Coupled Plasma Mass Spectrometry

Bias

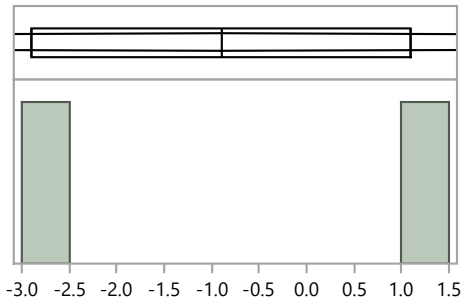


Quantiles		
100.0%	maximum	6.6
99.5%		6.6
97.5%		6.6
90.0%		6.6
75.0%	quartile	3.8
50.0%	median	2.1
25.0%	quartile	-1.0
10.0%		-4.4
2.5%		-4.4
0.5%		-4.4
0.0%	minimum	-4.4

Summary Statistics	
Mean	1.6
Std Dev	3.6
Std Err Mean	1.5
Upper 95% Mean	5.4
Lower 95% Mean	-2.2
N	6.0

Distributions Analyte_Detection=Cobalt Inductively Coupled Plasma Emission Spectrometry

Bias



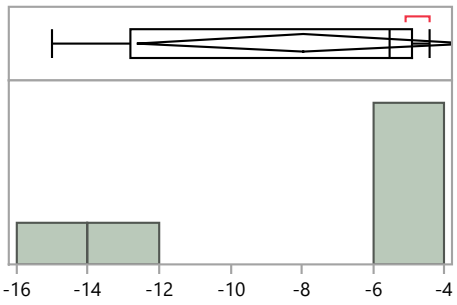
Quantiles		
100.0%	maximum	1.1
99.5%		1.1
97.5%		1.1
90.0%		1.1
75.0%	quartile	1.1
50.0%	median	-0.9
25.0%	quartile	-2.9
10.0%		-2.9
2.5%		-2.9
0.5%		-2.9
0.0%	minimum	-2.9

Summary Statistics	
Mean	-0.9
Std Dev	2.8
Std Err Mean	2.0
Upper 95% Mean	24.5
Lower 95% Mean	-26.3
N	2.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Cobalt Inductively Coupled Plasma Mass Spectrometry

Bias

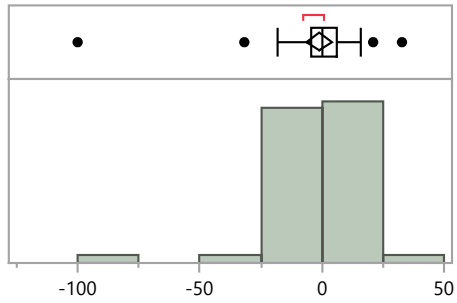


Quantiles		
100.0%	maximum	-4.4
99.5%		-4.4
97.5%		-4.4
90.0%		-4.4
75.0%	quartile	-4.9
50.0%	median	-5.6
25.0%	quartile	-12.8
10.0%		-15.0
2.5%		-15.0
0.5%		-15.0
0.0%	minimum	-15.0

Summary Statistics	
Mean	-8.0
Std Dev	4.5
Std Err Mean	1.8
Upper 95% Mean	-3.3
Lower 95% Mean	-12.6
N	6.0

Distributions Analyte_Detection=Cobalt-57 Gamma Spectrometry

Bias

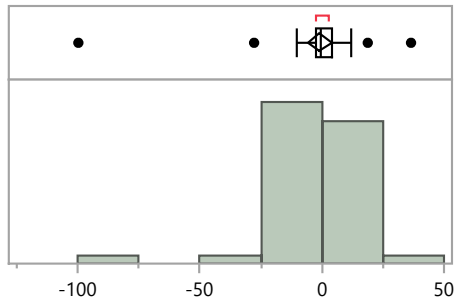


Quantiles		
100.0%	maximum	32.7
99.5%		32.7
97.5%		30.0
90.0%		13.1
75.0%	quartile	5.8
50.0%	median	-0.1
25.0%	quartile	-4.2
10.0%		-8.8
2.5%		-84.7
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-0.9
Std Dev	17.8
Std Err Mean	2.6
Upper 95% Mean	4.2
Lower 95% Mean	-6.1
N	48.0

Distributions Analyte_Detection=Cobalt-60 Gamma Spectrometry

Bias



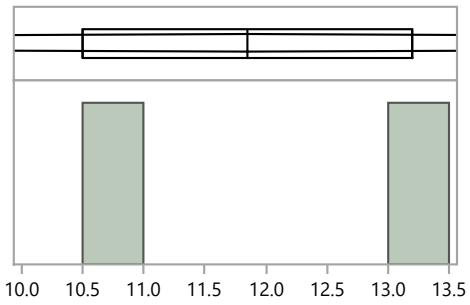
Quantiles		
100.0%	maximum	36.4
99.5%		36.4
97.5%		31.5
90.0%		11.0
75.0%	quartile	4.2
50.0%	median	-0.3
25.0%	quartile	-2.4
10.0%		-5.6
2.5%		-79.9
0.5%		-99.7
0.0%	minimum	-99.7

Summary Statistics	
Mean	-0.9
Std Dev	16.6
Std Err Mean	2.3
Upper 95% Mean	3.8
Lower 95% Mean	-5.7
N	50.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Copper Inductively Coupled Plasma Emission Spectrometry

Bias

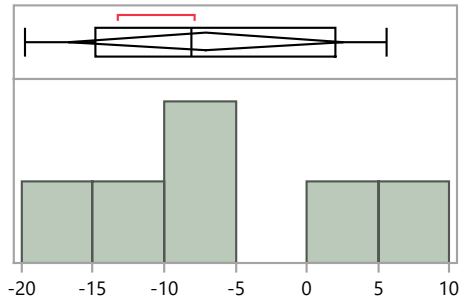


Quantiles		
100.0%	maximum	13.2
99.5%		13.2
97.5%		13.2
90.0%		13.2
75.0%	quartile	13.2
50.0%	median	11.9
25.0%	quartile	10.5
10.0%		10.5
2.5%		10.5
0.5%		10.5
0.0%	minimum	10.5

Summary Statistics	
Mean	11.9
Std Dev	1.9
Std Err Mean	1.3
Upper 95% Mean	29.0
Lower 95% Mean	-5.3
N	2.0

Distributions Analyte_Detection=Copper Inductively Coupled Plasma Mass Spectrometry

Bias

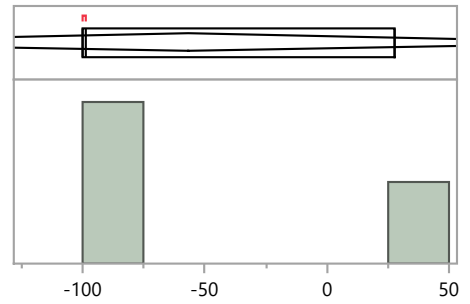


Quantiles		
100.0%	maximum	5.6
99.5%		5.6
97.5%		5.6
90.0%		5.6
75.0%	quartile	2.0
50.0%	median	-8.1
25.0%	quartile	-14.8
10.0%		-19.7
2.5%		-19.7
0.5%		-19.7
0.0%	minimum	-19.7

Summary Statistics	
Mean	-7.1
Std Dev	9.2
Std Err Mean	3.7
Upper 95% Mean	2.5
Lower 95% Mean	-16.8
N	6.0

Distributions Analyte_Detection=Iron-55 Gamma Spectrometry

Bias



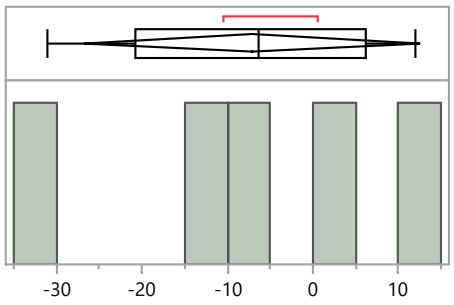
Quantiles		
100.0%	maximum	27.9
99.5%		27.9
97.5%		27.9
90.0%		27.9
75.0%	quartile	27.9
50.0%	median	-98.8
25.0%	quartile	-100.0
10.0%		-100.0
2.5%		-100.0
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-57.0
Std Dev	73.5
Std Err Mean	42.4
Upper 95% Mean	125.6
Lower 95% Mean	-239.5
N	3.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Iron-55 Liquid Scintillation Counter

Bias

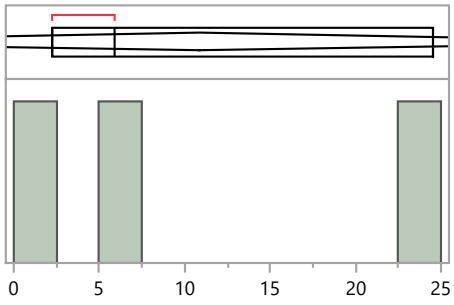


Quantiles		
100.0%	maximum	11.9
99.5%		11.9
97.5%		11.9
90.0%		11.9
75.0%	quartile	6.3
50.0%	median	-6.4
25.0%	quartile	-20.8
10.0%		-31.0
2.5%		-31.0
0.5%		-31.0
0.0%	minimum	-31.0

Summary Statistics	
Mean	-7.1
Std Dev	15.8
Std Err Mean	7.1
Upper 95% Mean	12.6
Lower 95% Mean	-26.7
N	5.0

Distributions Analyte_Detection=Lead Inductively Coupled Plasma Emission Spectrometry

Bias

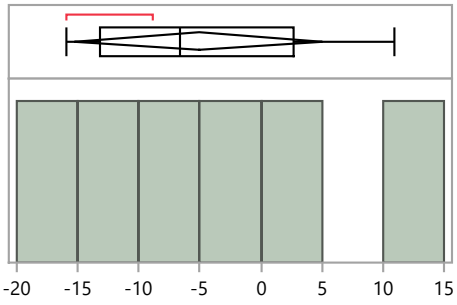


Quantiles		
100.0%	maximum	24.5
99.5%		24.5
97.5%		24.5
90.0%		24.5
75.0%	quartile	24.5
50.0%	median	5.9
25.0%	quartile	2.3
10.0%		2.3
2.5%		2.3
0.5%		2.3
0.0%	minimum	2.3

Summary Statistics	
Mean	10.9
Std Dev	11.9
Std Err Mean	6.9
Upper 95% Mean	40.5
Lower 95% Mean	-18.7
N	3.0

Distributions Analyte_Detection=Lead Inductively Coupled Plasma Mass Spectrometry

Bias



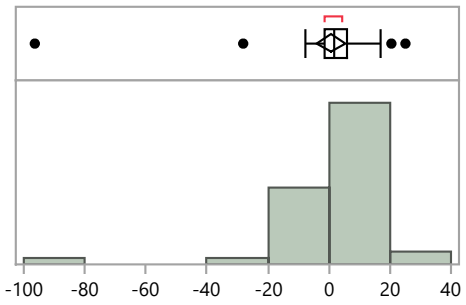
Quantiles		
100.0%	maximum	10.9
99.5%		10.9
97.5%		10.9
90.0%		10.9
75.0%	quartile	2.7
50.0%	median	-6.7
25.0%	quartile	-13.2
10.0%		-15.9
2.5%		-15.9
0.5%		-15.9
0.0%	minimum	-15.9

Summary Statistics	
Mean	-5.1
Std Dev	9.6
Std Err Mean	3.9
Upper 95% Mean	5.0
Lower 95% Mean	-15.2
N	6.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Manganese-54 Gamma Spectrometry

Bias

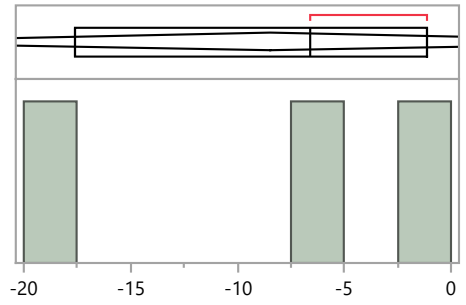


Quantiles		
100.0%	maximum	25.0
99.5%		25.0
97.5%		24.0
90.0%		12.6
75.0%	quartile	6.1
50.0%	median	1.5
25.0%	quartile	-1.6
10.0%		-5.4
2.5%		-81.0
0.5%		-96.3
0.0%	minimum	-96.3

Summary Statistics	
Mean	0.6
Std Dev	16.4
Std Err Mean	2.4
Upper 95% Mean	5.4
Lower 95% Mean	-4.1
N	48.0

Distributions Analyte_Detection=Mercury Atomic Absorption Spectrometry

Bias

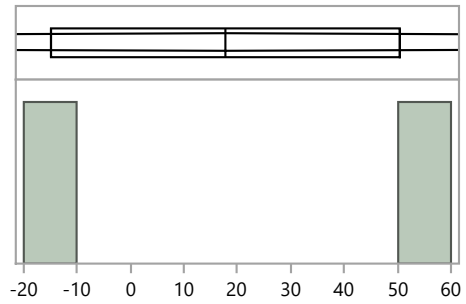


Quantiles		
100.0%	maximum	-1.1
99.5%		-1.1
97.5%		-1.1
90.0%		-1.1
75.0%	quartile	-1.1
50.0%	median	-6.6
25.0%	quartile	-17.6
10.0%		-17.6
2.5%		-17.6
0.5%		-17.6
0.0%	minimum	-17.6

Summary Statistics	
Mean	-8.4
Std Dev	8.4
Std Err Mean	4.9
Upper 95% Mean	12.4
Lower 95% Mean	-29.3
N	3.0

Distributions Analyte_Detection=Mercury Inductively Coupled Plasma Mass Spectrometry

Bias



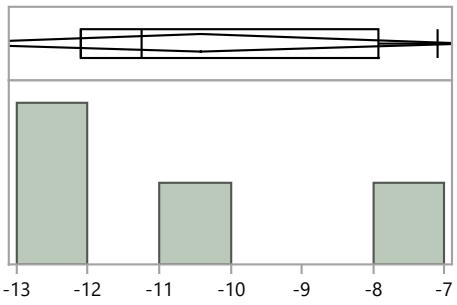
Quantiles		
100.0%	maximum	50.5
99.5%		50.5
97.5%		50.5
90.0%		50.5
75.0%	quartile	50.5
50.0%	median	17.9
25.0%	quartile	-14.8
10.0%		-14.8
2.5%		-14.8
0.5%		-14.8
0.0%	minimum	-14.8

Summary Statistics	
Mean	17.9
Std Dev	46.2
Std Err Mean	32.7
Upper 95% Mean	432.7
Lower 95% Mean	-397.0
N	2.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Mercury Other

Bias

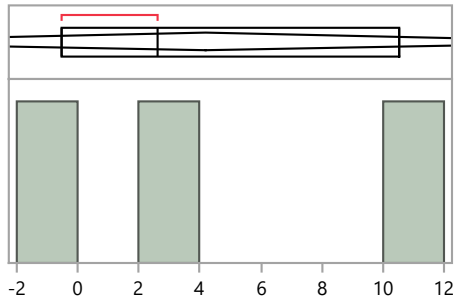


Quantiles		
100.0%	maximum	-7.1
99.5%		-7.1
97.5%		-7.1
90.0%		-7.1
75.0%	quartile	-7.9
50.0%	median	-11.3
25.0%	quartile	-12.1
10.0%		-12.1
2.5%		-12.1
0.5%		-12.1
0.0%	minimum	-12.1

Summary Statistics	
Mean	-10.4
Std Dev	2.4
Std Err Mean	1.2
Upper 95% Mean	-6.7
Lower 95% Mean	-14.2
N	4.0

Distributions Analyte_Detection=Nickel Inductively Coupled Plasma Emission Spectrometry

Bias

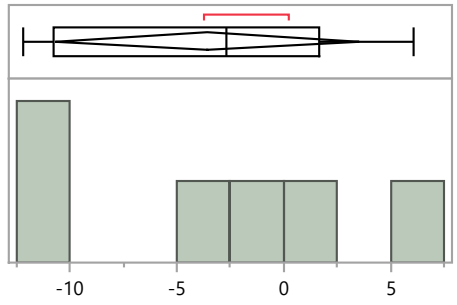


Quantiles		
100.0%	maximum	10.5
99.5%		10.5
97.5%		10.5
90.0%		10.5
75.0%	quartile	10.5
50.0%	median	2.6
25.0%	quartile	-0.5
10.0%		-0.5
2.5%		-0.5
0.5%		-0.5
0.0%	minimum	-0.5

Summary Statistics	
Mean	4.2
Std Dev	5.7
Std Err Mean	3.3
Upper 95% Mean	18.3
Lower 95% Mean	-9.9
N	3.0

Distributions Analyte_Detection=Nickel Inductively Coupled Plasma Mass Spectrometry

Bias



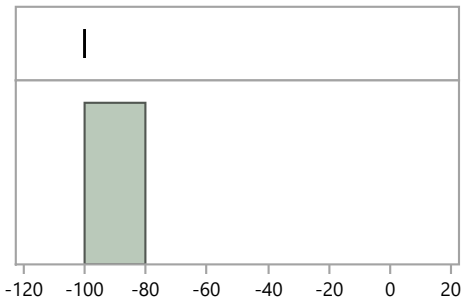
Quantiles		
100.0%	maximum	6.1
99.5%		6.1
97.5%		6.1
90.0%		6.1
75.0%	quartile	1.7
50.0%	median	-2.7
25.0%	quartile	-10.8
10.0%		-12.2
2.5%		-12.2
0.5%		-12.2
0.0%	minimum	-12.2

Summary Statistics	
Mean	-3.6
Std Dev	6.8
Std Err Mean	2.8
Upper 95% Mean	3.6
Lower 95% Mean	-10.7
N	6.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Nickel-63 Gamma Spectrometry

Bias

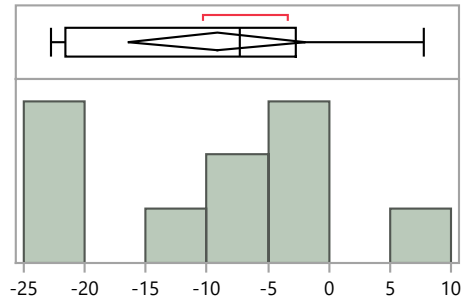


Quantiles		
100.0%	maximum	-100.0
99.5%		-100.0
97.5%		-100.0
90.0%		-100.0
75.0%	quartile	-100.0
50.0%	median	-100.0
25.0%	quartile	-100.0
10.0%		-100.0
2.5%		-100.0
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-100.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Nickel-63 Liquid Scintillation Counter

Bias

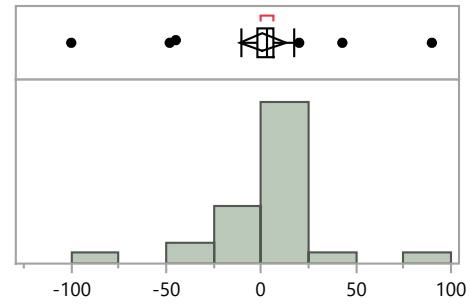


Quantiles		
100.0%	maximum	7.8
99.5%		7.8
97.5%		7.8
90.0%		7.0
75.0%	quartile	-2.7
50.0%	median	-7.4
25.0%	quartile	-21.6
10.0%		-22.7
2.5%		-22.8
0.5%		-22.8
0.0%	minimum	-22.8

Summary Statistics	
Mean	-9.2
Std Dev	10.2
Std Err Mean	3.2
Upper 95% Mean	-1.9
Lower 95% Mean	-16.4
N	10.0

Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

Bias



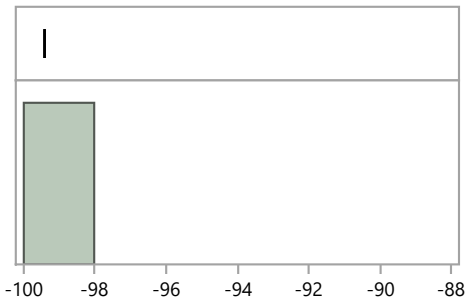
Quantiles		
100.0%	maximum	89.8
99.5%		89.8
97.5%		89.8
90.0%		22.3
75.0%	quartile	6.6
50.0%	median	3.3
25.0%	quartile	-1.8
10.0%		-45.2
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	0.9
Std Dev	30.7
Std Err Mean	5.8
Upper 95% Mean	12.8
Lower 95% Mean	-11.0
N	28.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Plutonium-238 Gamma Spectrometry

Bias

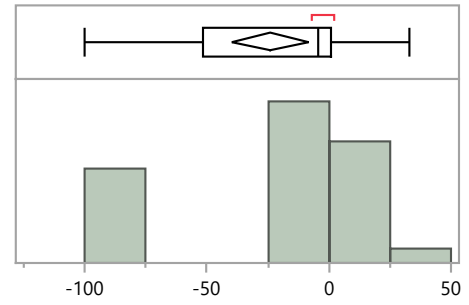


Quantiles		
100.0%	maximum	-99.4
99.5%		-99.4
97.5%		-99.4
90.0%		-99.4
75.0%	quartile	-99.4
50.0%	median	-99.4
25.0%	quartile	-99.4
10.0%		-99.4
2.5%		-99.4
0.5%		-99.4
0.0%	minimum	-99.4

Summary Statistics	
Mean	-99.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Plutonium-239/240 Alpha Spectrometry

Bias

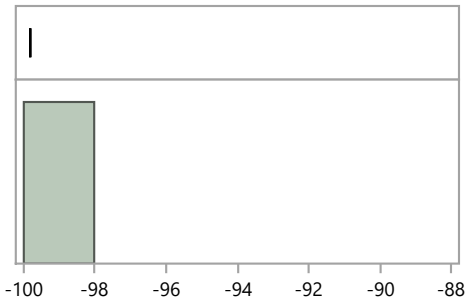


Quantiles		
100.0%	maximum	33.0
99.5%		33.0
97.5%		33.0
90.0%		6.0
75.0%	quartile	1.0
50.0%	median	-4.6
25.0%	quartile	-51.6
10.0%		-96.7
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-24.0
Std Dev	41.1
Std Err Mean	7.6
Upper 95% Mean	-8.4
Lower 95% Mean	-39.6
N	29.0

Distributions Analyte_Detection=Plutonium-239/240 Gamma Spectrometry

Bias



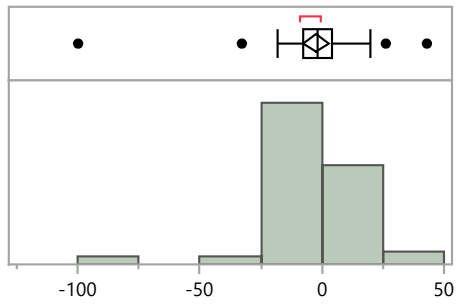
Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Potassium-40 Gamma Spectrometry

Bias

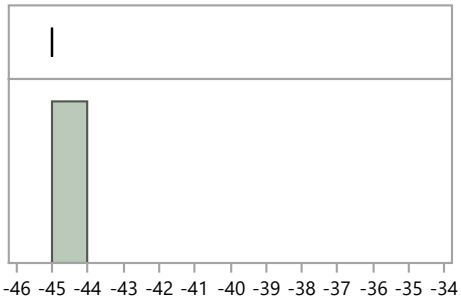


Quantiles		
100.0%	maximum	42.9
99.5%		42.9
97.5%		38.7
90.0%		11.9
75.0%	quartile	4.1
50.0%	median	-1.9
25.0%	quartile	-7.9
10.0%		-10.1
2.5%		-83.1
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-2.3
Std Dev	18.2
Std Err Mean	2.6
Upper 95% Mean	2.9
Lower 95% Mean	-7.6
N	49.0

Distributions Analyte_Detection=Selenium Inductively Coupled Plasma Emission Spectrometry

Bias

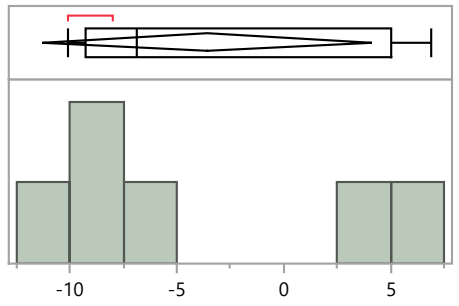


Quantiles		
100.0%	maximum	-45.0
99.5%		-45.0
97.5%		-45.0
90.0%		-45.0
75.0%	quartile	-45.0
50.0%	median	-45.0
25.0%	quartile	-45.0
10.0%		-45.0
2.5%		-45.0
0.5%		-45.0
0.0%	minimum	-45.0

Summary Statistics	
Mean	-45.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Selenium Inductively Coupled Plasma Mass Spectrometry

Bias



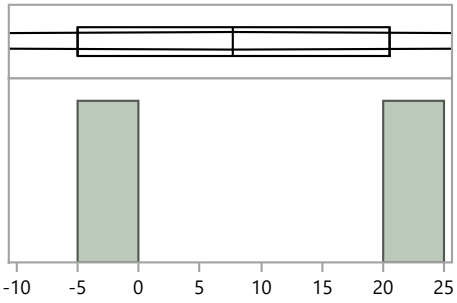
Quantiles		
100.0%	maximum	6.9
99.5%		6.9
97.5%		6.9
90.0%		6.9
75.0%	quartile	5.0
50.0%	median	-6.9
25.0%	quartile	-9.3
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

Summary Statistics	
Mean	-3.6
Std Dev	7.3
Std Err Mean	3.0
Upper 95% Mean	4.1
Lower 95% Mean	-11.3
N	6.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Silver Inductively Coupled Plasma Emission Spectrometry

Bias

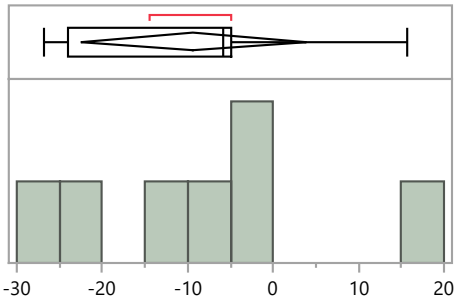


Quantiles		
100.0%	maximum	20.5
99.5%		20.5
97.5%		20.5
90.0%		20.5
75.0%	quartile	20.5
50.0%	median	7.8
25.0%	quartile	-5.0
10.0%		-5.0
2.5%		-5.0
0.5%		-5.0
0.0%	minimum	-5.0

Summary Statistics	
Mean	7.8
Std Dev	18.0
Std Err Mean	12.8
Upper 95% Mean	169.8
Lower 95% Mean	-154.3
N	2.0

Distributions Analyte_Detection=Silver Inductively Coupled Plasma Mass Spectrometry

Bias

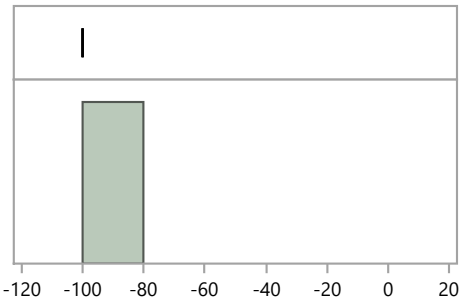


Quantiles		
100.0%	maximum	15.7
99.5%		15.7
97.5%		15.7
90.0%		15.7
75.0%	quartile	-5.0
50.0%	median	-5.9
25.0%	quartile	-24.0
10.0%		-26.8
2.5%		-26.8
0.5%		-26.8
0.0%	minimum	-26.8

Summary Statistics	
Mean	-9.4
Std Dev	14.3
Std Err Mean	5.4
Upper 95% Mean	3.8
Lower 95% Mean	-22.6
N	7.0

Distributions Analyte_Detection=Strontium-90 Gamma Spectrometry

Bias



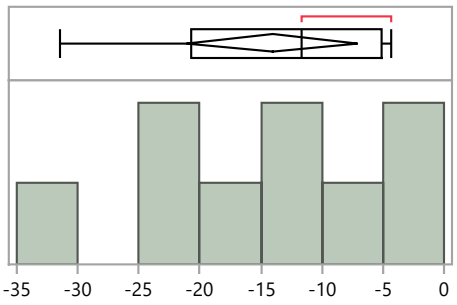
Quantiles		
100.0%	maximum	-100.0
99.5%		-100.0
97.5%		-100.0
90.0%		-100.0
75.0%	quartile	-100.0
50.0%	median	-100.0
25.0%	quartile	-100.0
10.0%		-100.0
2.5%		-100.0
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-100.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Strontium-90 Gas Flow Proportional Counter

Bias

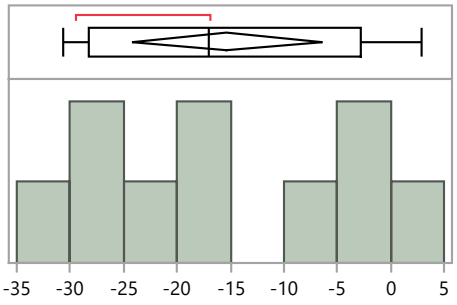


Quantiles		
100.0%	maximum	-4.3
99.5%		-4.3
97.5%		-4.3
90.0%		-4.3
75.0%	quartile	-5.1
50.0%	median	-11.7
25.0%	quartile	-20.8
10.0%		-31.4
2.5%		-31.4
0.5%		-31.4
0.0%	minimum	-31.4

Summary Statistics	
Mean	-14.1
Std Dev	9.2
Std Err Mean	3.1
Upper 95% Mean	-7.0
Lower 95% Mean	-21.1
N	9.0

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

Bias

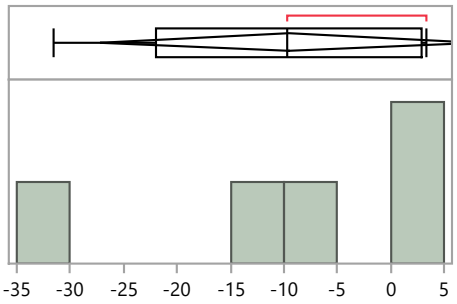


Quantiles		
100.0%	maximum	2.9
99.5%		2.9
97.5%		2.9
90.0%		2.5
75.0%	quartile	-2.9
50.0%	median	-17.1
25.0%	quartile	-28.3
10.0%		-30.6
2.5%		-30.7
0.5%		-30.7
0.0%	minimum	-30.7

Summary Statistics	
Mean	-15.3
Std Dev	12.5
Std Err Mean	4.0
Upper 95% Mean	-6.4
Lower 95% Mean	-24.3
N	10.0

Distributions Analyte_Detection=Strontium-90 Liquid Scintillation Counter

Bias



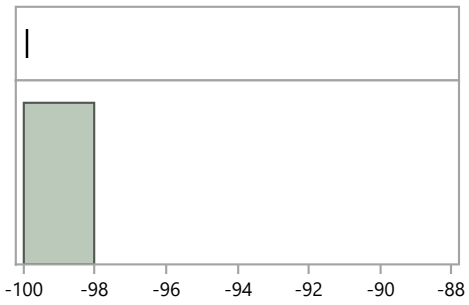
Quantiles		
100.0%	maximum	3.3
99.5%		3.3
97.5%		3.3
90.0%		3.3
75.0%	quartile	2.9
50.0%	median	-9.7
25.0%	quartile	-22.0
10.0%		-31.6
2.5%		-31.6
0.5%		-31.6
0.0%	minimum	-31.6

Summary Statistics	
Mean	-9.6
Std Dev	14.2
Std Err Mean	6.3
Upper 95% Mean	8.0
Lower 95% Mean	-27.2
N	5.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Technetium-99 Gamma Spectrometry

Bias

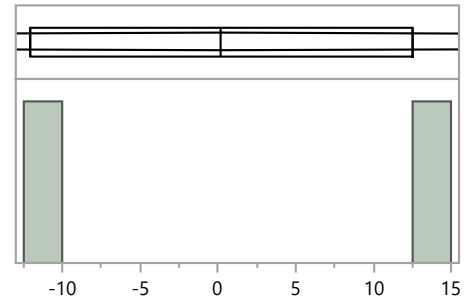


Quantiles		
100.0%	maximum	-99.9
99.5%		-99.9
97.5%		-99.9
90.0%		-99.9
75.0%	quartile	-99.9
50.0%	median	-99.9
25.0%	quartile	-99.9
10.0%		-99.9
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-99.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Technetium-99 Inductively Coupled Plasma Mass Spectrometry

Bias

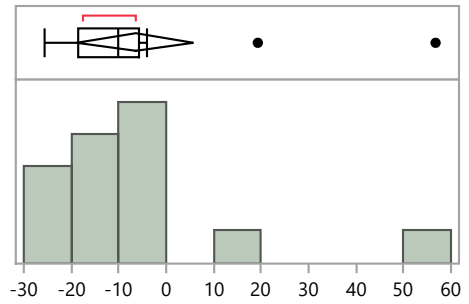


Quantiles		
100.0%	maximum	12.5
99.5%		12.5
97.5%		12.5
90.0%		12.5
75.0%	quartile	12.5
50.0%	median	0.2
25.0%	quartile	-12.1
10.0%		-12.1
2.5%		-12.1
0.5%		-12.1
0.0%	minimum	-12.1

Summary Statistics	
Mean	0.2
Std Dev	17.4
Std Err Mean	12.3
Upper 95% Mean	156.5
Lower 95% Mean	-156.1
N	2.0

Distributions Analyte_Detection=Technetium-99 Liquid Scintillation Counter

Bias



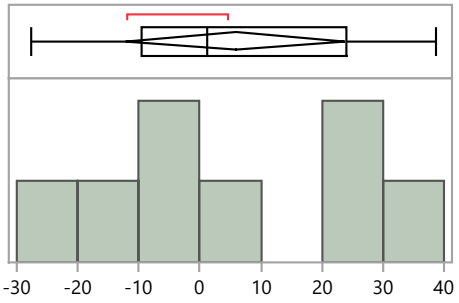
Quantiles		
100.0%	maximum	56.7
99.5%		56.7
97.5%		56.7
90.0%		38.0
75.0%	quartile	-5.8
50.0%	median	-10.1
25.0%	quartile	-18.4
10.0%		-25.4
2.5%		-25.7
0.5%		-25.7
0.0%	minimum	-25.7

Summary Statistics	
Mean	-6.5
Std Dev	21.4
Std Err Mean	5.7
Upper 95% Mean	5.9
Lower 95% Mean	-18.8
N	14.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Thallium Inductively Coupled Plasma Mass Spectrometry

Bias

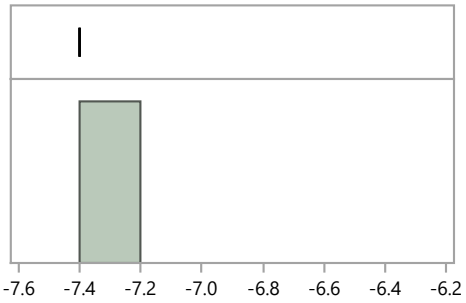


Quantiles		
100.0%	maximum	38.6
99.5%		38.6
97.5%		38.6
90.0%		38.6
75.0%	quartile	23.9
50.0%	median	1.3
25.0%	quartile	-9.6
10.0%		-27.5
2.5%		-27.5
0.5%		-27.5
0.0%	minimum	-27.5

Summary Statistics	
Mean	5.8
Std Dev	21.6
Std Err Mean	7.6
Upper 95% Mean	23.8
Lower 95% Mean	-12.3
N	8.0

Distributions Analyte_Detection=Thallium Thermal Ionization Mass Spectrometry

Bias

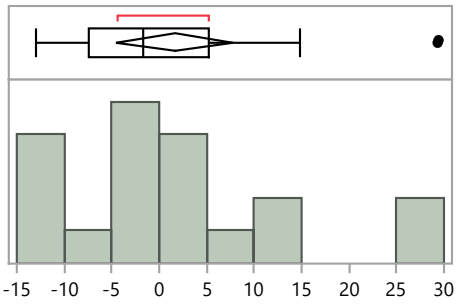


Quantiles		
100.0%	maximum	-7.4
99.5%		-7.4
97.5%		-7.4
90.0%		-7.4
75.0%	quartile	-7.4
50.0%	median	-7.4
25.0%	quartile	-7.4
10.0%		-7.4
2.5%		-7.4
0.5%		-7.4
0.0%	minimum	-7.4

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

Distributions Analyte_Detection=Thorium-228 Alpha Spectrometry

Bias



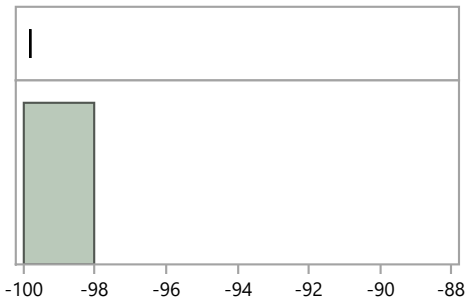
Quantiles		
100.0%	maximum	29.4
99.5%		29.4
97.5%		29.4
90.0%		29.3
75.0%	quartile	5.3
50.0%	median	-1.7
25.0%	quartile	-7.4
10.0%		-12.9
2.5%		-12.9
0.5%		-12.9
0.0%	minimum	-12.9

Summary Statistics	
Mean	1.6
Std Dev	12.8
Std Err Mean	2.9
Upper 95% Mean	7.8
Lower 95% Mean	-4.5
N	19.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Thorium-228 Gamma Spectrometry

Bias

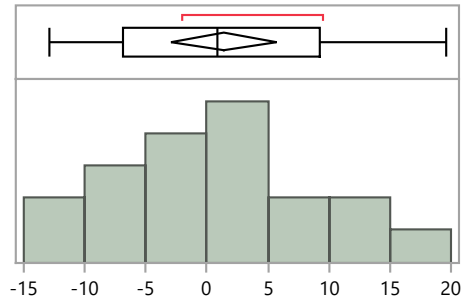


Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Thorium-230 Alpha Spectrometry

Bias

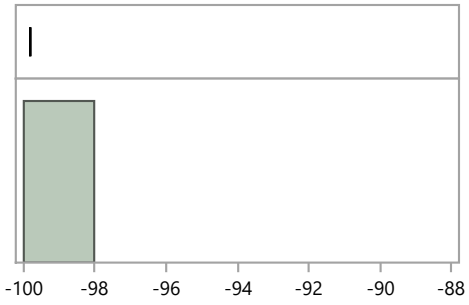


Quantiles		
100.0%	maximum	19.6
99.5%		19.6
97.5%		19.6
90.0%		13.6
75.0%	quartile	9.3
50.0%	median	0.9
25.0%	quartile	-6.8
10.0%		-12.5
2.5%		-12.9
0.5%		-12.9
0.0%	minimum	-12.9

Summary Statistics	
Mean	1.4
Std Dev	8.9
Std Err Mean	2.0
Upper 95% Mean	5.7
Lower 95% Mean	-2.9
N	19.0

Distributions Analyte_Detection=Thorium-230 Gamma Spectrometry

Bias



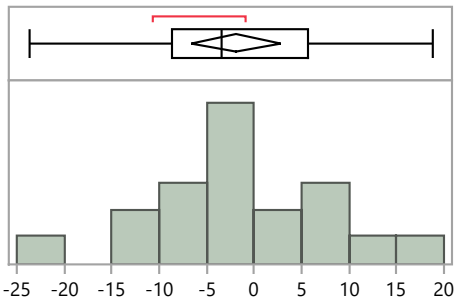
Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Thorium-232 Alpha Spectrometry

Bias

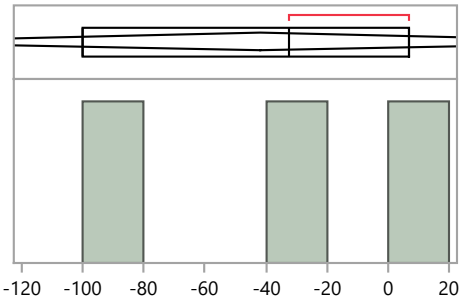


Quantiles		
100.0%	maximum	18.8
99.5%		18.8
97.5%		18.8
90.0%		10.3
75.0%	quartile	5.7
50.0%	median	-3.5
25.0%	quartile	-8.7
10.0%		-14.3
2.5%		-23.7
0.5%		-23.7
0.0%	minimum	-23.7

Summary Statistics	
Mean	-1.9
Std Dev	9.7
Std Err Mean	2.2
Upper 95% Mean	2.8
Lower 95% Mean	-6.6
N	19.0

Distributions Analyte_Detection=Thorium-232 Gamma Spectrometry

Bias

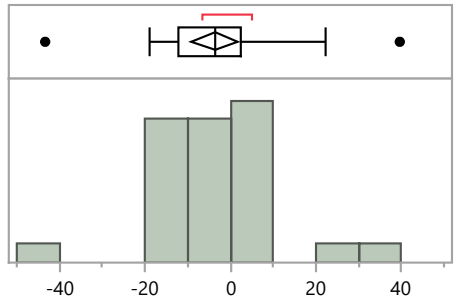


Quantiles		
100.0%	maximum	6.6
99.5%		6.6
97.5%		6.6
90.0%		6.6
75.0%	quartile	6.6
50.0%	median	-32.2
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-41.8
Std Dev	53.8
Std Err Mean	31.1
Upper 95% Mean	92.0
Lower 95% Mean	-175.6
N	3.0

Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

Bias



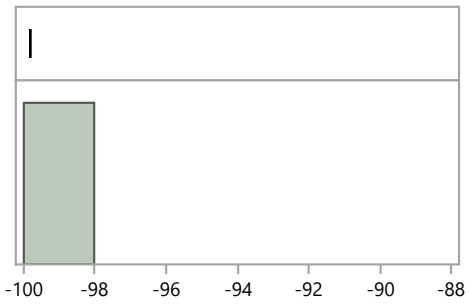
Quantiles		
100.0%	maximum	39.6
99.5%		39.6
97.5%		39.6
90.0%		10.2
75.0%	quartile	2.5
50.0%	median	-3.4
25.0%	quartile	-12.3
10.0%		-16.8
2.5%		-43.3
0.5%		-43.3
0.0%	minimum	-43.3

Summary Statistics	
Mean	-3.7
Std Dev	14.5
Std Err Mean	2.7
Upper 95% Mean	1.9
Lower 95% Mean	-9.3
N	28.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Uranium-234 Gamma Spectrometry

Bias

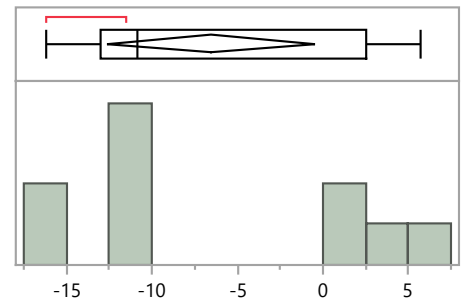


Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-235 Inductively Coupled Plasma Mass Spectrometry

Bias

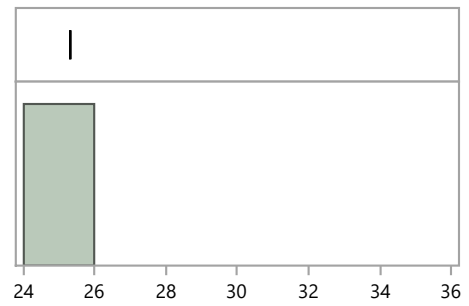


Quantiles		
100.0%	maximum	5.7
99.5%		5.7
97.5%		5.7
90.0%		5.5
75.0%	quartile	2.5
50.0%	median	-10.8
25.0%	quartile	-13.0
10.0%		-16.2
2.5%		-16.2
0.5%		-16.2
0.0%	minimum	-16.2

Summary Statistics	
Mean	-6.5
Std Dev	8.5
Std Err Mean	2.7
Upper 95% Mean	-0.4
Lower 95% Mean	-12.6
N	10.0

Distributions Analyte_Detection=Uranium-235 Thermal Ionization Mass Spectrometry

Bias



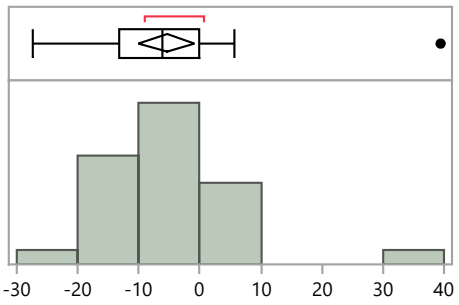
Quantiles		
100.0%	maximum	25.3
99.5%		25.3
97.5%		25.3
90.0%		25.3
75.0%	quartile	25.3
50.0%	median	25.3
25.0%	quartile	25.3
10.0%		25.3
2.5%		25.3
0.5%		25.3
0.0%	minimum	25.3

Summary Statistics	
Mean	25.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

Bias

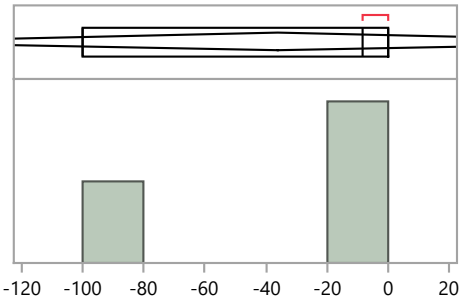


Quantiles		
100.0%	maximum	39.4
99.5%		39.4
97.5%		39.4
90.0%		5.0
75.0%	quartile	0.0
50.0%	median	-6.2
25.0%	quartile	-13.2
10.0%		-17.6
2.5%		-27.4
0.5%		-27.4
0.0%	minimum	-27.4

Summary Statistics	
Mean	-5.4
Std Dev	11.8
Std Err Mean	2.2
Upper 95% Mean	-0.9
Lower 95% Mean	-10.0
N	28.0

Distributions Analyte_Detection=Uranium-238 Gamma Spectrometry

Bias

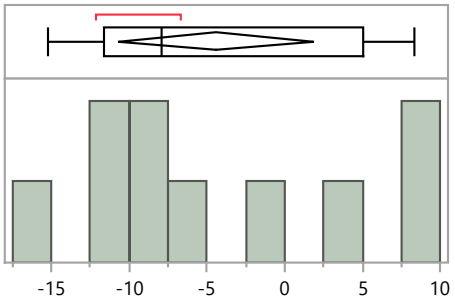


Quantiles		
100.0%	maximum	-0.2
99.5%		-0.2
97.5%		-0.2
90.0%		-0.2
75.0%	quartile	-0.2
50.0%	median	-8.6
25.0%	quartile	-99.9
10.0%		-99.9
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-36.2
Std Dev	55.3
Std Err Mean	31.9
Upper 95% Mean	101.1
Lower 95% Mean	-173.6
N	3.0

Distributions Analyte_Detection=Uranium-238 Inductively Coupled Plasma Mass Spectrometry

Bias



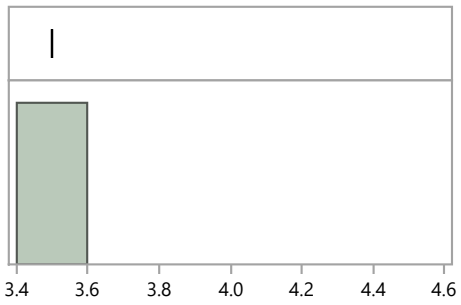
Quantiles		
100.0%	maximum	8.3
99.5%		8.3
97.5%		8.3
90.0%		8.3
75.0%	quartile	5.1
50.0%	median	-7.9
25.0%	quartile	-11.6
10.0%		-14.9
2.5%		-15.2
0.5%		-15.2
0.0%	minimum	-15.2

Summary Statistics	
Mean	-4.4
Std Dev	8.7
Std Err Mean	2.8
Upper 95% Mean	1.8
Lower 95% Mean	-10.7
N	10.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Uranium-238 Thermal Ionization Mass Spectrometry

Bias

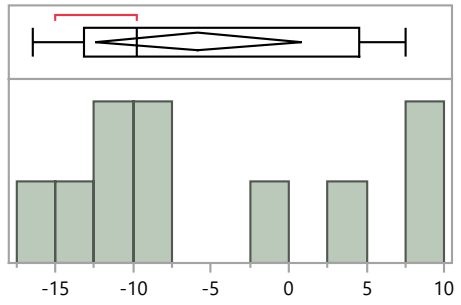


Quantiles		
100.0%	maximum	3.5
99.5%		3.5
97.5%		3.5
90.0%		3.5
75.0%	quartile	3.5
50.0%	median	3.5
25.0%	quartile	3.5
10.0%		3.5
2.5%		3.5
0.5%		3.5
0.0%	minimum	3.5

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

Distributions Analyte_Detection=Uranium-Total Inductively Coupled Plasma Mass Spectrometry

Bias

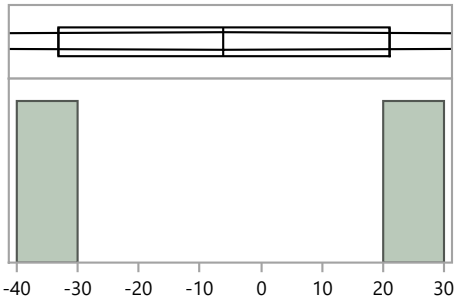


Quantiles		
100.0%	maximum	7.5
99.5%		7.5
97.5%		7.5
90.0%		7.5
75.0%	quartile	4.6
50.0%	median	-9.8
25.0%	quartile	-13.1
10.0%		-16.4
2.5%		-16.5
0.5%		-16.5
0.0%	minimum	-16.5

Summary Statistics	
Mean	-5.8
Std Dev	9.3
Std Err Mean	2.9
Upper 95% Mean	0.8
Lower 95% Mean	-12.5
N	10.0

Distributions Analyte_Detection=Uranium-Total Other

Bias



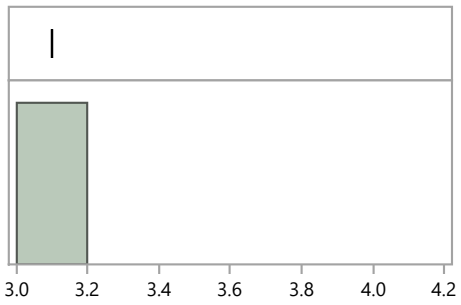
Quantiles		
100.0%	maximum	21.1
99.5%		21.1
97.5%		21.1
90.0%		21.1
75.0%	quartile	21.1
50.0%	median	-6.1
25.0%	quartile	-33.2
10.0%		-33.2
2.5%		-33.2
0.5%		-33.2
0.0%	minimum	-33.2

Summary Statistics	
Mean	-6.1
Std Dev	38.4
Std Err Mean	27.2
Upper 95% Mean	338.9
Lower 95% Mean	-351.0
N	2.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Uranium-Total Thermal Ionization Mass Spectrometry

Bias

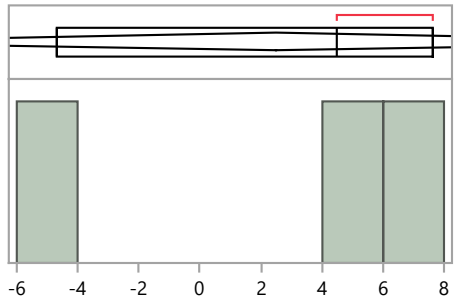


Quantiles		
100.0%	maximum	3.1
99.5%		3.1
97.5%		3.1
90.0%		3.1
75.0%	quartile	3.1
50.0%	median	3.1
25.0%	quartile	3.1
10.0%		3.1
2.5%		3.1
0.5%		3.1
0.0%	minimum	3.1

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

Distributions Analyte_Detection=Vanadium Inductively Coupled Plasma Emission Spectrometry

Bias

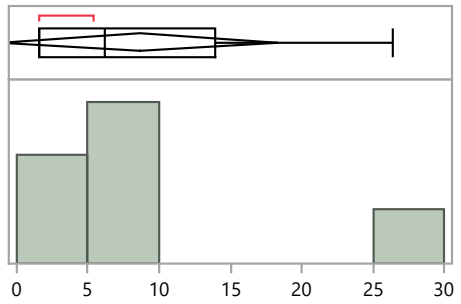


Quantiles		
100.0%	maximum	7.6
99.5%		7.6
97.5%		7.6
90.0%		7.6
75.0%	quartile	7.6
50.0%	median	4.5
25.0%	quartile	-4.7
10.0%		-4.7
2.5%		-4.7
0.5%		-4.7
0.0%	minimum	-4.7

Summary Statistics	
Mean	2.5
Std Dev	6.4
Std Err Mean	3.7
Upper 95% Mean	18.4
Lower 95% Mean	-13.4
N	3.0

Distributions Analyte_Detection=Vanadium Inductively Coupled Plasma Mass Spectrometry

Bias



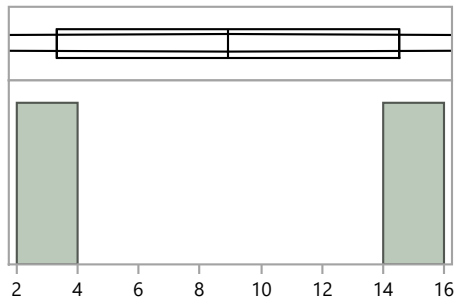
Quantiles		
100.0%	maximum	26.4
99.5%		26.4
97.5%		26.4
90.0%		26.4
75.0%	quartile	14.0
50.0%	median	6.2
25.0%	quartile	1.6
10.0%		1.6
2.5%		1.6
0.5%		1.6
0.0%	minimum	1.6

Summary Statistics	
Mean	8.6
Std Dev	9.3
Std Err Mean	3.8
Upper 95% Mean	18.3
Lower 95% Mean	-1.1
N	6.0

MaS51 Distribution by Detection Method

Distributions Analyte_Detection=Zinc Inductively Coupled Plasma Emission Spectrometry

Bias

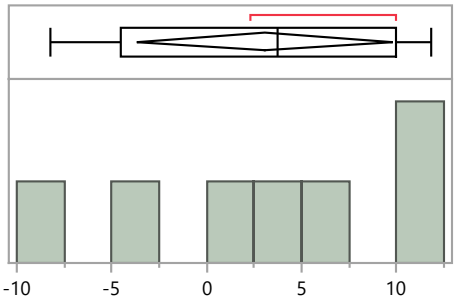


Quantiles		
100.0%	maximum	14.5
99.5%		14.5
97.5%		14.5
90.0%		14.5
75.0%	quartile	14.5
50.0%	median	8.9
25.0%	quartile	3.3
10.0%		3.3
2.5%		3.3
0.5%		3.3
0.0%	minimum	3.3

Summary Statistics	
Mean	8.9
Std Dev	7.9
Std Err Mean	5.6
Upper 95% Mean	80.1
Lower 95% Mean	-62.3
N	2.0

Distributions Analyte_Detection=Zinc Inductively Coupled Plasma Mass Spectrometry

Bias

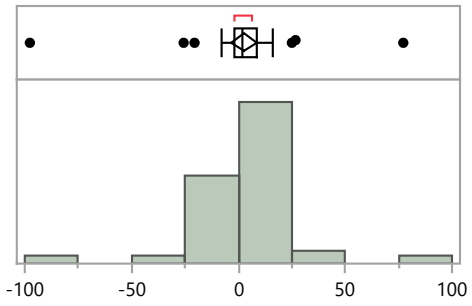


Quantiles		
100.0%	maximum	11.8
99.5%		11.8
97.5%		11.8
90.0%		11.8
75.0%	quartile	10.0
50.0%	median	3.7
25.0%	quartile	-4.5
10.0%		-8.2
2.5%		-8.2
0.5%		-8.2
0.0%	minimum	-8.2

Summary Statistics	
Mean	3.1
Std Dev	7.3
Std Err Mean	2.8
Upper 95% Mean	9.8
Lower 95% Mean	-3.7
N	7.0

Distributions Analyte_Detection=Zinc-65 Gamma Spectrometry

Bias



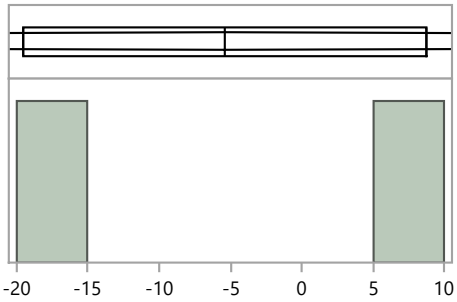
Quantiles		
100.0%	maximum	77.1
99.5%		77.1
97.5%		65.8
90.0%		14.8
75.0%	quartile	8.3
50.0%	median	1.8
25.0%	quartile	-2.0
10.0%		-7.5
2.5%		-81.3
0.5%		-97.5
0.0%	minimum	-97.5

Summary Statistics	
Mean	2.4
Std Dev	20.4
Std Err Mean	2.9
Upper 95% Mean	8.3
Lower 95% Mean	-3.6
N	48.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Antimony SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

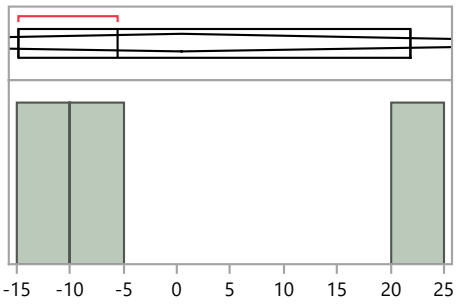


Quantiles		
100.0%	maximum	8.7
99.5%		8.7
97.5%		8.7
90.0%		8.7
75.0%	quartile	8.7
50.0%	median	-5.4
25.0%	quartile	-19.5
10.0%		-19.5
2.5%		-19.5
0.5%		-19.5
0.0%	minimum	-19.5

Summary Statistics	
Mean	-5.4
Std Dev	19.9
Std Err Mean	14.1
Upper 95% Mean	173.8
Lower 95% Mean	-184.6
N	2.0

Distributions Analyte_Method=Antimony SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

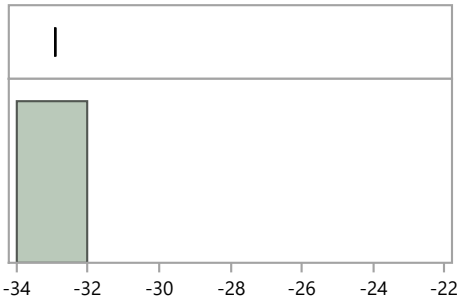


Quantiles		
100.0%	maximum	21.8
99.5%		21.8
97.5%		21.8
90.0%		21.8
75.0%	quartile	21.8
50.0%	median	-5.6
25.0%	quartile	-14.8
10.0%		-14.8
2.5%		-14.8
0.5%		-14.8
0.0%	minimum	-14.8

Summary Statistics	
Mean	0.5
Std Dev	19.0
Std Err Mean	11.0
Upper 95% Mean	47.8
Lower 95% Mean	-46.8
N	3.0

Distributions Analyte_Method=Antimony SW846 Methods 3015, 3051 (Microwave assisted)

Bias



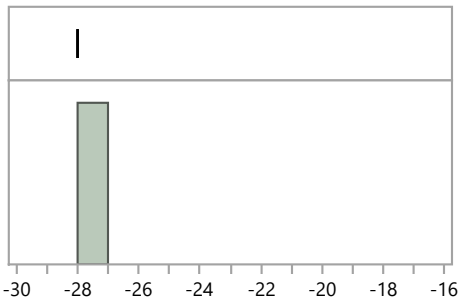
Quantiles		
100.0%	maximum	-32.9
99.5%		-32.9
97.5%		-32.9
90.0%		-32.9
75.0%	quartile	-32.9
50.0%	median	-32.9
25.0%	quartile	-32.9
10.0%		-32.9
2.5%		-32.9
0.5%		-32.9
0.0%	minimum	-32.9

Summary Statistics	
Mean	-32.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Antimony Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

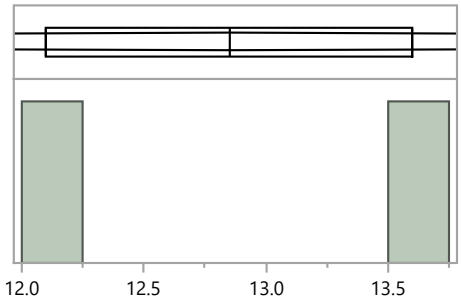


Quantiles		
100.0%	maximum	-28.0
99.5%		-28.0
97.5%		-28.0
90.0%		-28.0
75.0%	quartile	-28.0
50.0%	median	-28.0
25.0%	quartile	-28.0
10.0%		-28.0
2.5%		-28.0
0.5%		-28.0
0.0%	minimum	-28.0

Summary Statistics	
Mean	-28.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Arsenic SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

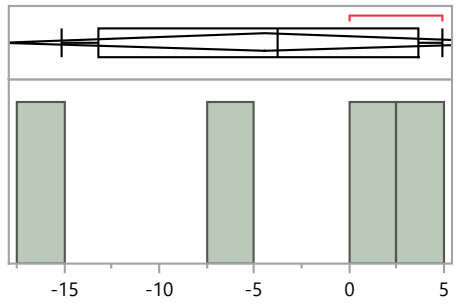


Quantiles		
100.0%	maximum	13.6
99.5%		13.6
97.5%		13.6
90.0%		13.6
75.0%	quartile	13.6
50.0%	median	12.9
25.0%	quartile	12.1
10.0%		12.1
2.5%		12.1
0.5%		12.1
0.0%	minimum	12.1

Summary Statistics	
Mean	12.9
Std Dev	1.1
Std Err Mean	0.8
Upper 95% Mean	22.4
Lower 95% Mean	3.3
N	2.0

Distributions Analyte_Method=Arsenic SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



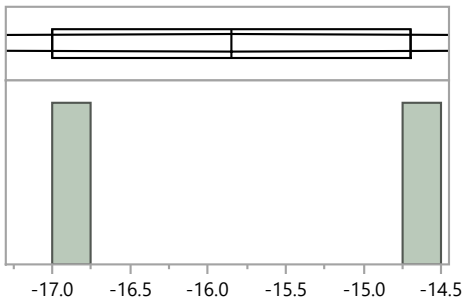
Quantiles		
100.0%	maximum	4.9
99.5%		4.9
97.5%		4.9
90.0%		4.9
75.0%	quartile	3.7
50.0%	median	-3.8
25.0%	quartile	-13.2
10.0%		-15.1
2.5%		-15.1
0.5%		-15.1
0.0%	minimum	-15.1

Summary Statistics	
Mean	-4.4
Std Dev	8.8
Std Err Mean	4.4
Upper 95% Mean	9.5
Lower 95% Mean	-18.4
N	4.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Arsenic SW846 Methods 3015, 3051 (Microwave assisted)

Bias

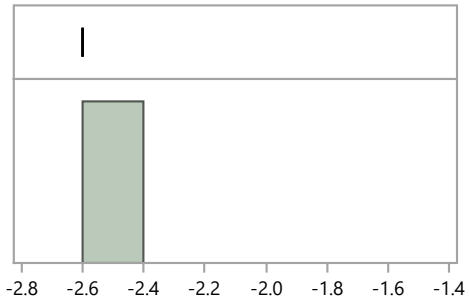


Quantiles		
100.0%	maximum	-14.7
99.5%		-14.7
97.5%		-14.7
90.0%		-14.7
75.0%	quartile	-14.7
50.0%	median	-15.9
25.0%	quartile	-17.0
10.0%		-17.0
2.5%		-17.0
0.5%		-17.0
0.0%	minimum	-17.0

Summary Statistics	
Mean	-15.9
Std Dev	1.6
Std Err Mean	1.2
Upper 95% Mean	-1.2
Lower 95% Mean	-30.5
N	2.0

Distributions Analyte_Method=Arsenic Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

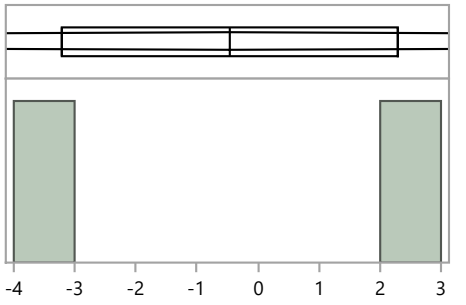


Quantiles		
100.0%	maximum	-2.6
99.5%		-2.6
97.5%		-2.6
90.0%		-2.6
75.0%	quartile	-2.6
50.0%	median	-2.6
25.0%	quartile	-2.6
10.0%		-2.6
2.5%		-2.6
0.5%		-2.6
0.0%	minimum	-2.6

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

Distributions Analyte_Method=Barium SW846 Method 3050B, Section 7.5, Increased Solubility

Bias



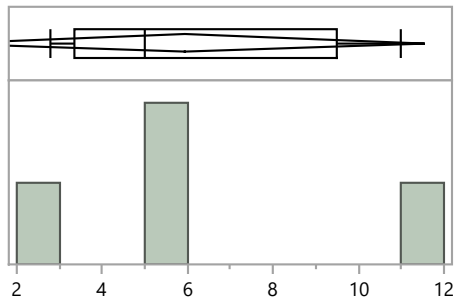
Quantiles		
100.0%	maximum	2.3
99.5%		2.3
97.5%		2.3
90.0%		2.3
75.0%	quartile	2.3
50.0%	median	-0.5
25.0%	quartile	-3.2
10.0%		-3.2
2.5%		-3.2
0.5%		-3.2
0.0%	minimum	-3.2

Summary Statistics	
Mean	-0.5
Std Dev	3.9
Std Err Mean	2.8
Upper 95% Mean	34.5
Lower 95% Mean	-35.4
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Barium SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

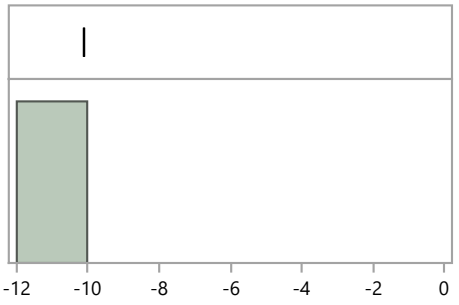


Quantiles		
100.0%	maximum	11.0
99.5%		11.0
97.5%		11.0
90.0%		11.0
75.0%	quartile	9.5
50.0%	median	5.0
25.0%	quartile	3.4
10.0%		2.8
2.5%		2.8
0.5%		2.8
0.0%	minimum	2.8

Summary Statistics	
Mean	6.0
Std Dev	3.5
Std Err Mean	1.8
Upper 95% Mean	11.6
Lower 95% Mean	0.3
N	4.0

Distributions Analyte_Method=Barium SW846 Methods 3015, 3051 (Microwave assisted)

Bias

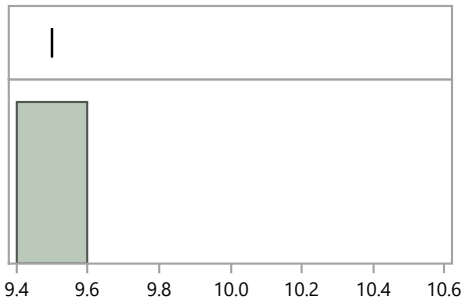


Quantiles		
100.0%	maximum	-10.1
99.5%		-10.1
97.5%		-10.1
90.0%		-10.1
75.0%	quartile	-10.1
50.0%	median	-10.1
25.0%	quartile	-10.1
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

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

Distributions Analyte_Method=Barium Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias



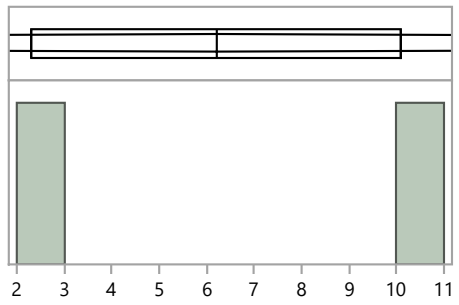
Quantiles		
100.0%	maximum	9.5
99.5%		9.5
97.5%		9.5
90.0%		9.5
75.0%	quartile	9.5
50.0%	median	9.5
25.0%	quartile	9.5
10.0%		9.5
2.5%		9.5
0.5%		9.5
0.0%	minimum	9.5

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

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Beryllium SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

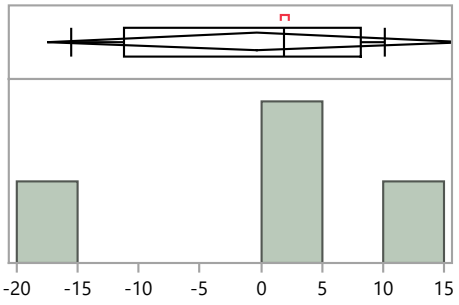


Quantiles		
100.0%	maximum	10.1
99.5%		10.1
97.5%		10.1
90.0%		10.1
75.0%	quartile	10.1
50.0%	median	6.2
25.0%	quartile	2.3
10.0%		2.3
2.5%		2.3
0.5%		2.3
0.0%	minimum	2.3

Summary Statistics	
Mean	6.2
Std Dev	5.5
Std Err Mean	3.9
Upper 95% Mean	55.8
Lower 95% Mean	-43.4
N	2.0

Distributions Analyte_Method=Beryllium SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

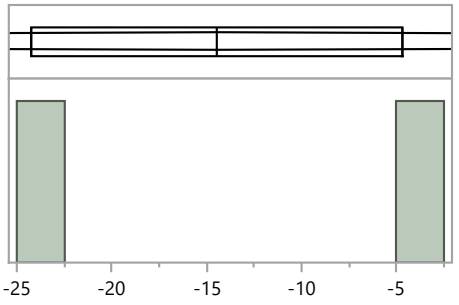


Quantiles		
100.0%	maximum	10.1
99.5%		10.1
97.5%		10.1
90.0%		10.1
75.0%	quartile	8.2
50.0%	median	2.0
25.0%	quartile	-11.2
10.0%		-15.5
2.5%		-15.5
0.5%		-15.5
0.0%	minimum	-15.5

Summary Statistics	
Mean	-0.4
Std Dev	10.8
Std Err Mean	5.4
Upper 95% Mean	16.8
Lower 95% Mean	-17.6
N	4.0

Distributions Analyte_Method=Beryllium SW846 Methods 3015, 3051 (Microwave assisted)

Bias



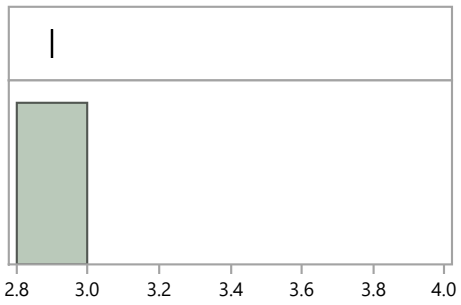
Quantiles		
100.0%	maximum	-4.7
99.5%		-4.7
97.5%		-4.7
90.0%		-4.7
75.0%	quartile	-4.7
50.0%	median	-14.5
25.0%	quartile	-24.2
10.0%		-24.2
2.5%		-24.2
0.5%		-24.2
0.0%	minimum	-24.2

Summary Statistics	
Mean	-14.5
Std Dev	13.8
Std Err Mean	9.8
Upper 95% Mean	109.4
Lower 95% Mean	-138.3
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Beryllium Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

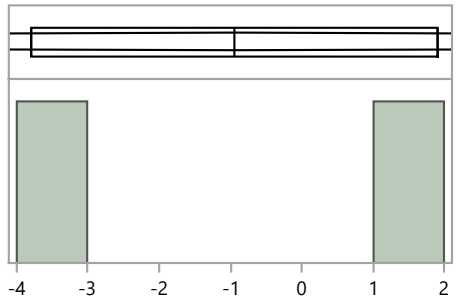


Quantiles		
100.0%	maximum	2.9
99.5%		2.9
97.5%		2.9
90.0%		2.9
75.0%	quartile	2.9
50.0%	median	2.9
25.0%	quartile	2.9
10.0%		2.9
2.5%		2.9
0.5%		2.9
0.0%	minimum	2.9

Summary Statistics	
Mean	2.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cadmium SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

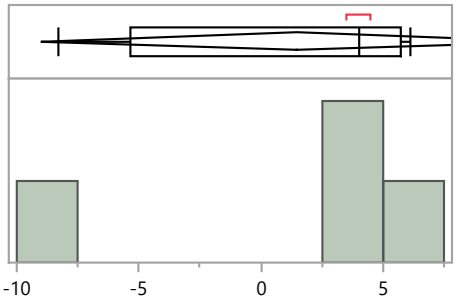


Quantiles		
100.0%	maximum	1.9
99.5%		1.9
97.5%		1.9
90.0%		1.9
75.0%	quartile	1.9
50.0%	median	-1.0
25.0%	quartile	-3.8
10.0%		-3.8
2.5%		-3.8
0.5%		-3.8
0.0%	minimum	-3.8

Summary Statistics	
Mean	-1.0
Std Dev	4.0
Std Err Mean	2.9
Upper 95% Mean	35.3
Lower 95% Mean	-37.2
N	2.0

Distributions Analyte_Method=Cadmium SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



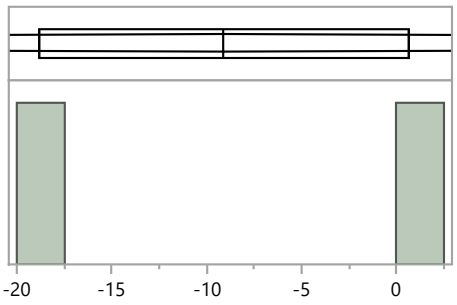
Quantiles		
100.0%	maximum	6.1
99.5%		6.1
97.5%		6.1
90.0%		6.1
75.0%	quartile	5.7
50.0%	median	4.0
25.0%	quartile	-5.4
10.0%		-8.3
2.5%		-8.3
0.5%		-8.3
0.0%	minimum	-8.3

Summary Statistics	
Mean	1.4
Std Dev	6.6
Std Err Mean	3.3
Upper 95% Mean	11.9
Lower 95% Mean	-9.0
N	4.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Cadmium SW846 Methods 3015, 3051 (Microwave assisted)

Bias

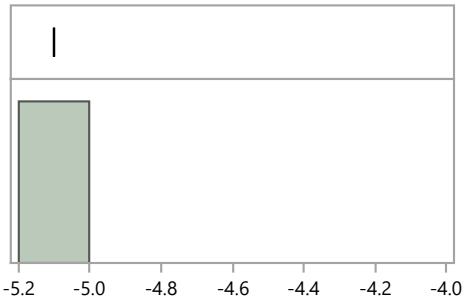


Quantiles		
100.0%	maximum	0.6
99.5%		0.6
97.5%		0.6
90.0%		0.6
75.0%	quartile	0.6
50.0%	median	-9.1
25.0%	quartile	-18.8
10.0%		-18.8
2.5%		-18.8
0.5%		-18.8
0.0%	minimum	-18.8

Summary Statistics	
Mean	-9.1
Std Dev	13.7
Std Err Mean	9.7
Upper 95% Mean	114.2
Lower 95% Mean	-132.4
N	2.0

Distributions Analyte_Method=Cadmium Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

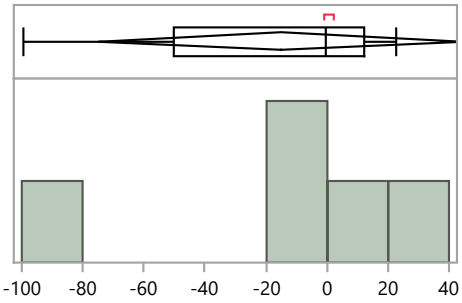


Quantiles		
100.0%	maximum	-5.1
99.5%		-5.1
97.5%		-5.1
90.0%		-5.1
75.0%	quartile	-5.1
50.0%	median	-5.1
25.0%	quartile	-5.1
10.0%		-5.1
2.5%		-5.1
0.5%		-5.1
0.0%	minimum	-5.1

Summary Statistics	
Mean	-5.1
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



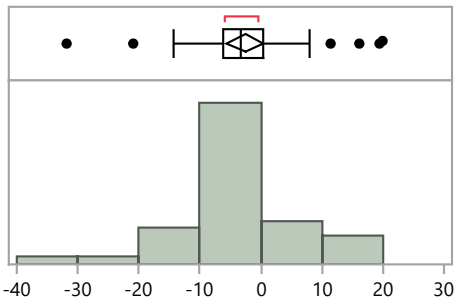
Quantiles		
100.0%	maximum	22.6
99.5%		22.6
97.5%		22.6
90.0%		22.6
75.0%	quartile	12.4
50.0%	median	-0.5
25.0%	quartile	-50.2
10.0%		-99.3
2.5%		-99.3
0.5%		-99.3
0.0%	minimum	-99.3

Summary Statistics	
Mean	-15.2
Std Dev	48.0
Std Err Mean	21.5
Upper 95% Mean	44.4
Lower 95% Mean	-74.8
N	5.0

MaS51 Distribution by Preparation Method

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

Bias

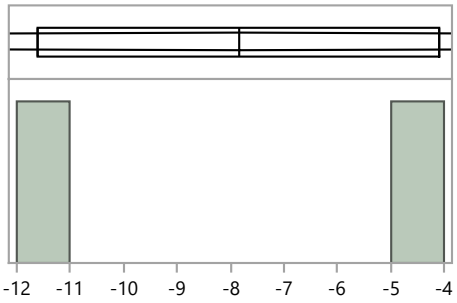


Quantiles		
100.0%	maximum	19.9
99.5%		19.9
97.5%		19.9
90.0%		11.0
75.0%	quartile	0.4
50.0%	median	-3.2
25.0%	quartile	-6.2
10.0%		-12.2
2.5%		-31.5
0.5%		-31.8
0.0%	minimum	-31.8

Summary Statistics	
Mean	-2.6
Std Dev	9.6
Std Err Mean	1.5
Upper 95% Mean	0.5
Lower 95% Mean	-5.6
N	40.0

Distributions Analyte_Method=Cesium-134 Other

Bias

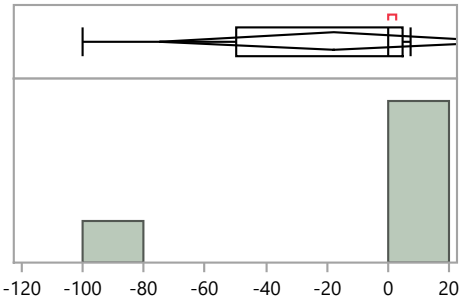


Quantiles		
100.0%	maximum	-4.1
99.5%		-4.1
97.5%		-4.1
90.0%		-4.1
75.0%	quartile	-4.1
50.0%	median	-7.9
25.0%	quartile	-11.6
10.0%		-11.6
2.5%		-11.6
0.5%		-11.6
0.0%	minimum	-11.6

Summary Statistics	
Mean	-7.9
Std Dev	5.3
Std Err Mean	3.8
Upper 95% Mean	39.8
Lower 95% Mean	-55.5
N	2.0

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

Bias



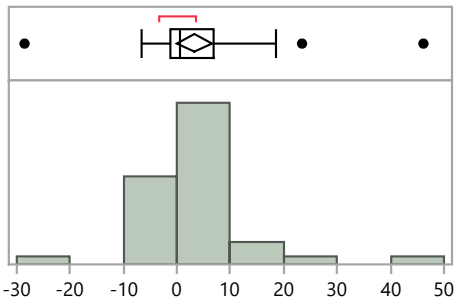
Quantiles		
100.0%	maximum	7.3
99.5%		7.3
97.5%		7.3
90.0%		7.3
75.0%	quartile	4.9
50.0%	median	0.2
25.0%	quartile	-49.9
10.0%		-99.9
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-18.0
Std Dev	45.9
Std Err Mean	20.5
Upper 95% Mean	39.0
Lower 95% Mean	-75.0
N	5.0

MaS51 Distribution by Preparation Method

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

Bias

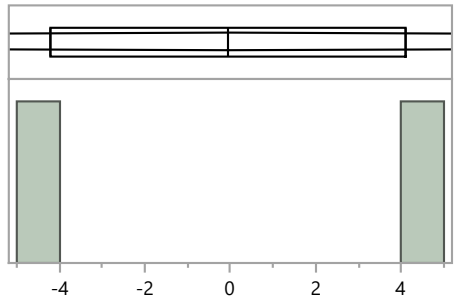


Quantiles		
100.0%	maximum	46.1
99.5%		46.1
97.5%		43.8
90.0%		15.1
75.0%	quartile	6.9
50.0%	median	0.6
25.0%	quartile	-1.3
10.0%		-4.3
2.5%		-26.3
0.5%		-28.5
0.0%	minimum	-28.5

Summary Statistics	
Mean	3.3
Std Dev	10.3
Std Err Mean	1.6
Upper 95% Mean	6.5
Lower 95% Mean	0.1
N	43.0

Distributions Analyte_Method=Cesium-137 Other

Bias

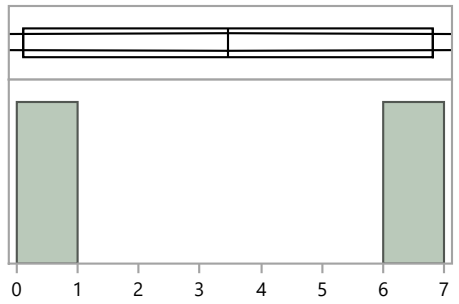


Quantiles		
100.0%	maximum	4.1
99.5%		4.1
97.5%		4.1
90.0%		4.1
75.0%	quartile	4.1
50.0%	median	-0.1
25.0%	quartile	-4.2
10.0%		-4.2
2.5%		-4.2
0.5%		-4.2
0.0%	minimum	-4.2

Summary Statistics	
Mean	-0.1
Std Dev	5.9
Std Err Mean	4.2
Upper 95% Mean	52.7
Lower 95% Mean	-52.8
N	2.0

Distributions Analyte_Method=Chromium SW846 Method 3050B, Section 7.5, Increased Solubility

Bias



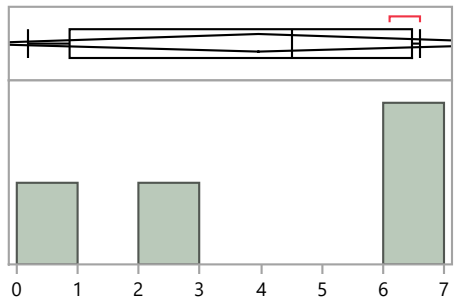
Quantiles		
100.0%	maximum	6.8
99.5%		6.8
97.5%		6.8
90.0%		6.8
75.0%	quartile	6.8
50.0%	median	3.5
25.0%	quartile	0.1
10.0%		0.1
2.5%		0.1
0.5%		0.1
0.0%	minimum	0.1

Summary Statistics	
Mean	3.5
Std Dev	4.7
Std Err Mean	3.4
Upper 95% Mean	46.0
Lower 95% Mean	-39.1
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Chromium SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

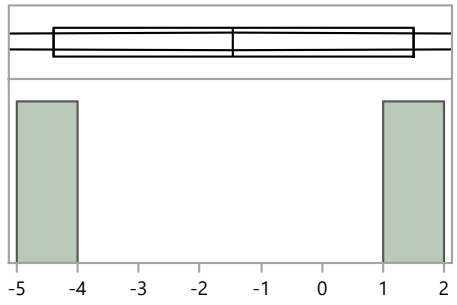


Quantiles		
100.0%	maximum	6.6
99.5%		6.6
97.5%		6.6
90.0%		6.6
75.0%	quartile	6.5
50.0%	median	4.5
25.0%	quartile	0.9
10.0%		0.2
2.5%		0.2
0.5%		0.2
0.0%	minimum	0.2

Summary Statistics	
Mean	4.0
Std Dev	3.0
Std Err Mean	1.5
Upper 95% Mean	8.7
Lower 95% Mean	-0.8
N	4.0

Distributions Analyte_Method=Chromium SW846 Methods 3015, 3051 (Microwave assisted)

Bias

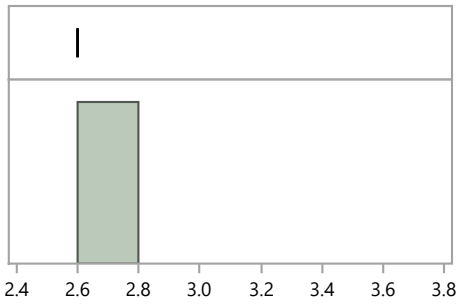


Quantiles		
100.0%	maximum	1.5
99.5%		1.5
97.5%		1.5
90.0%		1.5
75.0%	quartile	1.5
50.0%	median	-1.5
25.0%	quartile	-4.4
10.0%		-4.4
2.5%		-4.4
0.5%		-4.4
0.0%	minimum	-4.4

Summary Statistics	
Mean	-1.5
Std Dev	4.2
Std Err Mean	3.0
Upper 95% Mean	36.0
Lower 95% Mean	-38.9
N	2.0

Distributions Analyte_Method=Chromium Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias



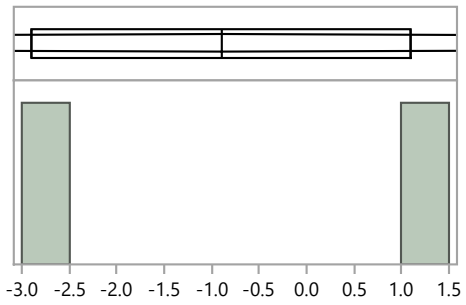
Quantiles		
100.0%	maximum	2.6
99.5%		2.6
97.5%		2.6
90.0%		2.6
75.0%	quartile	2.6
50.0%	median	2.6
25.0%	quartile	2.6
10.0%		2.6
2.5%		2.6
0.5%		2.6
0.0%	minimum	2.6

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

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Cobalt SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

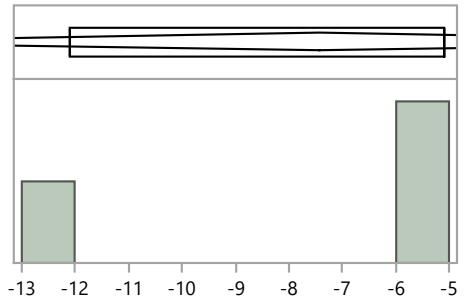


Quantiles		
100.0%	maximum	1.1
99.5%		1.1
97.5%		1.1
90.0%		1.1
75.0%	quartile	1.1
50.0%	median	-0.9
25.0%	quartile	-2.9
10.0%		-2.9
2.5%		-2.9
0.5%		-2.9
0.0%	minimum	-2.9

Summary Statistics	
Mean	-0.9
Std Dev	2.8
Std Err Mean	2.0
Upper 95% Mean	24.5
Lower 95% Mean	-26.3
N	2.0

Distributions Analyte_Method=Cobalt SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

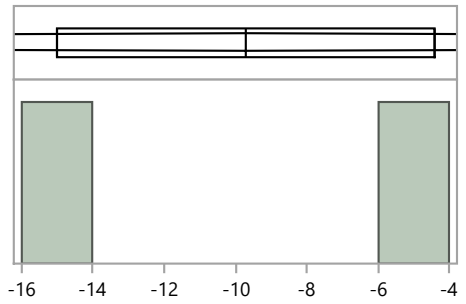


Quantiles		
100.0%	maximum	-5.1
99.5%		-5.1
97.5%		-5.1
90.0%		-5.1
75.0%	quartile	-5.1
50.0%	median	-5.1
25.0%	quartile	-12.1
10.0%		-12.1
2.5%		-12.1
0.5%		-12.1
0.0%	minimum	-12.1

Summary Statistics	
Mean	-7.4
Std Dev	4.0
Std Err Mean	2.3
Upper 95% Mean	2.6
Lower 95% Mean	-17.5
N	3.0

Distributions Analyte_Method=Cobalt SW846 Methods 3015, 3051 (Microwave assisted)

Bias



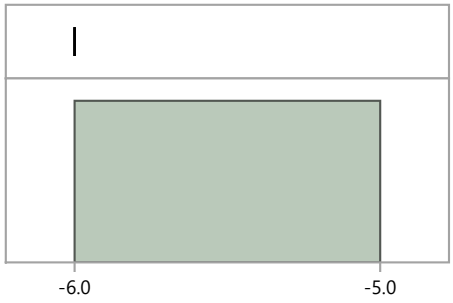
Quantiles		
100.0%	maximum	-4.4
99.5%		-4.4
97.5%		-4.4
90.0%		-4.4
75.0%	quartile	-4.4
50.0%	median	-9.7
25.0%	quartile	-15.0
10.0%		-15.0
2.5%		-15.0
0.5%		-15.0
0.0%	minimum	-15.0

Summary Statistics	
Mean	-9.7
Std Dev	7.5
Std Err Mean	5.3
Upper 95% Mean	57.6
Lower 95% Mean	-77.0
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Cobalt Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

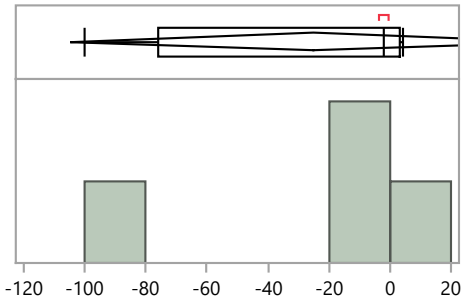


Quantiles		
100.0%	maximum	-6.0
99.5%		-6.0
97.5%		-6.0
90.0%		-6.0
75.0%	quartile	-6.0
50.0%	median	-6.0
25.0%	quartile	-6.0
10.0%		-6.0
2.5%		-6.0
0.5%		-6.0
0.0%	minimum	-6.0

Summary Statistics	
Mean	-6.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias

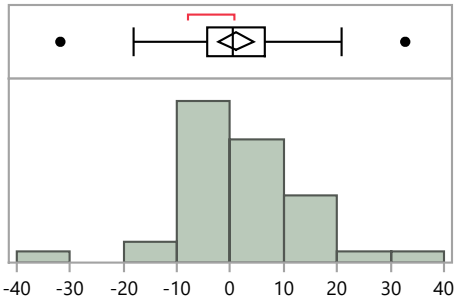


Quantiles		
100.0%	maximum	4.2
99.5%		4.2
97.5%		4.2
90.0%		4.2
75.0%	quartile	3.1
50.0%	median	-2.1
25.0%	quartile	-76.0
10.0%		-100.0
2.5%		-100.0
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-25.0
Std Dev	50.1
Std Err Mean	25.1
Upper 95% Mean	54.8
Lower 95% Mean	-104.7
N	4.0

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

Bias



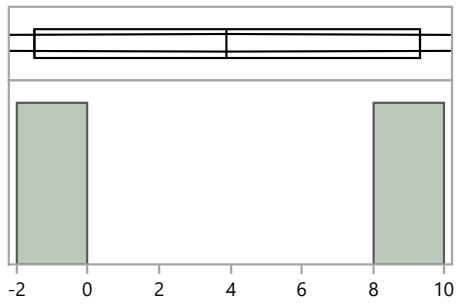
Quantiles		
100.0%	maximum	32.7
99.5%		32.7
97.5%		31.8
90.0%		13.7
75.0%	quartile	6.5
50.0%	median	0.3
25.0%	quartile	-4.4
10.0%		-7.8
2.5%		-30.8
0.5%		-31.8
0.0%	minimum	-31.8

Summary Statistics	
Mean	1.1
Std Dev	10.8
Std Err Mean	1.7
Upper 95% Mean	4.5
Lower 95% Mean	-2.2
N	42.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Cobalt-57 Other

Bias

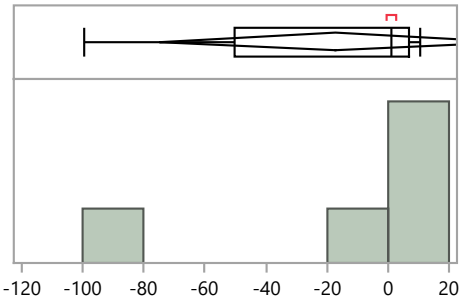


Quantiles		
100.0%	maximum	9.3
99.5%		9.3
97.5%		9.3
90.0%		9.3
75.0%	quartile	9.3
50.0%	median	3.9
25.0%	quartile	-1.5
10.0%		-1.5
2.5%		-1.5
0.5%		-1.5
0.0%	minimum	-1.5

Summary Statistics	
Mean	3.9
Std Dev	7.6
Std Err Mean	5.4
Upper 95% Mean	72.5
Lower 95% Mean	-64.7
N	2.0

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

Bias

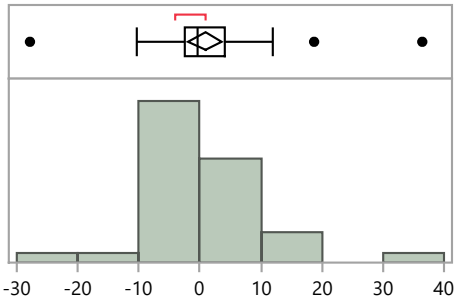


Quantiles		
100.0%	maximum	10.6
99.5%		10.6
97.5%		10.6
90.0%		10.6
75.0%	quartile	6.6
50.0%	median	1.0
25.0%	quartile	-50.1
10.0%		-99.7
2.5%		-99.7
0.5%		-99.7
0.0%	minimum	-99.7

Summary Statistics	
Mean	-17.2
Std Dev	46.3
Std Err Mean	20.7
Upper 95% Mean	40.3
Lower 95% Mean	-74.7
N	5.0

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

Bias



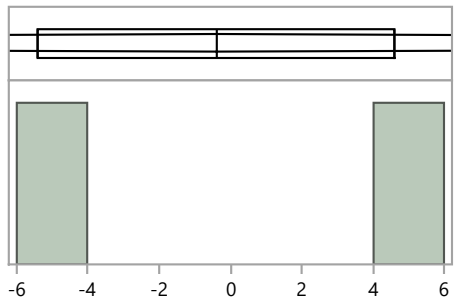
Quantiles		
100.0%	maximum	36.4
99.5%		36.4
97.5%		34.6
90.0%		11.5
75.0%	quartile	4.2
50.0%	median	-0.4
25.0%	quartile	-2.4
10.0%		-5.5
2.5%		-26.0
0.5%		-27.8
0.0%	minimum	-27.8

Summary Statistics	
Mean	0.9
Std Dev	9.0
Std Err Mean	1.4
Upper 95% Mean	3.7
Lower 95% Mean	-1.8
N	43.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Cobalt-60 Other

Bias

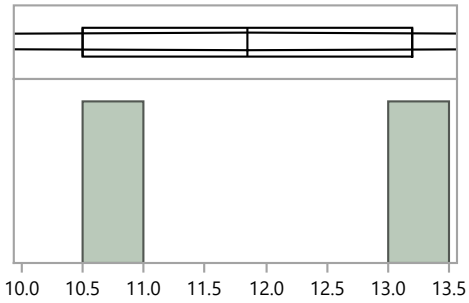


Quantiles		
100.0%	maximum	4.6
99.5%		4.6
97.5%		4.6
90.0%		4.6
75.0%	quartile	4.6
50.0%	median	-0.4
25.0%	quartile	-5.4
10.0%		-5.4
2.5%		-5.4
0.5%		-5.4
0.0%	minimum	-5.4

Summary Statistics	
Mean	-0.4
Std Dev	7.1
Std Err Mean	5.0
Upper 95% Mean	63.1
Lower 95% Mean	-63.9
N	2.0

Distributions Analyte_Method=Copper SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

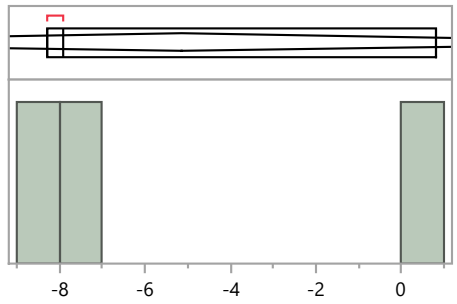


Quantiles		
100.0%	maximum	13.2
99.5%		13.2
97.5%		13.2
90.0%		13.2
75.0%	quartile	13.2
50.0%	median	11.9
25.0%	quartile	10.5
10.0%		10.5
2.5%		10.5
0.5%		10.5
0.0%	minimum	10.5

Summary Statistics	
Mean	11.9
Std Dev	1.9
Std Err Mean	1.3
Upper 95% Mean	29.0
Lower 95% Mean	-5.3
N	2.0

Distributions Analyte_Method=Copper SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



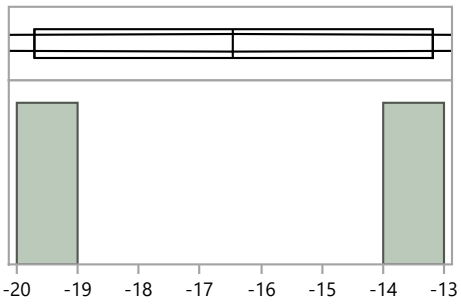
Quantiles		
100.0%	maximum	0.8
99.5%		0.8
97.5%		0.8
90.0%		0.8
75.0%	quartile	0.8
50.0%	median	-7.9
25.0%	quartile	-8.3
10.0%		-8.3
2.5%		-8.3
0.5%		-8.3
0.0%	minimum	-8.3

Summary Statistics	
Mean	-5.1
Std Dev	5.1
Std Err Mean	3.0
Upper 95% Mean	7.6
Lower 95% Mean	-17.9
N	3.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Copper SW846 Methods 3015, 3051 (Microwave assisted)

Bias

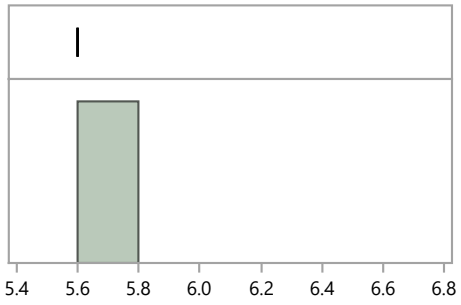


Quantiles		
100.0%	maximum	-13.2
99.5%		-13.2
97.5%		-13.2
90.0%		-13.2
75.0%	quartile	-13.2
50.0%	median	-16.5
25.0%	quartile	-19.7
10.0%		-19.7
2.5%		-19.7
0.5%		-19.7
0.0%	minimum	-19.7

Summary Statistics	
Mean	-16.5
Std Dev	4.6
Std Err Mean	3.3
Upper 95% Mean	24.8
Lower 95% Mean	-57.7
N	2.0

Distributions Analyte_Method=Copper Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

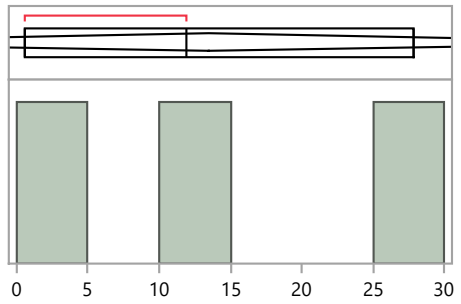


Quantiles		
100.0%	maximum	5.6
99.5%		5.6
97.5%		5.6
90.0%		5.6
75.0%	quartile	5.6
50.0%	median	5.6
25.0%	quartile	5.6
10.0%		5.6
2.5%		5.6
0.5%		5.6
0.0%	minimum	5.6

Summary Statistics	
Mean	5.6
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



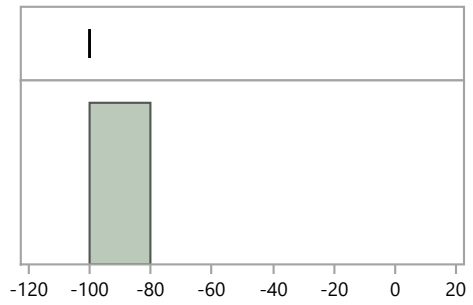
Quantiles		
100.0%	maximum	27.9
99.5%		27.9
97.5%		27.9
90.0%		27.9
75.0%	quartile	27.9
50.0%	median	11.9
25.0%	quartile	0.6
10.0%		0.6
2.5%		0.6
0.5%		0.6
0.0%	minimum	0.6

Summary Statistics	
Mean	13.5
Std Dev	13.7
Std Err Mean	7.9
Upper 95% Mean	47.5
Lower 95% Mean	-20.6
N	3.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Iron-55 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

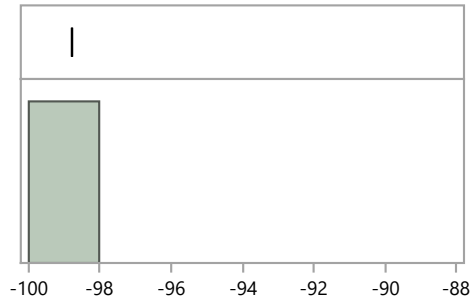


Quantiles		
100.0%	maximum	-100.0
99.5%		-100.0
97.5%		-100.0
90.0%		-100.0
75.0%	quartile	-100.0
50.0%	median	-100.0
25.0%	quartile	-100.0
10.0%		-100.0
2.5%		-100.0
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-100.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Iron-55 No preparation - analyzed as received

Bias

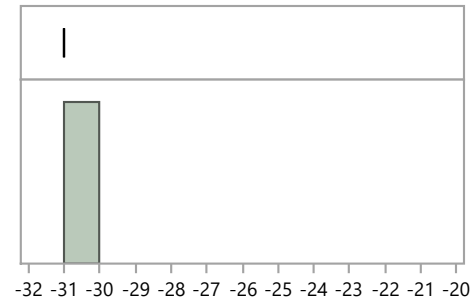


Quantiles		
100.0%	maximum	-98.8
99.5%		-98.8
97.5%		-98.8
90.0%		-98.8
75.0%	quartile	-98.8
50.0%	median	-98.8
25.0%	quartile	-98.8
10.0%		-98.8
2.5%		-98.8
0.5%		-98.8
0.0%	minimum	-98.8

Summary Statistics	
Mean	-98.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Iron-55 Other

Bias



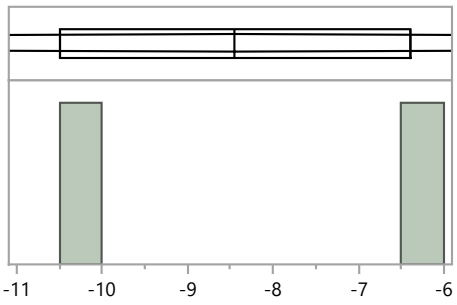
Quantiles		
100.0%	maximum	-31.0
99.5%		-31.0
97.5%		-31.0
90.0%		-31.0
75.0%	quartile	-31.0
50.0%	median	-31.0
25.0%	quartile	-31.0
10.0%		-31.0
2.5%		-31.0
0.5%		-31.0
0.0%	minimum	-31.0

Summary Statistics	
Mean	-31.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Iron-55 Total dissolution by fusion

Bias

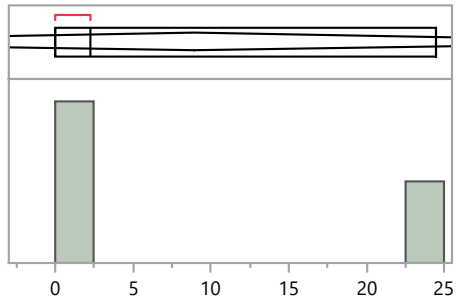


Quantiles		
100.0%	maximum	-6.4
99.5%		-6.4
97.5%		-6.4
90.0%		-6.4
75.0%	quartile	-6.4
50.0%	median	-8.5
25.0%	quartile	-10.5
10.0%		-10.5
2.5%		-10.5
0.5%		-10.5
0.0%	minimum	-10.5

Summary Statistics	
Mean	-8.5
Std Dev	2.9
Std Err Mean	2.0
Upper 95% Mean	17.6
Lower 95% Mean	-34.5
N	2.0

Distributions Analyte_Method=Lead SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

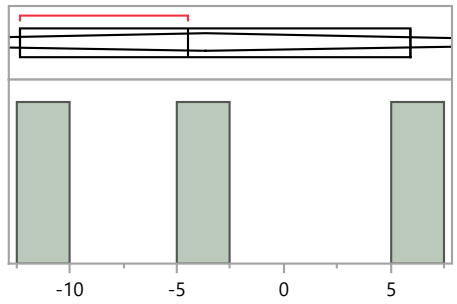


Quantiles		
100.0%	maximum	24.5
99.5%		24.5
97.5%		24.5
90.0%		24.5
75.0%	quartile	24.5
50.0%	median	2.3
25.0%	quartile	0.0
10.0%		0.0
2.5%		0.0
0.5%		0.0
0.0%	minimum	0.0

Summary Statistics	
Mean	8.9
Std Dev	13.5
Std Err Mean	7.8
Upper 95% Mean	42.5
Lower 95% Mean	-24.7
N	3.0

Distributions Analyte_Method=Lead SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



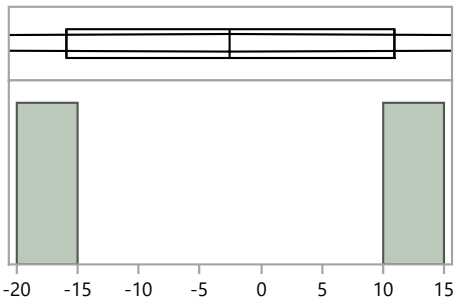
Quantiles		
100.0%	maximum	5.9
99.5%		5.9
97.5%		5.9
90.0%		5.9
75.0%	quartile	5.9
50.0%	median	-4.5
25.0%	quartile	-12.3
10.0%		-12.3
2.5%		-12.3
0.5%		-12.3
0.0%	minimum	-12.3

Summary Statistics	
Mean	-3.6
Std Dev	9.1
Std Err Mean	5.3
Upper 95% Mean	19.0
Lower 95% Mean	-26.3
N	3.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Lead SW846 Methods 3015, 3051 (Microwave assisted)

Bias

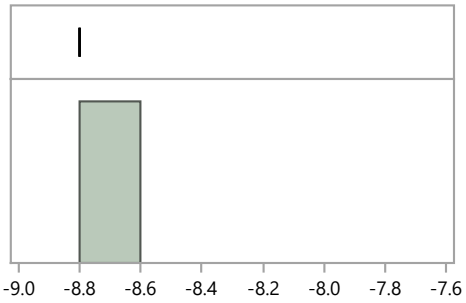


Quantiles		
100.0%	maximum	10.9
99.5%		10.9
97.5%		10.9
90.0%		10.9
75.0%	quartile	10.9
50.0%	median	-2.5
25.0%	quartile	-15.9
10.0%		-15.9
2.5%		-15.9
0.5%		-15.9
0.0%	minimum	-15.9

Summary Statistics	
Mean	-2.5
Std Dev	19.0
Std Err Mean	13.4
Upper 95% Mean	167.8
Lower 95% Mean	-172.8
N	2.0

Distributions Analyte_Method=Lead Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

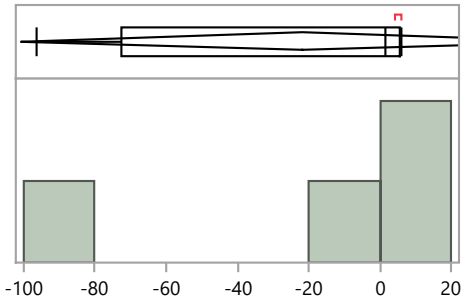


Quantiles		
100.0%	maximum	-8.8
99.5%		-8.8
97.5%		-8.8
90.0%		-8.8
75.0%	quartile	-8.8
50.0%	median	-8.8
25.0%	quartile	-8.8
10.0%		-8.8
2.5%		-8.8
0.5%		-8.8
0.0%	minimum	-8.8

Summary Statistics	
Mean	-8.8
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



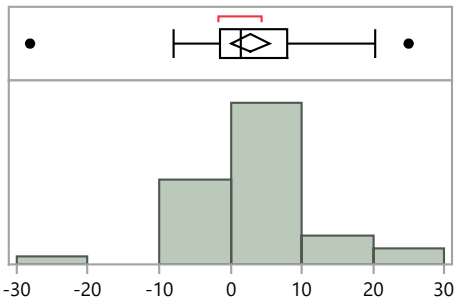
Quantiles		
100.0%	maximum	5.8
99.5%		5.8
97.5%		5.8
90.0%		5.8
75.0%	quartile	5.5
50.0%	median	1.5
25.0%	quartile	-72.6
10.0%		-96.3
2.5%		-96.3
0.5%		-96.3
0.0%	minimum	-96.3

Summary Statistics	
Mean	-21.9
Std Dev	49.7
Std Err Mean	24.9
Upper 95% Mean	57.2
Lower 95% Mean	-101.0
N	4.0

MaS51 Distribution by Preparation Method

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

Bias

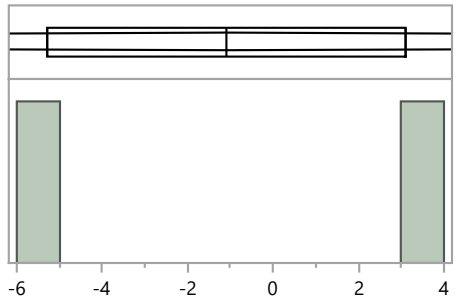


Quantiles		
100.0%	maximum	25.0
99.5%		25.0
97.5%		24.7
90.0%		13.7
75.0%	quartile	8.0
50.0%	median	1.5
25.0%	quartile	-1.4
10.0%		-4.1
2.5%		-26.6
0.5%		-28.1
0.0%	minimum	-28.1

Summary Statistics	
Mean	2.9
Std Dev	8.5
Std Err Mean	1.3
Upper 95% Mean	5.5
Lower 95% Mean	0.2
N	42.0

Distributions Analyte_Method=Manganese-54 Other

Bias

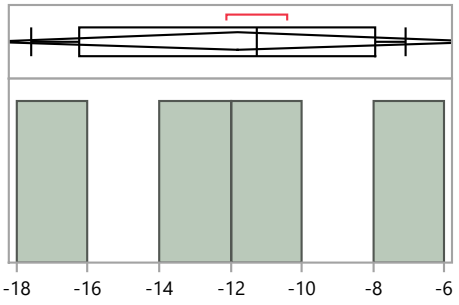


Quantiles		
100.0%	maximum	3.1
99.5%		3.1
97.5%		3.1
90.0%		3.1
75.0%	quartile	3.1
50.0%	median	-1.1
25.0%	quartile	-5.3
10.0%		-5.3
2.5%		-5.3
0.5%		-5.3
0.0%	minimum	-5.3

Summary Statistics	
Mean	-1.1
Std Dev	5.9
Std Err Mean	4.2
Upper 95% Mean	52.3
Lower 95% Mean	-54.5
N	2.0

Distributions Analyte_Method=Mercury Mercury per SW846 Method 7470 or 7471

Bias



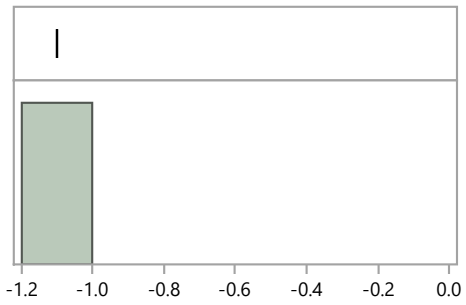
Quantiles		
100.0%	maximum	-7.1
99.5%		-7.1
97.5%		-7.1
90.0%		-7.1
75.0%	quartile	-7.9
50.0%	median	-11.3
25.0%	quartile	-16.2
10.0%		-17.6
2.5%		-17.6
0.5%		-17.6
0.0%	minimum	-17.6

Summary Statistics	
Mean	-11.8
Std Dev	4.4
Std Err Mean	2.2
Upper 95% Mean	-4.8
Lower 95% Mean	-18.8
N	4.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Mercury No preparation - analyzed as received

Bias

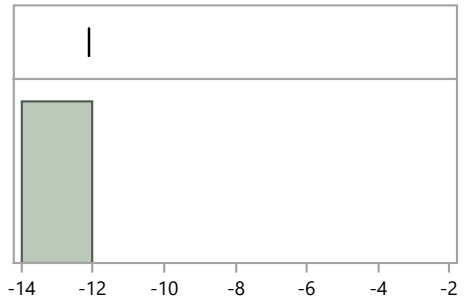


Quantiles		
100.0%	maximum	-1.1
99.5%		-1.1
97.5%		-1.1
90.0%		-1.1
75.0%	quartile	-1.1
50.0%	median	-1.1
25.0%	quartile	-1.1
10.0%		-1.1
2.5%		-1.1
0.5%		-1.1
0.0%	minimum	-1.1

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

Distributions Analyte_Method=Mercury Other

Bias

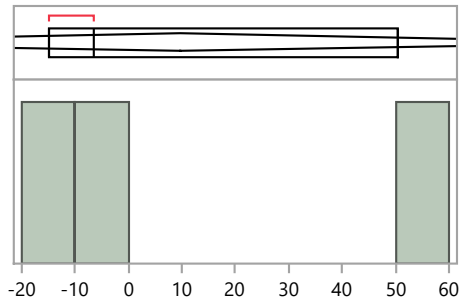


Quantiles		
100.0%	maximum	-12.1
99.5%		-12.1
97.5%		-12.1
90.0%		-12.1
75.0%	quartile	-12.1
50.0%	median	-12.1
25.0%	quartile	-12.1
10.0%		-12.1
2.5%		-12.1
0.5%		-12.1
0.0%	minimum	-12.1

Summary Statistics	
Mean	-12.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Mercury SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



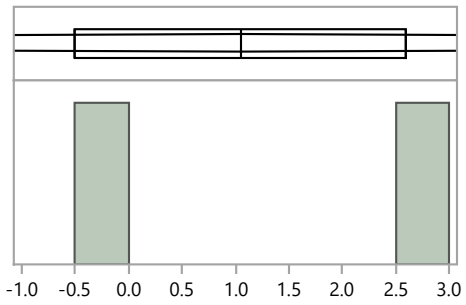
Quantiles		
100.0%	maximum	50.5
99.5%		50.5
97.5%		50.5
90.0%		50.5
75.0%	quartile	50.5
50.0%	median	-6.6
25.0%	quartile	-14.8
10.0%		-14.8
2.5%		-14.8
0.5%		-14.8
0.0%	minimum	-14.8

Summary Statistics	
Mean	9.7
Std Dev	35.6
Std Err Mean	20.5
Upper 95% Mean	98.1
Lower 95% Mean	-78.7
N	3.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Nickel SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

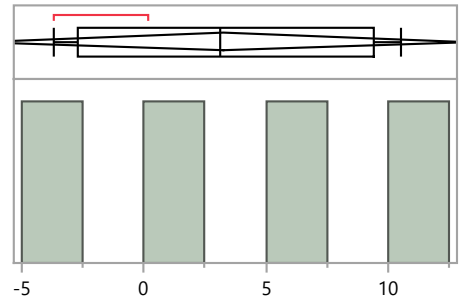


Quantiles		
100.0%	maximum	2.6
99.5%		2.6
97.5%		2.6
90.0%		2.6
75.0%	quartile	2.6
50.0%	median	1.1
25.0%	quartile	-0.5
10.0%		-0.5
2.5%		-0.5
0.5%		-0.5
0.0%	minimum	-0.5

Summary Statistics	
Mean	1.1
Std Dev	2.2
Std Err Mean	1.6
Upper 95% Mean	20.7
Lower 95% Mean	-18.6
N	2.0

Distributions Analyte_Method=Nickel SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

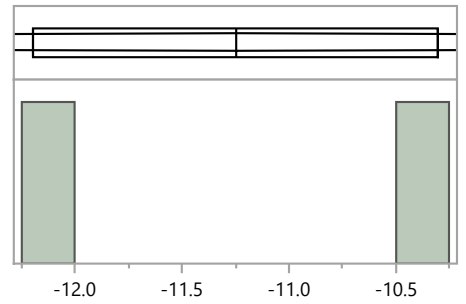


Quantiles		
100.0%	maximum	10.5
99.5%		10.5
97.5%		10.5
90.0%		10.5
75.0%	quartile	9.4
50.0%	median	3.2
25.0%	quartile	-2.7
10.0%		-3.7
2.5%		-3.7
0.5%		-3.7
0.0%	minimum	-3.7

Summary Statistics	
Mean	3.3
Std Dev	6.3
Std Err Mean	3.1
Upper 95% Mean	13.3
Lower 95% Mean	-6.7
N	4.0

Distributions Analyte_Method=Nickel SW846 Methods 3015, 3051 (Microwave assisted)

Bias



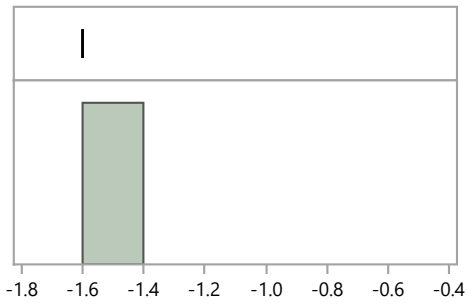
Quantiles		
100.0%	maximum	-10.3
99.5%		-10.3
97.5%		-10.3
90.0%		-10.3
75.0%	quartile	-10.3
50.0%	median	-11.3
25.0%	quartile	-12.2
10.0%		-12.2
2.5%		-12.2
0.5%		-12.2
0.0%	minimum	-12.2

Summary Statistics	
Mean	-11.3
Std Dev	1.3
Std Err Mean	0.9
Upper 95% Mean	0.8
Lower 95% Mean	-23.3
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Nickel Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

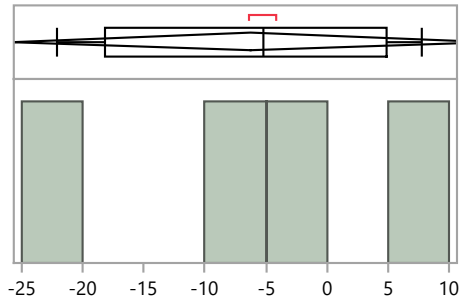


Quantiles		
100.0%	maximum	-1.6
99.5%		-1.6
97.5%		-1.6
90.0%		-1.6
75.0%	quartile	-1.6
50.0%	median	-1.6
25.0%	quartile	-1.6
10.0%		-1.6
2.5%		-1.6
0.5%		-1.6
0.0%	minimum	-1.6

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

Distributions Analyte_Method=Nickel-63 Acid dissolution with hydrofluoric acid

Bias

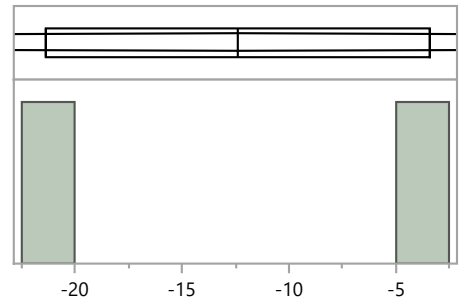


Quantiles		
100.0%	maximum	7.8
99.5%		7.8
97.5%		7.8
90.0%		7.8
75.0%	quartile	4.8
50.0%	median	-5.3
25.0%	quartile	-18.2
10.0%		-22.1
2.5%		-22.1
0.5%		-22.1
0.0%	minimum	-22.1

Summary Statistics	
Mean	-6.2
Std Dev	12.3
Std Err Mean	6.1
Upper 95% Mean	13.4
Lower 95% Mean	-25.8
N	4.0

Distributions Analyte_Method=Nickel-63 Acid leaching without hydrofluoric acid

Bias



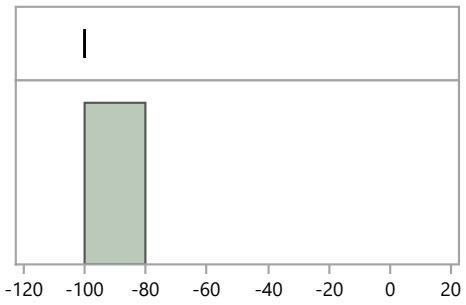
Quantiles		
100.0%	maximum	-3.4
99.5%		-3.4
97.5%		-3.4
90.0%		-3.4
75.0%	quartile	-3.4
50.0%	median	-12.4
25.0%	quartile	-21.4
10.0%		-21.4
2.5%		-21.4
0.5%		-21.4
0.0%	minimum	-21.4

Summary Statistics	
Mean	-12.4
Std Dev	12.7
Std Err Mean	9.0
Upper 95% Mean	102.0
Lower 95% Mean	-126.8
N	2.0

MaS51 Distribution by Preparation Method

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

Bias

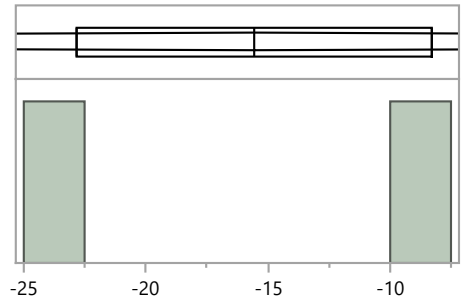


Quantiles		
100.0%	maximum	-100.0
99.5%		-100.0
97.5%		-100.0
90.0%		-100.0
75.0%	quartile	-100.0
50.0%	median	-100.0
25.0%	quartile	-100.0
10.0%		-100.0
2.5%		-100.0
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-100.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Nickel-63 Other

Bias

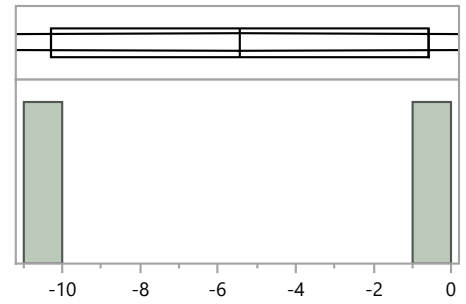


Quantiles		
100.0%	maximum	-8.3
99.5%		-8.3
97.5%		-8.3
90.0%		-8.3
75.0%	quartile	-8.3
50.0%	median	-15.6
25.0%	quartile	-22.8
10.0%		-22.8
2.5%		-22.8
0.5%		-22.8
0.0%	minimum	-22.8

Summary Statistics	
Mean	-15.6
Std Dev	10.3
Std Err Mean	7.3
Upper 95% Mean	76.6
Lower 95% Mean	-107.7
N	2.0

Distributions Analyte_Method=Nickel-63 Total dissolution by fusion

Bias



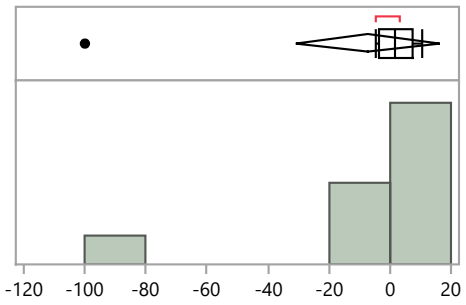
Quantiles		
100.0%	maximum	-0.6
99.5%		-0.6
97.5%		-0.6
90.0%		-0.6
75.0%	quartile	-0.6
50.0%	median	-5.5
25.0%	quartile	-10.3
10.0%		-10.3
2.5%		-10.3
0.5%		-10.3
0.0%	minimum	-10.3

Summary Statistics	
Mean	-5.5
Std Dev	6.9
Std Err Mean	4.9
Upper 95% Mean	56.2
Lower 95% Mean	-67.1
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Plutonium-238 Acid dissolution with hydrofluoric acid

Bias

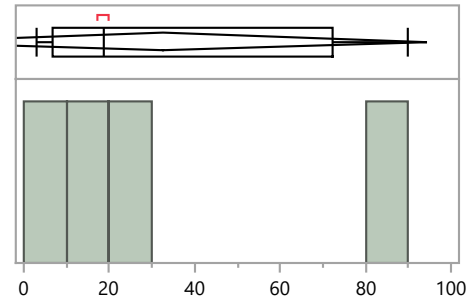


Quantiles		
100.0%	maximum	10.7
99.5%		10.7
97.5%		10.7
90.0%		10.6
75.0%	quartile	7.5
50.0%	median	1.8
25.0%	quartile	-3.8
10.0%		-90.4
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-7.5
Std Dev	32.9
Std Err Mean	10.4
Upper 95% Mean	16.0
Lower 95% Mean	-31.0
N	10.0

Distributions Analyte_Method=Plutonium-238 Acid leaching without hydrofluoric acid

Bias

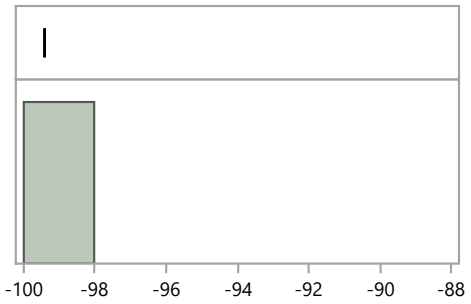


Quantiles		
100.0%	maximum	89.8
99.5%		89.8
97.5%		89.8
90.0%		89.8
75.0%	quartile	72.4
50.0%	median	18.7
25.0%	quartile	6.7
10.0%		3.1
2.5%		3.1
0.5%		3.1
0.0%	minimum	3.1

Summary Statistics	
Mean	32.6
Std Dev	38.9
Std Err Mean	19.4
Upper 95% Mean	94.4
Lower 95% Mean	-29.3
N	4.0

Distributions Analyte_Method=Plutonium-238 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



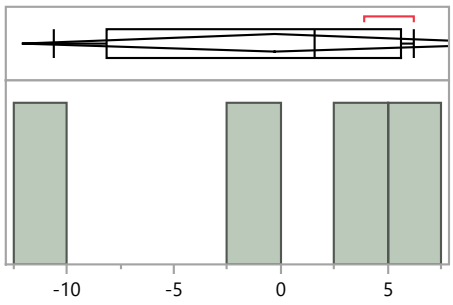
Quantiles		
100.0%	maximum	-99.4
99.5%		-99.4
97.5%		-99.4
90.0%		-99.4
75.0%	quartile	-99.4
50.0%	median	-99.4
25.0%	quartile	-99.4
10.0%		-99.4
2.5%		-99.4
0.5%		-99.4
0.0%	minimum	-99.4

Summary Statistics	
Mean	-99.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Plutonium-238 Other

Bias

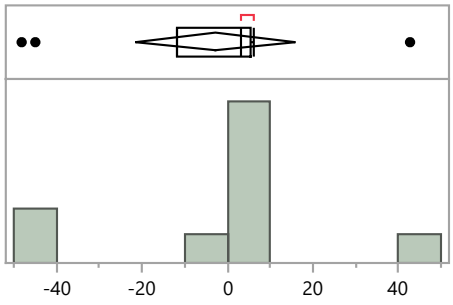


Quantiles		
100.0%	maximum	6.2
99.5%		6.2
97.5%		6.2
90.0%		6.2
75.0%	quartile	5.6
50.0%	median	1.6
25.0%	quartile	-8.1
10.0%		-10.6
2.5%		-10.6
0.5%		-10.6
0.0%	minimum	-10.6

Summary Statistics	
Mean	-0.3
Std Dev	7.4
Std Err Mean	3.7
Upper 95% Mean	11.5
Lower 95% Mean	-12.1
N	4.0

Distributions Analyte_Method=Plutonium-238 Total dissolution by fusion

Bias

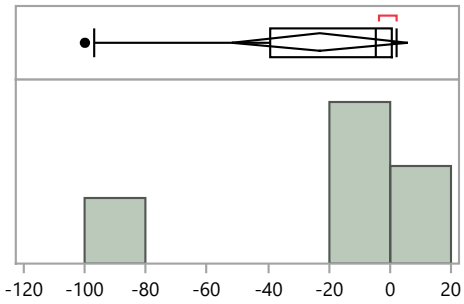


Quantiles		
100.0%	maximum	42.7
99.5%		42.7
97.5%		42.7
90.0%		39.0
75.0%	quartile	5.3
50.0%	median	3.3
25.0%	quartile	-11.7
10.0%		-47.8
2.5%		-48.1
0.5%		-48.1
0.0%	minimum	-48.1

Summary Statistics	
Mean	-2.9
Std Dev	26.2
Std Err Mean	8.3
Upper 95% Mean	15.9
Lower 95% Mean	-21.6
N	10.0

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

Bias



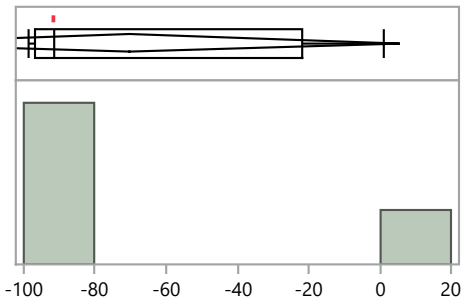
Quantiles		
100.0%	maximum	2.0
99.5%		2.0
97.5%		2.0
90.0%		1.9
75.0%	quartile	0.5
50.0%	median	-4.8
25.0%	quartile	-39.0
10.0%		-99.6
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-23.0
Std Dev	40.2
Std Err Mean	12.7
Upper 95% Mean	5.8
Lower 95% Mean	-51.7
N	10.0

MaS51 Distribution by Preparation Method

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

Bias

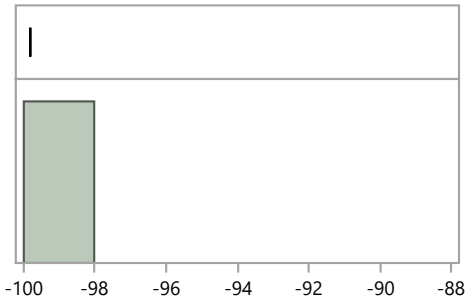


Quantiles		
100.0%	maximum	1.2
99.5%		1.2
97.5%		1.2
90.0%		1.2
75.0%	quartile	-21.9
50.0%	median	-91.6
25.0%	quartile	-97.0
10.0%		-98.7
2.5%		-98.7
0.5%		-98.7
0.0%	minimum	-98.7

Summary Statistics	
Mean	-70.2
Std Dev	47.7
Std Err Mean	23.8
Upper 95% Mean	5.7
Lower 95% Mean	-146.0
N	4.0

Distributions Analyte_Method=Plutonium-239/240 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

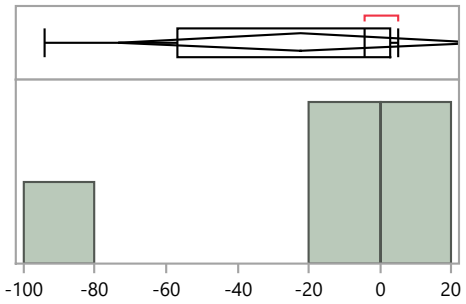


Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-239/240 Other

Bias



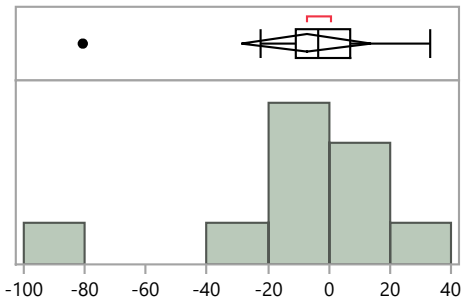
Quantiles		
100.0%	maximum	5.1
99.5%		5.1
97.5%		5.1
90.0%		5.1
75.0%	quartile	3.0
50.0%	median	-4.5
25.0%	quartile	-56.8
10.0%		-94.1
2.5%		-94.1
0.5%		-94.1
0.0%	minimum	-94.1

Summary Statistics	
Mean	-22.4
Std Dev	41.1
Std Err Mean	18.4
Upper 95% Mean	28.6
Lower 95% Mean	-73.5
N	5.0

MaS51 Distribution by Preparation Method

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

Bias

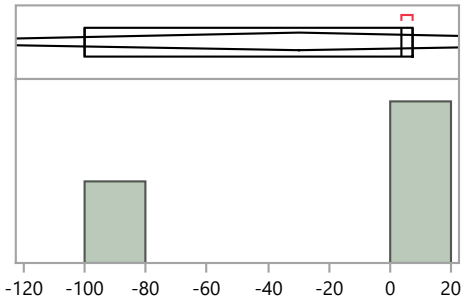


Quantiles		
100.0%	maximum	33.0
99.5%		33.0
97.5%		33.0
90.0%		30.7
75.0%	quartile	7.0
50.0%	median	-3.4
25.0%	quartile	-11.0
10.0%		-74.8
2.5%		-80.6
0.5%		-80.6
0.0%	minimum	-80.6

Summary Statistics	
Mean	-7.4
Std Dev	29.4
Std Err Mean	9.3
Upper 95% Mean	13.7
Lower 95% Mean	-28.4
N	10.0

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

Bias

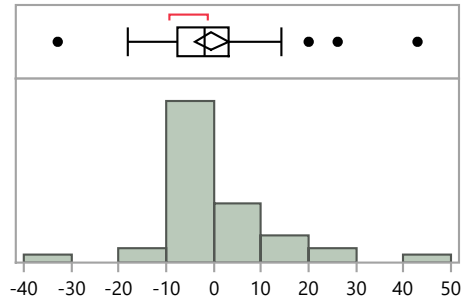


Quantiles		
100.0%	maximum	7.3
99.5%		7.3
97.5%		7.3
90.0%		7.3
75.0%	quartile	7.3
50.0%	median	3.7
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-29.6
Std Dev	60.8
Std Err Mean	35.1
Upper 95% Mean	121.5
Lower 95% Mean	-180.7
N	3.0

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

Bias



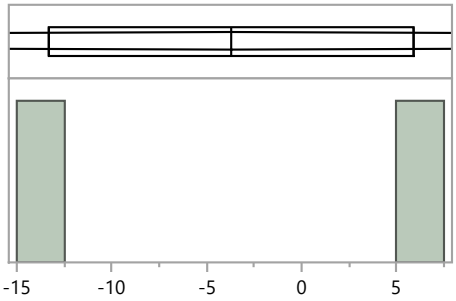
Quantiles		
100.0%	maximum	42.9
99.5%		42.9
97.5%		40.8
90.0%		13.1
75.0%	quartile	3.2
50.0%	median	-2.0
25.0%	quartile	-7.6
10.0%		-9.3
2.5%		-31.0
0.5%		-32.8
0.0%	minimum	-32.8

Summary Statistics	
Mean	-0.4
Std Dev	11.8
Std Err Mean	1.8
Upper 95% Mean	3.2
Lower 95% Mean	-4.0
N	44.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Potassium-40 Other

Bias

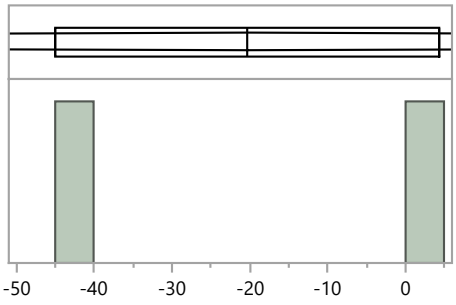


Quantiles		
100.0%	maximum	5.9
99.5%		5.9
97.5%		5.9
90.0%		5.9
75.0%	quartile	5.9
50.0%	median	-3.7
25.0%	quartile	-13.3
10.0%		-13.3
2.5%		-13.3
0.5%		-13.3
0.0%	minimum	-13.3

Summary Statistics	
Mean	-3.7
Std Dev	13.6
Std Err Mean	9.6
Upper 95% Mean	118.3
Lower 95% Mean	-125.7
N	2.0

Distributions Analyte_Method=Selenium SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

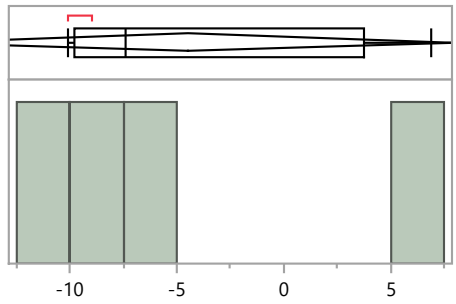


Quantiles		
100.0%	maximum	4.4
99.5%		4.4
97.5%		4.4
90.0%		4.4
75.0%	quartile	4.4
50.0%	median	-20.3
25.0%	quartile	-45.0
10.0%		-45.0
2.5%		-45.0
0.5%		-45.0
0.0%	minimum	-45.0

Summary Statistics	
Mean	-20.3
Std Dev	34.9
Std Err Mean	24.7
Upper 95% Mean	293.5
Lower 95% Mean	-334.1
N	2.0

Distributions Analyte_Method=Selenium SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



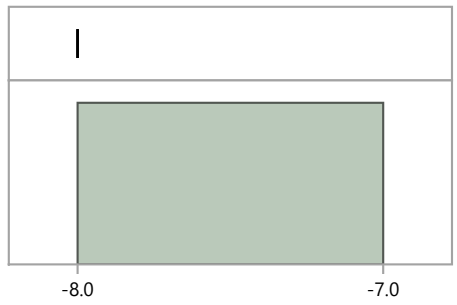
Quantiles		
100.0%	maximum	6.9
99.5%		6.9
97.5%		6.9
90.0%		6.9
75.0%	quartile	3.7
50.0%	median	-7.4
25.0%	quartile	-9.8
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

Summary Statistics	
Mean	-4.5
Std Dev	7.8
Std Err Mean	3.9
Upper 95% Mean	7.9
Lower 95% Mean	-16.9
N	4.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Selenium SW846 Methods 3015, 3051 (Microwave assisted)

Bias

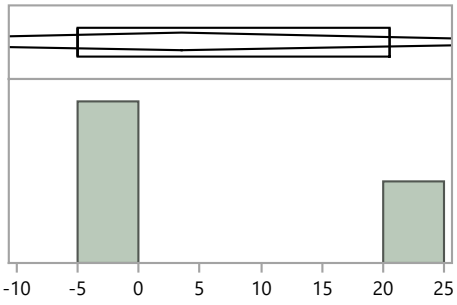


Quantiles		
100.0%	maximum	-8.0
99.5%		-8.0
97.5%		-8.0
90.0%		-8.0
75.0%	quartile	-8.0
50.0%	median	-8.0
25.0%	quartile	-8.0
10.0%		-8.0
2.5%		-8.0
0.5%		-8.0
0.0%	minimum	-8.0

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

Distributions Analyte_Method=Silver SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

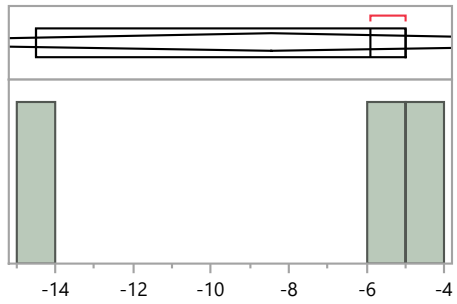


Quantiles		
100.0%	maximum	20.5
99.5%		20.5
97.5%		20.5
90.0%		20.5
75.0%	quartile	20.5
50.0%	median	-5.0
25.0%	quartile	-5.0
10.0%		-5.0
2.5%		-5.0
0.5%		-5.0
0.0%	minimum	-5.0

Summary Statistics	
Mean	3.5
Std Dev	14.7
Std Err Mean	8.5
Upper 95% Mean	40.1
Lower 95% Mean	-33.1
N	3.0

Distributions Analyte_Method=Silver SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



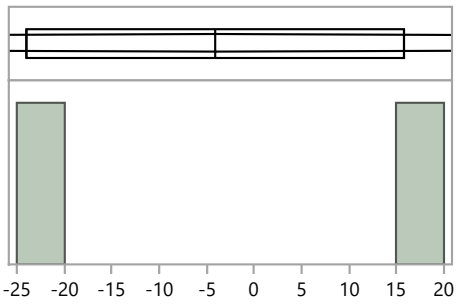
Quantiles		
100.0%	maximum	-5.0
99.5%		-5.0
97.5%		-5.0
90.0%		-5.0
75.0%	quartile	-5.0
50.0%	median	-5.9
25.0%	quartile	-14.5
10.0%		-14.5
2.5%		-14.5
0.5%		-14.5
0.0%	minimum	-14.5

Summary Statistics	
Mean	-8.5
Std Dev	5.2
Std Err Mean	3.0
Upper 95% Mean	4.6
Lower 95% Mean	-21.5
N	3.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Silver SW846 Methods 3015, 3051 (Microwave assisted)

Bias

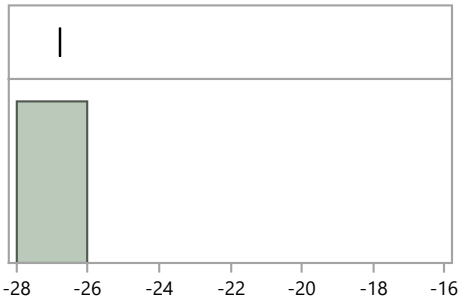


Quantiles		
100.0%	maximum	15.7
99.5%		15.7
97.5%		15.7
90.0%		15.7
75.0%	quartile	15.7
50.0%	median	-4.2
25.0%	quartile	-24.0
10.0%		-24.0
2.5%		-24.0
0.5%		-24.0
0.0%	minimum	-24.0

Summary Statistics	
Mean	-4.2
Std Dev	28.1
Std Err Mean	19.9
Upper 95% Mean	248.1
Lower 95% Mean	-256.4
N	2.0

Distributions Analyte_Method=Silver Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

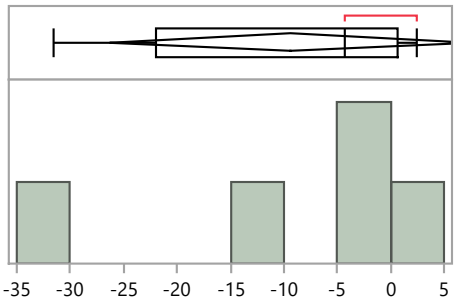


Quantiles		
100.0%	maximum	-26.8
99.5%		-26.8
97.5%		-26.8
90.0%		-26.8
75.0%	quartile	-26.8
50.0%	median	-26.8
25.0%	quartile	-26.8
10.0%		-26.8
2.5%		-26.8
0.5%		-26.8
0.0%	minimum	-26.8

Summary Statistics	
Mean	-26.8
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



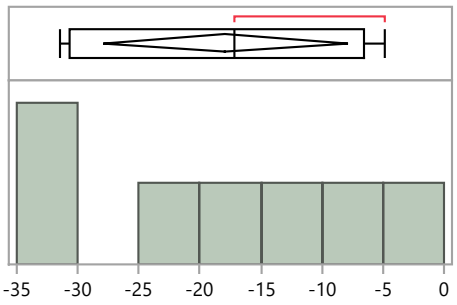
Quantiles		
100.0%	maximum	2.5
99.5%		2.5
97.5%		2.5
90.0%		2.5
75.0%	quartile	0.7
50.0%	median	-4.3
25.0%	quartile	-22.0
10.0%		-31.6
2.5%		-31.6
0.5%		-31.6
0.0%	minimum	-31.6

Summary Statistics	
Mean	-9.4
Std Dev	13.6
Std Err Mean	6.1
Upper 95% Mean	7.5
Lower 95% Mean	-26.2
N	5.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Strontium-90 Acid leaching without hydrofluoric acid

Bias

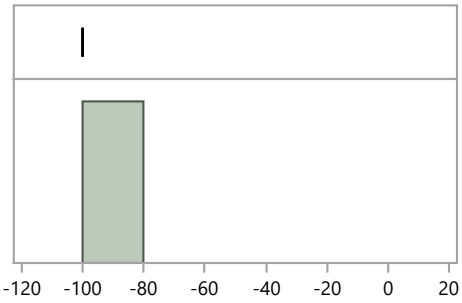


Quantiles		
100.0%	maximum	-4.9
99.5%		-4.9
97.5%		-4.9
90.0%		-4.9
75.0%	quartile	-6.6
50.0%	median	-17.2
25.0%	quartile	-30.7
10.0%		-31.4
2.5%		-31.4
0.5%		-31.4
0.0%	minimum	-31.4

Summary Statistics	
Mean	-17.9
Std Dev	10.9
Std Err Mean	4.1
Upper 95% Mean	-7.9
Lower 95% Mean	-28.0
N	7.0

Distributions Analyte_Method=Strontium-90 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

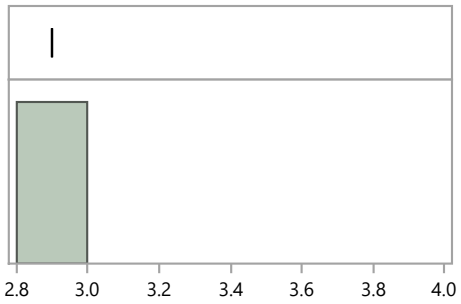


Quantiles		
100.0%	maximum	-100.0
99.5%		-100.0
97.5%		-100.0
90.0%		-100.0
75.0%	quartile	-100.0
50.0%	median	-100.0
25.0%	quartile	-100.0
10.0%		-100.0
2.5%		-100.0
0.5%		-100.0
0.0%	minimum	-100.0

Summary Statistics	
Mean	-100.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



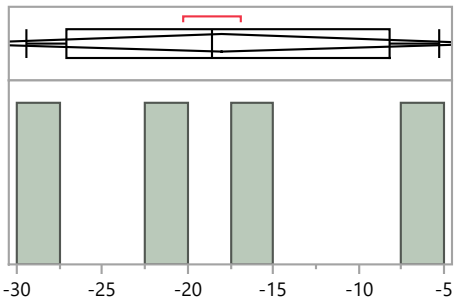
Quantiles		
100.0%	maximum	2.9
99.5%		2.9
97.5%		2.9
90.0%		2.9
75.0%	quartile	2.9
50.0%	median	2.9
25.0%	quartile	2.9
10.0%		2.9
2.5%		2.9
0.5%		2.9
0.0%	minimum	2.9

Summary Statistics	
Mean	2.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Strontium-90 Other

Bias

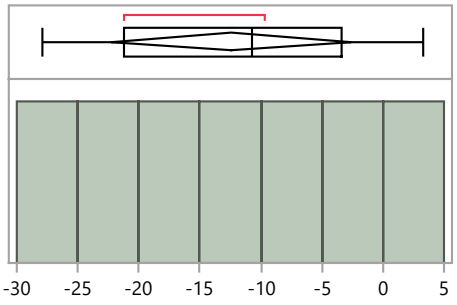


Quantiles		
100.0%	maximum	-5.3
99.5%		-5.3
97.5%		-5.3
90.0%		-5.3
75.0%	quartile	-8.2
50.0%	median	-18.6
25.0%	quartile	-27.1
10.0%		-29.4
2.5%		-29.4
0.5%		-29.4
0.0%	minimum	-29.4

Summary Statistics	
Mean	-18.0
Std Dev	10.0
Std Err Mean	5.0
Upper 95% Mean	-2.1
Lower 95% Mean	-33.8
N	4.0

Distributions Analyte_Method=Strontium-90 Total dissolution by fusion

Bias

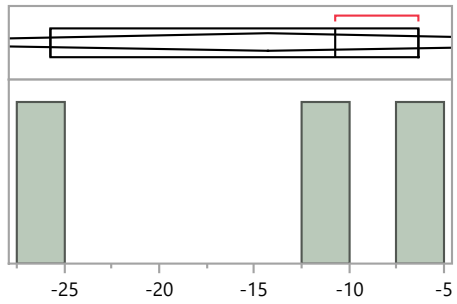


Quantiles		
100.0%	maximum	3.3
99.5%		3.3
97.5%		3.3
90.0%		3.3
75.0%	quartile	-3.4
50.0%	median	-10.7
25.0%	quartile	-21.2
10.0%		-27.9
2.5%		-27.9
0.5%		-27.9
0.0%	minimum	-27.9

Summary Statistics	
Mean	-12.4
Std Dev	10.6
Std Err Mean	4.0
Upper 95% Mean	-2.6
Lower 95% Mean	-22.2
N	7.0

Distributions Analyte_Method=Technetium-99 Acid dissolution with hydrofluoric acid

Bias



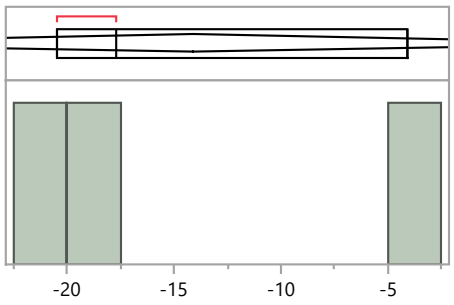
Quantiles		
100.0%	maximum	-6.4
99.5%		-6.4
97.5%		-6.4
90.0%		-6.4
75.0%	quartile	-6.4
50.0%	median	-10.7
25.0%	quartile	-25.7
10.0%		-25.7
2.5%		-25.7
0.5%		-25.7
0.0%	minimum	-25.7

Summary Statistics	
Mean	-14.3
Std Dev	10.1
Std Err Mean	5.8
Upper 95% Mean	10.9
Lower 95% Mean	-39.4
N	3.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Technetium-99 Acid leaching without hydrofluoric acid

Bias

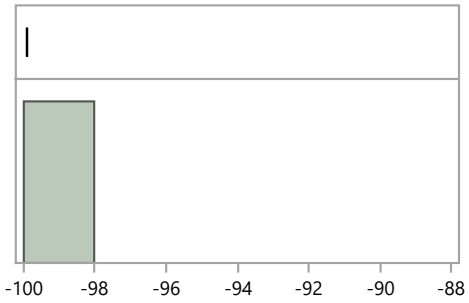


Quantiles		
100.0%	maximum	-4.1
99.5%		-4.1
97.5%		-4.1
90.0%		-4.1
75.0%	quartile	-4.1
50.0%	median	-17.7
25.0%	quartile	-20.5
10.0%		-20.5
2.5%		-20.5
0.5%		-20.5
0.0%	minimum	-20.5

Summary Statistics	
Mean	-14.1
Std Dev	8.8
Std Err Mean	5.1
Upper 95% Mean	7.7
Lower 95% Mean	-35.9
N	3.0

Distributions Analyte_Method=Technetium-99 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

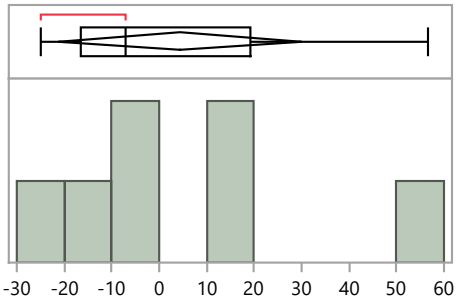


Quantiles		
100.0%	maximum	-99.9
99.5%		-99.9
97.5%		-99.9
90.0%		-99.9
75.0%	quartile	-99.9
50.0%	median	-99.9
25.0%	quartile	-99.9
10.0%		-99.9
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-99.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Technetium-99 Other

Bias



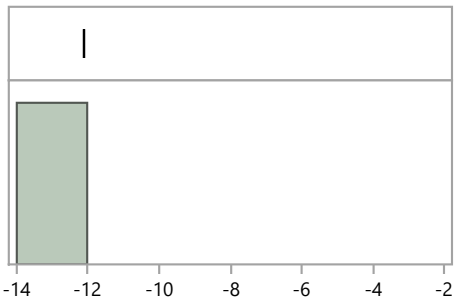
Quantiles		
100.0%	maximum	56.7
99.5%		56.7
97.5%		56.7
90.0%		56.7
75.0%	quartile	19.3
50.0%	median	-7.0
25.0%	quartile	-16.4
10.0%		-25.0
2.5%		-25.0
0.5%		-25.0
0.0%	minimum	-25.0

Summary Statistics	
Mean	4.4
Std Dev	27.8
Std Err Mean	10.5
Upper 95% Mean	30.1
Lower 95% Mean	-21.3
N	7.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Technetium-99 SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

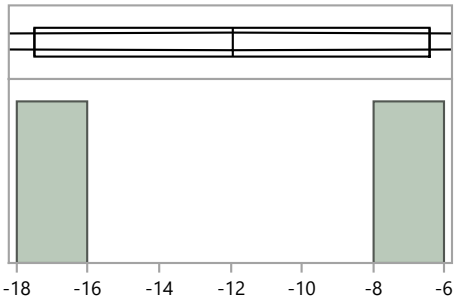


Quantiles		
100.0%	maximum	-12.1
99.5%		-12.1
97.5%		-12.1
90.0%		-12.1
75.0%	quartile	-12.1
50.0%	median	-12.1
25.0%	quartile	-12.1
10.0%		-12.1
2.5%		-12.1
0.5%		-12.1
0.0%	minimum	-12.1

Summary Statistics	
Mean	-12.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Technetium-99 Total dissolution by fusion

Bias

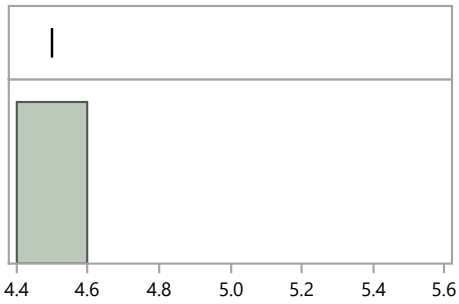


Quantiles		
100.0%	maximum	-6.4
99.5%		-6.4
97.5%		-6.4
90.0%		-6.4
75.0%	quartile	-6.4
50.0%	median	-12.0
25.0%	quartile	-17.5
10.0%		-17.5
2.5%		-17.5
0.5%		-17.5
0.0%	minimum	-17.5

Summary Statistics	
Mean	-12.0
Std Dev	7.8
Std Err Mean	5.5
Upper 95% Mean	58.6
Lower 95% Mean	-82.5
N	2.0

Distributions Analyte_Method=Thallium SW846 Method 3050B, Section 7.5, Increased Solubility

Bias



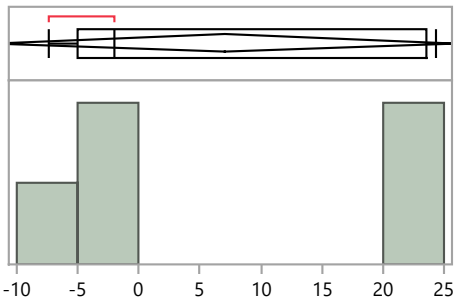
Quantiles		
100.0%	maximum	4.5
99.5%		4.5
97.5%		4.5
90.0%		4.5
75.0%	quartile	4.5
50.0%	median	4.5
25.0%	quartile	4.5
10.0%		4.5
2.5%		4.5
0.5%		4.5
0.0%	minimum	4.5

Summary Statistics	
Mean	4.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Thallium SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

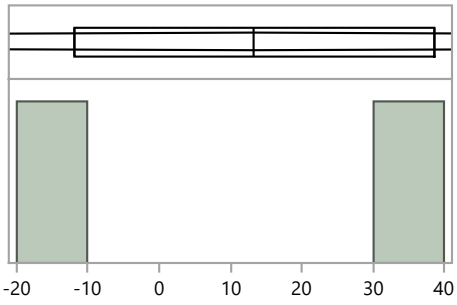


Quantiles		
100.0%	maximum	24.3
99.5%		24.3
97.5%		24.3
90.0%		24.3
75.0%	quartile	23.6
50.0%	median	-2.0
25.0%	quartile	-5.0
10.0%		-7.4
2.5%		-7.4
0.5%		-7.4
0.0%	minimum	-7.4

Summary Statistics	
Mean	7.0
Std Dev	15.2
Std Err Mean	6.8
Upper 95% Mean	25.9
Lower 95% Mean	-11.9
N	5.0

Distributions Analyte_Method=Thallium SW846 Methods 3015, 3051 (Microwave assisted)

Bias

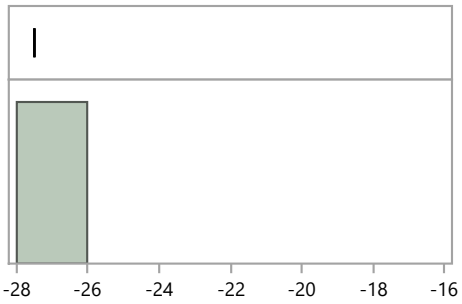


Quantiles		
100.0%	maximum	38.6
99.5%		38.6
97.5%		38.6
90.0%		38.6
75.0%	quartile	38.6
50.0%	median	13.4
25.0%	quartile	-11.9
10.0%		-11.9
2.5%		-11.9
0.5%		-11.9
0.0%	minimum	-11.9

Summary Statistics	
Mean	13.4
Std Dev	35.7
Std Err Mean	25.3
Upper 95% Mean	334.2
Lower 95% Mean	-307.5
N	2.0

Distributions Analyte_Method=Thallium Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias



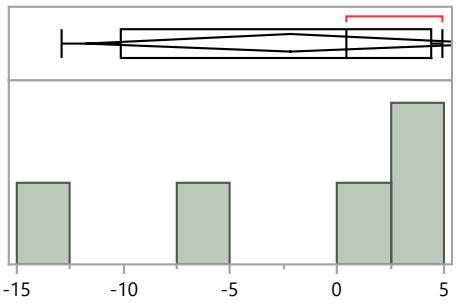
Quantiles		
100.0%	maximum	-27.5
99.5%		-27.5
97.5%		-27.5
90.0%		-27.5
75.0%	quartile	-27.5
50.0%	median	-27.5
25.0%	quartile	-27.5
10.0%		-27.5
2.5%		-27.5
0.5%		-27.5
0.0%	minimum	-27.5

Summary Statistics	
Mean	-27.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-228 Acid dissolution with hydrofluoric acid

Bias

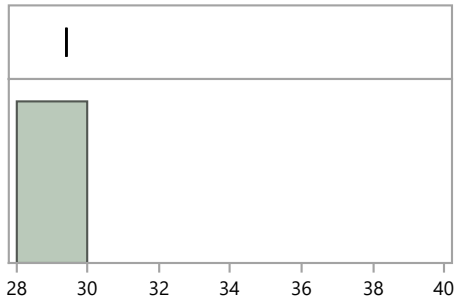


Quantiles		
100.0%	maximum	4.9
99.5%		4.9
97.5%		4.9
90.0%		4.9
75.0%	quartile	4.4
50.0%	median	0.4
25.0%	quartile	-10.2
10.0%		-12.9
2.5%		-12.9
0.5%		-12.9
0.0%	minimum	-12.9

Summary Statistics	
Mean	-2.2
Std Dev	7.7
Std Err Mean	3.4
Upper 95% Mean	7.3
Lower 95% Mean	-11.8
N	5.0

Distributions Analyte_Method=Thorium-228 Acid leaching without hydrofluoric acid

Bias

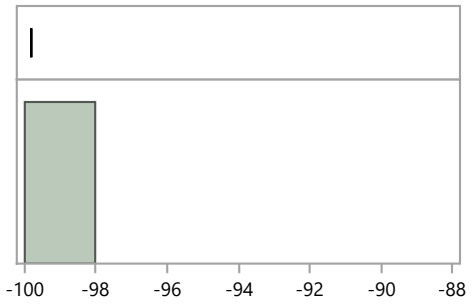


Quantiles		
100.0%	maximum	29.4
99.5%		29.4
97.5%		29.4
90.0%		29.4
75.0%	quartile	29.4
50.0%	median	29.4
25.0%	quartile	29.4
10.0%		29.4
2.5%		29.4
0.5%		29.4
0.0%	minimum	29.4

Summary Statistics	
Mean	29.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Thorium-228 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



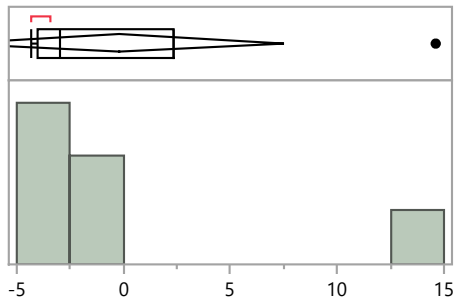
Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-228 Other

Bias

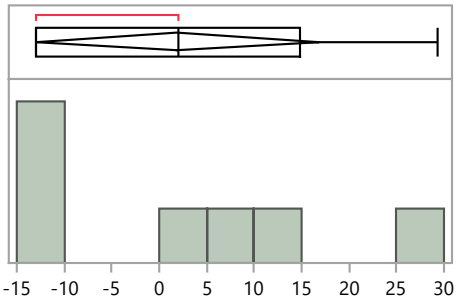


Quantiles		
100.0%	maximum	14.6
99.5%		14.6
97.5%		14.6
90.0%		14.6
75.0%	quartile	2.4
50.0%	median	-3.0
25.0%	quartile	-4.0
10.0%		-4.3
2.5%		-4.3
0.5%		-4.3
0.0%	minimum	-4.3

Summary Statistics	
Mean	-0.2
Std Dev	7.3
Std Err Mean	3.0
Upper 95% Mean	7.5
Lower 95% Mean	-7.9
N	6.0

Distributions Analyte_Method=Thorium-228 Total dissolution by fusion

Bias

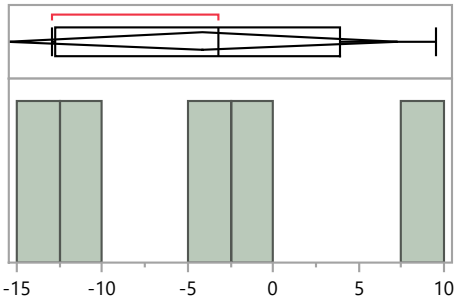


Quantiles		
100.0%	maximum	29.3
99.5%		29.3
97.5%		29.3
90.0%		29.3
75.0%	quartile	14.8
50.0%	median	2.1
25.0%	quartile	-12.9
10.0%		-12.9
2.5%		-12.9
0.5%		-12.9
0.0%	minimum	-12.9

Summary Statistics	
Mean	1.9
Std Dev	16.2
Std Err Mean	6.1
Upper 95% Mean	16.9
Lower 95% Mean	-13.0
N	7.0

Distributions Analyte_Method=Thorium-230 Acid dissolution with hydrofluoric acid

Bias



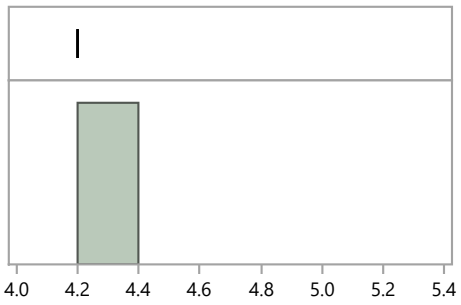
Quantiles		
100.0%	maximum	9.5
99.5%		9.5
97.5%		9.5
90.0%		9.5
75.0%	quartile	4.0
50.0%	median	-3.2
25.0%	quartile	-12.7
10.0%		-12.9
2.5%		-12.9
0.5%		-12.9
0.0%	minimum	-12.9

Summary Statistics	
Mean	-4.1
Std Dev	9.2
Std Err Mean	4.1
Upper 95% Mean	7.3
Lower 95% Mean	-15.6
N	5.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-230 Acid leaching without hydrofluoric acid

Bias

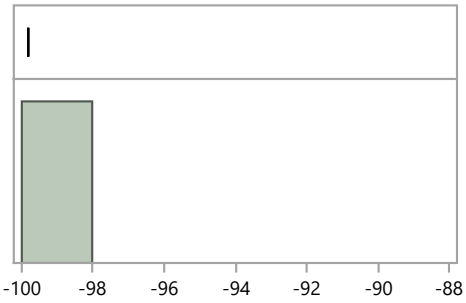


Quantiles		
100.0%	maximum	4.2
99.5%		4.2
97.5%		4.2
90.0%		4.2
75.0%	quartile	4.2
50.0%	median	4.2
25.0%	quartile	4.2
10.0%		4.2
2.5%		4.2
0.5%		4.2
0.0%	minimum	4.2

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

Distributions Analyte_Method=Thorium-230 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

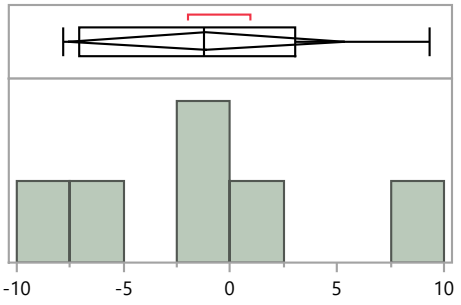


Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Thorium-230 Other

Bias



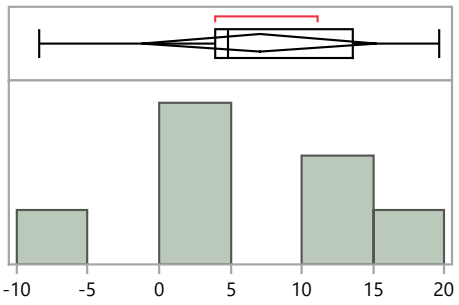
Quantiles		
100.0%	maximum	9.3
99.5%		9.3
97.5%		9.3
90.0%		9.3
75.0%	quartile	3.0
50.0%	median	-1.2
25.0%	quartile	-7.1
10.0%		-7.8
2.5%		-7.8
0.5%		-7.8
0.0%	minimum	-7.8

Summary Statistics	
Mean	-1.1
Std Dev	6.2
Std Err Mean	2.5
Upper 95% Mean	5.3
Lower 95% Mean	-7.6
N	6.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-230 Total dissolution by fusion

Bias

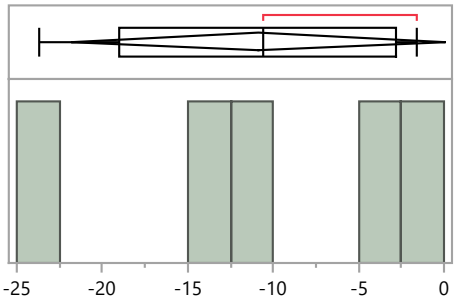


Quantiles		
100.0%	maximum	19.6
99.5%		19.6
97.5%		19.6
90.0%		19.6
75.0%	quartile	13.6
50.0%	median	4.8
25.0%	quartile	3.9
10.0%		-8.4
2.5%		-8.4
0.5%		-8.4
0.0%	minimum	-8.4

Summary Statistics	
Mean	7.1
Std Dev	8.9
Std Err Mean	3.4
Upper 95% Mean	15.3
Lower 95% Mean	-1.2
N	7.0

Distributions Analyte_Method=Thorium-232 Acid dissolution with hydrofluoric acid

Bias

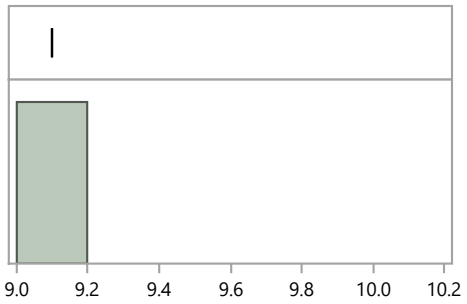


Quantiles		
100.0%	maximum	-1.6
99.5%		-1.6
97.5%		-1.6
90.0%		-1.6
75.0%	quartile	-2.8
50.0%	median	-10.6
25.0%	quartile	-19.0
10.0%		-23.7
2.5%		-23.7
0.5%		-23.7
0.0%	minimum	-23.7

Summary Statistics	
Mean	-10.8
Std Dev	8.8
Std Err Mean	3.9
Upper 95% Mean	0.1
Lower 95% Mean	-21.8
N	5.0

Distributions Analyte_Method=Thorium-232 Acid leaching without hydrofluoric acid

Bias



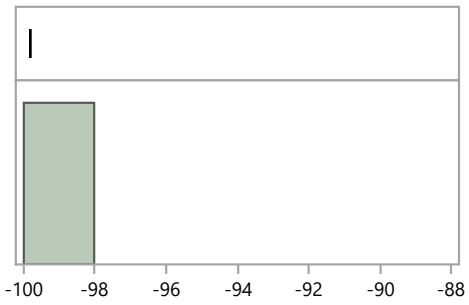
Quantiles		
100.0%	maximum	9.1
99.5%		9.1
97.5%		9.1
90.0%		9.1
75.0%	quartile	9.1
50.0%	median	9.1
25.0%	quartile	9.1
10.0%		9.1
2.5%		9.1
0.5%		9.1
0.0%	minimum	9.1

Summary Statistics	
Mean	9.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-232 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

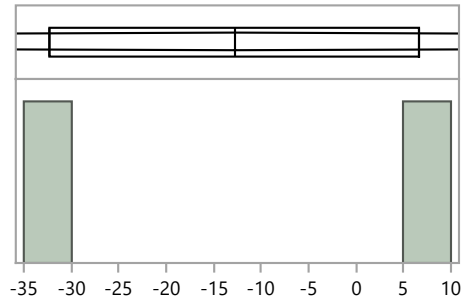


Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Thorium-232 No preparation - analyzed as received

Bias

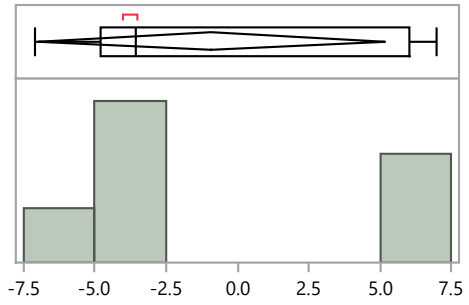


Quantiles		
100.0%	maximum	6.6
99.5%		6.6
97.5%		6.6
90.0%		6.6
75.0%	quartile	6.6
50.0%	median	-12.8
25.0%	quartile	-32.2
10.0%		-32.2
2.5%		-32.2
0.5%		-32.2
0.0%	minimum	-32.2

Summary Statistics	
Mean	-12.8
Std Dev	27.4
Std Err Mean	19.4
Upper 95% Mean	233.7
Lower 95% Mean	-259.3
N	2.0

Distributions Analyte_Method=Thorium-232 Other

Bias



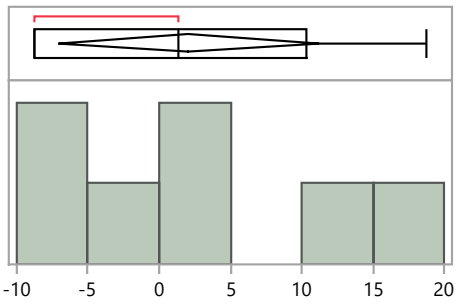
Quantiles		
100.0%	maximum	7.0
99.5%		7.0
97.5%		7.0
90.0%		7.0
75.0%	quartile	6.0
50.0%	median	-3.6
25.0%	quartile	-4.8
10.0%		-7.1
2.5%		-7.1
0.5%		-7.1
0.0%	minimum	-7.1

Summary Statistics	
Mean	-0.9
Std Dev	5.8
Std Err Mean	2.4
Upper 95% Mean	5.2
Lower 95% Mean	-7.0
N	6.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Thorium-232 Total dissolution by fusion

Bias

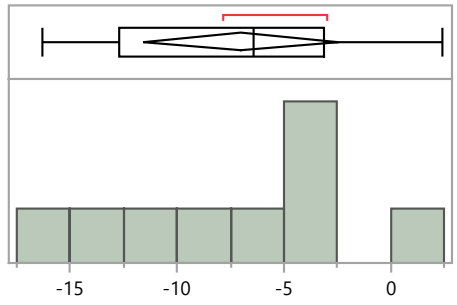


Quantiles		
100.0%	maximum	18.8
99.5%		18.8
97.5%		18.8
90.0%		18.8
75.0%	quartile	10.3
50.0%	median	1.4
25.0%	quartile	-8.7
10.0%		-8.7
2.5%		-8.7
0.5%		-8.7
0.0%	minimum	-8.7

Summary Statistics	
Mean	2.1
Std Dev	9.9
Std Err Mean	3.7
Upper 95% Mean	11.2
Lower 95% Mean	-7.1
N	7.0

Distributions Analyte_Method=Uranium-234 Acid dissolution with hydrofluoric acid

Bias

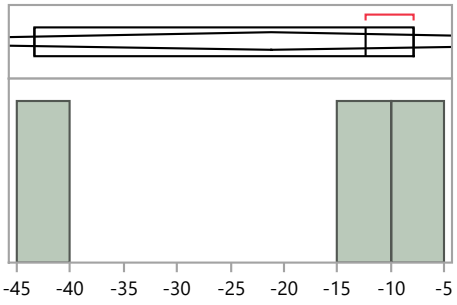


Quantiles		
100.0%	maximum	2.4
99.5%		2.4
97.5%		2.4
90.0%		2.4
75.0%	quartile	-3.1
50.0%	median	-6.4
25.0%	quartile	-12.7
10.0%		-16.3
2.5%		-16.3
0.5%		-16.3
0.0%	minimum	-16.3

Summary Statistics	
Mean	-7.0
Std Dev	6.0
Std Err Mean	2.0
Upper 95% Mean	-2.5
Lower 95% Mean	-11.6
N	9.0

Distributions Analyte_Method=Uranium-234 Acid leaching without hydrofluoric acid

Bias



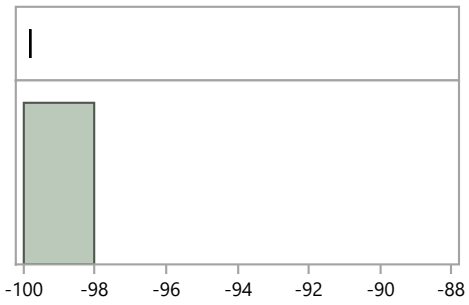
Quantiles		
100.0%	maximum	-7.9
99.5%		-7.9
97.5%		-7.9
90.0%		-7.9
75.0%	quartile	-7.9
50.0%	median	-12.3
25.0%	quartile	-43.3
10.0%		-43.3
2.5%		-43.3
0.5%		-43.3
0.0%	minimum	-43.3

Summary Statistics	
Mean	-21.2
Std Dev	19.3
Std Err Mean	11.1
Upper 95% Mean	26.8
Lower 95% Mean	-69.1
N	3.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-234 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

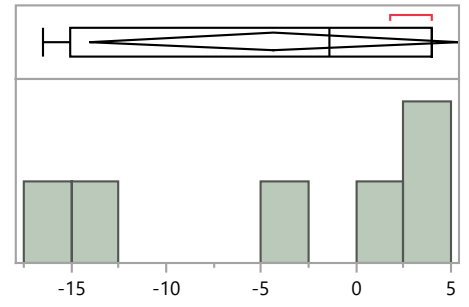


Quantiles		
100.0%	maximum	-99.8
99.5%		-99.8
97.5%		-99.8
90.0%		-99.8
75.0%	quartile	-99.8
50.0%	median	-99.8
25.0%	quartile	-99.8
10.0%		-99.8
2.5%		-99.8
0.5%		-99.8
0.0%	minimum	-99.8

Summary Statistics	
Mean	-99.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Other

Bias

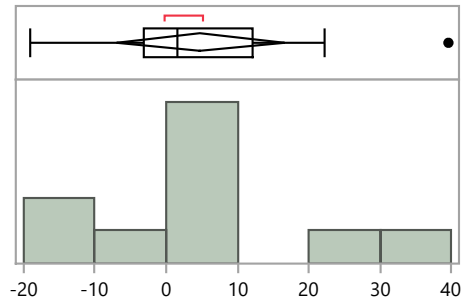


Quantiles		
100.0%	maximum	4.0
99.5%		4.0
97.5%		4.0
90.0%		4.0
75.0%	quartile	4.0
50.0%	median	-1.4
25.0%	quartile	-15.1
10.0%		-16.5
2.5%		-16.5
0.5%		-16.5
0.0%	minimum	-16.5

Summary Statistics	
Mean	-4.3
Std Dev	9.3
Std Err Mean	3.8
Upper 95% Mean	5.4
Lower 95% Mean	-14.0
N	6.0

Distributions Analyte_Method=Uranium-234 Total dissolution by fusion

Bias



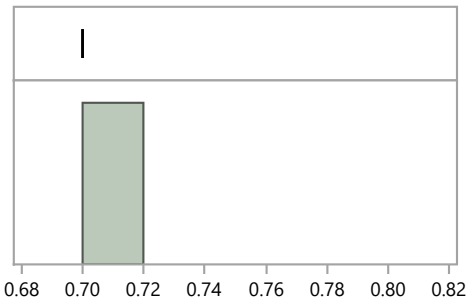
Quantiles		
100.0%	maximum	39.6
99.5%		39.6
97.5%		39.6
90.0%		37.9
75.0%	quartile	12.2
50.0%	median	1.7
25.0%	quartile	-3.2
10.0%		-18.3
2.5%		-19.0
0.5%		-19.0
0.0%	minimum	-19.0

Summary Statistics	
Mean	4.8
Std Dev	16.5
Std Err Mean	5.2
Upper 95% Mean	16.6
Lower 95% Mean	-7.0
N	10.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-235 EPA Method 200.8 Trace Metals in Waters & Wastes

Bias

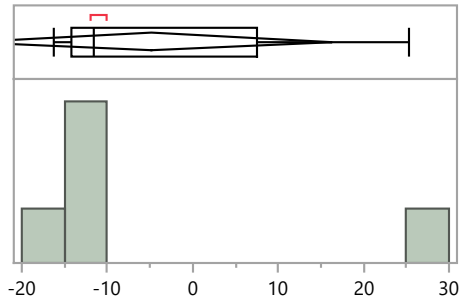


Quantiles		
100.0%	maximum	0.7
99.5%		0.7
97.5%		0.7
90.0%		0.7
75.0%	quartile	0.7
50.0%	median	0.7
25.0%	quartile	0.7
10.0%		0.7
2.5%		0.7
0.5%		0.7
0.0%	minimum	0.7

Summary Statistics	
Mean	0.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-235 Other

Bias

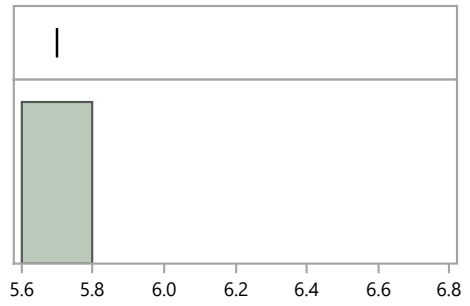


Quantiles		
100.0%	maximum	25.3
99.5%		25.3
97.5%		25.3
90.0%		25.3
75.0%	quartile	7.6
50.0%	median	-11.5
25.0%	quartile	-14.1
10.0%		-16.2
2.5%		-16.2
0.5%		-16.2
0.0%	minimum	-16.2

Summary Statistics	
Mean	-4.9
Std Dev	17.0
Std Err Mean	7.6
Upper 95% Mean	16.3
Lower 95% Mean	-26.1
N	5.0

Distributions Analyte_Method=Uranium-235 SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



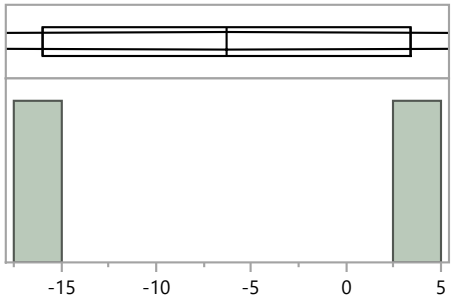
Quantiles		
100.0%	maximum	5.7
99.5%		5.7
97.5%		5.7
90.0%		5.7
75.0%	quartile	5.7
50.0%	median	5.7
25.0%	quartile	5.7
10.0%		5.7
2.5%		5.7
0.5%		5.7
0.0%	minimum	5.7

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

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-235 SW846 Methods 3015, 3051 (Microwave assisted)

Bias

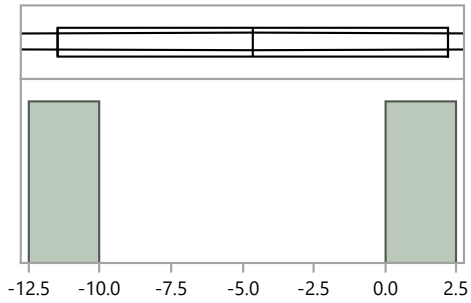


Quantiles		
100.0%	maximum	3.4
99.5%		3.4
97.5%		3.4
90.0%		3.4
75.0%	quartile	3.4
50.0%	median	-6.3
25.0%	quartile	-16.0
10.0%		-16.0
2.5%		-16.0
0.5%		-16.0
0.0%	minimum	-16.0

Summary Statistics	
Mean	-6.3
Std Dev	13.7
Std Err Mean	9.7
Upper 95% Mean	117.0
Lower 95% Mean	-129.6
N	2.0

Distributions Analyte_Method=Uranium-235 Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

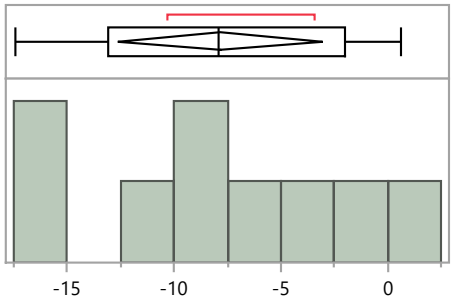


Quantiles		
100.0%	maximum	2.2
99.5%		2.2
97.5%		2.2
90.0%		2.2
75.0%	quartile	2.2
50.0%	median	-4.7
25.0%	quartile	-11.5
10.0%		-11.5
2.5%		-11.5
0.5%		-11.5
0.0%	minimum	-11.5

Summary Statistics	
Mean	-4.7
Std Dev	9.7
Std Err Mean	6.9
Upper 95% Mean	82.4
Lower 95% Mean	-91.7
N	2.0

Distributions Analyte_Method=Uranium-238 Acid dissolution with hydrofluoric acid

Bias



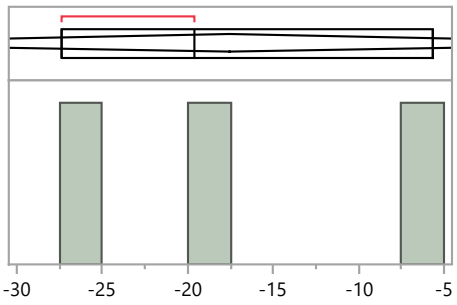
Quantiles		
100.0%	maximum	0.6
99.5%		0.6
97.5%		0.6
90.0%		0.6
75.0%	quartile	-2.0
50.0%	median	-7.9
25.0%	quartile	-13.1
10.0%		-17.4
2.5%		-17.4
0.5%		-17.4
0.0%	minimum	-17.4

Summary Statistics	
Mean	-7.8
Std Dev	6.2
Std Err Mean	2.1
Upper 95% Mean	-3.1
Lower 95% Mean	-12.6
N	9.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-238 Acid leaching without hydrofluoric acid

Bias

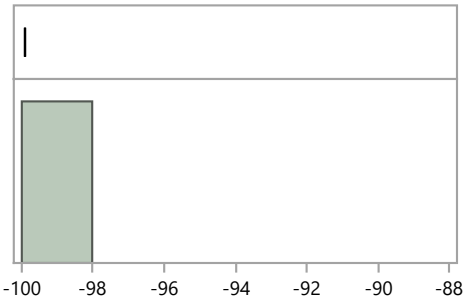


Quantiles		
100.0%	maximum	-5.7
99.5%		-5.7
97.5%		-5.7
90.0%		-5.7
75.0%	quartile	-5.7
50.0%	median	-19.6
25.0%	quartile	-27.4
10.0%		-27.4
2.5%		-27.4
0.5%		-27.4
0.0%	minimum	-27.4

Summary Statistics	
Mean	-17.6
Std Dev	11.0
Std Err Mean	6.3
Upper 95% Mean	9.7
Lower 95% Mean	-44.9
N	3.0

Distributions Analyte_Method=Uranium-238 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias

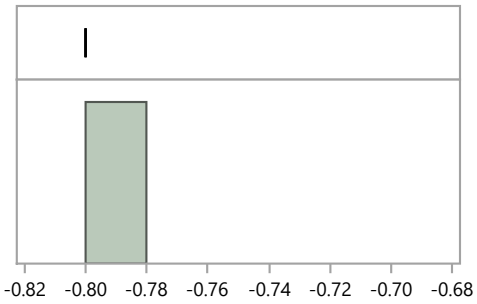


Quantiles		
100.0%	maximum	-99.9
99.5%		-99.9
97.5%		-99.9
90.0%		-99.9
75.0%	quartile	-99.9
50.0%	median	-99.9
25.0%	quartile	-99.9
10.0%		-99.9
2.5%		-99.9
0.5%		-99.9
0.0%	minimum	-99.9

Summary Statistics	
Mean	-99.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 EPA Method 200.8 Trace Metals in Waters & Wastes

Bias



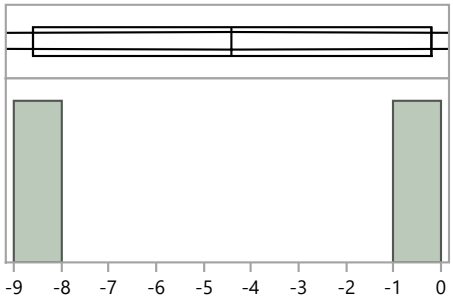
Quantiles		
100.0%	maximum	-0.8
99.5%		-0.8
97.5%		-0.8
90.0%		-0.8
75.0%	quartile	-0.8
50.0%	median	-0.8
25.0%	quartile	-0.8
10.0%		-0.8
2.5%		-0.8
0.5%		-0.8
0.0%	minimum	-0.8

Summary Statistics	
Mean	-0.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

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

Bias

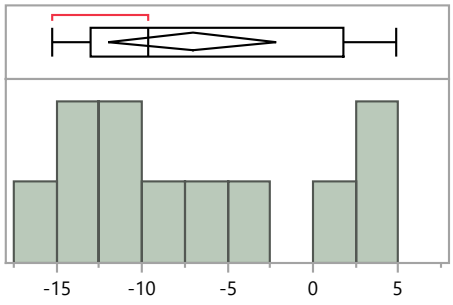


Quantiles		
100.0%	maximum	-0.2
99.5%		-0.2
97.5%		-0.2
90.0%		-0.2
75.0%	quartile	-0.2
50.0%	median	-4.4
25.0%	quartile	-8.6
10.0%		-8.6
2.5%		-8.6
0.5%		-8.6
0.0%	minimum	-8.6

Summary Statistics	
Mean	-4.4
Std Dev	5.9
Std Err Mean	4.2
Upper 95% Mean	49.0
Lower 95% Mean	-57.8
N	2.0

Distributions Analyte_Method=Uranium-238 Other

Bias

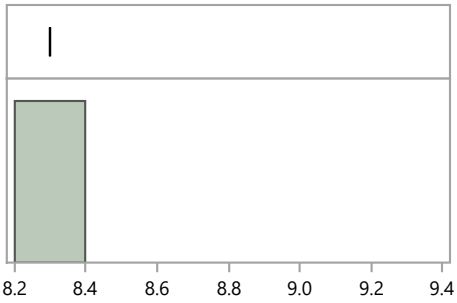


Quantiles		
100.0%	maximum	4.9
99.5%		4.9
97.5%		4.9
90.0%		4.6
75.0%	quartile	1.8
50.0%	median	-9.6
25.0%	quartile	-13.0
10.0%		-15.0
2.5%		-15.2
0.5%		-15.2
0.0%	minimum	-15.2

Summary Statistics	
Mean	-7.0
Std Dev	7.4
Std Err Mean	2.2
Upper 95% Mean	-2.1
Lower 95% Mean	-12.0
N	11.0

Distributions Analyte_Method=Uranium-238 SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias



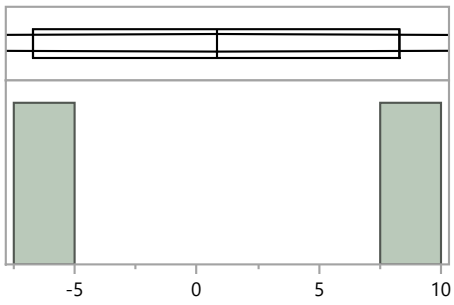
Quantiles		
100.0%	maximum	8.3
99.5%		8.3
97.5%		8.3
90.0%		8.3
75.0%	quartile	8.3
50.0%	median	8.3
25.0%	quartile	8.3
10.0%		8.3
2.5%		8.3
0.5%		8.3
0.0%	minimum	8.3

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

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-238 SW846 Methods 3015, 3051 (Microwave assisted)

Bias

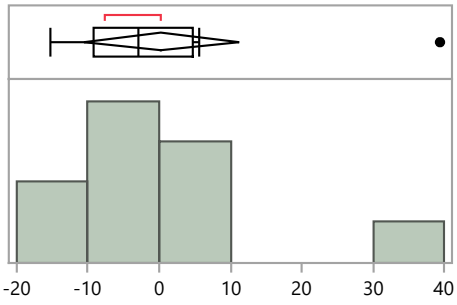


Quantiles		
100.0%	maximum	8.3
99.5%		8.3
97.5%		8.3
90.0%		8.3
75.0%	quartile	8.3
50.0%	median	0.8
25.0%	quartile	-6.7
10.0%		-6.7
2.5%		-6.7
0.5%		-6.7
0.0%	minimum	-6.7

Summary Statistics	
Mean	0.8
Std Dev	10.6
Std Err Mean	7.5
Upper 95% Mean	96.1
Lower 95% Mean	-94.5
N	2.0

Distributions Analyte_Method=Uranium-238 Total dissolution by fusion

Bias

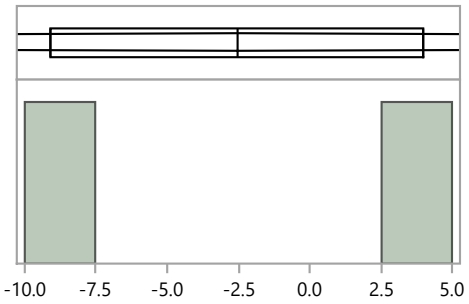


Quantiles		
100.0%	maximum	39.4
99.5%		39.4
97.5%		39.4
90.0%		36.0
75.0%	quartile	4.8
50.0%	median	-3.0
25.0%	quartile	-9.1
10.0%		-15.0
2.5%		-15.2
0.5%		-15.2
0.0%	minimum	-15.2

Summary Statistics	
Mean	0.3
Std Dev	15.3
Std Err Mean	4.8
Upper 95% Mean	11.3
Lower 95% Mean	-10.6
N	10.0

Distributions Analyte_Method=Uranium-238 Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias



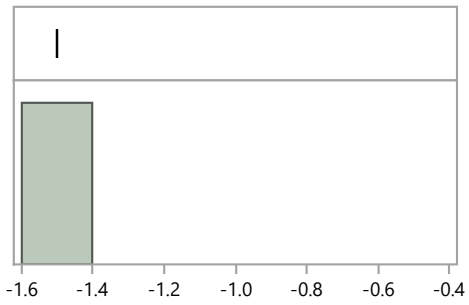
Quantiles		
100.0%	maximum	4.0
99.5%		4.0
97.5%		4.0
90.0%		4.0
75.0%	quartile	4.0
50.0%	median	-2.6
25.0%	quartile	-9.1
10.0%		-9.1
2.5%		-9.1
0.5%		-9.1
0.0%	minimum	-9.1

Summary Statistics	
Mean	-2.6
Std Dev	9.3
Std Err Mean	6.6
Upper 95% Mean	80.7
Lower 95% Mean	-85.8
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-Total EPA Method 200.8 Trace Metals in Waters & Wastes

Bias

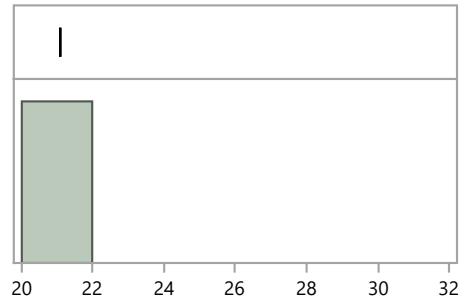


Quantiles		
100.0%	maximum	-1.5
99.5%		-1.5
97.5%		-1.5
90.0%		-1.5
75.0%	quartile	-1.5
50.0%	median	-1.5
25.0%	quartile	-1.5
10.0%		-1.5
2.5%		-1.5
0.5%		-1.5
0.0%	minimum	-1.5

Summary Statistics	
Mean	-1.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias

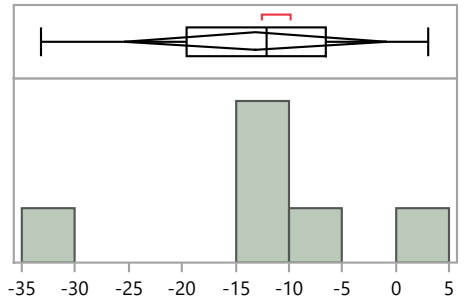


Quantiles		
100.0%	maximum	21.1
99.5%		21.1
97.5%		21.1
90.0%		21.1
75.0%	quartile	21.1
50.0%	median	21.1
25.0%	quartile	21.1
10.0%		21.1
2.5%		21.1
0.5%		21.1
0.0%	minimum	21.1

Summary Statistics	
Mean	21.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-Total Other

Bias



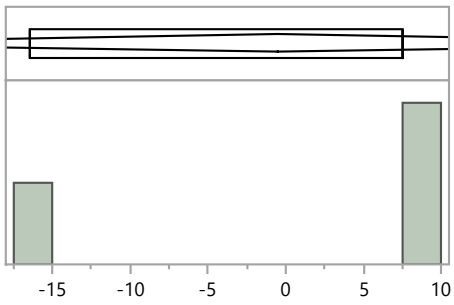
Quantiles		
100.0%	maximum	3.1
99.5%		3.1
97.5%		3.1
90.0%		3.1
75.0%	quartile	-6.6
50.0%	median	-12.2
25.0%	quartile	-19.6
10.0%		-33.2
2.5%		-33.2
0.5%		-33.2
0.0%	minimum	-33.2

Summary Statistics	
Mean	-13.2
Std Dev	11.7
Std Err Mean	4.8
Upper 95% Mean	-0.9
Lower 95% Mean	-25.5
N	6.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Uranium-Total SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

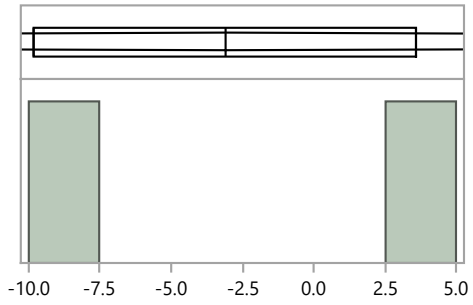


Quantiles		
100.0%	maximum	7.5
99.5%		7.5
97.5%		7.5
90.0%		7.5
75.0%	quartile	7.5
50.0%	median	7.5
25.0%	quartile	-16.5
10.0%		-16.5
2.5%		-16.5
0.5%		-16.5
0.0%	minimum	-16.5

Summary Statistics	
Mean	-0.5
Std Dev	13.9
Std Err Mean	8.0
Upper 95% Mean	33.9
Lower 95% Mean	-34.9
N	3.0

Distributions Analyte_Method=Uranium-Total Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

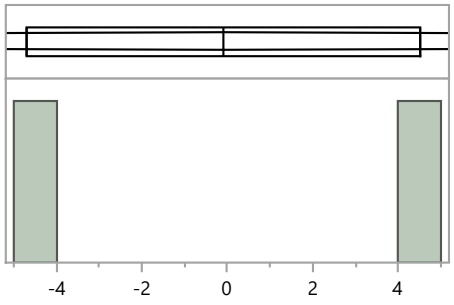


Quantiles		
100.0%	maximum	3.6
99.5%		3.6
97.5%		3.6
90.0%		3.6
75.0%	quartile	3.6
50.0%	median	-3.1
25.0%	quartile	-9.8
10.0%		-9.8
2.5%		-9.8
0.5%		-9.8
0.0%	minimum	-9.8

Summary Statistics	
Mean	-3.1
Std Dev	9.5
Std Err Mean	6.7
Upper 95% Mean	82.0
Lower 95% Mean	-88.2
N	2.0

Distributions Analyte_Method=Vanadium SW846 Method 3050B, Section 7.5, Increased Solubility

Bias



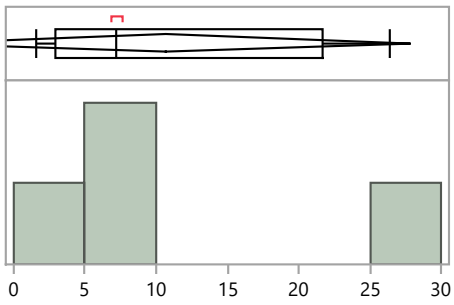
Quantiles		
100.0%	maximum	4.5
99.5%		4.5
97.5%		4.5
90.0%		4.5
75.0%	quartile	4.5
50.0%	median	-0.1
25.0%	quartile	-4.7
10.0%		-4.7
2.5%		-4.7
0.5%		-4.7
0.0%	minimum	-4.7

Summary Statistics	
Mean	-0.1
Std Dev	6.5
Std Err Mean	4.6
Upper 95% Mean	58.3
Lower 95% Mean	-58.5
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Vanadium SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

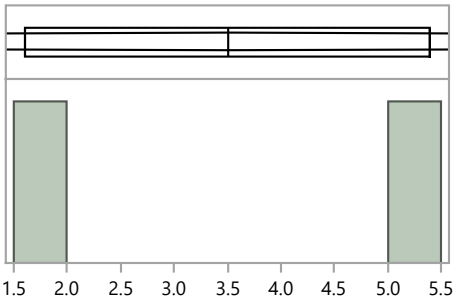


Quantiles		
100.0%	maximum	26.4
99.5%		26.4
97.5%		26.4
90.0%		26.4
75.0%	quartile	21.7
50.0%	median	7.3
25.0%	quartile	2.9
10.0%		1.6
2.5%		1.6
0.5%		1.6
0.0%	minimum	1.6

Summary Statistics	
Mean	10.6
Std Dev	10.9
Std Err Mean	5.4
Upper 95% Mean	27.9
Lower 95% Mean	-6.6
N	4.0

Distributions Analyte_Method=Vanadium SW846 Methods 3015, 3051 (Microwave assisted)

Bias

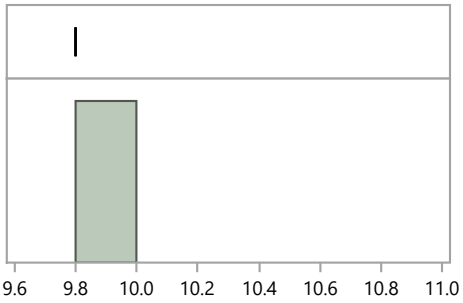


Quantiles		
100.0%	maximum	5.4
99.5%		5.4
97.5%		5.4
90.0%		5.4
75.0%	quartile	5.4
50.0%	median	3.5
25.0%	quartile	1.6
10.0%		1.6
2.5%		1.6
0.5%		1.6
0.0%	minimum	1.6

Summary Statistics	
Mean	3.5
Std Dev	2.7
Std Err Mean	1.9
Upper 95% Mean	27.6
Lower 95% Mean	-20.6
N	2.0

Distributions Analyte_Method=Vanadium Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias



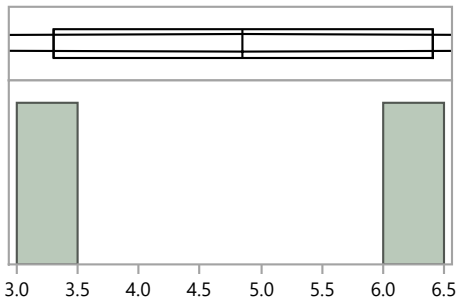
Quantiles		
100.0%	maximum	9.8
99.5%		9.8
97.5%		9.8
90.0%		9.8
75.0%	quartile	9.8
50.0%	median	9.8
25.0%	quartile	9.8
10.0%		9.8
2.5%		9.8
0.5%		9.8
0.0%	minimum	9.8

Summary Statistics	
Mean	9.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Zinc SW846 Method 3050B, Section 7.5, Increased Solubility

Bias

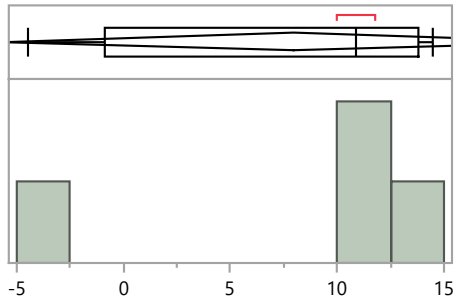


Quantiles		
100.0%	maximum	6.4
99.5%		6.4
97.5%		6.4
90.0%		6.4
75.0%	quartile	6.4
50.0%	median	4.9
25.0%	quartile	3.3
10.0%		3.3
2.5%		3.3
0.5%		3.3
0.0%	minimum	3.3

Summary Statistics	
Mean	4.9
Std Dev	2.2
Std Err Mean	1.6
Upper 95% Mean	24.5
Lower 95% Mean	-14.8
N	2.0

Distributions Analyte_Method=Zinc SW846 Methods 3005, 3010, 3020, 3050 or CLP ILM03.0

Bias

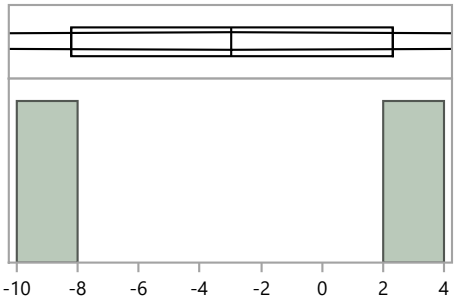


Quantiles		
100.0%	maximum	14.5
99.5%		14.5
97.5%		14.5
90.0%		14.5
75.0%	quartile	13.8
50.0%	median	10.9
25.0%	quartile	-0.9
10.0%		-4.5
2.5%		-4.5
0.5%		-4.5
0.0%	minimum	-4.5

Summary Statistics	
Mean	8.0
Std Dev	8.5
Std Err Mean	4.3
Upper 95% Mean	21.5
Lower 95% Mean	-5.6
N	4.0

Distributions Analyte_Method=Zinc SW846 Methods 3015, 3051 (Microwave assisted)

Bias



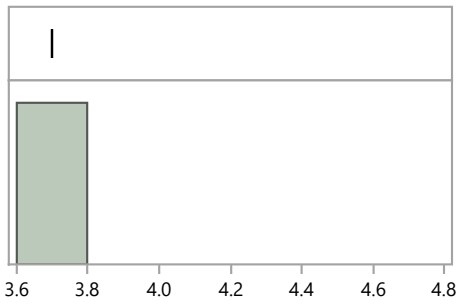
Quantiles		
100.0%	maximum	2.3
99.5%		2.3
97.5%		2.3
90.0%		2.3
75.0%	quartile	2.3
50.0%	median	-3.0
25.0%	quartile	-8.2
10.0%		-8.2
2.5%		-8.2
0.5%		-8.2
0.0%	minimum	-8.2

Summary Statistics	
Mean	-3.0
Std Dev	7.4
Std Err Mean	5.3
Upper 95% Mean	63.8
Lower 95% Mean	-69.7
N	2.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Zinc Total Metals Analysis (i.e. XRF, Fusion, neutron activation)

Bias

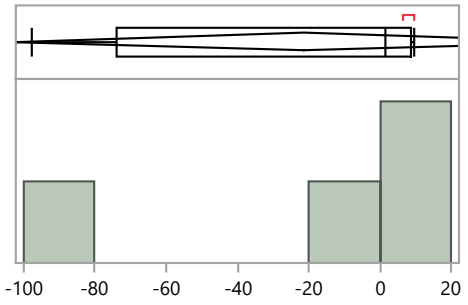


Quantiles		
100.0%	maximum	3.7
99.5%		3.7
97.5%		3.7
90.0%		3.7
75.0%	quartile	3.7
50.0%	median	3.7
25.0%	quartile	3.7
10.0%		3.7
2.5%		3.7
0.5%		3.7
0.0%	minimum	3.7

Summary Statistics	
Mean	3.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias

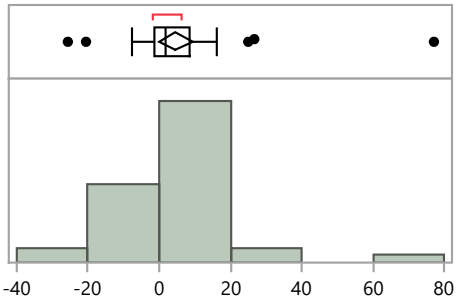


Quantiles		
100.0%	maximum	9.7
99.5%		9.7
97.5%		9.7
90.0%		9.7
75.0%	quartile	8.9
50.0%	median	1.5
25.0%	quartile	-74.0
10.0%		-97.5
2.5%		-97.5
0.5%		-97.5
0.0%	minimum	-97.5

Summary Statistics	
Mean	-21.2
Std Dev	51.2
Std Err Mean	25.6
Upper 95% Mean	60.2
Lower 95% Mean	-102.6
N	4.0

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

Bias



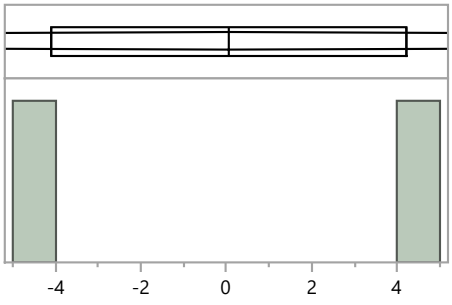
Quantiles		
100.0%	maximum	77.1
99.5%		77.1
97.5%		73.3
90.0%		15.6
75.0%	quartile	8.8
50.0%	median	1.8
25.0%	quartile	-1.4
10.0%		-7.3
2.5%		-25.2
0.5%		-25.6
0.0%	minimum	-25.6

Summary Statistics	
Mean	4.7
Std Dev	15.0
Std Err Mean	2.3
Upper 95% Mean	9.4
Lower 95% Mean	0.0
N	42.0

MaS51 Distribution by Preparation Method

Distributions Analyte_Method=Zinc-65 Other

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	0.1
25.0%	quartile	-4.1
10.0%		-4.1
2.5%		-4.1
0.5%		-4.1
0.0%	minimum	-4.1

Summary Statistics	
Mean	0.1
Std Dev	5.9
Std Err Mean	4.2
Upper 95% Mean	52.8
Lower 95% Mean	-52.7
N	2.0