

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.

MaW47 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ADEM01	Alabama Department of Environmental Management	MaW
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	MaW
AFOH01	USAFSAM/OEA	MaW
ALIN01	Anatek Labs Inc.	MaW
ANLB01	Argonne National Laboratory	MaW
AREV01	Framatome - CMC	MaW
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	MaW
ARSL01	ARS Aleut Analytical, LLC	MaW
ASUK99	AWE (Aldermaston)	MaW
AY1201	Consolidated Nuclear Security, LLC, ACO Laboratory	MaW
BY1201	Consolidated Nuclear Security, LLC, ACO, Production Laboratory	MaW
CESL01	Lawrence Livermore National Laboratory - EMRL	MaW
DEHS01	Department of Environmental Health & Safety	MaW
DLEA01	DLE Associates	MaW
EFGS01	Eurofins Frontier Global Sciences, LLC.	MaW
ELIW01	Energy Laboratories, Inc.	MaW
ERCL01	Washington State Public Health Laboratories	MaW
ERHD99	National Monitoring Section, Radiation Protection Bureau, Health Canada	MaW
ESDE01	Region 5 EQC Tritium Lab	MaW
ETTP01	MCLinc	MaW
FDHE01	Florida Dept of Health Environmental Laboratory	MaW
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	MaW
FERM01	Fernald Project	MaW
FNAL01	Fermi National Accelerator Laboratory (FermiLab)	MaW
GENE01	GEL Laboratories, LLC	MaW
GPCL01	Georgia Power Company Environmental Laboratory	MaW
HCAL01	Lawrence Livermore National Laboratory	MaW
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	MaW
HPAC99	UKHSA, RCE Glasgow	MaW
IAEA20	IAEA Marine Environment Laboratories, Radiometrics Laboratory	MaW
IAEA99	International Atomic Energy Agency	MaW
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	MaW
ISUE01	ISU Environmental Monitoring Laboratory	MaW
ISUP01	ISU - Department of Physics/Health Physics/EAL	MaW
JAEC99	Research Laboratories and Information Directorate	MaW
JLNN01	Jefferson Laboratory	MaW
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	MaW
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	MaW
LZCA01	ACZ Laboratories, Inc	MaW
MART01	Fluor BWXT Ports Analytical Laboratory	MaW
MART03	Radioactive Material Analysis Laboratory	MaW
MDPH01	MDPH-Radiation Control Program	MaW
MNDH01	Minnesota Department of Health, Public Health Lab. Division	MaW
NARL01	National Analytical Radiation Environmental Laboratory	MaW

NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	MaW
NJDH01	New Jersey Dept. of Health, ECLS	MaW
NRLL99	Environmental Radioactivity - National Centre for Radiation Science	MaW
ODHL01	Ohio Department of Health Laboratory	MaW
OTLI01	Pace Analytical National Center for Testing & Innovation	MaW
QUAN02	Eurofins TestAmerica Knoxville	MaW
RJLG01	RJ Lee Group - Columbia Basin Analytical Laboratories (CBAL)	MaW
RPSC01	Radiation Protection Service	MaW
SAVA01	Battelle Savannah River Alliance	MaW
SEML01	SRS Environmental Monitoring Laboratory	MaW
SLAC01	SLAC DOE National Accelerator Laboratory	MaW
SOUT01	Southwest Research Institute	MaW
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	MaW
TDHL01	Texas Department of State Health Services Laboratory	MaW
TELE01	Teledyne Brown Engineering - Environmental Services	MaW
TELE02	ATI Environmental, Inc., Midwest Lab	MaW
TMAO01	EBERLINE Analytical Corporation	MaW
TNUT01	St. Louis USACE FUSRAP Laboratory	MaW
UNTE01	UniTech-235	MaW
WIPH01	WI, DPH, Radiation Protection Section	MaW
WIPP01	WIPP Laboratories	MaW
WSHL01	Wisconsin State Laboratory of Hygiene	MaW
WSTP99	Cavendish Nuclear Limited	MaW
WVDP01	WVDP Environmental Laboratory	MaW
YPGA01	US Army Yuma Proving Ground / Material Analysis Lab	MaW

Laboratories Not Reporting

Lab Code	Lab Name	Matrix Code
CMRC01	Carlsbad Environmental Monitoring and Research Center	MaW
ERAD01	Lawrence Livermore National Laboratory	MaW
EULC01	EnergySolutions, LLC	MaW
NSPH01	Nevada State Public Health Laboratory	MaW
UNEV01	University of Nevada, Reno	MaW

Study Reference Values

MAPEP-22-MaW47

Radiological Reference Date: 08/01/2022

Analyte	Ref Value	Ref Unc
Inorganic Units: (mg/L)		
Antimony	4.77	0.05
Arsenic	1.53	0.03
Barium	2.34	0.05
Beryllium	3.27	0.07
Cadmium	0.634	0.013
Chromium	3.49	0.07
Cobalt	6.01	0.12
Copper	6.72	0.13
Lead	2.11	0.04
Mercury	0.124	0.002
Nickel	4.02	0.08
Thallium	1.70E-5	8.00E-7
Uranium-235	5.05E-4	1.2E-5
Uranium-238	0.068	0.002
Uranium-Total	0.068	0.002
Vanadium	3.37	0.07
Zinc	3.62	0.07

Analyte	Ref Value	Ref Unc
Radiological Units: (Bq/L)		
Americium-241	0.327	0.005
Cesium-134	17.1	0.3
Cesium-137	16.8	0.3
Cobalt-57	30.0	0.6
Cobalt-60	17.0	0.4
Hydrogen-3	395	9
Iron-55	27.8	0.6
Nickel-63	32.9	0.7
Plutonium-238	0.985	0.015
Plutonium-239/240	1.070	0.016
Radium-226	0.511	0.011
Strontium-90	7.73	0.16
Uranium-234	1.37	0.05
Uranium-238	0.84	0.03
Zinc-65	11.3	0.2

Sample Statistical Summary

MAPEP-22-MaW47

Radiological Reference Date: 08/01/2022

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (mg/L)
Inorganic							
Antimony	15	15	4.74	0.19	4.77	0.05	3.34 - 6.20
Arsenic	16	16	1.51	0.10	1.53	0.03	1.07 - 1.99
Barium	16	16	2.35	0.08	2.34	0.05	1.64 - 3.04
Beryllium	15	15	3.37	0.18	3.27	0.07	2.29 - 4.25
Cadmium	16	16	0.637	0.031	0.634	0.013	0.444 - 0.824
Chromium	16	16	3.51	0.14	3.49	0.07	2.44 - 4.54
Cobalt	16	16	6.04	0.35	6.01	0.12	4.21 - 7.81
Copper	16	16	6.59	0.39	6.72	0.13	4.70 - 8.74
Lead	16	16	2.16	0.10	2.11	0.04	1.48 - 2.74
Mercury	14	14	0.122	0.011	0.124	0.002	0.087 - 0.161
Nickel	15	15	4.09	0.18	4.02	0.08	2.81 - 5.23
Selenium	13	11					False Positive Test
Technetium-99	1	1					False Positive Test
Thallium	13	7	4.20E-3	2.88E-2	1.70E-5	8.00E-7	Sensitivity Evaluation
Uranium-235	11	9	5.12E-4	3.20E-5	5.05E-4	1.2E-5	3.54E-4 - 6.57E-4
Uranium-238	10	10	0.071	0.002	0.068	0.002	0.048 - 0.088
Uranium-Total	15	14	0.072	0.003	0.068	0.002	0.048 - 0.088
Vanadium	16	16	3.39	0.12	3.37	0.07	2.36 - 4.38
Zinc	16	16	3.67	0.20	3.62	0.07	2.53 - 4.71

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (Bq/L)
Radiological							
Americium-241	31	27	0.318	0.031	0.327	0.005	0.229 - 0.425
Cesium-134	53	50	16.1	1.4	17.1	0.3	12.0 - 22.2
Cesium-137	53	51	17.2	1.1	16.8	0.3	11.8 - 21.8
Cobalt-57	53	50	29.8	1.7	30.0	0.6	21.0 - 39.0
Cobalt-60	53	52	16.8	1.1	17.0	0.4	11.9 - 22.1
Hydrogen-3	37	35	387	32	395	9	277 - 514
Iron-55	3	2			27.8	0.6	19.5 - 36.1
Manganese-54	47	47					False Positive Test
Nickel-63	7	6	32.4	4.3	32.9	0.7	23.0 - 42.8
Plutonium-238	27	25	0.956	0.085	0.985	0.015	0.690 - 1.281
Plutonium-239/240	27	24	1.014	0.077	1.070	0.016	0.749 - 1.391
Potassium-40	43	39					False Positive Test
Radium-226	20	14	0.502	0.077	0.511	0.011	0.358 - 0.664
Strontium-90	30	25	7.35	0.51	7.73	0.16	5.41 - 10.05
Technetium-99	14	12					False Positive Test
Uranium-234	30	28	1.35	0.10	1.37	0.05	0.96 - 1.78
Uranium-238	31	29	0.84	0.07	0.84	0.03	0.59 - 1.09
Zinc-65	53	49	11.6	0.9	11.3	0.2	7.9 - 14.7

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-22-MaW47

Inorganic

Analyte	A	W	RW	N
Antimony	15			
Arsenic	16			
Barium	16			
Beryllium	15			
Cadmium	16			
Chromium	16			
Cobalt	16			
Copper	16			
Lead	16			
Mercury	14			
Nickel	15			
Selenium	11		2	
Thallium	7		6	
Uranium-Total	14		1	
Uranium-235	9		2	
Uranium-238	10			
Vanadium	16			
Zinc	16			
Technetium-99	1			

Radiological

Analyte	A	W	RW	N
Americium-241	26	1		4
Cesium-134	48	2		1
Cesium-137	50	1		2
Cobalt-57	50			3
Cobalt-60	52			1
Hydrogen-3	33	2		2
Iron-55	2			1
Manganese-54	47			6
Nickel-63	5	1		1
Plutonium-238	24	1		2
Plutonium-239/240	23	1		3
Potassium-40	39			14
Radium-226	10	4		5
Strontium-90	25			5
Technetium-99	12			2
Uranium-234	27	1		2
Uranium-238	27	2		2
Zinc-65	46	3		4



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

Laboratory Results For MAPEP-22-MaW47

(ADEM01) Alabama Department of Environmental Management
1350 Coliseum Blvd.
Montgomery, AL 36110

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	16.3	17.1	A		-4.7	12.0 - 22.2	0.328	A
Cesium-137	18.1	16.8	A		7.7	11.8 - 21.8	0.459	A
Cobalt-57	30.4	30.0	A		1.3	21.0 - 39.0	0.644	A
Cobalt-60	17.4	17.0	A		2.4	11.9 - 22.1	0.348	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	12.05	11.3	A		6.6	7.9 - 14.7	0.545	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ADFC99) Abu Dhabi Quality and Conformity Council-Central Testing Lab

Radiation Lab

Abu Dhabi, Abu Dhabi 853

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	16.55	17.1	A		-3.2	12.0 - 22.2	0.49	A
Cesium-137	17.14	16.8	A		2.0	11.8 - 21.8	0.81	A
Cobalt-57	18.60	30.0	N		-38.0	21.0 - 39.0	0.52	A
Cobalt-60	19.09	17.0	A		12.3	11.9 - 22.1	0.67	A
Hydrogen-3	398.56	395	A		0.9	277 - 514	62.59	W
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.14		A			False Positive Test	0.13	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.830	0.985	A		-15.7	0.690 - 1.281	0.25	N
Plutonium-239/240	1.150	1.070	A		7.5	0.749 - 1.391	0.034	A
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	6.72	7.73	A		-13.1	5.41 - 10.05	0.31	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.42	1.37	A		3.7	0.96 - 1.78	0.32	W
Uranium-238	0.82	0.84	A		-2.4	0.59 - 1.09	0.21	W
Zinc-65	12.33	11.3	A		9.1	7.9 - 14.7	0.75	A

Radiological Reference Date: August 1, 2022

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- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

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

Notes:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(AFOH01) USAFSAM/OEA

2510 Fifth Street, Area B

Wright-Patterson AFB, OH 45433-7913

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.310	0.327	A		-5.2	0.229 - 0.425	0.018	A
Cesium-134	15.58	17.1	A		-8.9	12.0 - 22.2	0.43	A
Cesium-137	16.10	16.8	A		-4.2	11.8 - 21.8	0.51	A
Cobalt-57	27.14	30.0	A		-9.5	21.0 - 39.0	0.86	A
Cobalt-60	15.71	17.0	A		-7.6	11.9 - 22.1	0.36	A
Hydrogen-3	403	395	A		2.0	277 - 514	31	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.007		A			False Positive Test	0.069	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.980	0.985	A		-0.5	0.690 - 1.281	0.052	A
Plutonium-239/240	1.038	1.070	A		-3.0	0.749 - 1.391	0.055	A
Potassium-40	-0.80		A			False Positive Test	0.44	
Radium-226	0.493	0.511	A		-3.5	0.358 - 0.664	0.041	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.61	7.73	A		-1.6	5.41 - 10.05	0.26	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.317	1.37	A		-3.9	0.96 - 1.78	0.068	A
Uranium-238	0.812	0.84	A		-3.3	0.59 - 1.09	0.043	A
Zinc-65	10.45	11.3	A		-7.5	7.9 - 14.7	0.27	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ALIN01) Anatek Labs Inc.
504 E. Sprague Ave Ste D
Spokane, WA 99202

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	0.3885	0.511	W		-24.0	0.358 - 0.664	0.032	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ANLB01) Argonne National Laboratory

9700 S. Cass Ave

Argonne, IL 60439

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.28	0.327	A		-14.4	0.229 - 0.425	0.020	A
Cesium-134	16.67	17.1	A		-2.5	12.0 - 22.2	0.78	A
Cesium-137	17.86	16.8	A		6.3	11.8 - 21.8	0.55	A
Cobalt-57	29.7	30.0	A		-1.0	21.0 - 39.0	0.8	A
Cobalt-60	17.78	17.0	A		4.6	11.9 - 22.1	0.51	A
Hydrogen-3	395.9	395	A		0.2	277 - 514	5.89	N
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.28		A			False Positive Test	0.338	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	1.03	0.985	A		4.6	0.690 - 1.281	0.067	A
Plutonium-239/240	1.099	1.070	A		2.7	0.749 - 1.391	0.071	A
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.12	7.73	A		-7.9	5.41 - 10.05	0.210	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.246	1.37	A		-9.1	0.96 - 1.78	0.077	A
Uranium-238	0.769	0.84	A		-8.5	0.59 - 1.09	0.048	A
Zinc-65	12.52	11.3	A		10.8	7.9 - 14.7	0.947	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(AREV01) Framatome - CMC

1724 Mount Athos Road

Lynchburg, VA 24504

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.70	4.77	A		-1.5	3.34 - 6.20	0.47	A
Arsenic	1.47	1.53	A		-3.9	1.07 - 1.99	0.15	A
Barium	2.33	2.34	A		-0.4	1.64 - 3.04	0.23	A
Beryllium	3.17	3.27	A		-3.1	2.29 - 4.25	0.32	A
Cadmium	0.62	0.634	A		-2.2	0.444 - 0.824	0.06	A
Chromium	3.47	3.49	A		-0.6	2.44 - 4.54	0.35	A
Cobalt	6.12	6.01	A		1.8	4.21 - 7.81	0.61	A
Copper	6.59	6.72	A		-1.9	4.70 - 8.74	0.66	A
Lead	2.07	2.11	A		-1.9	1.48 - 2.74	0.21	A
Mercury	0.12	0.124	A		-3.2	0.087 - 0.161	0.01	A
Nickel	3.90	4.02	A		-3.0	2.81 - 5.23	0.39	A
Selenium	0.05		A			False Positive Test	0.05	
Technetium-99	NR					False Positive Test		
Thallium	0.05	0.000017	A	(17)		Sensitivity Evaluation	0.05	
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	3.35	3.37	A		-0.6	2.36 - 4.38	0.34	A
Zinc	3.51	3.62	A		-3.0	2.53 - 4.71	0.35	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ARPL01) Analytical Support Operations - Radiochemical Processing Lab

PO Box 999

Richland, WA 99354

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.319	0.327	A		-2.4	0.229 - 0.425	0.020	A
Cesium-134	NR	17.1	N	(28)		12.0 - 22.2		
Cesium-137	NR	16.8	N	(28)		11.8 - 21.8		
Cobalt-57	NR	30.0	N	(28)		21.0 - 39.0		
Cobalt-60	NR	17.0	N	(28)		11.9 - 22.1		
Hydrogen-3	NR	395	N	(28)		277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985	N	(28)		0.690 - 1.281		
Plutonium-239/240	NR	1.070	N	(28)		0.749 - 1.391		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73	N	(28)		5.41 - 10.05		
Technetium-99	-0.12		A			False Positive Test	0.18	
Uranium-234	NR	1.37	N	(28)		0.96 - 1.78		
Uranium-238	NR	0.84	N	(28)		0.59 - 1.09		
Zinc-65	NR	11.3	N	(28)		7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ARSL01) ARS Aleut Analytical, LLC

2609 North River Road

Port Allen, LA 70767

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.70	4.77	A		-1.5	3.34 - 6.20	0.082	N
Arsenic	1.53	1.53	A		0.0	1.07 - 1.99	0.119	A
Barium	2.28	2.34	A		-2.6	1.64 - 3.04	0.129	A
Beryllium	3.41	3.27	A		4.3	2.29 - 4.25	0.096	A
Cadmium	0.652	0.634	A		2.8	0.444 - 0.824	0.115	W
Chromium	3.60	3.49	A		3.2	2.44 - 4.54	0.105	A
Cobalt	6.63	6.01	A		10.3	4.21 - 7.81	0.110	N
Copper	6.22	6.72	A		-7.4	4.70 - 8.74	0.096	N
Lead	2.24	2.11	A		6.2	1.48 - 2.74	0.127	A
Mercury	0.127	0.124	A		2.4	0.087 - 0.161	0.088	N
Nickel	4.34	4.02	A		8.0	2.81 - 5.23	0.112	A
Selenium	0.00349		A			False Positive Test	0.105	
Technetium-99	NR					False Positive Test		
Thallium	0.0000737	0.000017	A	(17)		Sensitivity Evaluation	0.105	
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	0.0698	0.068	A		2.6	0.048 - 0.088	0.158	N
Vanadium	3.46	3.37	A		2.7	2.36 - 4.38	0.111	A
Zinc	4.02	3.62	A		11.1	2.53 - 4.71	0.117	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.299	0.327	A		-8.6	0.229 - 0.425	0.026	A
Cesium-134	15.237	17.1	A		-10.9	12.0 - 22.2	0.502	A
Cesium-137	16.809	16.8	A		0.1	11.8 - 21.8	0.381	A
Cobalt-57	28.945	30.0	A		-3.5	21.0 - 39.0	0.997	A
Cobalt-60	16.962	17.0	A		-0.2	11.9 - 22.1	0.340	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.023		A			False Positive Test	0.094	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.888	0.985	A		-9.8	0.690 - 1.281	0.068	A
Plutonium-239/240	0.908	1.070	A		-15.1	0.749 - 1.391	0.069	A
Potassium-40	-0.451		A			False Positive Test	0.713	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.890	7.73	A		2.1	5.41 - 10.05	0.613	A
Technetium-99	0.434		A			False Positive Test	0.288	
Uranium-234	1.375	1.37	A		0.4	0.96 - 1.78	0.094	A
Uranium-238	0.766	0.84	A		-8.8	0.59 - 1.09	0.056	A
Zinc-65	11.852	11.3	A		4.9	7.9 - 14.7	0.469	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ASUK99) AWE (Aldermaston)

A38.1 AWE,

Reading, Berkshire RG7 4PR

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.954	0.985	A		-3.1	0.690 - 1.281	0.0842	A
Plutonium-239/240	1.029	1.070	A		-3.8	0.749 - 1.391	0.0907	A
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	1.028	1.37	W		-25.0	0.96 - 1.78	0.121	A
Uranium-238	0.647	0.84	W		-23.0	0.59 - 1.09	0.0764	A
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(AY1201) Consolidated Nuclear Security, LLC, ACO Laboratory

Y12, NSC, Bldg. 9995, Rm 142

Oak Ridge, TN 37831-8189

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.68	4.77	A		-1.9	3.34 - 6.20	.247	A
Arsenic	1.48	1.53	A		-3.3	1.07 - 1.99	.083	A
Barium	2.33	2.34	A		-0.4	1.64 - 3.04	.095	A
Beryllium	3.38	3.27	A		3.4	2.29 - 4.25	.211	A
Cadmium	0.650	0.634	A		2.5	0.444 - 0.824	.039	A
Chromium	3.55	3.49	A		1.7	2.44 - 4.54	.112	A
Cobalt	6.03	6.01	A		0.3	4.21 - 7.81	.302	A
Copper	6.86	6.72	A		2.1	4.70 - 8.74	.283	A
Lead	2.14	2.11	A		1.4	1.48 - 2.74	.140	A
Mercury	0.130	0.124	A		4.8	0.087 - 0.161	0.0099	A
Nickel	3.99	4.02	A		-0.7	2.81 - 5.23	.197	A
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	0.000498	5.05E-4	A		-1.4	3.54E-4 - 6.57E-4	0.00005	A
Uranium-238	0.069	0.068	A		1.5	0.048 - 0.088	0.0069	A
Uranium-Total	0.0702	0.068	A		3.2	0.048 - 0.088	0.007	A
Vanadium	3.39	3.37	A		0.6	2.36 - 4.38	.129	A
Zinc	3.66	3.62	A		1.1	2.53 - 4.71	.229	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.315	0.327	A		-3.7	0.229 - 0.425	0.028	A
Cesium-134	NR	17.1		(6)		12.0 - 22.2		
Cesium-137	16.9	16.8	A		0.6	11.8 - 21.8	0.61	A
Cobalt-57	30.5	30.0	A		1.7	21.0 - 39.0	0.83	A
Cobalt-60	16.8	17.0	A		-1.2	11.9 - 22.1	0.61	A
Hydrogen-3	363	395	A		-8.1	277 - 514	10	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.0289		A			False Positive Test	0.13	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.925	0.985	A		-6.1	0.690 - 1.281	0.060	A
Plutonium-239/240	0.984	1.070	A		-8.0	0.749 - 1.391	0.064	A
Potassium-40	3.29		A			False Positive Test	2.0	
Radium-226	0.273	0.511	N		-46.6	0.358 - 0.664	0.06	W

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.40	7.73	A		-4.3	5.41 - 10.05	0.20	A
Technetium-99	0.235		A			False Positive Test	0.33	
Uranium-234	1.35	1.37	A		-1.5	0.96 - 1.78	0.078	A
Uranium-238	0.860	0.84	A		2.4	0.59 - 1.09	0.052	A
Zinc-65	11.7	11.3	A		3.5	7.9 - 14.7	0.74	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(BY1201) Consolidated Nuclear Security, LLC, ACO, Production Laboratory

Y12, NSC, Bldg. 9995, Rm 142

Oak Ridge, TN 37831-8189

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.493	0.327	N		50.8	0.229 - 0.425	0.0444	A
Cesium-134	NR	17.1		(6)		12.0 - 22.2		
Cesium-137	17.5	16.8	A		4.2	11.8 - 21.8	0.350	A
Cobalt-57	31.2	30.0	A		4.0	21.0 - 39.0	0.498	N
Cobalt-60	16.9	17.0	A		-0.6	11.9 - 22.1	0.27	N
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.129		A			False Positive Test	0.131	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	1.06	0.985	A		7.6	0.690 - 1.281	0.072	A
Plutonium-239/240	1.17	1.070	A		9.3	0.749 - 1.391	0.078	A
Potassium-40	2.52		N	(1)		False Positive Test	0.67	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	6.85	7.73	A		-11.4	5.41 - 10.05	0.253	A
Technetium-99	0.394		A			False Positive Test	0.17	
Uranium-234	1.37	1.37	A		0.0	0.96 - 1.78	0.061	A
Uranium-238	0.90	0.84	A		7.1	0.59 - 1.09	0.045	A
Zinc-65	12	11.3	A		6.2	7.9 - 14.7	0.529	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(CESL01) Lawrence Livermore National Laboratory - EMRL

7000 East Avenue

Livermore, CA 94551

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	1.53e+01	17.1	A		-10.5	12.0 - 22.2	1.53e+00	A
Cesium-137	1.32e+01	16.8	W		-21.4	11.8 - 21.8	1.53e+00	A
Cobalt-57	3.01e+01	30.0	A		0.3	21.0 - 39.0	1.16e+00	A
Cobalt-60	1.60e+01	17.0	A		-5.9	11.9 - 22.1	1.23e+00	A
Hydrogen-3	4.12e+02	395	A		4.3	277 - 514	5.21e+00	N
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-2.59e+00		A			False Positive Test	4.54e+00	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	9.80e-01	0.985	A		-0.5	0.690 - 1.281	4.05e-02	A
Plutonium-239/240	1.00e+00	1.070	A		-6.5	0.749 - 1.391	4.10e-02	A
Potassium-40	1.94e+01		A			False Positive Test	1.94e+01	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	6.28e+00	11.3	N		-44.4	7.9 - 14.7	3.49e+00	N

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(DEHS01) Department of Environmental Health & Safety

North Carolina State Univ.

Raleigh, NC 27695-8007

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	12.0696	17.1	W		-29.4	12.0 - 22.2	.5223	A
Cesium-137	15.593	16.8	A		-7.2	11.8 - 21.8	.6493	A
Cobalt-57	NR	30.0	N	(25)		21.0 - 39.0		
Cobalt-60	14.8105	17.0	A		-12.9	11.9 - 22.1	.4866	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	8.3998	11.3	W		-25.7	7.9 - 14.7	.798	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(DLEA01) DLE Associates

730 Alfred Nobel Drive

Hercules, CA 94547

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	393.03	395	A		-0.5	277 - 514	18.21	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	0.717	0.511	N		40.3	0.358 - 0.664	0.081	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.67	7.73	A		-0.8	5.41 - 10.05	0.68	A
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (EFGS01) Eurofins Frontier Global Sciences, LLC.
 5755 8th St. E
 Tacoma, WA 98424

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	0.11	0.124	A		-11.3	0.087 - 0.161	0.004863	A
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ELIW01) Energy Laboratories, Inc.

2393 Salt Creek HWY

Casper, Wy 82601

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	0.2	0.511	N		-60.9	0.358 - 0.664	0.025	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	1.4	1.37	A		2.2	0.96 - 1.78	0.15	A
Uranium-238	0.9	0.84	A		7.1	0.59 - 1.09	0.1	A
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150th Street
 Shoreline, WA 98155-9701

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.85	4.77	A		1.7	3.34 - 6.20	0.41	A
Arsenic	1.57	1.53	A		2.6	1.07 - 1.99	0.13	A
Barium	2.28	2.34	A		-2.6	1.64 - 3.04	0.19	A
Beryllium	3.48	3.27	A		6.4	2.29 - 4.25	0.30	A
Cadmium	0.631	0.634	A		-0.5	0.444 - 0.824	0.039	A
Chromium	3.70	3.49	A		6.0	2.44 - 4.54	0.32	A
Cobalt	6.20	6.01	A		3.2	4.21 - 7.81	0.51	A
Copper	6.90	6.72	A		2.7	4.70 - 8.74	0.61	A
Lead	2.10	2.11	A		-0.5	1.48 - 2.74	0.18	A
Mercury	NR	0.124				0.087 - 0.161		
Nickel	4.14	4.02	A		3.0	2.81 - 5.23	0.36	A
Selenium	0.00083		A			False Positive Test	0.00044	
Technetium-99	NR					False Positive Test		
Thallium	0.00044	0.000017	N	(4)		Sensitivity Evaluation	0.00014	
Uranium-235	0.000526	5.05E-4	A		4.2	3.54E-4 - 6.57E-4	0.000032	A
Uranium-238	0.0743	0.068	A		9.3	0.048 - 0.088	0.0045	A
Uranium-Total	0.0749	0.068	A		10.1	0.048 - 0.088	0.0045	A
Vanadium	3.64	3.37	A		8.0	2.36 - 4.38	0.31	A
Zinc	3.86	3.62	A		6.6	2.53 - 4.71	0.33	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.278	0.327	A		-15.0	0.229 - 0.425	0.021	A
Cesium-134	17.3	17.1	A		1.2	12.0 - 22.2	0.2	N
Cesium-137	16.8	16.8	A		0.0	11.8 - 21.8	0.3	N
Cobalt-57	30.7	30.0	A		2.3	21.0 - 39.0	0.5	N
Cobalt-60	17.2	17.0	A		1.2	11.9 - 22.1	0.2	N
Hydrogen-3	377	395	A		-4.6	277 - 514	11	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.20		A			False Positive Test	0.11	
Nickel-63	30.7	32.9	A		-6.7	23.0 - 42.8	4.3	A
Plutonium-238	0.921	0.985	A		-6.5	0.690 - 1.281	0.074	A
Plutonium-239/240	0.914	1.070	A		-14.6	0.749 - 1.391	0.072	A
Potassium-40	2.8		A			False Positive Test	1.7	
Radium-226	0.548	0.511	A		7.2	0.358 - 0.664	0.060	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.36	7.73	A		-4.8	5.41 - 10.05	0.43	A
Technetium-99	0.22		A			False Positive Test	0.23	
Uranium-234	1.39	1.37	A		1.5	0.96 - 1.78	0.09	A
Uranium-238	0.873	0.84	A		3.9	0.59 - 1.09	0.060	A
Zinc-65	11.0	11.3	A		-2.7	7.9 - 14.7	0.5	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47

(ERHD99) National Monitoring Section, Radiation Protection Bureau, Health Canada

775 Brookfield Road AL6302D1

Ottawa, Ontario K1A 1C1

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.30	0.327	A		-8.3	0.229 - 0.425	0.01	A
Cesium-134	16.59	17.1	A		-3.0	12.0 - 22.2	0.64	A
Cesium-137	15.41	16.8	A		-8.3	11.8 - 21.8	0.58	A
Cobalt-57	26.10	30.0	A		-13.0	21.0 - 39.0	0.97	A
Cobalt-60	14.85	17.0	A		-12.6	11.9 - 22.1	0.59	A
Hydrogen-3	418	395	A		5.8	277 - 514	6	N
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.32		A			False Positive Test	0.57	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	1.05	0.985	A		6.6	0.690 - 1.281	0.03	A
Plutonium-239/240	1.07	1.070	A		0.0	0.749 - 1.391	0.03	A
Potassium-40	0.017		A			False Positive Test	0.029	
Radium-226	0.65	0.511	W		27.2	0.358 - 0.664	0.02	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	8.10	7.73	A		4.8	5.41 - 10.05	0.18	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.29	1.37	A		-5.8	0.96 - 1.78	0.03	A
Uranium-238	0.79	0.84	A		-6.0	0.59 - 1.09	0.02	A
Zinc-65	10.25	11.3	A		-9.3	7.9 - 14.7	0.38	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ESDE01) Region 5 EQC Tritium Lab

206 Beaufort NE

Aiken, SC 29801

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	430.1	395	A		8.9	277 - 514	11.0	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47

(ETTP01) MCLinc

161 Mitchell Road

Oak Ridge, Tennessee 37830

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.71	4.77	A		-1.3	3.34 - 6.20	0.24	A
Arsenic	1.384	1.53	A		-9.5	1.07 - 1.99	0.07	A
Barium	2.292	2.34	A		-2.1	1.64 - 3.04	0.06	A
Beryllium	3.302	3.27	A		1.0	2.29 - 4.25	0.23	A
Cadmium	0.5630	0.634	A		-11.2	0.444 - 0.824	0.01	N
Chromium	3.535	3.49	A		1.3	2.44 - 4.54	0.357	A
Cobalt	5.94	6.01	A		-1.2	4.21 - 7.81	0.49	A
Copper	5.60	6.72	A		-16.7	4.70 - 8.74	0.44	A
Lead	1.949	2.11	A		-7.6	1.48 - 2.74	0.13	A
Mercury	0.1266	0.124	A		2.1	0.087 - 0.161	0.00633	A
Nickel	3.805	4.02	A		-5.3	2.81 - 5.23	0.076	N
Selenium	0.031		A			False Positive Test	0.10	
Technetium-99	0.000024		A			False Positive Test	0.00005	
Thallium	0.035	0.000017	N	(4)		Sensitivity Evaluation	0.0040	
Uranium-235	0.000471	5.05E-4	A		-6.7	3.54E-4 - 6.57E-4	0.000023	A
Uranium-238	0.069	0.068	A		1.5	0.048 - 0.088	0.00345	A
Uranium-Total	0.070	0.068	A		2.9	0.048 - 0.088	0.0035	A
Vanadium	3.274	3.37	A		-2.8	2.36 - 4.38	0.19	A
Zinc	3.44	3.62	A		-5.0	2.53 - 4.71	0.17	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	0.09		A			False Positive Test	0.2	
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
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- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(FDHE01) Florida Dept of Health Environmental Laboratory

PO Box 680069

Orlando, FL 32868-0069

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.33	0.327	A		0.9	0.229 - 0.425	0.17	N
Cesium-134	16.037	17.1	A		-6.2	12.0 - 22.2	0.229	N
Cesium-137	17.21	16.8	A		2.4	11.8 - 21.8	0.357	A
Cobalt-57	28.828	30.0	A		-3.9	21.0 - 39.0	0.538	N
Cobalt-60	16.385	17.0	A		-3.6	11.9 - 22.1	0.308	N
Hydrogen-3	400.44	395	A		1.4	277 - 514	10	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.175		A			False Positive Test	0.209	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	1.26	0.985	W		27.9	0.690 - 1.281	0.13	A
Plutonium-239/240	1.85	1.070	N		72.9	0.749 - 1.391	0.019	N
Potassium-40	0.693		A			False Positive Test	0.744	
Radium-226	0.485	0.511	A		-5.1	0.358 - 0.664	0.08	W

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	8.06	7.73	A		4.3	5.41 - 10.05	0.9	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.415	1.37	A		3.3	0.96 - 1.78	0.3	W
Uranium-238	0.879	0.84	A		4.6	0.59 - 1.09	0.2	W
Zinc-65	11.827	11.3	A		4.7	7.9 - 14.7	0.43	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab

PO Box 680069

Orlando, FL 32868-0069

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.326	0.327	A		-0.3	0.229 - 0.425	0.1116	N
Cesium-134	16.178	17.1	A		-5.4	12.0 - 22.2	0.223	N
Cesium-137	16.71	16.8	A		-0.5	11.8 - 21.8	0.333	N
Cobalt-57	27.63	30.0	A		-7.9	21.0 - 39.0	0.452	N
Cobalt-60	16.462	17.0	A		-3.2	11.9 - 22.1	0.27	N
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.198		A			False Positive Test	0.198	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	1.378		A			False Positive Test	1.202	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	0.836	0.84	A		-0.5	0.59 - 1.09	2.5	N
Zinc-65	11.824	11.3	A		4.6	7.9 - 14.7	0.355	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
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- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47

(FERM01) Fernald Project

7400 Willey Road

Hamilton, OH 45013

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	0.07408	0.068	A		8.9	0.048 - 0.088	0.01	A
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

Results Flags:

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

Uncertainty Flags:

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

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

Laboratory Results For MAPEP-22-MaW47

(FNAL01) Fermi National Accelerator Laboratory (FermiLab)

PO Box 500, MS325

Batavia, IL 60510

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	14.44	17.1	A		-15.6	12.0 - 22.2	0.86	A
Cesium-137	17.17	16.8	A		2.2	11.8 - 21.8	0.89	A
Cobalt-57	29.8	30.0	A		-0.7	21.0 - 39.0	1.3	A
Cobalt-60	16.60	17.0	A		-2.4	11.9 - 22.1	0.87	A
Hydrogen-3	400	395	A		1.3	277 - 514	14	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.04		A			False Positive Test	0.13	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	0.01		A			False Positive Test	2.0	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.89	11.3	A		5.2	7.9 - 14.7	0.74	A

Radiological Reference Date: August 1, 2022

Results Flags:

- A = Result acceptable.....|Bias| <= 20%
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- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

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

Notes:

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

Laboratory Results For MAPEP-22-MaW47

(GENE01) GEL Laboratories, LLC

2040 Savage Road

Charleston, SC 29407

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.71	4.77	A		-1.3	3.34 - 6.20	0.943	W
Arsenic	1.53	1.53	A		0.0	1.07 - 1.99	0.305	W
Barium	2.21	2.34	A		-5.6	1.64 - 3.04	0.441	W
Beryllium	3.82	3.27	A		16.8	2.29 - 4.25	0.765	W
Cadmium	0.590	0.634	A		-6.9	0.444 - 0.824	0.118	W
Chromium	3.31	3.49	A		-5.2	2.44 - 4.54	0.663	W
Cobalt	6.22	6.01	A		3.5	4.21 - 7.81	1.24	W
Copper	6.41	6.72	A		-4.6	4.70 - 8.74	1.28	W
Lead	2.32	2.11	A		10.0	1.48 - 2.74	0.464	W
Mercury	0.119	0.124	A		-4.0	0.087 - 0.161	0.0238	W
Nickel	4.19	4.02	A		4.2	2.81 - 5.23	0.838	W
Selenium	0.000162		A			False Positive Test	0.000501	
Technetium-99	NR					False Positive Test		
Thallium	-0.0466	0.000017	A	(17)		Sensitivity Evaluation	0.0191	
Uranium-235	0.000495	5.05E-4	A		-2.0	3.54E-4 - 6.57E-4	0.000099	W
Uranium-238	0.0674	0.068	A		-0.9	0.048 - 0.088	0.0135	W
Uranium-Total	0.0679	0.068	A		-0.1	0.048 - 0.088	0.0135	W
Vanadium	3.31	3.37	A		-1.8	2.36 - 4.38	0.662	W
Zinc	3.20	3.62	A		-11.6	2.53 - 4.71	0.640	W

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.414	0.327	W		26.6	0.229 - 0.425	0.0310	A
Cesium-134	15.9	17.1	A		-7.0	12.0 - 22.2	0.799	A
Cesium-137	17.8	16.8	A		6.0	11.8 - 21.8	0.808	A
Cobalt-57	30.4	30.0	A		1.3	21.0 - 39.0	1.32	A
Cobalt-60	17.8	17.0	A		4.7	11.9 - 22.1	1.00	A
Hydrogen-3	350	395	A		-11.4	277 - 514	35.3	A
Iron-55	22.9	27.8	A		-17.6	19.5 - 36.1	2.51	A
Manganese-54	-0.0317		A			False Positive Test	0.0798	
Nickel-63	35.7	32.9	A		8.5	23.0 - 42.8	3.23	A
Plutonium-238	0.881	0.985	A		-10.6	0.690 - 1.281	0.0463	A
Plutonium-239/240	0.943	1.070	A		-11.9	0.749 - 1.391	0.0489	A
Potassium-40	-0.850		A			False Positive Test	0.833	
Radium-226	0.471	0.511	A		-7.8	0.358 - 0.664	0.0524	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.49	7.73	A		-3.1	5.41 - 10.05	0.652	A
Technetium-99	-0.206		A			False Positive Test	0.296	
Uranium-234	1.31	1.37	A		-4.4	0.96 - 1.78	0.0728	A
Uranium-238	0.851	0.84	A		1.3	0.59 - 1.09	0.0506	A
Zinc-65	12.6	11.3	A		11.5	7.9 - 14.7	0.7	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47

(GPCL01) Georgia Power Company Environmental Laboratory

2480 Maner Road

Atlanta, GA 30339

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	17.2	17.1	A		0.6	12.0 - 22.2	1.27	A
Cesium-137	NR	16.8	N	(28)		11.8 - 21.8		
Cobalt-57	30.3493	30.0	A		1.2	21.0 - 39.0	2.75	A
Cobalt-60	16.9677	17.0	A		-0.2	11.9 - 22.1	1.29	A
Hydrogen-3	378.14	395	A		-4.3	277 - 514	15.74	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	.078		A			False Positive Test	.36	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	.3531		A			False Positive Test	2.39	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	6.8635	7.73	A		-11.2	5.41 - 10.05	0.1772	A
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	12.1112	11.3	A		7.2	7.9 - 14.7	1.36	A

Radiological Reference Date: August 1, 2022

Results Flags:

- A = Result acceptable.....|Bias| <= 20%
- W = Result acceptable with warning.....20% < |Bias| <= 30%
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- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

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

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47
 (HCAL01) Lawrence Livermore National Laboratory
 Analytical Services and Instrumentation Analytical Lab
 Livermore, CA 94550

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	409	395	A		3.5	277 - 514	22	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

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

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	17.74	17.1	A		3.7	12.0 - 22.2	1.135	A
Cesium-137	18.45	16.8	A		9.8	11.8 - 21.8	0.8299	A
Cobalt-57	30.23	30.0	A		0.8	21.0 - 39.0	2.023	A
Cobalt-60	16.83	17.0	A		-1.0	11.9 - 22.1	1.066	A
Hydrogen-3	390	395	A		-1.3	277 - 514	10.5	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.009528		A			False Positive Test	0.04389	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	-0.3522		A			False Positive Test	1.201	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	10.97	11.3	A		-2.9	7.9 - 14.7	0.8996	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(HPAC99) UKHSA, RCE Glasgow

155 Hardgate Road

Glasgow, Scotland G51 4LS

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.340	0.327	A		4.0	0.229 - 0.425	0.020	A
Cesium-134	16.5	17.1	A		-3.5	12.0 - 22.2	1.0	A
Cesium-137	16.7	16.8	A		-0.6	11.8 - 21.8	1.1	A
Cobalt-57	29.5	30.0	A		-1.7	21.0 - 39.0	1.9	A
Cobalt-60	16.4	17.0	A		-3.5	11.9 - 22.1	1.1	A
Hydrogen-3	402	395	A		1.8	277 - 514	35	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.8		A			False Positive Test	0.8	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.96	0.985	A		-2.5	0.690 - 1.281	0.06	A
Plutonium-239/240	1.08	1.070	A		0.9	0.749 - 1.391	0.06	A
Potassium-40	7		A			False Positive Test	7	
Radium-226	14	0.511	N		2639.7	0.358 - 0.664	14	N

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	4.88	7.73	N		-36.9	5.41 - 10.05	0.21	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.39	1.37	A		1.5	0.96 - 1.78	0.1	A
Uranium-238	0.865	0.84	A		3.0	0.59 - 1.09	0.065	A
Zinc-65	11.2	11.3	A		-0.9	7.9 - 14.7	1.0	A

Radiological Reference Date: August 1, 2022

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%
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Notes:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
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- (25) = Result not reported with other gamma results
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47

(IAEA20) IAEA Marine Environment Laboratories, Radiometrics Laboratory
 4a, Quai Antoine 1er
 Monaco, Monaco 98000

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.334	0.327	A		2.1	0.229 - 0.425	0.035	A
Cesium-134	18.32	17.1	A		7.1	12.0 - 22.2	0.72	A
Cesium-137	16.49	16.8	A		-1.8	11.8 - 21.8	0.70	A
Cobalt-57	29.0	30.0	A		-3.3	21.0 - 39.0	1.2	A
Cobalt-60	17.17	17.0	A		1.0	11.9 - 22.1	0.68	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.08	11.3	A		-1.9	7.9 - 14.7	0.47	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (IAEA99) International Atomic Energy Agency
 Agency's Laboratories Seibersdorf
 Seibersdorf, Austria A-2444

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	1.65	1.53	A		7.8	1.07 - 1.99	0.08	A
Barium	2.41	2.34	A		3.0	1.64 - 3.04	0.07	A
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	0.660	0.634	A		4.1	0.444 - 0.824	0.017	A
Chromium	3.66	3.49	A		4.9	2.44 - 4.54	0.11	A
Cobalt	6.25	6.01	A		4.0	4.21 - 7.81	0.19	A
Copper	6.98	6.72	A		3.9	4.70 - 8.74	0.22	A
Lead	2.12	2.11	A		0.5	1.48 - 2.74	0.06	A
Mercury	NR	0.124				0.087 - 0.161		
Nickel	4.15	4.02	A		3.2	2.81 - 5.23	0.13	A
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	0.000514	5.05E-4	A		1.8	3.54E-4 - 6.57E-4	0.000015	A
Uranium-238	0.0714	0.068	A		5.0	0.048 - 0.088	0.0015	A
Uranium-Total	0.0719	0.068	A		5.7	0.048 - 0.088	0.0015	A
Vanadium	3.56	3.37	A		5.6	2.36 - 4.38	0.12	A
Zinc	3.76	3.62	A		3.9	2.53 - 4.71	0.10	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.330	0.327	A		0.9	0.229 - 0.425	0.028	A
Cesium-134	16.8	17.1	A		-1.8	12.0 - 22.2	0.6	A
Cesium-137	17.2	16.8	A		2.4	11.8 - 21.8	0.4	A
Cobalt-57	29.4	30.0	A		-2.0	21.0 - 39.0	0.8	A
Cobalt-60	17.1	17.0	A		0.6	11.9 - 22.1	0.6	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.09		A			False Positive Test	0.09	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	0.01		A			False Positive Test	0.02	
Radium-226	0.511	0.511	A		0.0	0.358 - 0.664	0.023	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	1.41	1.37	A		2.9	0.96 - 1.78	0.03	A
Uranium-238	0.861	0.84	A		2.5	0.59 - 1.09	0.021	A
Zinc-65	11.6	11.3	A		2.7	7.9 - 14.7	0.4	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(IEMA01) Illinois Emergency Management Agency Radiochemistry Laboratory

1301 Knotts St.

Springfield, IL 62703

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.271	0.327	A		-17.1	0.229 - 0.425	0.017	A
Cesium-134	16.9	17.1	A		-1.2	12.0 - 22.2	0.34	A
Cesium-137	17.2	16.8	A		2.4	11.8 - 21.8	0.57	A
Cobalt-57	29.9	30.0	A		-0.3	21.0 - 39.0	0.89	A
Cobalt-60	16.9	17.0	A		-0.6	11.9 - 22.1	0.39	A
Hydrogen-3	389.1	395	A		-1.5	277 - 514	4.3	N
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.01		A			False Positive Test	0.13	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.945	0.985	A		-4.1	0.690 - 1.281	0.040	A
Plutonium-239/240	1.037	1.070	A		-3.1	0.749 - 1.391	0.043	A
Potassium-40	0.92		A			False Positive Test	0.87	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.12	7.73	A		-7.9	5.41 - 10.05	0.22	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.448	1.37	A		5.7	0.96 - 1.78	0.086	A
Uranium-238	0.916	0.84	A		9.0	0.59 - 1.09	0.058	A
Zinc-65	11.3	11.3	A		0.0	7.9 - 14.7	0.60	A

Radiological Reference Date: August 1, 2022

Results Flags:

- A = Result acceptable.....|Bias| <= 20%
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- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

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

Notes:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (ISUE01) ISU Environmental Monitoring Laboratory
 785 5th 8th Ave Rm B107
 Pocatello, Idaho 83209

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	15.9	17.1	A		-7.0	12.0 - 22.2	0.23	N
Cesium-137	17.4	16.8	A		3.6	11.8 - 21.8	0.50	A
Cobalt-57	30.5	30.0	A		1.7	21.0 - 39.0	0.73	A
Cobalt-60	18.1	17.0	A		6.5	11.9 - 22.1	0.38	A
Hydrogen-3	382.4	395	A		-3.2	277 - 514	6.6	N
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.02		A			False Positive Test	0.06	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	12.0	11.3	A		6.2	7.9 - 14.7	0.43	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(ISUP01) ISU - Department of Physics/Health Physics/EAL

785 S. 8th Ave, Rm 120

Pocatello, ID 83209-8106

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	19.54	17.1	A		14.3	12.0 - 22.2	1.60	A
Cesium-137	19.36	16.8	A		15.2	11.8 - 21.8	1.87	A
Cobalt-57	34.59	30.0	A		15.3	21.0 - 39.0	1.00	A
Cobalt-60	19.18	17.0	A		12.8	11.9 - 22.1	1.53	A
Hydrogen-3	264.7	395	N		-33.0	277 - 514	0.45	N
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.11		A			False Positive Test	0.16	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	1.03		A			False Positive Test	1.00	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.98	11.3	A		6.0	7.9 - 14.7	0.58	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(JAEC99) Research Laboratories and Information Directorate
 Jordan Atomic Energy Commission
 Amman, Jordan 70 (11934)

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.39	4.77	A		-8.0	3.34 - 6.20	4.13	N
Arsenic	1.37	1.53	A		-10.5	1.07 - 1.99	2.75	N
Barium	2.31	2.34	A		-1.3	1.64 - 3.04	2.39	N
Beryllium	3.17	3.27	A		-3.1	2.29 - 4.25	1.4	N
Cadmium	0.61	0.634	A		-3.8	0.444 - 0.824	5.48	N
Chromium	3.57	3.49	A		2.3	2.44 - 4.54	2.57	N
Cobalt	5.94	6.01	A		-1.2	4.21 - 7.81	5.38	N
Copper	6.39	6.72	A		-4.9	4.70 - 8.74	6.06	N
Lead	2.08	2.11	A		-1.4	1.48 - 2.74	1.27	N
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	3.24	3.37	A		-3.9	2.36 - 4.38	1.45	N
Zinc	3.47	3.62	A		-4.1	2.53 - 4.71	6.23	N

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	17.8	17.1	A		4.1	12.0 - 22.2	0.5	A
Cesium-137	17.5	16.8	A		4.2	11.8 - 21.8	0.8	A
Cobalt-57	28.1	30.0	A		-6.3	21.0 - 39.0	1.1	A
Cobalt-60	16.5	17.0	A		-2.9	11.9 - 22.1	0.6	A
Hydrogen-3	362.381	395	A		-8.3	277 - 514	18.573	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	1.181	1.37	A		-13.8	0.96 - 1.78	0.046	A
Uranium-238	0.671	0.84	W		-20.1	0.59 - 1.09	0.029	A
Zinc-65	11.3	11.3	A		0.0	7.9 - 14.7	0.5	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-22-MaW47

(JLNN01) Jefferson Laboratory

111 Hadron Drive

Newport News, VA 23606

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.302	0.327	A		-7.6	0.229 - 0.425	.07403	W
Cesium-134	15.2	17.1	A		-11.1	12.0 - 22.2	.2032	N
Cesium-137	16.59	16.8	A		-1.3	11.8 - 21.8	0.3434	A
Cobalt-57	29.02	30.0	A		-3.3	21.0 - 39.0	.4888	N
Cobalt-60	16.42	17.0	A		-3.4	11.9 - 22.1	.2474	N
Hydrogen-3	280.285	395	W		-29.0	277 - 514	24.4281	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.01733		A			False Positive Test	0.09708	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	0.5169		A			False Positive Test	.9549	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.57	11.3	A		2.4	7.9 - 14.7	2.052	W

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(LAWR01) LAWRENCE BERKELEY NATIONAL LABORATORY
1 CYCLOTRON RD.
BERKELEY, CA 94720

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	14.61	17.1	A		-14.6	12.0 - 22.2	0.8244	A
Cesium-137	15.73	16.8	A		-6.4	11.8 - 21.8	0.8777	A
Cobalt-57	27.16	30.0	A		-9.5	21.0 - 39.0	1.485	A
Cobalt-60	15.50	17.0	A		-8.8	11.9 - 22.1	0.8865	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.05557		A			False Positive Test	0.5557	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	-0.7961		A			False Positive Test	1.08	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.31	11.3	A		0.1	7.9 - 14.7	0.7437	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(LOCK03) Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory

INL/Battelle Energy Alliance, LLC

Idaho Falls, ID 83415-7111

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.37	4.77	A		-8.4	3.34 - 6.20	0.17	A
Arsenic	1.68	1.53	A		9.8	1.07 - 1.99	0.11	A
Barium	2.31	2.34	A		-1.3	1.64 - 3.04	0.05	A
Beryllium	3.38	3.27	A		3.4	2.29 - 4.25	0.17	A
Cadmium	0.62	0.634	A		-2.2	0.444 - 0.824	0.02	A
Chromium	3.21	3.49	A		-8.0	2.44 - 4.54	0.2	A
Cobalt	5.48	6.01	A		-8.8	4.21 - 7.81	0.24	A
Copper	6.11	6.72	A		-9.1	4.70 - 8.74	0.28	A
Lead	2.15	2.11	A		1.9	1.48 - 2.74	0.04	N
Mercury	0.13	0.124	A		4.8	0.087 - 0.161	0.001	N
Nickel	4.16	4.02	A		3.5	2.81 - 5.23	0.12	A
Selenium	0.15		N	(1)		False Positive Test	0.01	
Technetium-99	NR					False Positive Test		
Thallium	0.00029	0.000017	N	(4)		Sensitivity Evaluation	0.000007	
Uranium-235	0.0010	5.05E-4	N		98.0	3.54E-4 - 6.57E-4	0.00005	A
Uranium-238	0.072	0.068	A		5.9	0.048 - 0.088	0.00102	N
Uranium-Total	0.073	0.068	A		7.4	0.048 - 0.088	0.00102	N
Vanadium	3.23	3.37	A		-4.2	2.36 - 4.38	0.07	A
Zinc	3.93	3.62	A		8.6	2.53 - 4.71	0.25	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	14.3	17.1	A		-16.4	12.0 - 22.2	0.22	N
Cesium-137	16.05	16.8	A		-4.5	11.8 - 21.8	0.26	N
Cobalt-57	31.28	30.0	A		4.3	21.0 - 39.0	0.49	N
Cobalt-60	16.13	17.0	A		-5.1	11.9 - 22.1	0.26	N
Hydrogen-3	293.65	395	W		-25.7	277 - 514	18.61	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.04		A			False Positive Test	0.02	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	0.38		A			False Positive Test	0.22	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.63	11.3	A		2.9	7.9 - 14.7	0.31	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(LZCA01) ACZ Laboratories, Inc
2273 Downhill Drive
Steamboat Springs, CO 80487

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	0.390	0.511	W		-23.7	0.358 - 0.664	0.038	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (MART01) Fluor BWXT Ports Analytical Laboratory
 Lab COC, Bldg. X-705, Rm 106
 Piketon, OH 45661

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	0.000498	5.05E-4	A		-1.4	3.54E-4 - 6.57E-4	0.000072	A
Uranium-238	0.0687	0.068	A		1.0	0.048 - 0.088	0.00815	A
Uranium-Total	0.0692	0.068	A		1.8	0.048 - 0.088	0.00431	A
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.3500	0.327	A		7.0	0.229 - 0.425	0.01910	A
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.9267	0.985	A		-5.9	0.690 - 1.281	0.05347	A
Plutonium-239/240	1.013	1.070	A		-5.3	0.749 - 1.391	0.05784	A
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	-0.383		A			False Positive Test	0.212	
Uranium-234	1.277	1.37	A		-6.8	0.96 - 1.78	0.06686	A
Uranium-238	0.8105	0.84	A		-3.5	0.59 - 1.09	0.04494	A
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (MART03) Radioactive Material Analysis Laboratory
 ORNL
 Oak Ridge, TN 37830

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.88	4.77	A		2.3	3.34 - 6.20	0.49	A
Arsenic	1.54	1.53	A		0.7	1.07 - 1.99	0.15	A
Barium	2.31	2.34	A		-1.3	1.64 - 3.04	0.23	A
Beryllium	3.27	3.27	A		0.0	2.29 - 4.25	0.33	A
Cadmium	0.623	0.634	A		-1.7	0.444 - 0.824	0.062	A
Chromium	3.44	3.49	A		-1.4	2.44 - 4.54	0.34	A
Cobalt	6.11	6.01	A		1.7	4.21 - 7.81	0.61	A
Copper	7.11	6.72	A		5.8	4.70 - 8.74	0.71	A
Lead	2.11	2.11	A		0.0	1.48 - 2.74	0.21	A
Mercury	0.122	0.124	A		-1.6	0.087 - 0.161	0.0122	A
Nickel	3.93	4.02	A		-2.2	2.81 - 5.23	0.39	A
Selenium	0.011		A			False Positive Test	0.011	
Technetium-99	NR					False Positive Test		
Thallium	0.00004	0.000017	A	(17)		Sensitivity Evaluation	0.00004	
Uranium-235	0.00052	5.05E-4	A		3.0	3.54E-4 - 6.57E-4	0.00005	A
Uranium-238	0.071	0.068	A		4.4	0.048 - 0.088	0.007	A
Uranium-Total	0.072	0.068	A		5.9	0.048 - 0.088	0.007	A
Vanadium	3.39	3.37	A		0.6	2.36 - 4.38	0.34	A
Zinc	3.62	3.62	A		0.0	2.53 - 4.71	0.36	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.300	0.327	A		-8.3	0.229 - 0.425	0.023	A
Cesium-134	16.90	17.1	A		-1.2	12.0 - 22.2	0.26	N
Cesium-137	16.99	16.8	A		1.1	11.8 - 21.8	0.41	A
Cobalt-57	29.01	30.0	A		-3.3	21.0 - 39.0	0.51	N
Cobalt-60	16.58	17.0	A		-2.5	11.9 - 22.1	0.30	N
Hydrogen-3	420	395	A		6.3	277 - 514	13	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.11		A			False Positive Test	0.20	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.956	0.985	A		-2.9	0.690 - 1.281	0.044	A
Plutonium-239/240	1.014	1.070	A		-5.2	0.749 - 1.391	0.046	A
Potassium-40	2.5		A			False Positive Test	1.3	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	6.85	7.73	A		-11.4	5.41 - 10.05	0.16	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.420	1.37	A		3.7	0.96 - 1.78	0.062	A
Uranium-238	0.900	0.84	A		7.1	0.59 - 1.09	0.043	A
Zinc-65	11.53	11.3	A		2.0	7.9 - 14.7	0.62	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (MDPH01) MDPH-Radiation Control Program
 MERL-Room 362
 Jamaica Plain, MA 02130-3597

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	15.05	17.1	A		-12.0	12.0 - 22.2	0.40	A
Cesium-137	16.86	16.8	A		0.4	11.8 - 21.8	0.47	A
Cobalt-57	29.56	30.0	A		-1.5	21.0 - 39.0	1.13	A
Cobalt-60	16.43	17.0	A		-3.4	11.9 - 22.1	0.56	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.86	11.3	A		5.0	7.9 - 14.7	0.39	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

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

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.059260	0.327	N		-81.9	0.229 - 0.425	2.122	N
Cesium-134	17.357	17.1	A		1.5	12.0 - 22.2	0.3623	A
Cesium-137	19.428	16.8	A		15.6	11.8 - 21.8	0.4600	A
Cobalt-57	31.777	30.0	A		5.9	21.0 - 39.0	1.343	A
Cobalt-60	18.750	17.0	A		10.3	11.9 - 22.1	0.3609	N
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.016195		A			False Positive Test	0.3300	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	-0.36214		A			False Positive Test	2.023	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	13.867	11.3	W		22.7	7.9 - 14.7	0.6301	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(NARL01) National Analytical Radiation Environmental Laboratory

540 S. Morris Ave.

Montgomery, AL 36115-2601

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.321	0.327	A		-1.8	0.229 - 0.425	0.0205	A
Cesium-134	17.4	17.1	A		1.8	12.0 - 22.2	0.946	A
Cesium-137	18.3	16.8	A		8.9	11.8 - 21.8	0.997	A
Cobalt-57	31.6	30.0	A		5.3	21.0 - 39.0	1.74	A
Cobalt-60	17.1	17.0	A		0.6	11.9 - 22.1	0.918	A
Hydrogen-3	398	395	A		0.8	277 - 514	10.0	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.0679		A			False Positive Test	0.0641	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.930	0.985	A		-5.6	0.690 - 1.281	0.0413	A
Plutonium-239/240	1.01	1.070	A		-5.6	0.749 - 1.391	0.0444	A
Potassium-40	-1.21		A			False Positive Test	0.865	
Radium-226	0.490	0.511	A		-4.1	0.358 - 0.664	0.0253	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.41	7.73	A		-4.1	5.41 - 10.05	0.181	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.39	1.37	A		1.5	0.96 - 1.78	0.0619	A
Uranium-238	0.888	0.84	A		5.7	0.59 - 1.09	0.0413	A
Zinc-65	12.5	11.3	A		10.6	7.9 - 14.7	0.727	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(NESI01) BWXT-Radioisotope & Analytical Chemistry Laboratory
Lynchburg Technology Center
Lynchburg, VA 24504-5447

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.90	4.77	A		2.7	3.34 - 6.20	0.10	A
Arsenic	1.32	1.53	A		-13.7	1.07 - 1.99	0.12	A
Barium	2.45	2.34	A		4.7	1.64 - 3.04	0.08	A
Beryllium	3.31	3.27	A		1.2	2.29 - 4.25	0.08	A
Cadmium	0.65	0.634	A		2.5	0.444 - 0.824	0.07	A
Chromium	3.29	3.49	A		-5.7	2.44 - 4.54	0.08	A
Cobalt	5.62	6.01	A		-6.5	4.21 - 7.81	0.10	N
Copper	6.58	6.72	A		-2.1	4.70 - 8.74	0.11	N
Lead	2.19	2.11	A		3.8	1.48 - 2.74	0.08	A
Mercury	0.108	0.124	A		-12.9	0.087 - 0.161	0.008	A
Nickel	4.21	4.02	A		4.7	2.81 - 5.23	0.09	A
Selenium	0.005		A			False Positive Test	0.16	
Technetium-99	NR					False Positive Test		
Thallium	0.005	0.000017	A	(17)		Sensitivity Evaluation	0.43	
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	3.19	3.37	A		-5.3	2.36 - 4.38	0.08	A
Zinc	3.71	3.62	A		2.5	2.53 - 4.71	0.08	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.302	0.327	A		-7.6	0.229 - 0.425	0.019	A
Cesium-134	15.4	17.1	A		-9.9	12.0 - 22.2	1.22	A
Cesium-137	17.3	16.8	A		3.0	11.8 - 21.8	1.10	A
Cobalt-57	29.9	30.0	A		-0.3	21.0 - 39.0	0.82	A
Cobalt-60	16.8	17.0	A		-1.2	11.9 - 22.1	0.53	A
Hydrogen-3	384	395	A		-2.8	277 - 514	11.2	A
Iron-55	NR	27.8	N	(28)		19.5 - 36.1		
Manganese-54	-0.054		A			False Positive Test	0.288	
Nickel-63	NR	32.9	N	(28)		23.0 - 42.8		
Plutonium-238	0.918	0.985	A		-6.8	0.690 - 1.281	0.037	A
Plutonium-239/240	1.06	1.070	A		-0.9	0.749 - 1.391	0.042	A
Potassium-40	5.37		A			False Positive Test	2.39	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73	N	(28)		5.41 - 10.05		
Technetium-99	-0.004		A			False Positive Test	0.09	
Uranium-234	1.43	1.37	A		4.4	0.96 - 1.78	0.056	A
Uranium-238	0.888	0.84	A		5.7	0.59 - 1.09	0.038	A
Zinc-65	11.1	11.3	A		-1.8	7.9 - 14.7	0.71	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (NJDH01) New Jersey Dept. of Health, ECLS
 3 Schwarzkopf Drive
 Ewing, NJ 08628

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	14.6	17.1	A		-14.6	12.0 - 22.2	0.36	A
Cesium-137	16.8	16.8	A		0.0	11.8 - 21.8	0.44	A
Cobalt-57	28.3	30.0	A		-5.7	21.0 - 39.0	0.4	N
Cobalt-60	16.3	17.0	A		-4.1	11.9 - 22.1	0.4	A
Hydrogen-3	407.0	395	A		3.0	277 - 514	10.0	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.05		A			False Positive Test	0.09	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	0.74		A			False Positive Test	1.5	
Radium-226	0.524	0.511	A		2.5	0.358 - 0.664	0.17	N

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	6.85	7.73	A		-11.4	5.41 - 10.05	0.32	A
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	12.2	11.3	A		8.0	7.9 - 14.7	0.5	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(NRL99) Environmental Radioactivity - National Centre for Radiation Science

PO Box 29181

Christchurch, Christchurch 8540

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.306	0.327	A		-6.4	0.229 - 0.425	0.054	W
Cesium-134	17.1	17.1	A		0.0	12.0 - 22.2	1.1	A
Cesium-137	17.1	16.8	A		1.8	11.8 - 21.8	1.1	A
Cobalt-57	31.2	30.0	A		4.0	21.0 - 39.0	2.0	A
Cobalt-60	16.5	17.0	A		-2.9	11.9 - 22.1	1.1	A
Hydrogen-3	430	395	A		8.9	277 - 514	22	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.26		A			False Positive Test	0.13	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.932	0.985	A		-5.4	0.690 - 1.281	0.044	A
Plutonium-239/240	0.932	1.070	A		-12.9	0.749 - 1.391	0.044	A
Potassium-40	2.3		A			False Positive Test	1.1	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.37	7.73	A		-4.7	5.41 - 10.05	0.22	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.253	1.37	A		-8.5	0.96 - 1.78	0.038	A
Uranium-238	0.798	0.84	A		-5.0	0.59 - 1.09	0.027	A
Zinc-65	11.66	11.3	A		3.2	7.9 - 14.7	0.84	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (ODHL01) Ohio Department of Health Laboratory
 8995 E Main Street
 Reynoldsburg, OH 43068

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	16.975	17.1	A		-0.7	12.0 - 22.2	0.53875	A
Cesium-137	16.725	16.8	A		-0.4	11.8 - 21.8	1.0255	A
Cobalt-57	28.125	30.0	A		-6.3	21.0 - 39.0	1.96	A
Cobalt-60	16.7	17.0	A		-1.8	11.9 - 22.1	0.499	A
Hydrogen-3	354.63	395	A		-10.2	277 - 514	7.76	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.077775		A			False Positive Test	0.09645	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	0.11125		A			False Positive Test	0.58275	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	10.895	11.3	A		-3.6	7.9 - 14.7	0.57675	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(OTLI01) Pace Analytical National Center for Testing & Innovation

12065 Lebanon Road

Mt. Juliet, TN 37122

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	.0008	5.05E-4	N		58.4	3.54E-4 - 6.57E-4	.0001	A
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	0.144	0.068	N		111.8	0.048 - 0.088	0.001	N
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.134	0.327	N		-59.0	0.229 - 0.425	0.310	N
Cesium-134	15.7	17.1	A		-8.2	12.0 - 22.2	1.09	A
Cesium-137	16.8	16.8	A		0.0	11.8 - 21.8	1.25	A
Cobalt-57	31.0	30.0	A		3.3	21.0 - 39.0	2.19	A
Cobalt-60	14.7	17.0	A		-13.5	11.9 - 22.1	1.02	A
Hydrogen-3	409	395	A		3.5	277 - 514	14.2	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.2		A			False Positive Test	0.25	
Nickel-63	34.7	32.9	A		5.5	23.0 - 42.8	1.7	A
Plutonium-238	0.811	0.985	A		-17.7	0.690 - 1.281	0.042	A
Plutonium-239/240	0.824	1.070	W		-23.0	0.749 - 1.391	0.073	A
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.66	7.73	A		-0.9	5.41 - 10.05	0.183	A
Technetium-99	-0.13		A			False Positive Test	0.357	
Uranium-234	1.29	1.37	A		-5.8	0.96 - 1.78	0.156	A
Uranium-238	0.925	0.84	A		10.1	0.59 - 1.09	0.131	A
Zinc-65	10.7	11.3	A		-5.3	7.9 - 14.7	1.2	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (QUAN02) Eurofins TestAmerica Knoxville
 5815 Middlebrook Pike
 Knoxville, TN 37921-

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.81	4.77	A		0.8	3.34 - 6.20	0.16033	A
Arsenic	1.58	1.53	A		3.3	1.07 - 1.99	0.05530	A
Barium	2.37	2.34	A		1.3	1.64 - 3.04	0.07900	A
Beryllium	3.41	3.27	A		4.3	2.29 - 4.25	0.11367	A
Cadmium	0.665	0.634	A		4.9	0.444 - 0.824	0.02217	A
Chromium	3.64	3.49	A		4.3	2.44 - 4.54	0.12133	A
Cobalt	6.24	6.01	A		3.8	4.21 - 7.81	0.20800	A
Copper	6.85	6.72	A		1.9	4.70 - 8.74	0.22833	A
Lead	2.22	2.11	A		5.2	1.48 - 2.74	0.074000	A
Mercury	0.120	0.124	A		-3.2	0.087 - 0.161	0.00400	A
Nickel	4.2	4.02	A		4.5	2.81 - 5.23	0.14000	A
Selenium	-0.0018		A			False Positive Test	0.00120	
Technetium-99	NR					False Positive Test		
Thallium	0.00334	0.000017	N	(4)		Sensitivity Evaluation	0.00110	
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	3.47	3.37	A		3.0	2.36 - 4.38	0.11567	A
Zinc	3.71	3.62	A		2.5	2.53 - 4.71	0.16077	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

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

2710 North 20th Avenue

Pasco, WA 99301

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.75	4.77	A		-0.4	3.34 - 6.20	0.044	N
Arsenic	1.52	1.53	A		-0.7	1.07 - 1.99	0.114	A
Barium	2.36	2.34	A		0.9	1.64 - 3.04	0.280	A
Beryllium	3.54	3.27	A		8.3	2.29 - 4.25	0.451	A
Cadmium	0.669	0.634	A		5.5	0.444 - 0.824	0.054	A
Chromium	3.66	3.49	A		4.9	2.44 - 4.54	0.312	A
Cobalt	6.67	6.01	A		11.0	4.21 - 7.81	0.731	A
Copper	6.94	6.72	A		3.3	4.70 - 8.74	0.668	A
Lead	2.22	2.11	A		5.2	1.48 - 2.74	0.184	A
Mercury	0.104	0.124	A		-16.1	0.087 - 0.161	0.005	A
Nickel	4.43	4.02	A		10.2	2.81 - 5.23	0.403	A
Selenium	0.001		N	(1)		False Positive Test	0.0001	
Technetium-99	NR					False Positive Test		
Thallium	0.00005	0.000017	N	(4)		Sensitivity Evaluation	0.000003	
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	0.069	0.068	A		1.5	0.048 - 0.088	0.005	A
Vanadium	3.49	3.37	A		3.6	2.36 - 4.38	0.395	A
Zinc	3.85	3.62	A		6.4	2.53 - 4.71	0.436	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(RPSC01) Radiation Protection Service

Ontario Ministry of Labour, Training And Skills Development

Toronto, Ontario M9P 3T1

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	18.6	17.1	A		8.8	12.0 - 22.2	2.4	A
Cesium-137	19.8	16.8	A		17.9	11.8 - 21.8	2.42	A
Cobalt-57	34.3	30.0	A		14.3	21.0 - 39.0	6.87	W
Cobalt-60	19.3	17.0	A		13.5	11.9 - 22.1	1.61	A
Hydrogen-3	398.2	395	A		0.8	277 - 514	54.1	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.174		A			False Positive Test	0.419	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	2.99		A			False Positive Test	1.18	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	13.1	11.3	A		15.9	7.9 - 14.7	1.39	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (SAVA01) Battelle Savannah River Alliance
 SRNL (non-purchased material receipt)
 AIKEN, SC 29808-0000

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	5.12	4.77	A		7.3	3.34 - 6.20	0.512	A
Arsenic	1.52	1.53	A		-0.7	1.07 - 1.99	0.152	A
Barium	2.53	2.34	A		8.1	1.64 - 3.04	0.253	A
Beryllium	3.11	3.27	A		-4.9	2.29 - 4.25	0.311	A
Cadmium	0.671	0.634	A		5.8	0.444 - 0.824	0.0671	A
Chromium	3.44	3.49	A		-1.4	2.44 - 4.54	0.344	A
Cobalt	5.46	6.01	A		-9.2	4.21 - 7.81	0.546	A
Copper	6.51	6.72	A		-3.1	4.70 - 8.74	0.651	A
Lead	2.38	2.11	A		12.8	1.48 - 2.74	0.238	A
Mercury	0.116	0.124	A		-6.5	0.087 - 0.161	0.0116	A
Nickel	3.88	4.02	A		-3.5	2.81 - 5.23	0.388	A
Selenium	0.0000030		A			False Positive Test	0.000001	
Technetium-99	NR					False Positive Test		
Thallium	0.0000436	0.000017	N	(4)		Sensitivity Evaluation	0.000004	
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	0.0788	0.068	A		15.9	0.048 - 0.088	0.00788	A
Vanadium	3.39	3.37	A		0.6	2.36 - 4.38	0.339	A
Zinc	3.61	3.62	A		-0.3	2.53 - 4.71	0.361	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	15.9	17.1	A		-7.0	12.0 - 22.2	0.664	A
Cesium-137	17.4	16.8	A		3.6	11.8 - 21.8	1.15	A
Cobalt-57	29.2	30.0	A		-2.7	21.0 - 39.0	1.36	A
Cobalt-60	16.7	17.0	A		-1.8	11.9 - 22.1	0.870	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.171		A			False Positive Test	0.547	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	1.49		A			False Positive Test	7.70	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	10.1	11.3	A		-10.6	7.9 - 14.7	1.55	W

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (SEML01) SRS Environmental Monitoring Laboratory
 Bldg 735-B
 Aiken, SC 29808

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.68	4.77	A		-1.9	3.34 - 6.20	0.56	A
Arsenic	1.46	1.53	A		-4.6	1.07 - 1.99	0.15	A
Barium	2.32	2.34	A		-0.9	1.64 - 3.04	0.21	A
Beryllium	3.19	3.27	A		-2.4	2.29 - 4.25	0.26	A
Cadmium	0.640	0.634	A		0.9	0.444 - 0.824	0.070	A
Chromium	3.51	3.49	A		0.6	2.44 - 4.54	0.35	A
Cobalt	5.71	6.01	A		-5.0	4.21 - 7.81	0.51	A
Copper	6.60	6.72	A		-1.8	4.70 - 8.74	0.66	A
Lead	2.10	2.11	A		-0.5	1.48 - 2.74	0.21	A
Mercury	0.145	0.124	A		16.9	0.087 - 0.161	0.015	A
Nickel	4.01	4.02	A		-0.2	2.81 - 5.23	0.40	A
Selenium	0.010		A			False Positive Test	0.010	
Technetium-99	NR					False Positive Test		
Thallium	0.02	0.000017	A	(17)		Sensitivity Evaluation	0.02	
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	3.41	3.37	A		1.2	2.36 - 4.38	0.31	A
Zinc	3.58	3.62	A		-1.1	2.53 - 4.71	0.36	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.284	0.327	A		-13.2	0.229 - 0.425	0.0618	W
Cesium-134	17.42	17.1	A		1.9	12.0 - 22.2	0.50	A
Cesium-137	18.00	16.8	A		7.1	11.8 - 21.8	0.61	A
Cobalt-57	29.80	30.0	A		-0.7	21.0 - 39.0	0.88	A
Cobalt-60	17.40	17.0	A		2.4	11.9 - 22.1	0.51	A
Hydrogen-3	403	395	A		2.0	277 - 514	29	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.060		A			False Positive Test	0.043	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.92	0.985	A		-6.6	0.690 - 1.281	0.15	W
Plutonium-239/240	0.96	1.070	A		-10.3	0.749 - 1.391	0.16	W
Potassium-40	1.11		A			False Positive Test	0.50	
Radium-226	NR	0.511		(6)		0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	6.81	7.73	A		-11.9	5.41 - 10.05	0.49	A
Technetium-99	0.23		A			False Positive Test	0.16	
Uranium-234	1.38	1.37	A		0.7	0.96 - 1.78	0.19	A
Uranium-238	0.85	0.84	A		1.2	0.59 - 1.09	0.12	A
Zinc-65	12.50	11.3	A		10.6	7.9 - 14.7	0.48	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (SLAC01) SLAC DOE National Accelerator Laboratory
 2575 Sand Hill Road
 Menlo Park, CA 94025

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	14.74	17.1	A		-13.8	12.0 - 22.2	1.47	A
Cesium-137	17.07	16.8	A		1.6	11.8 - 21.8	1.71	A
Cobalt-57	27.55	30.0	A		-8.2	21.0 - 39.0	2.76	A
Cobalt-60	16.07	17.0	A		-5.5	11.9 - 22.1	1.61	A
Hydrogen-3	369	395	A		-6.6	277 - 514	37	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.58		A			False Positive Test	0.58	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	1		A			False Positive Test	1	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.63	11.3	A		2.9	7.9 - 14.7	1.16	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(SOUT01) Southwest Research Institute

6220 Culebra Rd.

San Antonio, TX 78238-5166

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	4.85	4.77	A		1.7	3.34 - 6.20	0.966	W
Arsenic	1.59	1.53	A		3.9	1.07 - 1.99	0.629	N
Barium	2.44	2.34	A		4.3	1.64 - 3.04	0.407	W
Beryllium	3.54	3.27	A		8.3	2.29 - 4.25	0.578	W
Cadmium	0.674	0.634	A		6.3	0.444 - 0.824	0.158	W
Chromium	3.53	3.49	A		1.1	2.44 - 4.54	0.576	W
Cobalt	6.00	6.01	A		-0.2	4.21 - 7.81	0.967	W
Copper	6.83	6.72	A		1.6	4.70 - 8.74	1.10	W
Lead	2.13	2.11	A		0.9	1.48 - 2.74	0.382	W
Mercury	0.137	0.124	A		10.5	0.087 - 0.161	0.0220	W
Nickel	4.08	4.02	A		1.5	2.81 - 5.23	0.663	W
Selenium	-0.0145		A			False Positive Test	0.0576	
Technetium-99	NR					False Positive Test		
Thallium	0.000876	0.000017	A	(17)		Sensitivity Evaluation	0.00119	
Uranium-235	0.000584	5.05E-4	A		15.6	3.54E-4 - 6.57E-4	0.000110	W
Uranium-238	0.0739	0.068	A		8.7	0.048 - 0.088	0.0119	W
Uranium-Total	0.0747	0.068	A		9.9	0.048 - 0.088	0.0120	W
Vanadium	3.42	3.37	A		1.5	2.36 - 4.38	0.559	W
Zinc	3.75	3.62	A		3.6	2.53 - 4.71	0.624	W

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.294	0.327	A		-10.1	0.229 - 0.425	0.0284	A
Cesium-134	16.7	17.1	A		-2.3	12.0 - 22.2	0.796	A
Cesium-137	17.6	16.8	A		4.8	11.8 - 21.8	0.778	A
Cobalt-57	29.4	30.0	A		-2.0	21.0 - 39.0	1.03	A
Cobalt-60	17.9	17.0	A		5.3	11.9 - 22.1	0.767	A
Hydrogen-3	355	395	A		-10.1	277 - 514	21.8	A
Iron-55	24.8	27.8	A		-10.8	19.5 - 36.1	2.16	A
Manganese-54	-0.233		A			False Positive Test	0.274	
Nickel-63	33.6	32.9	A		2.1	23.0 - 42.8	1.98	A
Plutonium-238	0.996	0.985	A		1.1	0.690 - 1.281	0.0719	A
Plutonium-239/240	1.05	1.070	A		-1.9	0.749 - 1.391	0.0756	A
Potassium-40	1.87		A			False Positive Test	1.47	
Radium-226	0.578	0.511	A		13.1	0.358 - 0.664	0.426	N

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	16.0	7.73	N		107.0	5.41 - 10.05	0.996	A
Technetium-99	-0.247		A			False Positive Test	0.101	
Uranium-234	1.33	1.37	A		-2.9	0.96 - 1.78	0.0937	A
Uranium-238	0.774	0.84	A		-7.9	0.59 - 1.09	0.0570	A
Zinc-65	13.9	11.3	W		23.0	7.9 - 14.7	0.933	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(SRPD01) Sandia National Laboratories, Radiation Protection Sample Diagnostics

PO Box 5800, MS1103

Albuquerque, NM 87185-1103

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	1.64E+01	17.1	A		-4.1	12.0 - 22.2	1.10	A
Cesium-137	1.68E+01	16.8	A		0.0	11.8 - 21.8	1.06	A
Cobalt-57	2.86E+01	30.0	A		-4.7	21.0 - 39.0	2.87	A
Cobalt-60	1.61E+01	17.0	A		-5.3	11.9 - 22.1	7.33E-01	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-1.87E-01		A			False Positive Test	1.93E-01	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	4.58E+00		N	(1)		False Positive Test	1.13	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	1.11E+01	11.3	A		-1.8	7.9 - 14.7	7.16E-01	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(TDHL01) Texas Department of State Health Services Laboratory
 1100 W 49th Street
 Austin, TX 78756

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.224	0.327	N		-31.5	0.229 - 0.425	0.029	A
Cesium-134	16.61	17.1	A		-2.9	12.0 - 22.2	0.27	N
Cesium-137	17.83	16.8	A		6.1	11.8 - 21.8	0.53	A
Cobalt-57	29.31	30.0	A		-2.3	21.0 - 39.0	0.58	N
Cobalt-60	17.41	17.0	A		2.4	11.9 - 22.1	0.34	N
Hydrogen-3	413	395	A		4.6	277 - 514	13	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.13		A			False Positive Test	0.13	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.672	0.985	N		-31.8	0.690 - 1.281	0.065	A
Plutonium-239/240	0.712	1.070	N		-33.5	0.749 - 1.391	0.068	A
Potassium-40	1.76		A			False Positive Test	0.71	
Radium-226	0.403	0.511	W		-21.1	0.358 - 0.664	0.019	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.06	7.73	A		-8.7	5.41 - 10.05	0.18	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.38	1.37	A		0.7	0.96 - 1.78	0.12	A
Uranium-238	0.749	0.84	A		-10.8	0.59 - 1.09	0.073	A
Zinc-65	12.00	11.3	A		6.2	7.9 - 14.7	0.41	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(TELE01) Teledyne Brown Engineering - Environmental Services

2508 Quality Lane

Knoxville, TN 37931-6819

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	24.4	32.9	W		-25.8	23.0 - 42.8	1.17	A
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	1.86		N	(1)		False Positive Test	.414	
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (TELE02) ATI Environmental, Inc., Midwest Lab
 700 Landwehr Road
 Northbrook, IL 60062-

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	13.6	17.1	W		-20.5	12.0 - 22.2	0.3	A
Cesium-137	16.0	16.8	A		-4.8	11.8 - 21.8	0.4	A
Cobalt-57	27.5	30.0	A		-8.3	21.0 - 39.0	0.4	N
Cobalt-60	14.4	17.0	A		-15.3	11.9 - 22.1	0.3	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.03		A			False Positive Test	0.10	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	3.88		A			False Positive Test	1.51	
Radium-226	NR	0.511	N	(28)		0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	6.79	7.73	A		-12.2	5.41 - 10.05	0.32	A
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37	N	(28)		0.96 - 1.78		
Uranium-238	NR	0.84	N	(28)		0.59 - 1.09		
Zinc-65	11.5	11.3	A		1.8	7.9 - 14.7	0.6	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (TMAO01) EBERLINE Analytical Corporation
 601 A SCARBORO RD
 OAK RIDGE, TN 37830-

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.326	0.327	A		-0.3	0.229 - 0.425	0.075	W
Cesium-134	15.030	17.1	A		-12.1	12.0 - 22.2	1.368	A
Cesium-137	19.757	16.8	A		17.6	11.8 - 21.8	2.017	A
Cobalt-57	33.324	30.0	A		11.1	21.0 - 39.0	2.842	A
Cobalt-60	18.910	17.0	A		11.2	11.9 - 22.1	1.442	A
Hydrogen-3	392.342	395	A		-0.7	277 - 514	15.692	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.317		A			False Positive Test	0.814	
Nickel-63	35.058	32.9	A		6.6	23.0 - 42.8	1.469	A
Plutonium-238	0.937	0.985	A		-4.9	0.690 - 1.281	0.106	A
Plutonium-239/240	1.048	1.070	A		-2.1	0.749 - 1.391	0.113	A
Potassium-40	2.262		A			False Positive Test	4.852	
Radium-226	0.600	0.511	A		17.4	0.358 - 0.664	0.173	W

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.050	7.73	A		-8.8	5.41 - 10.05	0.274	A
Technetium-99	1.978		N	(1)		False Positive Test	0.242	
Uranium-234	1.529	1.37	A		11.6	0.96 - 1.78	0.150	A
Uranium-238	0.888	0.84	A		5.7	0.59 - 1.09	0.105	A
Zinc-65	12.500	11.3	A		10.6	7.9 - 14.7	3.237	W

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (TNUT01) St. Louis USACE FUSRAP Laboratory
 112 James S McDonnell Blvd
 HAZELWOOD, MO 63042

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.379	0.327	A		15.9	0.229 - 0.425	0.080	W
Cesium-134	14.096	17.1	A		-17.6	12.0 - 22.2	0.273	N
Cesium-137	16.983	16.8	A		1.1	11.8 - 21.8	0.519	A
Cobalt-57	29.935	30.0	A		-0.2	21.0 - 39.0	0.620	A
Cobalt-60	16.696	17.0	A		-1.8	11.9 - 22.1	0.374	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.040		A			False Positive Test	0.077	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	-0.402		A			False Positive Test	0.226	
Radium-226	0.499	0.511	A		-2.3	0.358 - 0.664	0.038	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	1.314	1.37	A		-4.1	0.96 - 1.78	0.079	A
Uranium-238	0.851	0.84	A		1.3	0.59 - 1.09	0.056	A
Zinc-65	11.885	11.3	A		5.2	7.9 - 14.7	.423	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(UNTE01) UniTech-235

178 Aldo Drive

Barnwell, SC 29812

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	13.95	17.1	A		-18.4	12.0 - 22.2	0.96	A
Cesium-137	17.03	16.8	A		1.4	11.8 - 21.8	1.60	A
Cobalt-57	30.50	30.0	A		1.7	21.0 - 39.0	1.88	A
Cobalt-60	17.13	17.0	A		0.8	11.9 - 22.1	1.26	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.02		A			False Positive Test	0.02	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	28.14		N	(1)		False Positive Test	7.06	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	14.84	11.3	N		31.3	7.9 - 14.7	2.10	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (WIPH01) WI, DPH, Radiation Protection Section
 1 West Wilson Street
 Madison, WI 53701

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.34894	0.327	A		6.7	0.229 - 0.425	0.710987	N
Cesium-134	15.91975	17.1	A		-6.9	12.0 - 22.2	0.211345	N
Cesium-137	17.4414	16.8	A		3.8	11.8 - 21.8	0.37418	A
Cobalt-57	31.3061	30.0	A		4.4	21.0 - 39.0	0.57277	N
Cobalt-60	17.0985	17.0	A		0.6	11.9 - 22.1	0.399685	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.00395		A			False Positive Test	0.174	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	4.4317		N	(1)		False Positive Test	0.806125	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3	N	(25)		7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(WIPP01) WIPP Laboratories
 1400 University Drive
 Carlsbad, NM 88220

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.310	0.327	A		-5.2	0.229 - 0.425	0.0301	A
Cesium-134	15.6	17.1	A		-8.8	12.0 - 22.2	0.496	A
Cesium-137	16.1	16.8	A		-4.2	11.8 - 21.8	0.509	A
Cobalt-57	28.3	30.0	A		-5.7	21.0 - 39.0	0.643	A
Cobalt-60	15.9	17.0	A		-6.5	11.9 - 22.1	0.577	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.000577		A			False Positive Test	0.127	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.968	0.985	A		-1.7	0.690 - 1.281	0.0780	A
Plutonium-239/240	1.02	1.070	A		-4.7	0.749 - 1.391	0.0817	A
Potassium-40	-2.22		A			False Positive Test	1.96	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	8.88	7.73	A		14.9	5.41 - 10.05	0.418	A
Technetium-99	NR					False Positive Test		
Uranium-234	1.57	1.37	A		14.6	0.96 - 1.78	0.217	A
Uranium-238	0.909	0.84	A		8.2	0.59 - 1.09	0.127	A
Zinc-65	10.4	11.3	A		-8.0	7.9 - 14.7	0.617	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (WSHL01) Wisconsin State Laboratory of Hygiene
 2601 Agriculture Drive
 Madison, WI 53718

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	15.9	17.1	A		-7.0	12.0 - 22.2	0.323	A
Cesium-137	17.2	16.8	A		2.4	11.8 - 21.8	0.513	A
Cobalt-57	30.0	30.0	A		0.0	21.0 - 39.0	0.7	A
Cobalt-60	16.6	17.0	A		-2.4	11.9 - 22.1	0.924	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.164		A			False Positive Test	0.119	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	-0.517		A			False Positive Test	0.712	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	2.13	7.73	N		-72.4	5.41 - 10.05	0.88	N
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.9	11.3	A		5.3	7.9 - 14.7	0.906	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(WSTP99) Cavendish Nuclear Limited

Greson Court

Cumbria, UK CA24 3HZ

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.315	0.327	A		-3.7	0.229 - 0.425	0.032	A
Cesium-134	17.29	17.1	A		1.1	12.0 - 22.2	0.80	A
Cesium-137	17.79	16.8	A		5.9	11.8 - 21.8	1.08	A
Cobalt-57	29.6	30.0	A		-1.3	21.0 - 39.0	1.1	A
Cobalt-60	16.64	17.0	A		-2.1	11.9 - 22.1	0.60	A
Hydrogen-3	374.8	395	A		-5.1	277 - 514	9.1	A
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	0.22		A			False Positive Test	0.26	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	0.945	0.985	A		-4.1	0.690 - 1.281	0.071	A
Plutonium-239/240	0.985	1.070	A		-7.9	0.749 - 1.391	0.075	A
Potassium-40	1.0		A			False Positive Test	3.5	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.45	7.73	A		-3.6	5.41 - 10.05	0.41	A
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	9.88	11.3	A		-12.6	7.9 - 14.7	0.79	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47
 (WVDP01) WVDP Environmental Laboratory
 10282 Rock Springs Road
 West Valley, NY 14171

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	NR	5.05E-4				3.54E-4 - 6.57E-4		
Uranium-238	NR	0.068				0.048 - 0.088		
Uranium-Total	NR	0.068				0.048 - 0.088		
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	14.9	17.1	A		-12.9	12.0 - 22.2	0.350	A
Cesium-137	17.1	16.8	A		1.8	11.8 - 21.8	0.515	A
Cobalt-57	29.0	30.0	A		-3.3	21.0 - 39.0	0.730	A
Cobalt-60	16.3	17.0	A		-4.1	11.9 - 22.1	0.409	A
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	-0.0531		A			False Positive Test	0.0895	
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	0.0701		A			False Positive Test	1.02	
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.38	7.73	A		-4.5	5.41 - 10.05	0.228	A
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	11.7	11.3	A		3.5	7.9 - 14.7	0.511	A

Radiological Reference Date: August 1, 2022

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:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-22-MaW47

(YPGA01) US Army Yuma Proving Ground / Material Analysis Lab

301 C. Street

Yuma, AZ 85365

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	4.77				3.34 - 6.20		
Arsenic	NR	1.53				1.07 - 1.99		
Barium	NR	2.34				1.64 - 3.04		
Beryllium	NR	3.27				2.29 - 4.25		
Cadmium	NR	0.634				0.444 - 0.824		
Chromium	NR	3.49				2.44 - 4.54		
Cobalt	NR	6.01				4.21 - 7.81		
Copper	NR	6.72				4.70 - 8.74		
Lead	NR	2.11				1.48 - 2.74		
Mercury	NR	0.124				0.087 - 0.161		
Nickel	NR	4.02				2.81 - 5.23		
Selenium	NR					False Positive Test		
Technetium-99	NR					False Positive Test		
Thallium	NR	0.000017				Sensitivity Evaluation		
Uranium-235	0.0005	5.05E-4	A		-1.0	3.54E-4 - 6.57E-4	0.0001	W
Uranium-238	0.0694	0.068	A		2.1	0.048 - 0.088	0.003	A
Uranium-Total	0.0699	0.068	A		2.8	0.048 - 0.088	0.003	A
Vanadium	NR	3.37				2.36 - 4.38		
Zinc	NR	3.62				2.53 - 4.71		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.327				0.229 - 0.425		
Cesium-134	NR	17.1				12.0 - 22.2		
Cesium-137	NR	16.8				11.8 - 21.8		
Cobalt-57	NR	30.0				21.0 - 39.0		
Cobalt-60	NR	17.0				11.9 - 22.1		
Hydrogen-3	NR	395				277 - 514		
Iron-55	NR	27.8				19.5 - 36.1		
Manganese-54	NR					False Positive Test		
Nickel-63	NR	32.9				23.0 - 42.8		
Plutonium-238	NR	0.985				0.690 - 1.281		
Plutonium-239/240	NR	1.070				0.749 - 1.391		
Potassium-40	NR					False Positive Test		
Radium-226	NR	0.511				0.358 - 0.664		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	7.73				5.41 - 10.05		
Technetium-99	NR					False Positive Test		
Uranium-234	NR	1.37				0.96 - 1.78		
Uranium-238	NR	0.84				0.59 - 1.09		
Zinc-65	NR	11.3				7.9 - 14.7		

Radiological Reference Date: August 1, 2022

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:

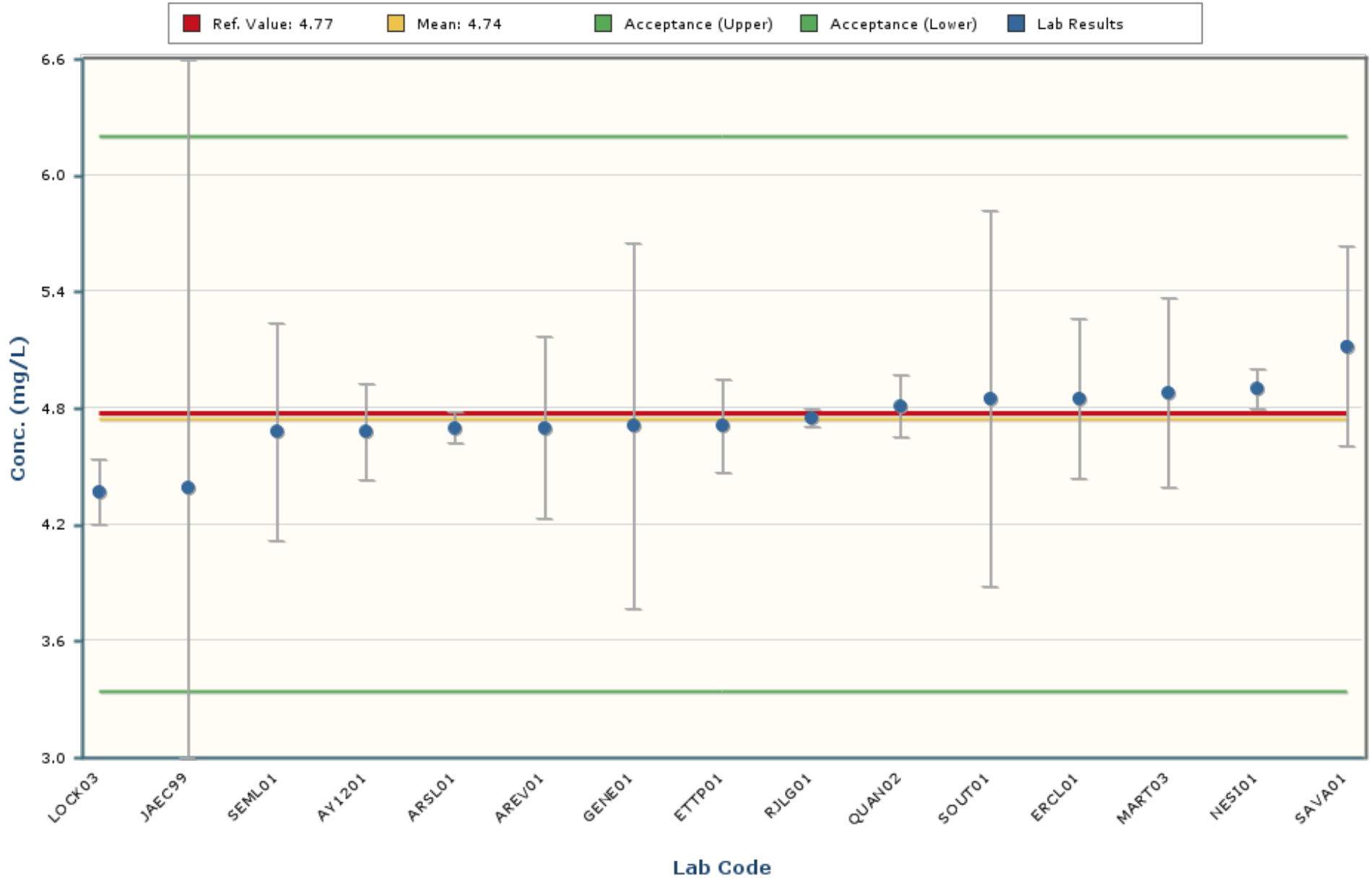
- NOT ACCEPTABLE.....RP < 2%
 - ACCEPTABLE.....2% <= RP <= 15%
 - ACCEPTABLE WITH WARNING.....15% < RP <= 30%
 - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

Notes:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (25) = Result not reported with other gamma results
- (28) = Not Reporting Previously Reported Analyte

Antimony

MAPEP-22-MaW47



Notes:

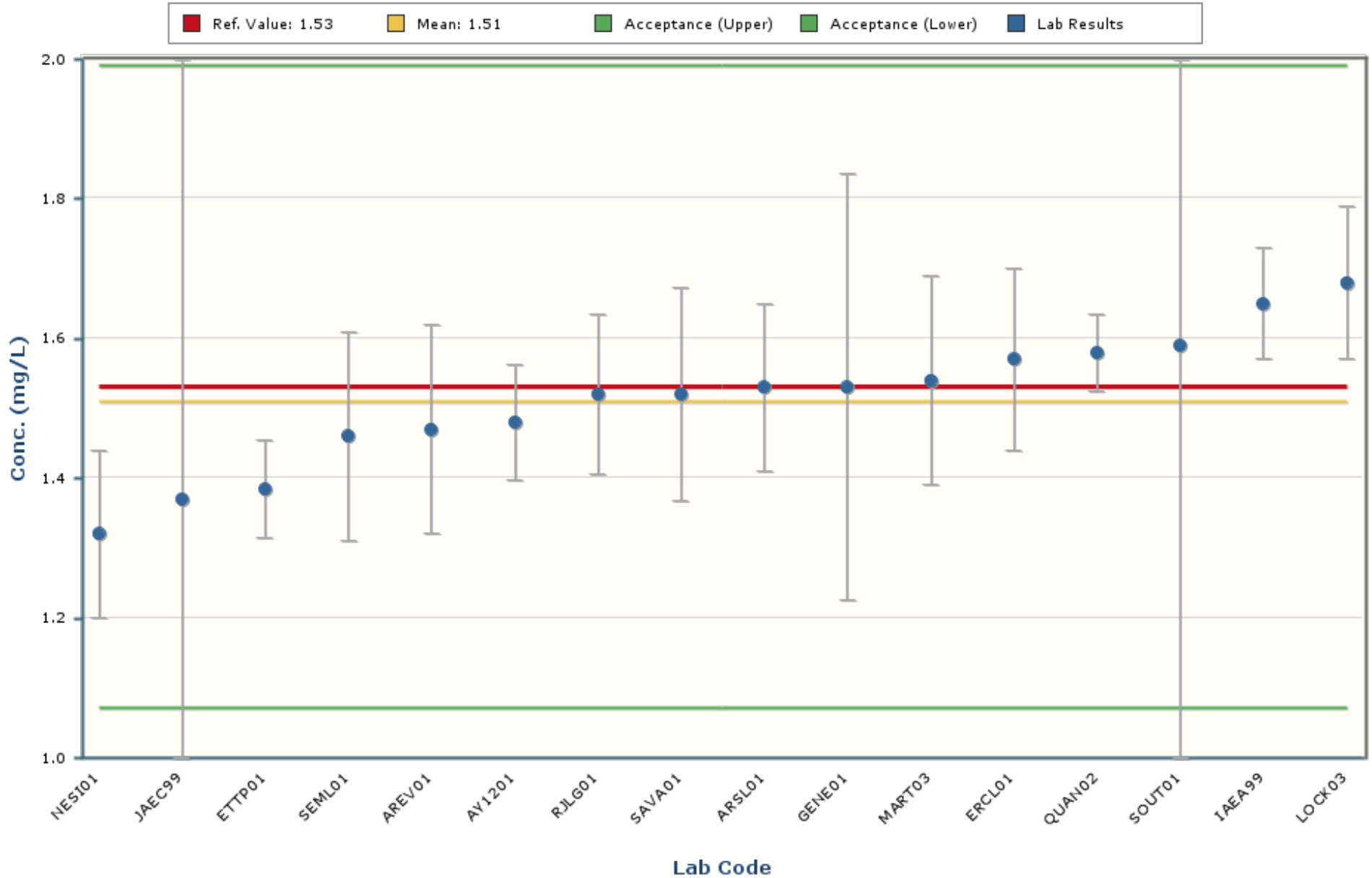
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 3.80 and 5.68 (± 5 Standard Deviations).

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

Arsenic

MAPEP-22-MaW47



Notes:

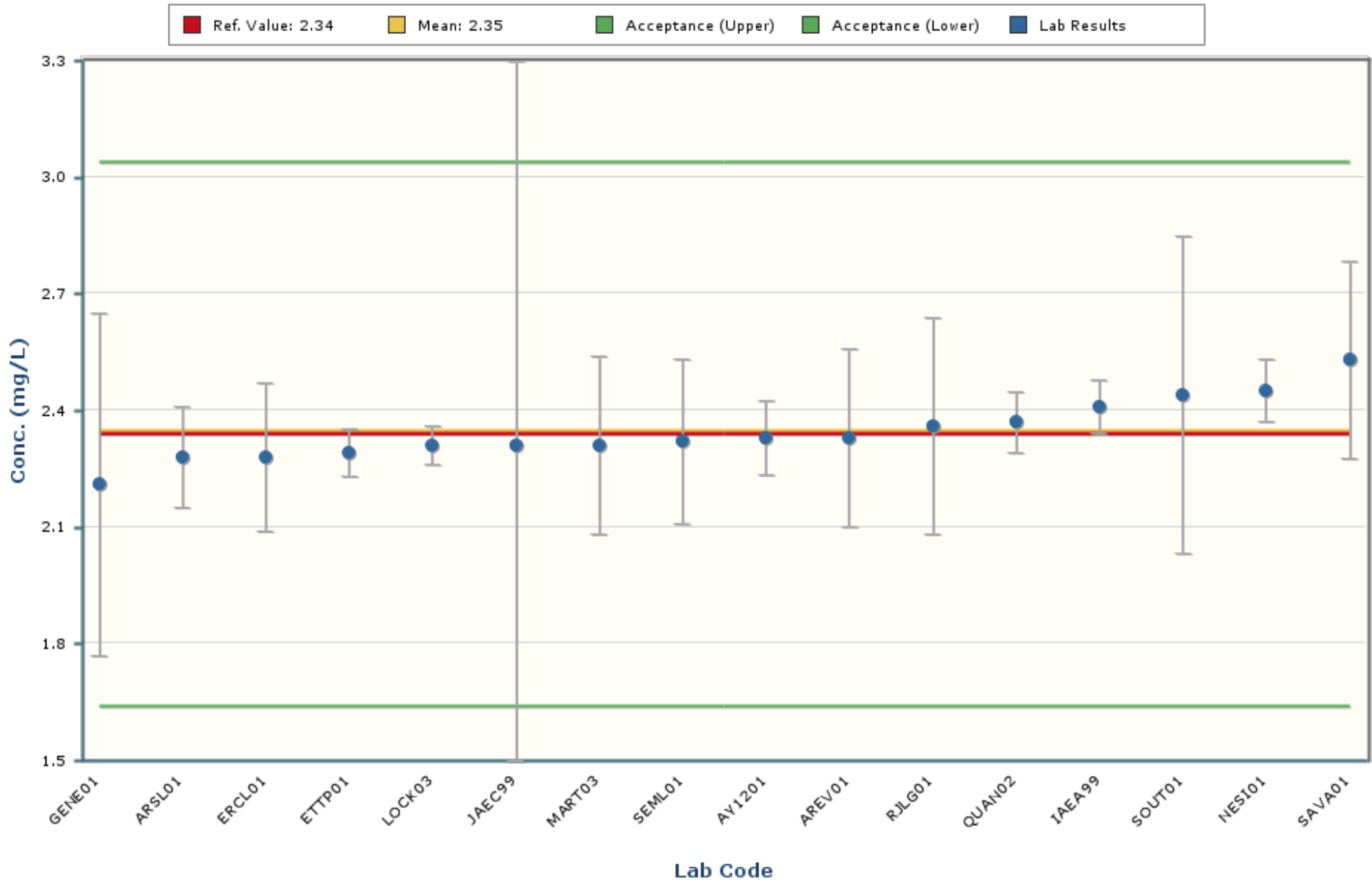
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.03 and 2.00 (± 5 Standard Deviations).

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

Barium

MAPEP-22-MaW47



Notes:

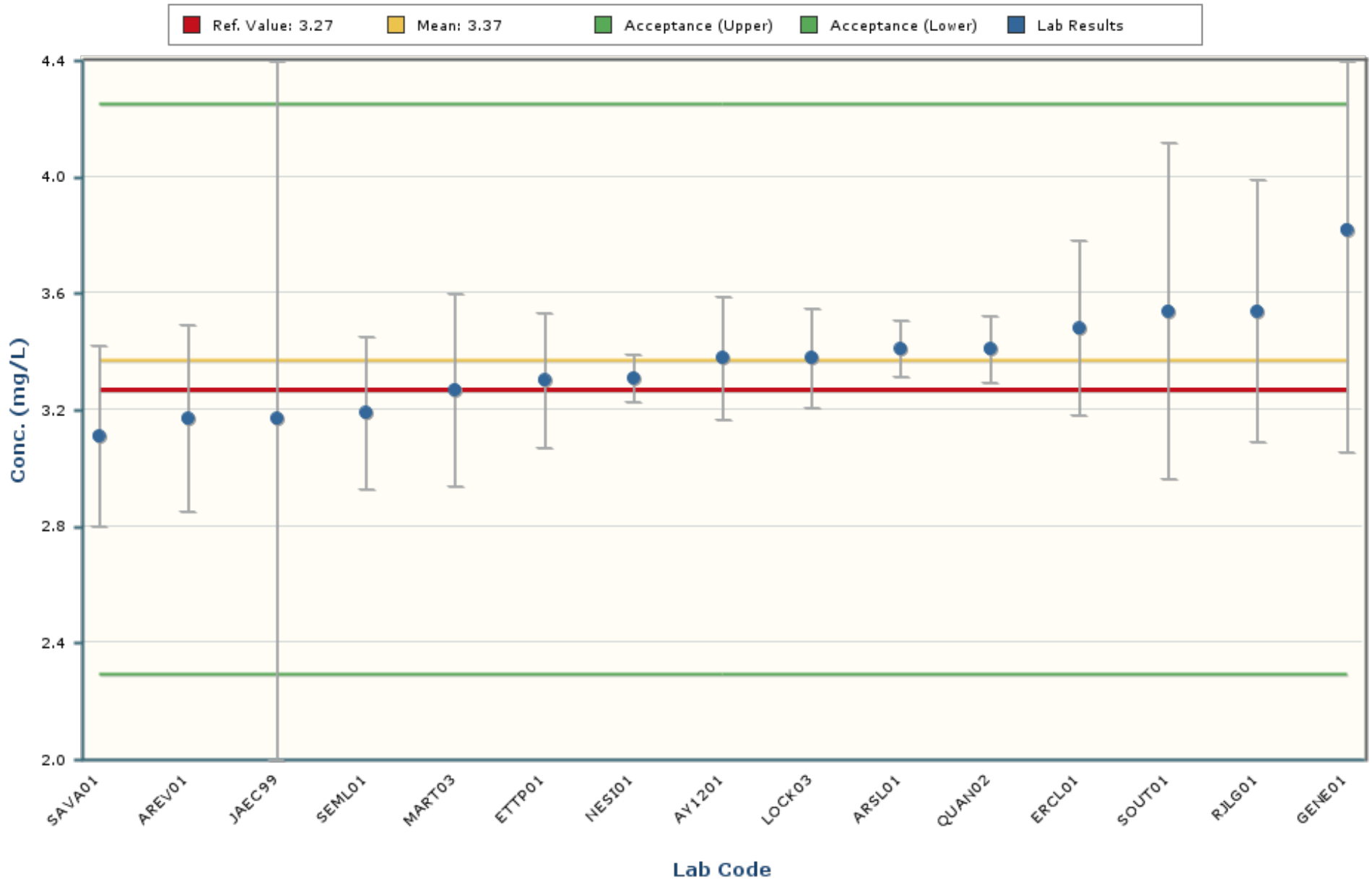
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.95 and 2.74 (± 5 Standard Deviations).

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

Beryllium

MAPEP-22-MaW47



Notes:

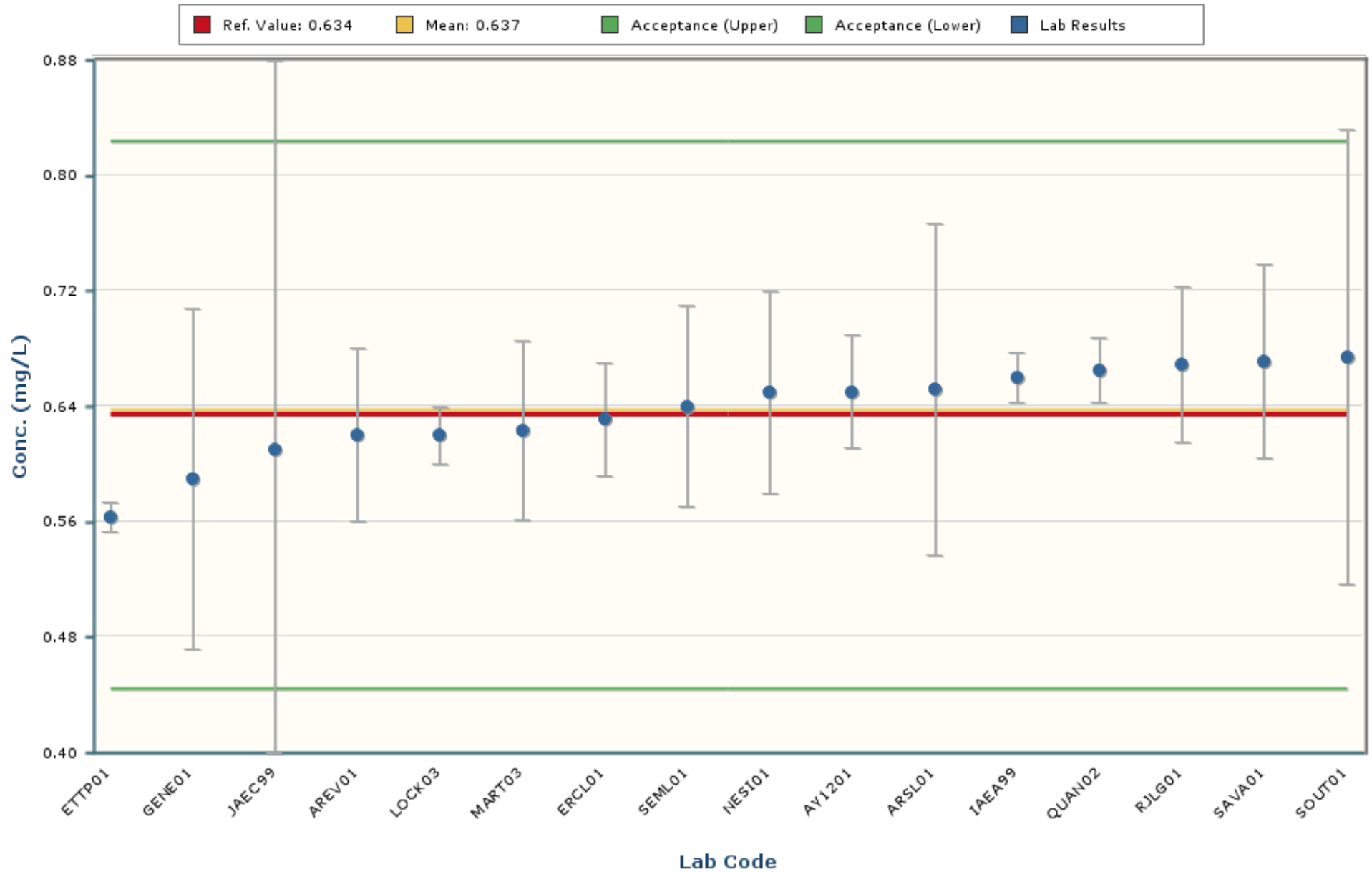
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.45 and 4.29 (± 5 Standard Deviations).

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

Cadmium

MAPEP-22-MaW47



Notes:

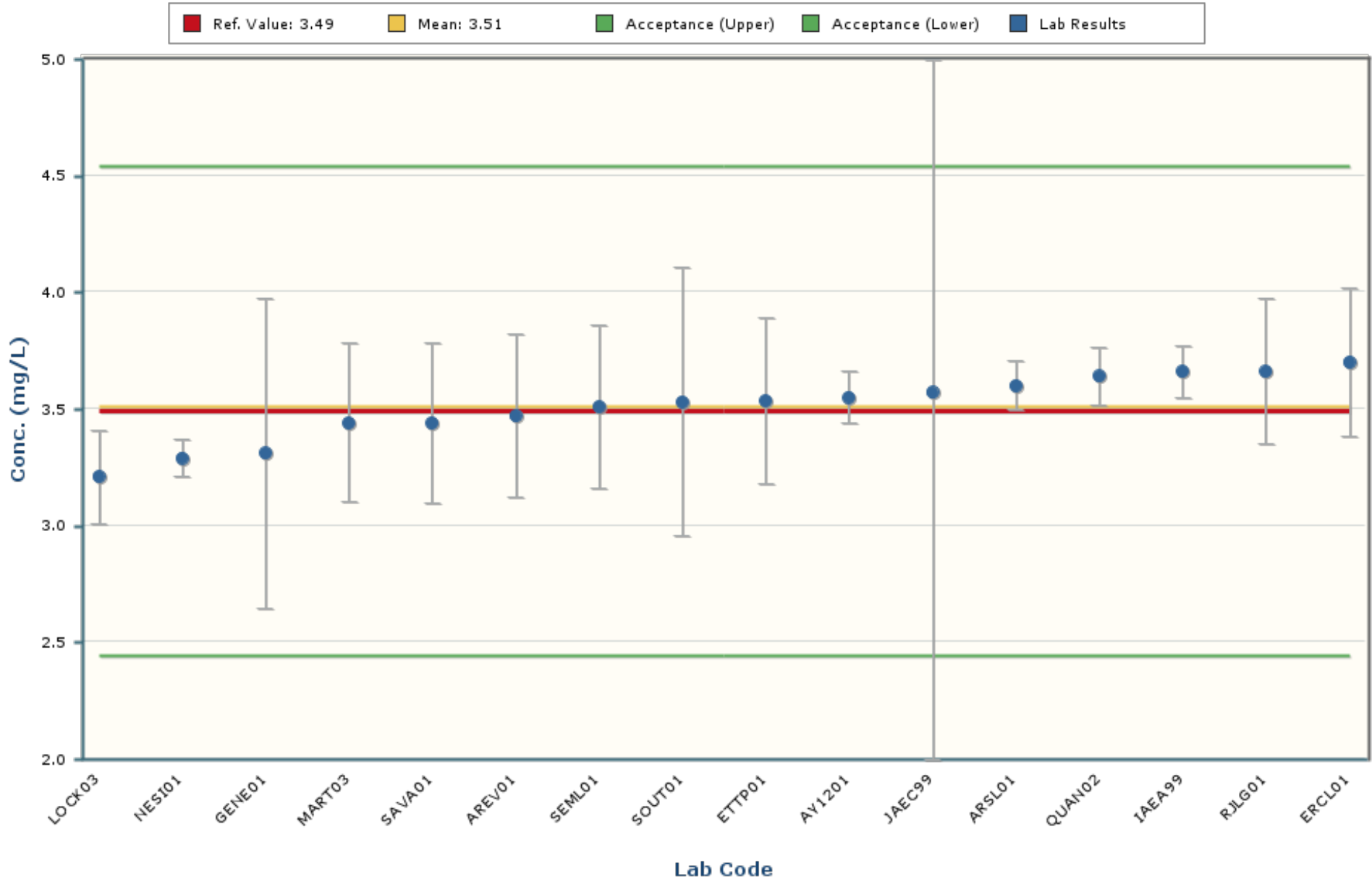
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.480 and 0.793 (± 5 Standard Deviations).

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

Chromium

MAPEP-22-MaW47



Notes:

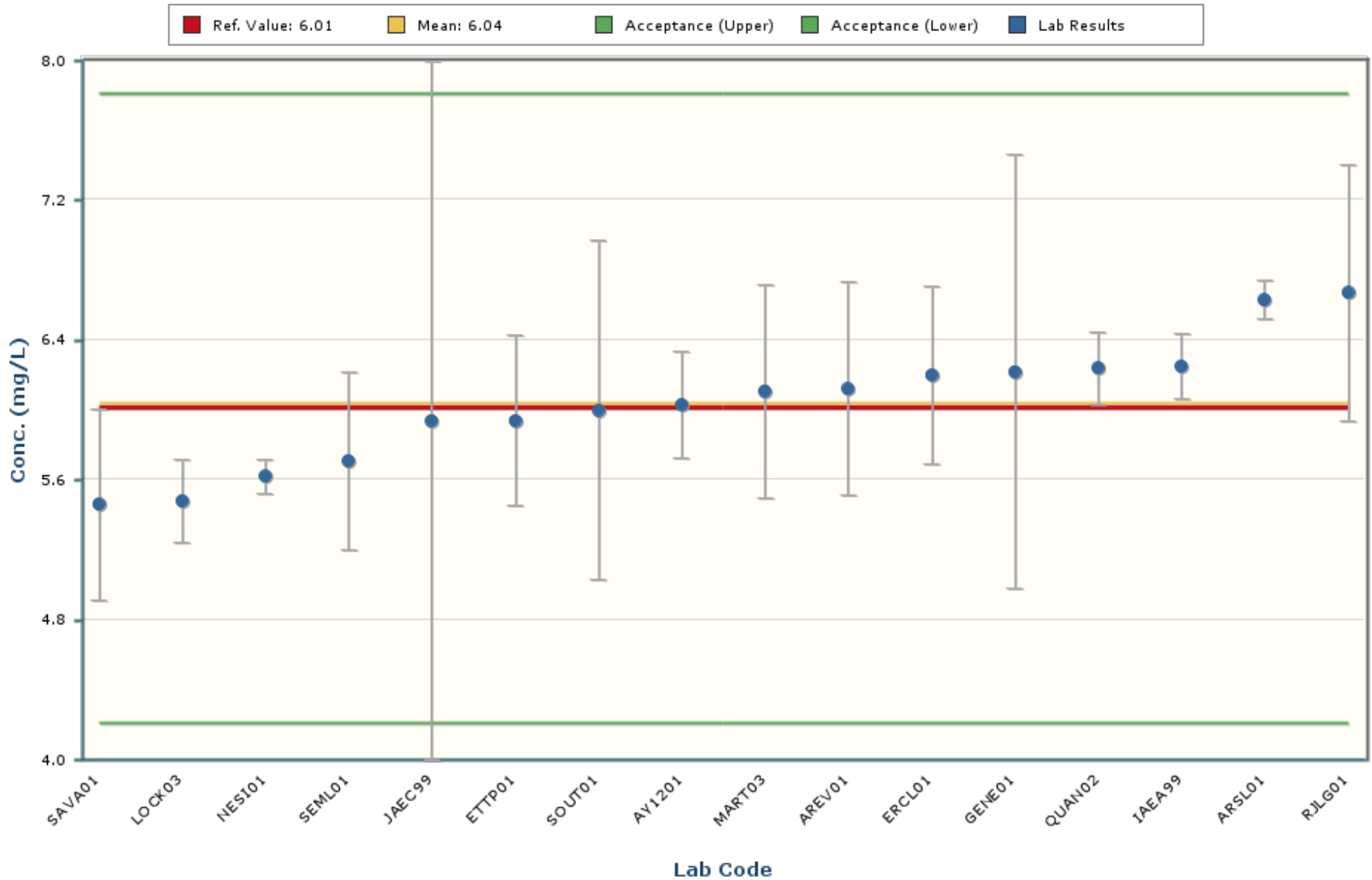
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.80 and 4.22 (± 5 Standard Deviations).

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

Cobalt

MAPEP-22-MaW47



Notes:

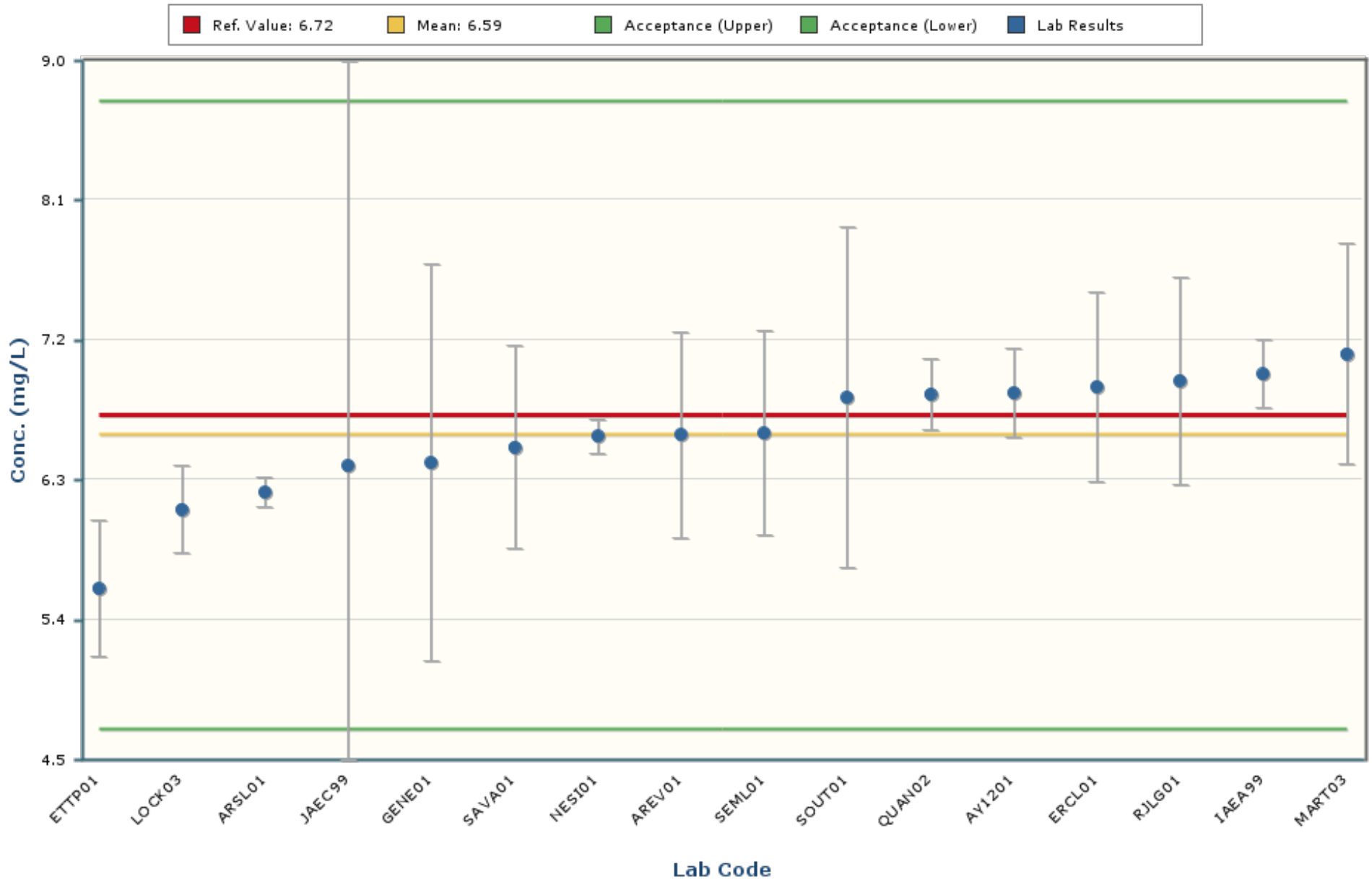
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 4.28 and 7.80 (± 5 Standard Deviations).

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

Copper

MAPEP-22-MaW47



Notes:

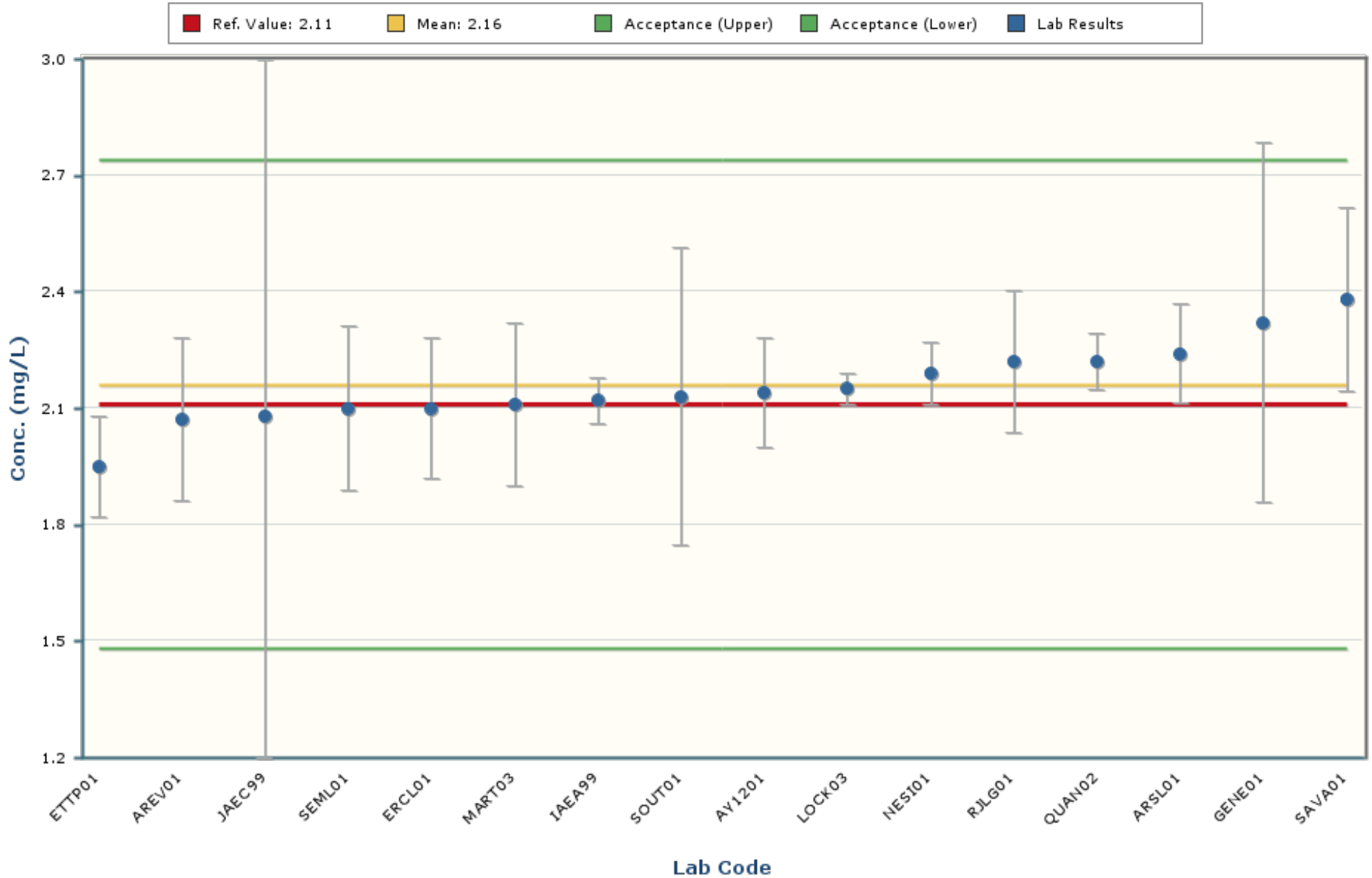
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 4.65 and 8.54 (± 5 Standard Deviations).

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

Lead

MAPEP-22-MaW47



Notes:

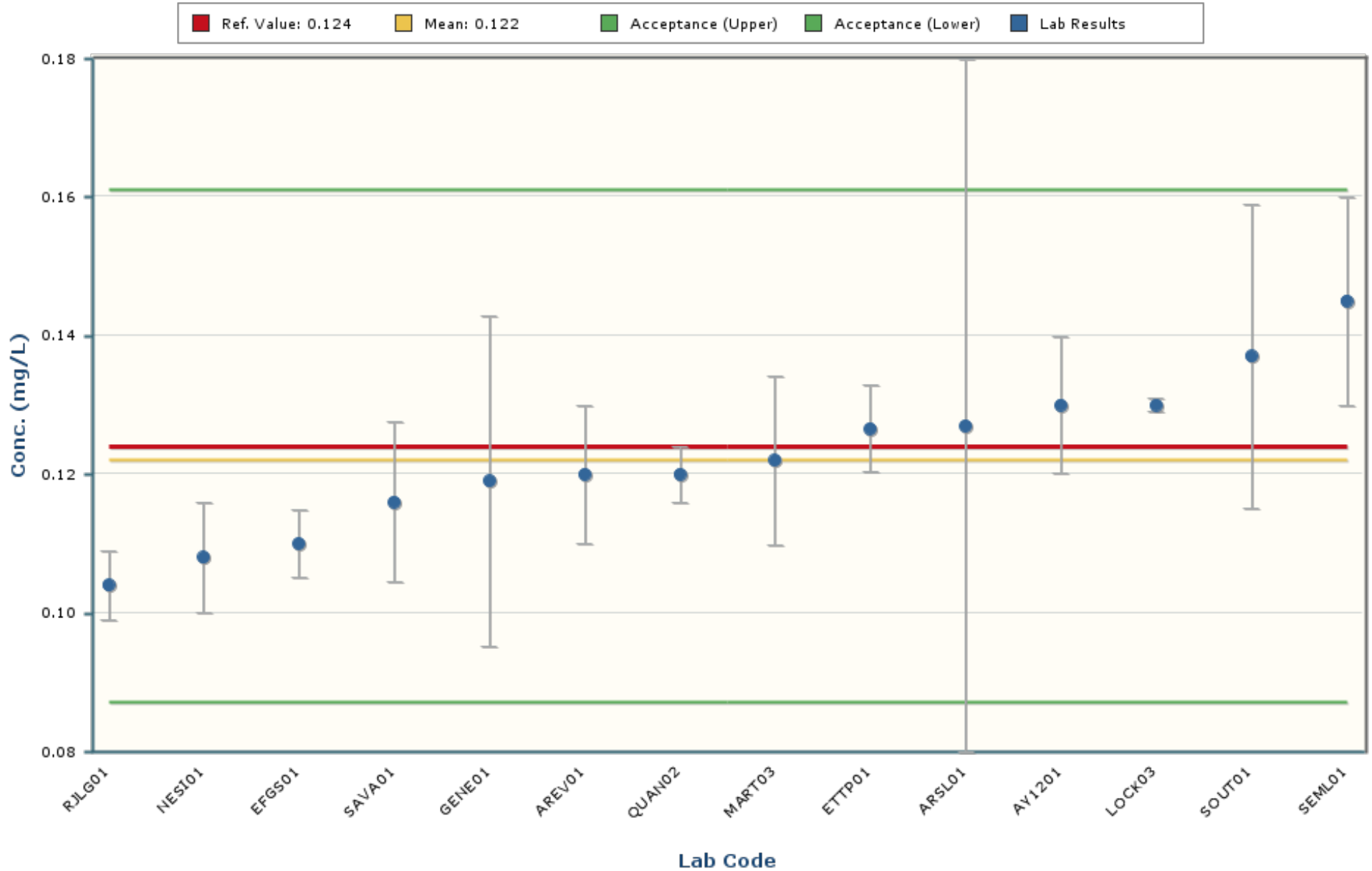
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.64 and 2.67 (± 5 Standard Deviations).

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

Mercury

MAPEP-22-MaW47



Notes:

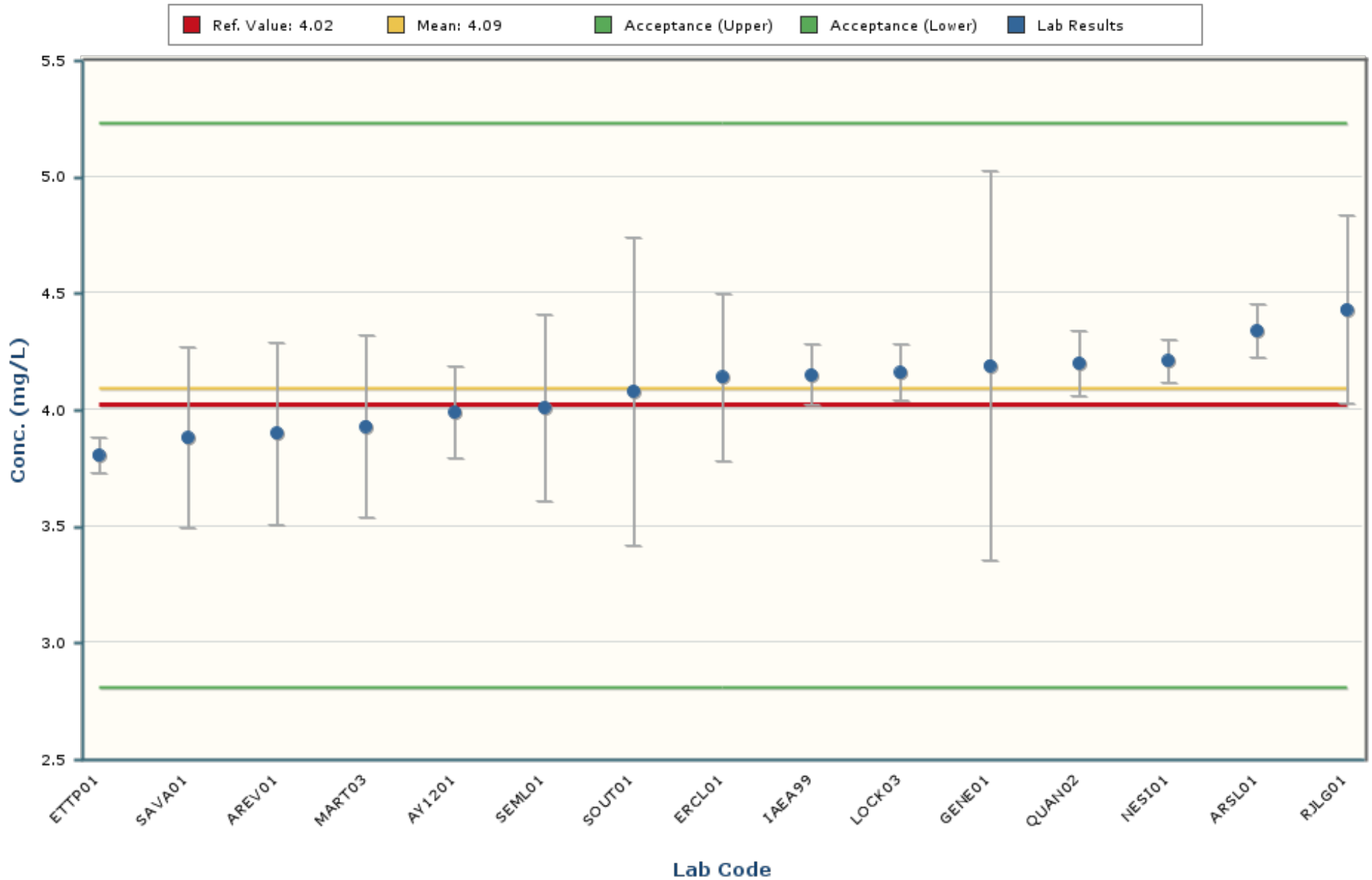
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.066 and 0.179 (± 5 Standard Deviations).

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

Nickel

MAPEP-22-MaW47



Notes:

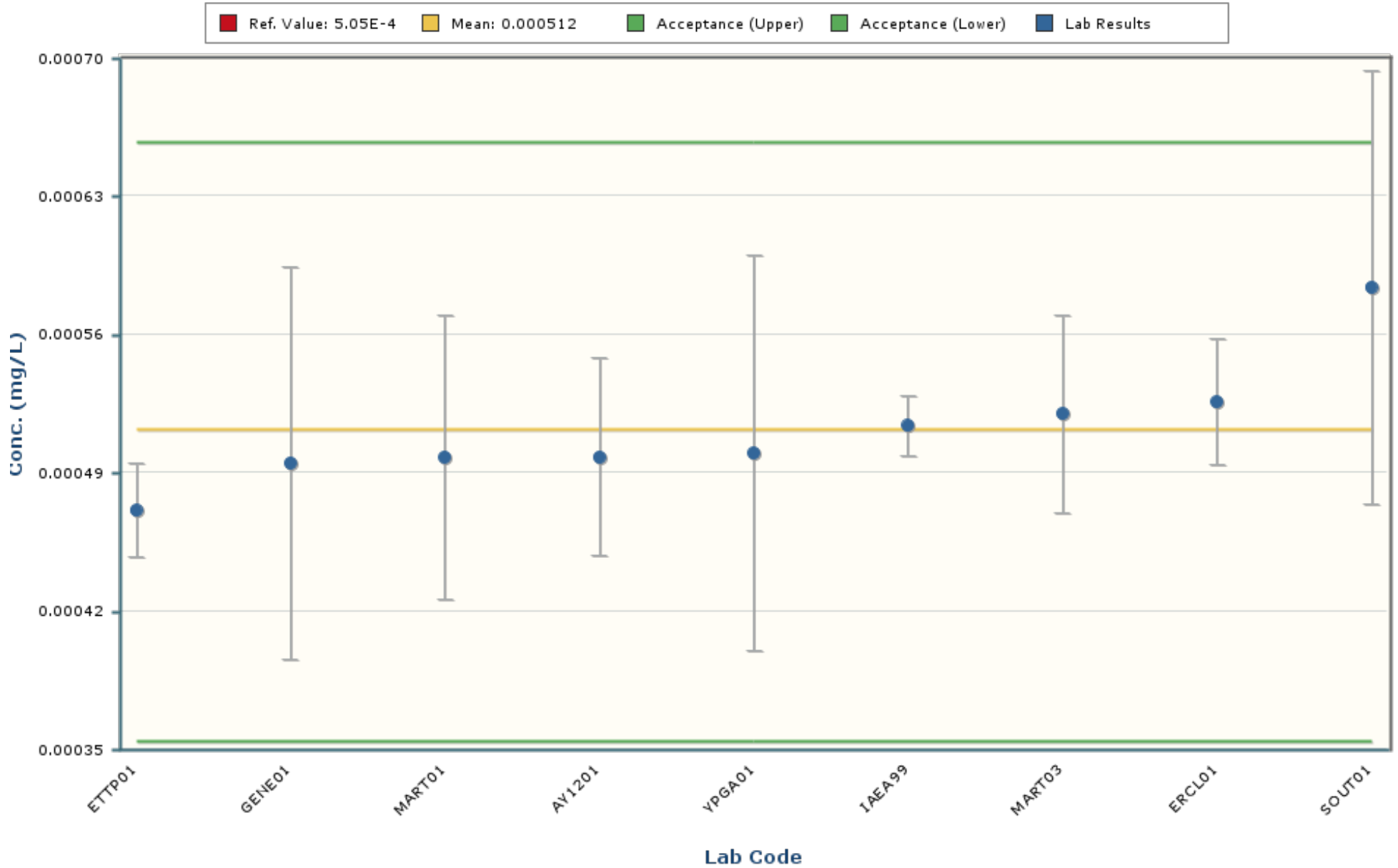
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 3.22 and 4.97 (± 5 Standard Deviations).

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

Uranium-235

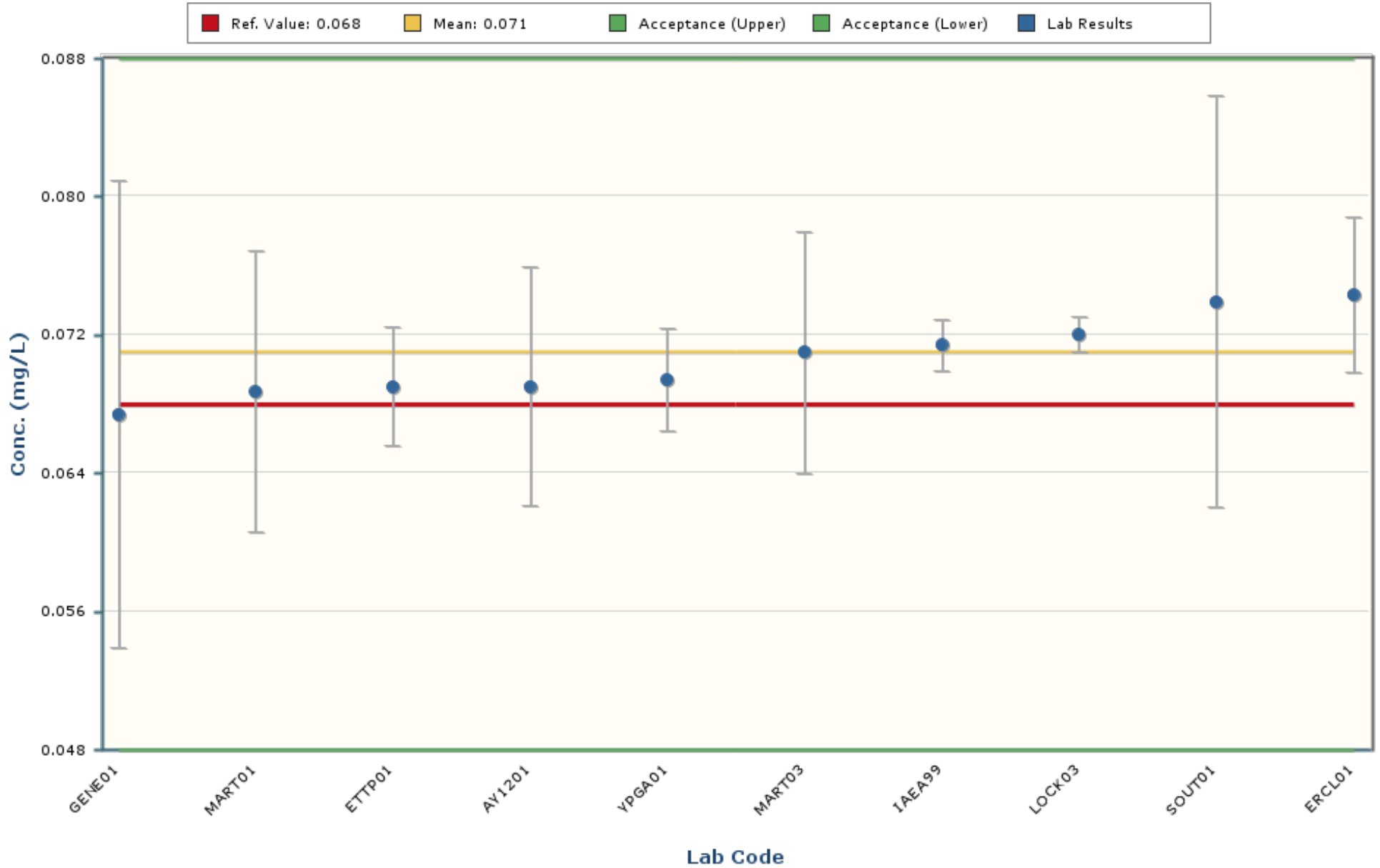
MAPEP-22-MaW47



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.000354 and 0.000669 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± 1 standard deviation.

Uranium-238

MAPEP-22-MaW47



Notes:

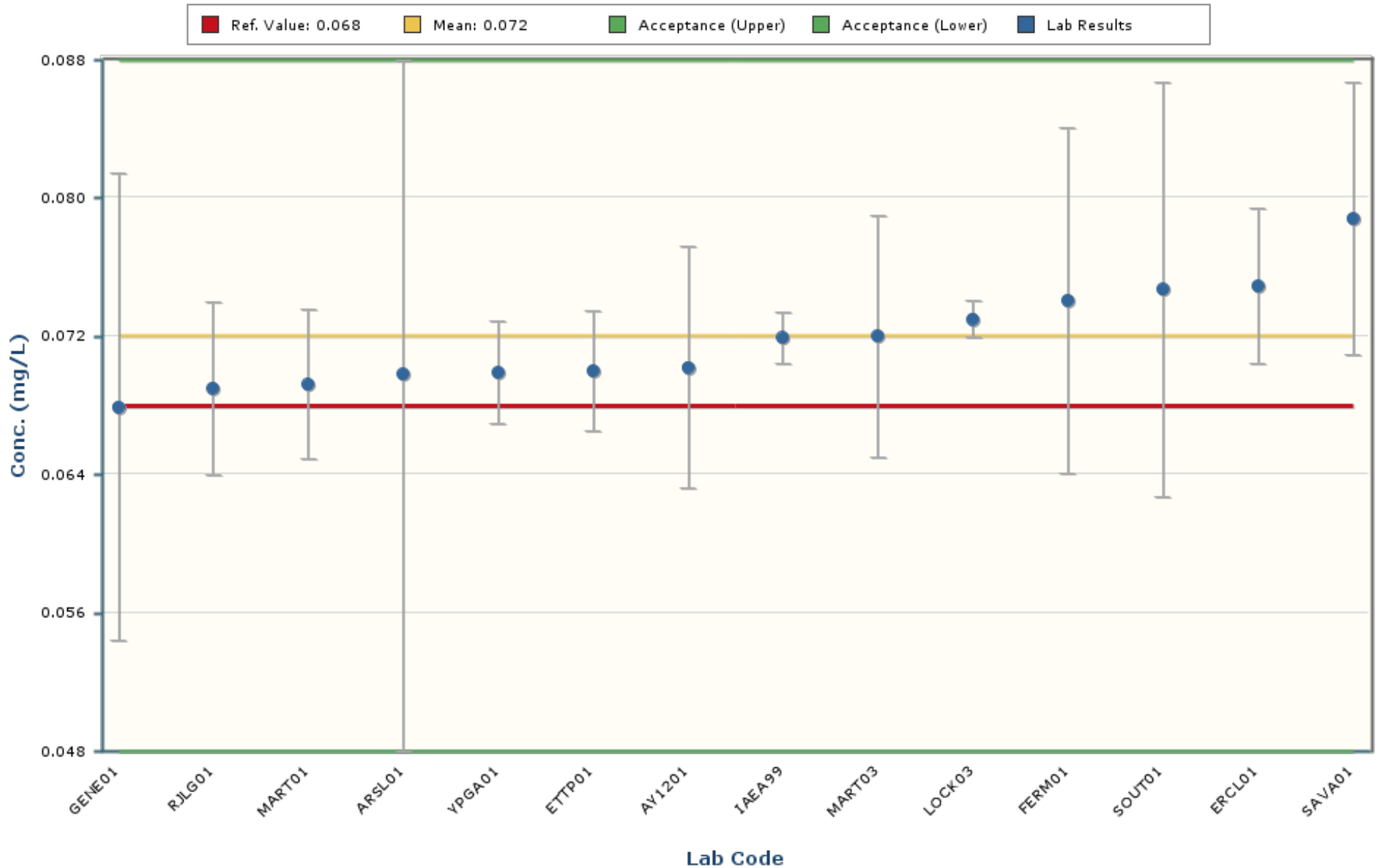
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.059 and 0.082 (± 5 Standard Deviations).

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

Uranium-Total

MAPEP-22-MaW47



Notes:

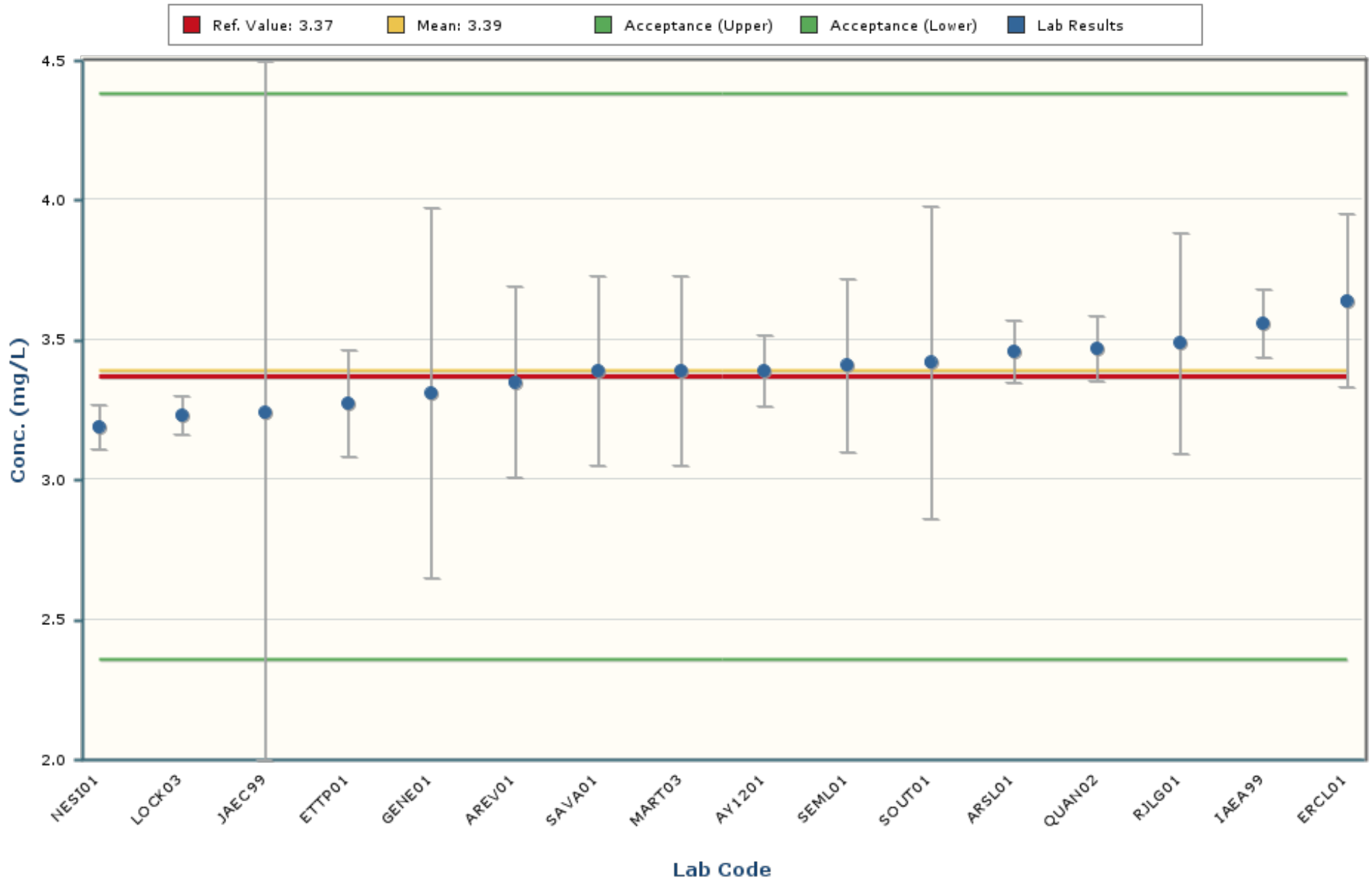
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.057 and 0.087 (± 5 Standard Deviations).

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

Vanadium

MAPEP-22-MaW47



Notes:

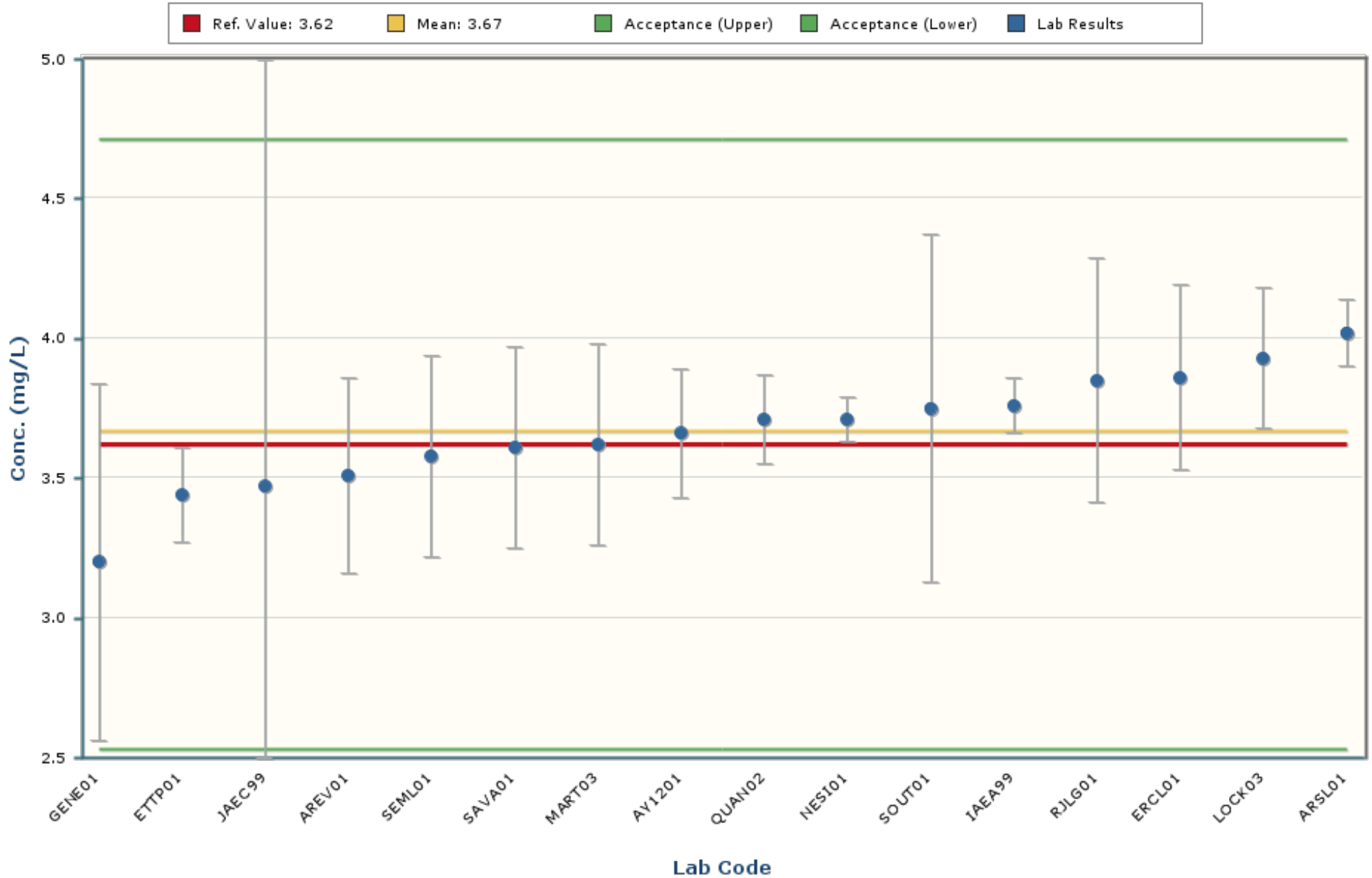
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.78 and 4.00 (± 5 Standard Deviations).

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

Zinc

MAPEP-22-MaW47



Notes:

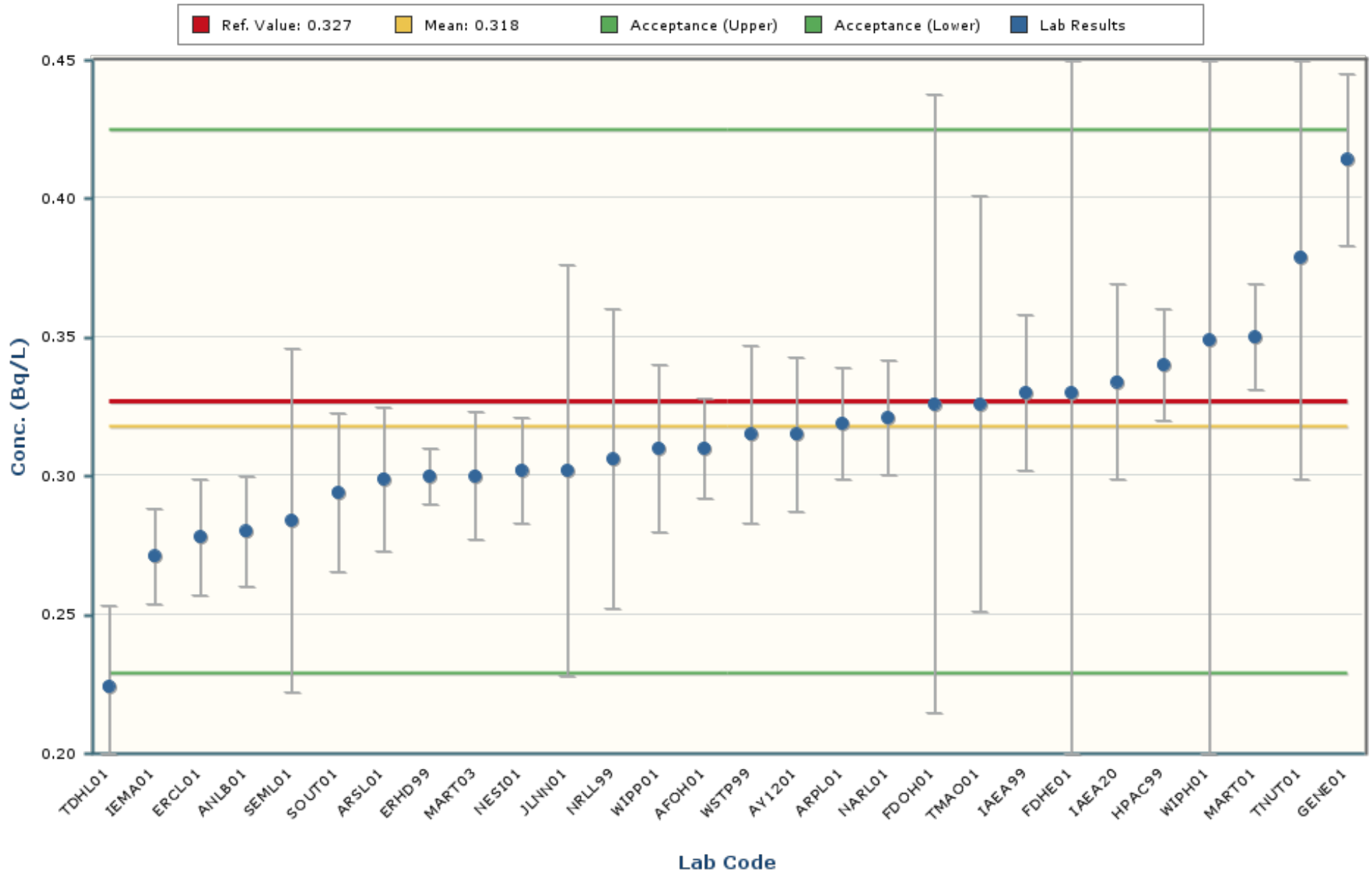
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.64 and 4.69 (± 5 Standard Deviations).

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

Americium-241

MAPEP-22-MaW47



Notes:

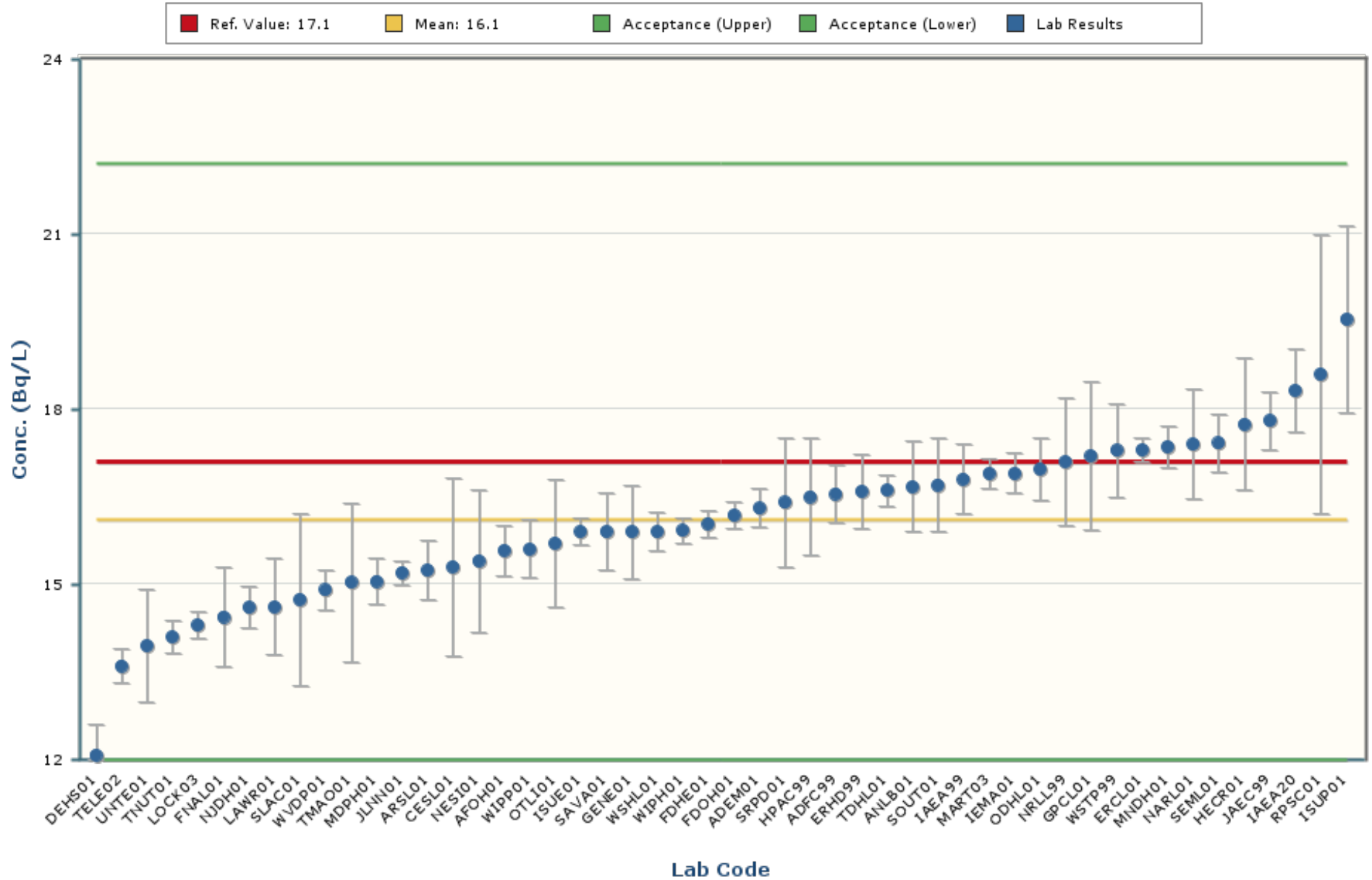
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.163 and 0.473 (± 5 Standard Deviations).

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

Cesium-134

MAPEP-22-MaW47



Notes:

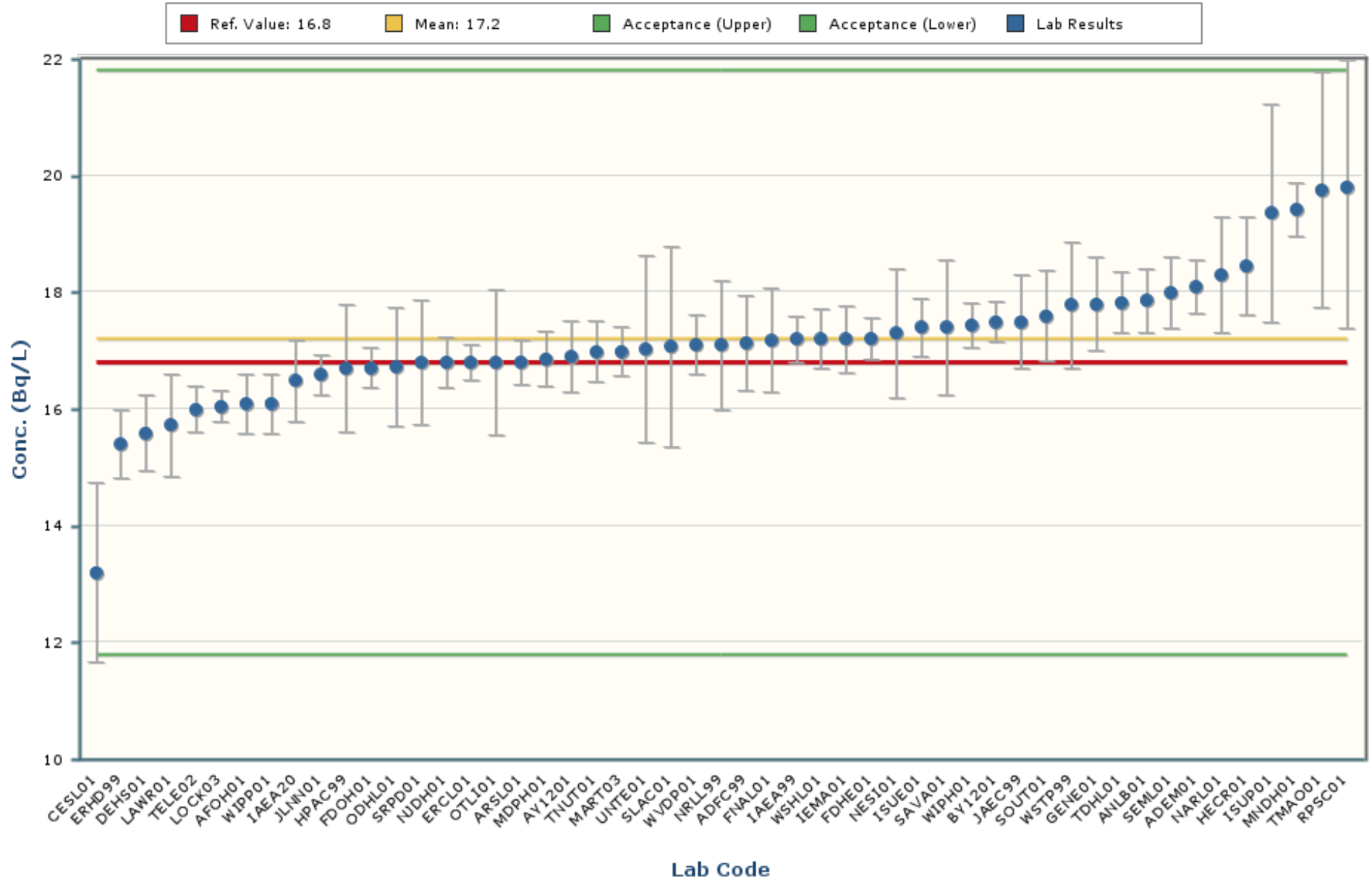
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 9.2 and 23.0 (± 5 Standard Deviations).

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

Cesium-137

MAPEP-22-MaW47



Notes:

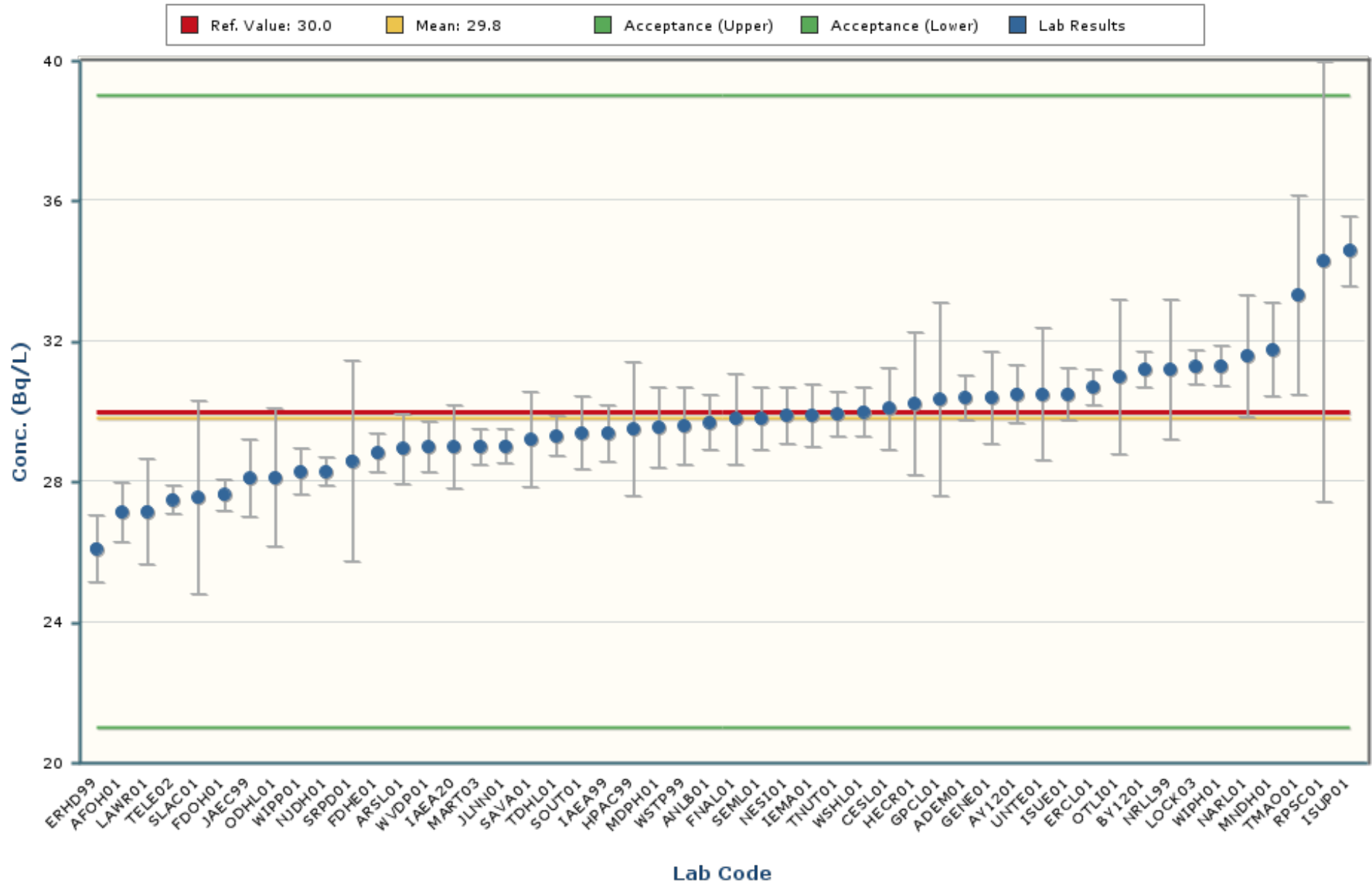
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 11.6 and 22.7 (± 5 Standard Deviations).

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

Cobalt-57

MAPEP-22-MaW47



Notes:

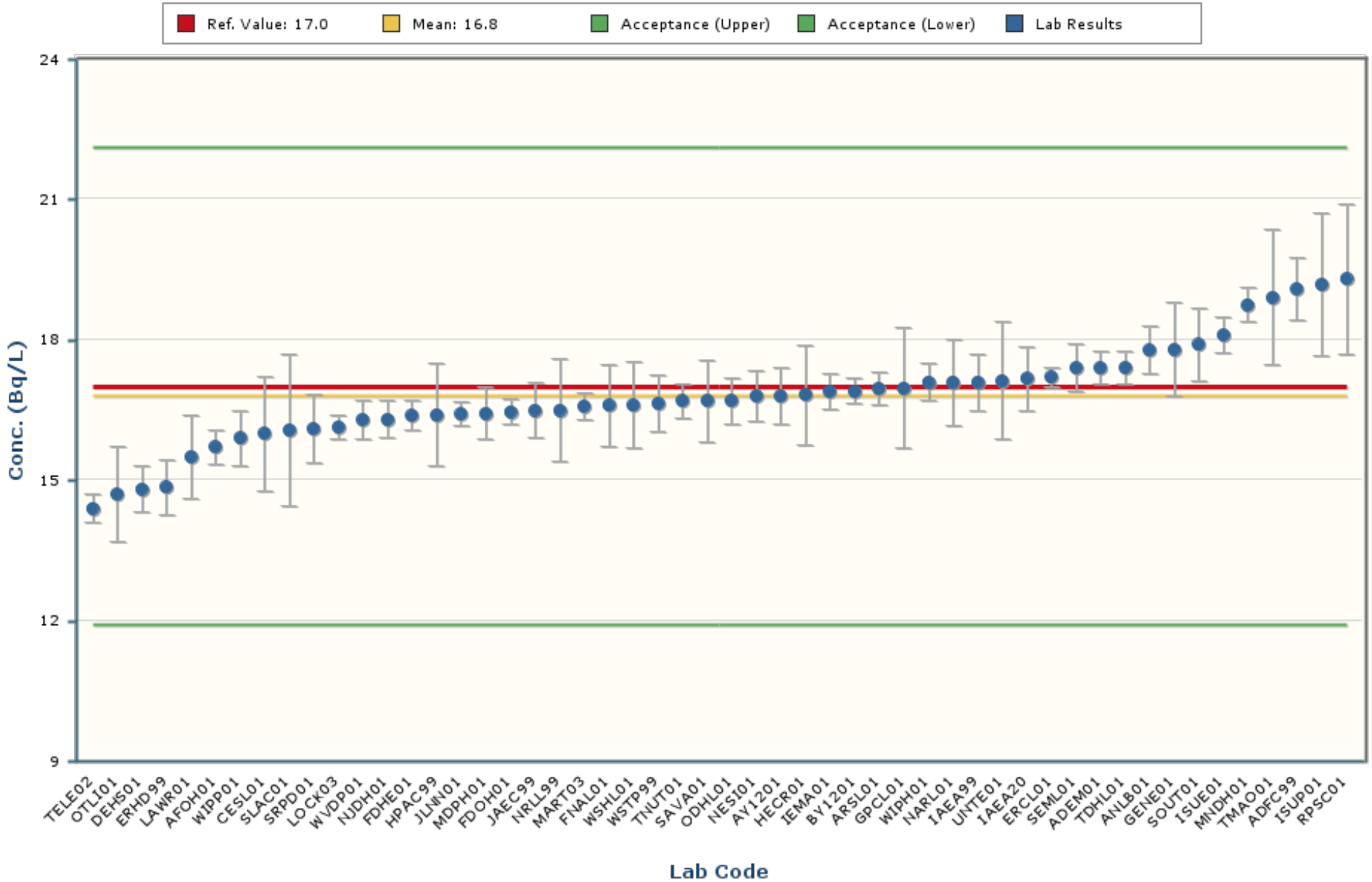
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 21.4 and 38.1 (± 5 Standard Deviations).

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

Cobalt-60

MAPEP-22-MaW47



Notes:

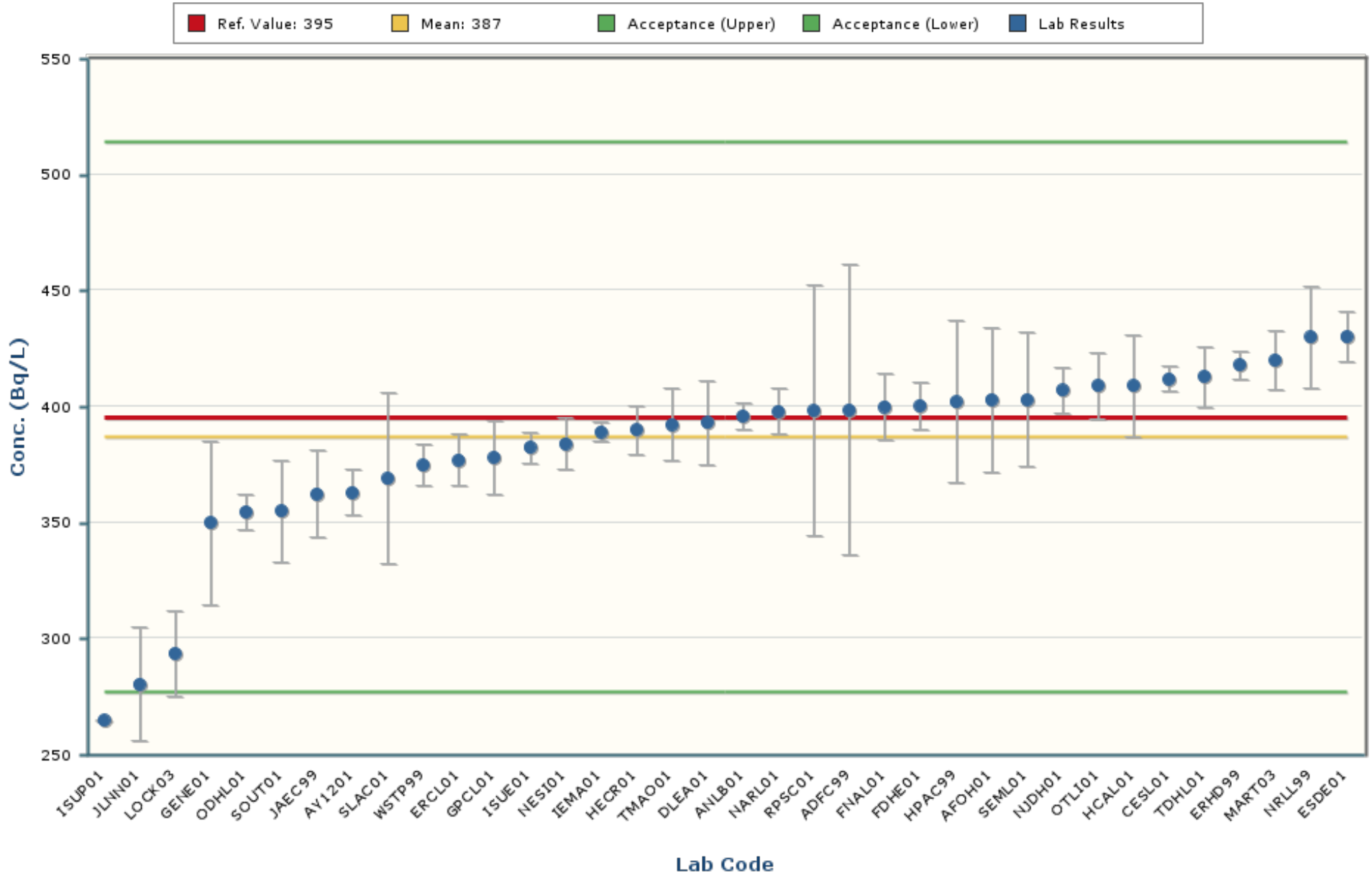
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 11.5 and 22.1 (± 5 Standard Deviations).

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

Hydrogen-3

MAPEP-22-MaW47



Notes:

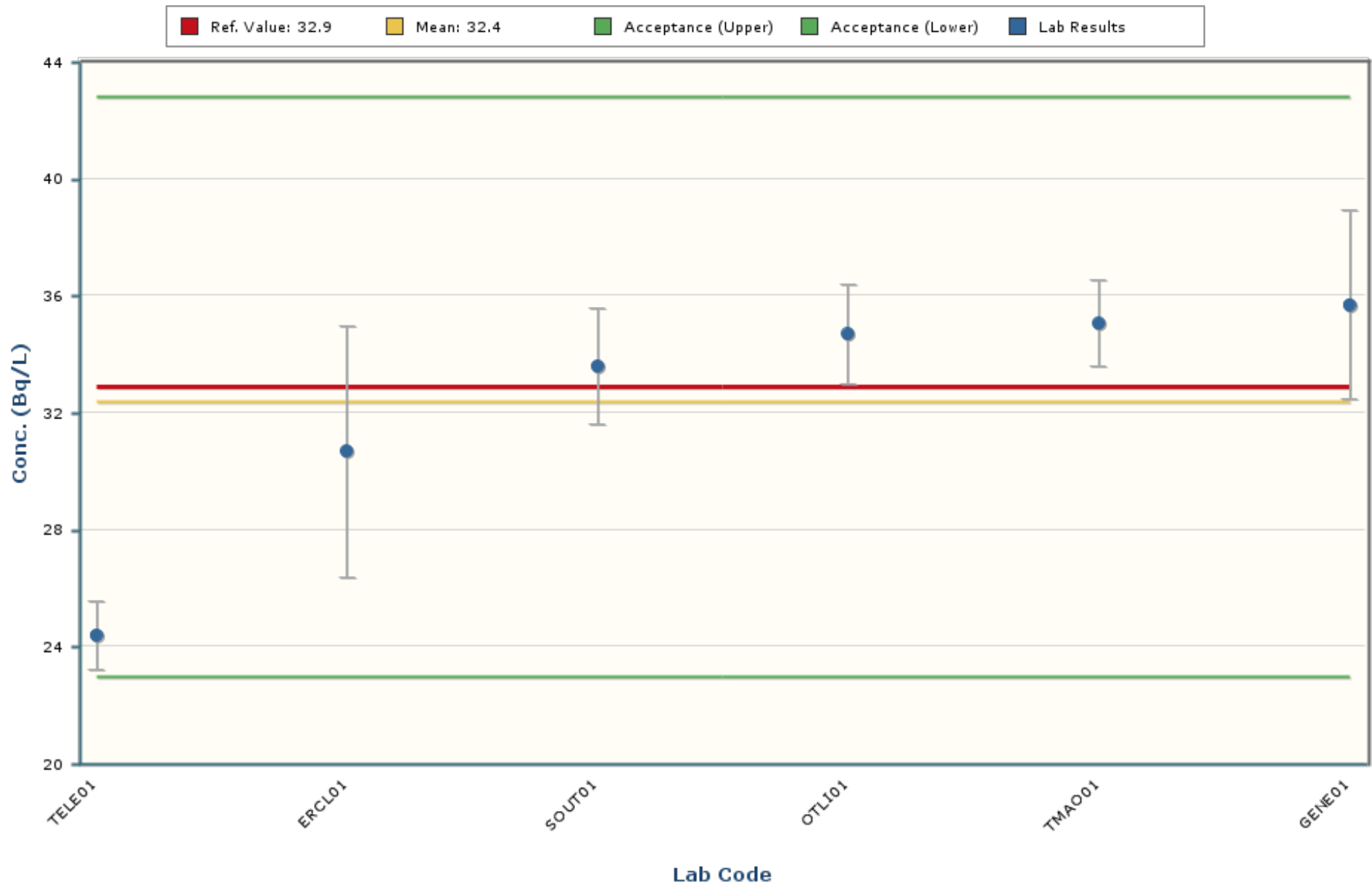
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 225 and 548 (± 5 Standard Deviations).

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

Nickel-63

MAPEP-22-MaW47



Notes:

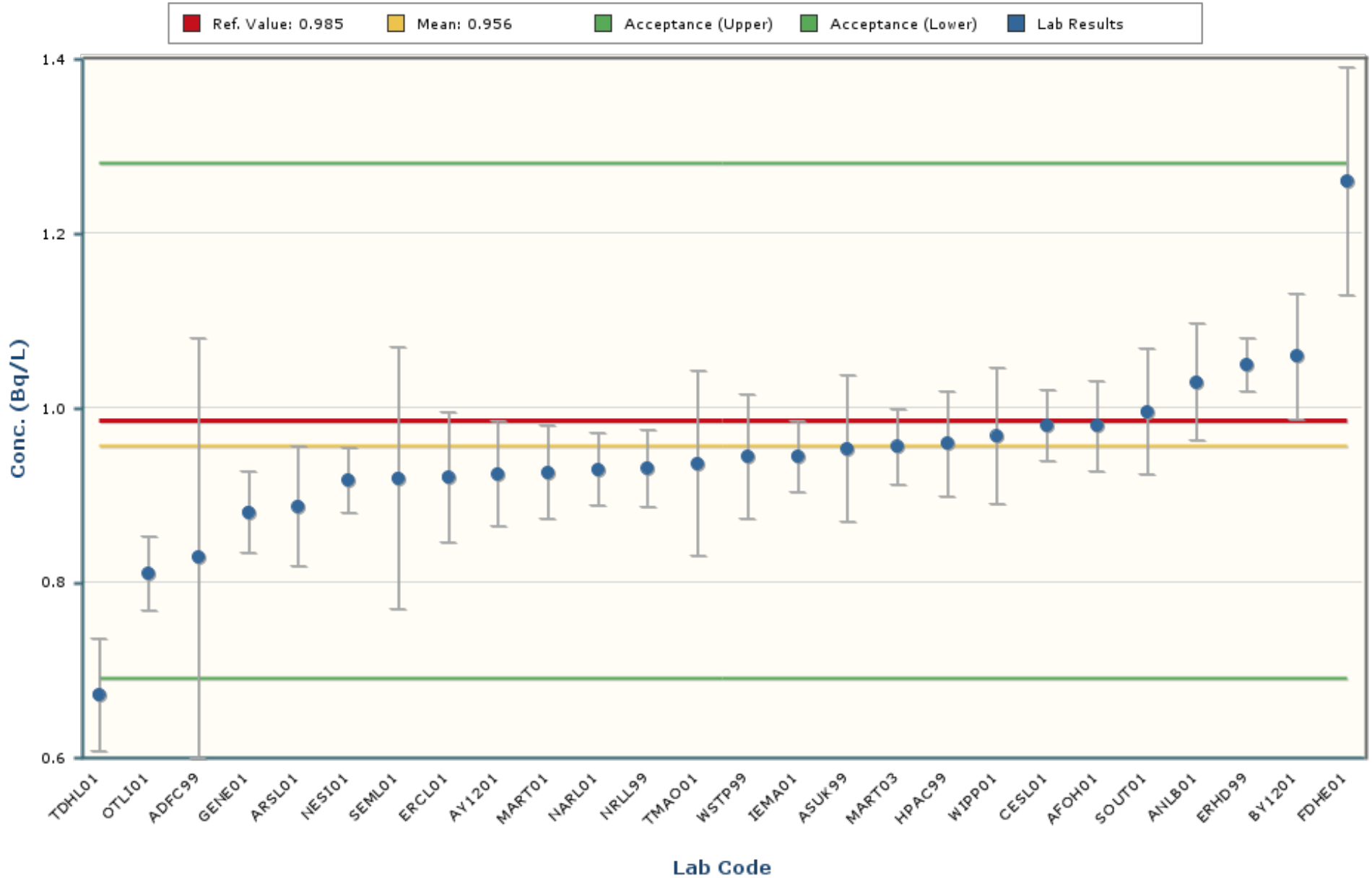
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 11.0 and 53.8 (± 5 Standard Deviations).

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

Plutonium-238

MAPEP-22-MaW47



Notes:

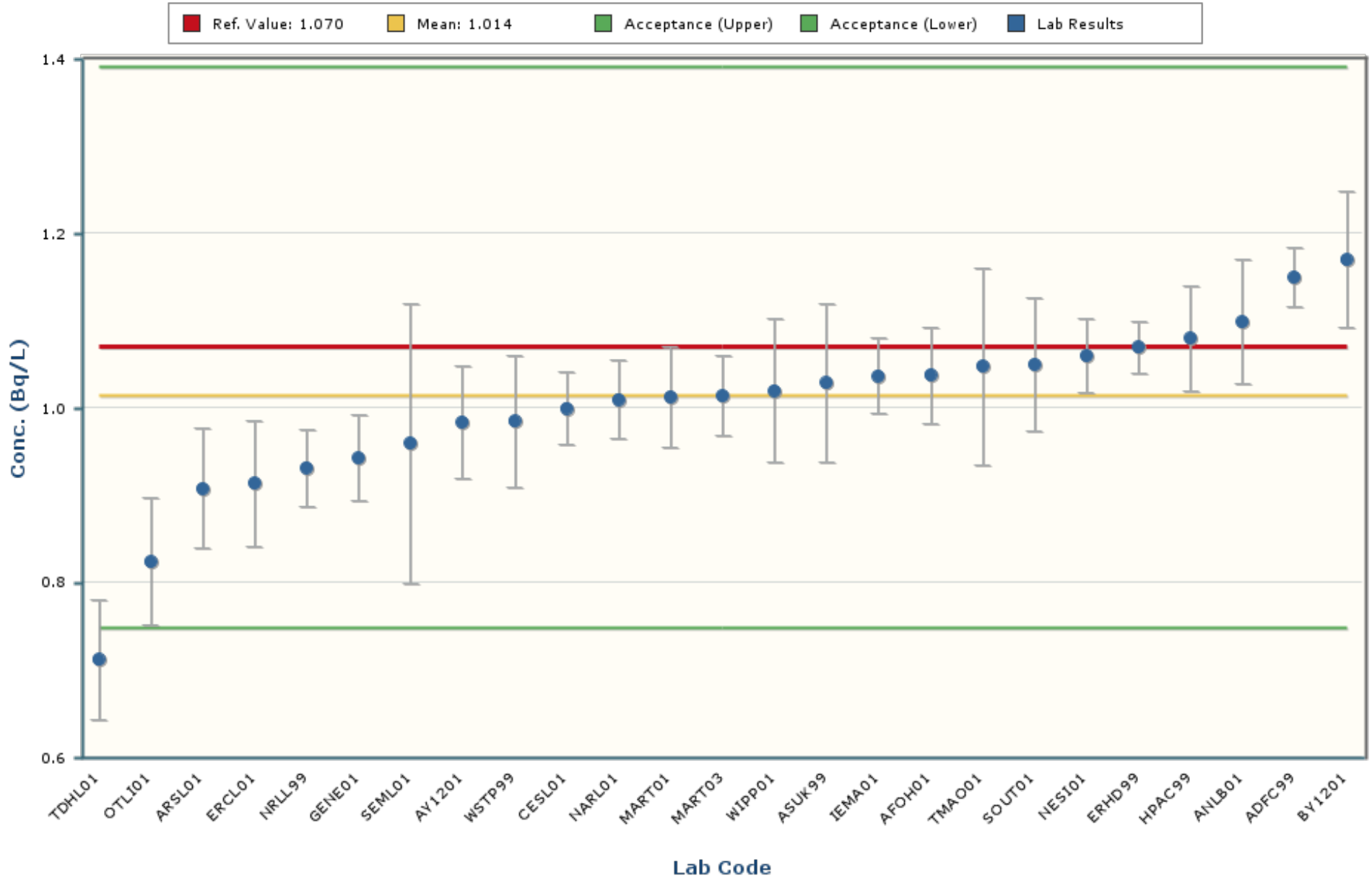
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.529 and 1.383 (± 5 Standard Deviations).

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

Plutonium-239/240

MAPEP-22-MaW47



Notes:

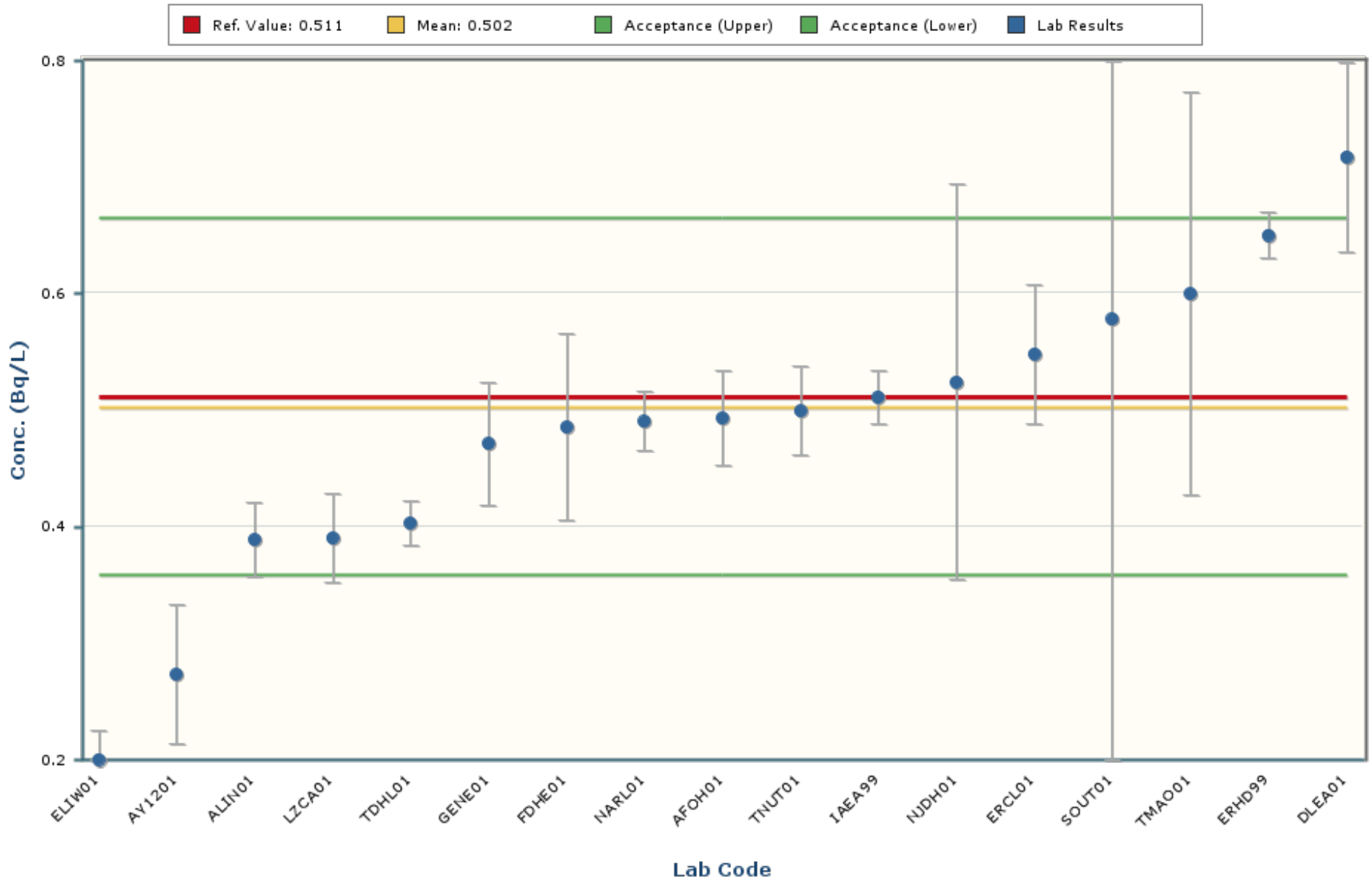
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.628 and 1.401 (± 5 Standard Deviations).

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

Radium-226

MAPEP-22-MaW47



Notes:

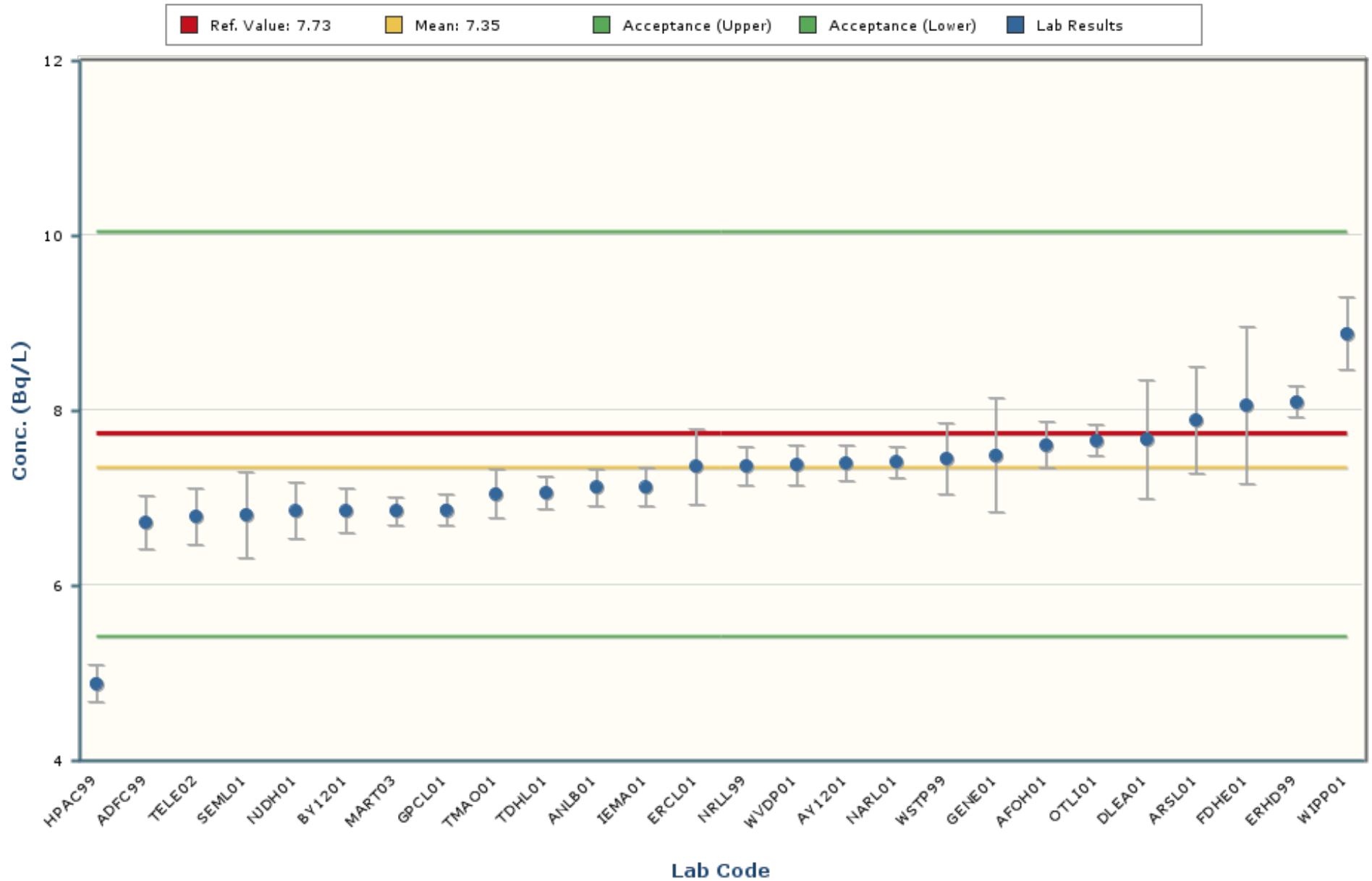
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.118 and 0.886 (± 5 Standard Deviations).

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

Strontium-90

MAPEP-22-MaW47



Notes:

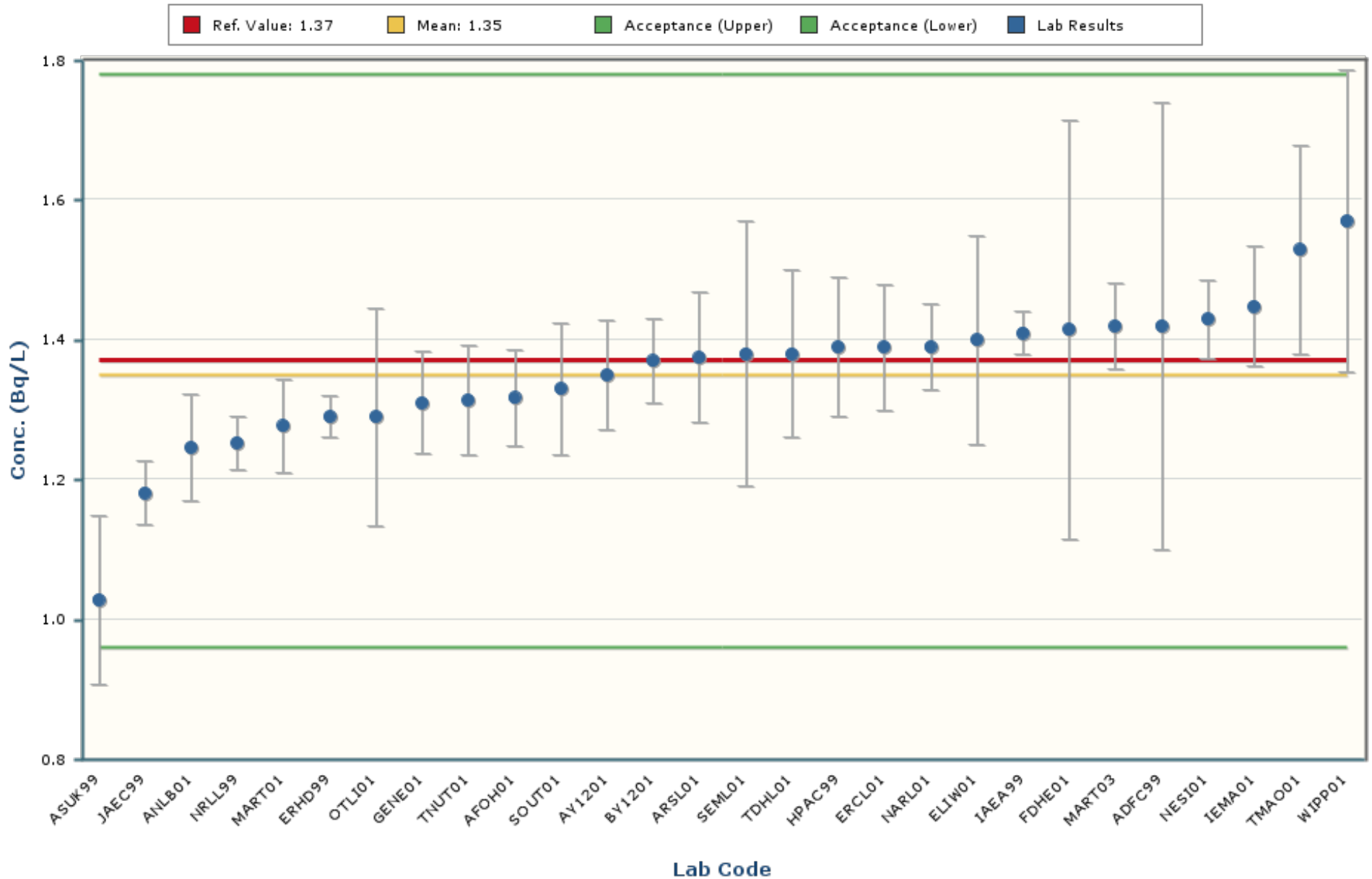
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 4.80 and 9.91 (± 5 Standard Deviations).

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

Uranium-234

MAPEP-22-MaW47



Notes:

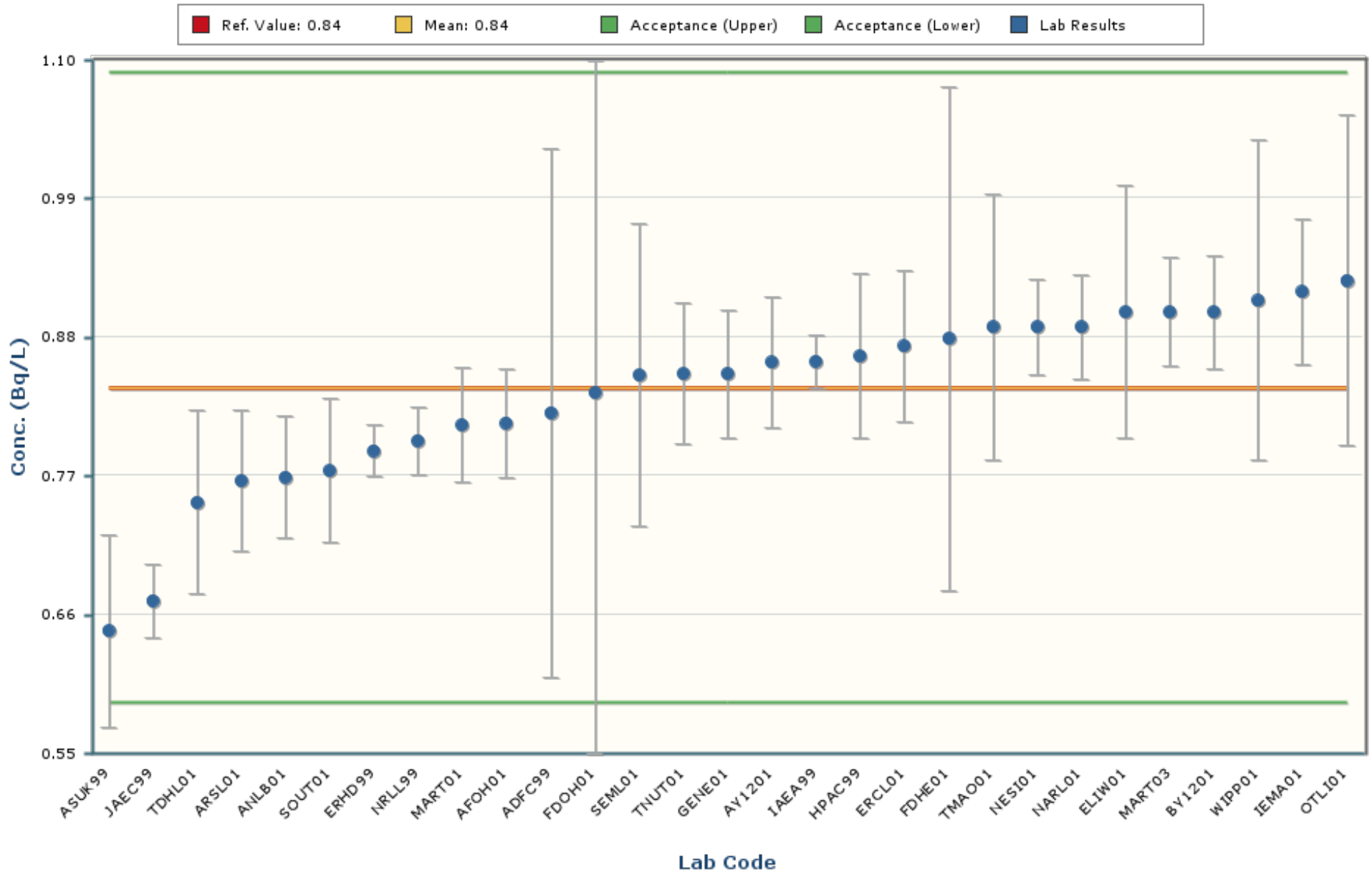
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.83 and 1.87 (± 5 Standard Deviations).

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

Uranium-238

MAPEP-22-MaW47



Notes:

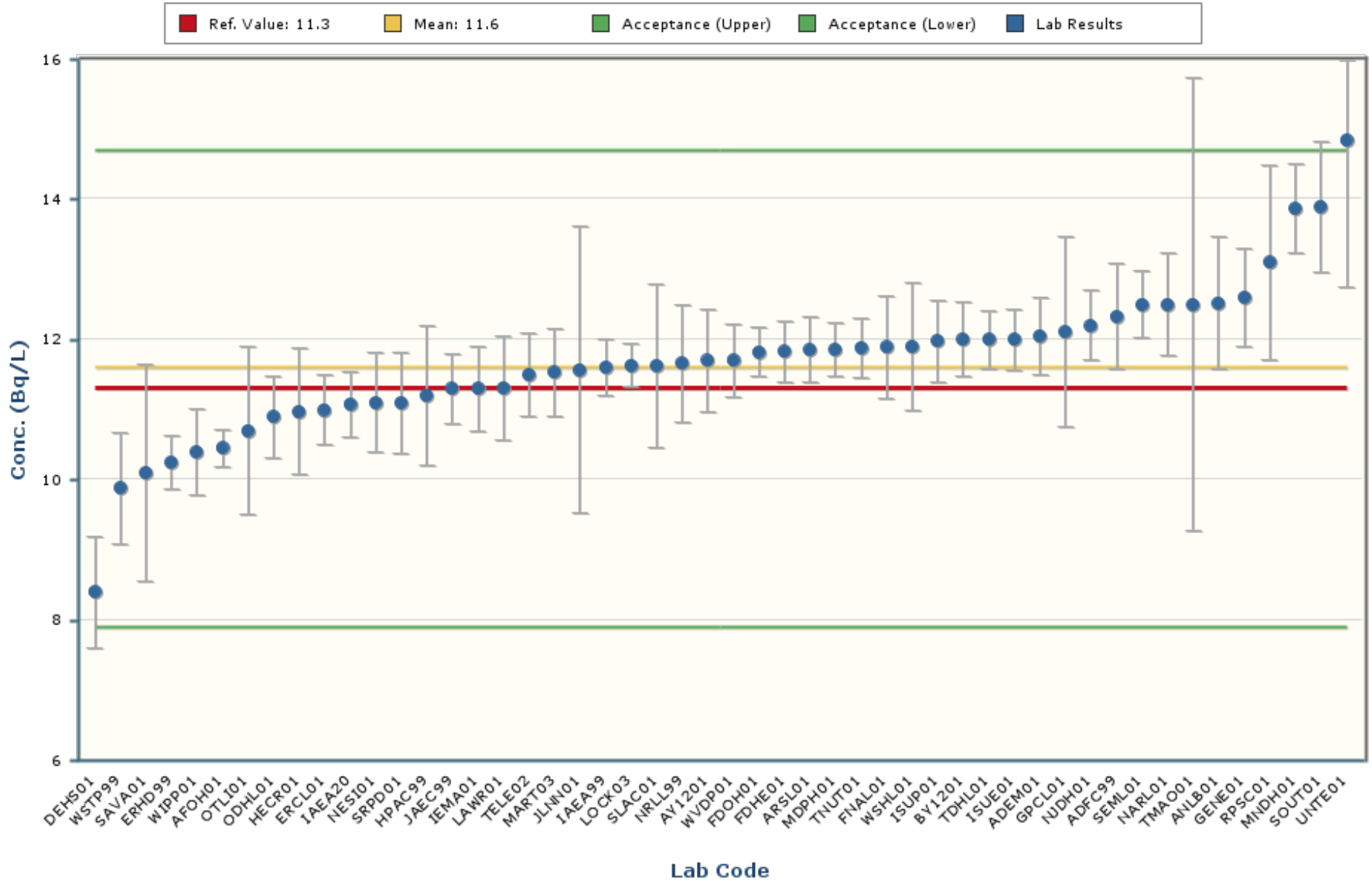
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.49 and 1.18 (± 5 Standard Deviations).

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

Zinc-65

MAPEP-22-MaW47



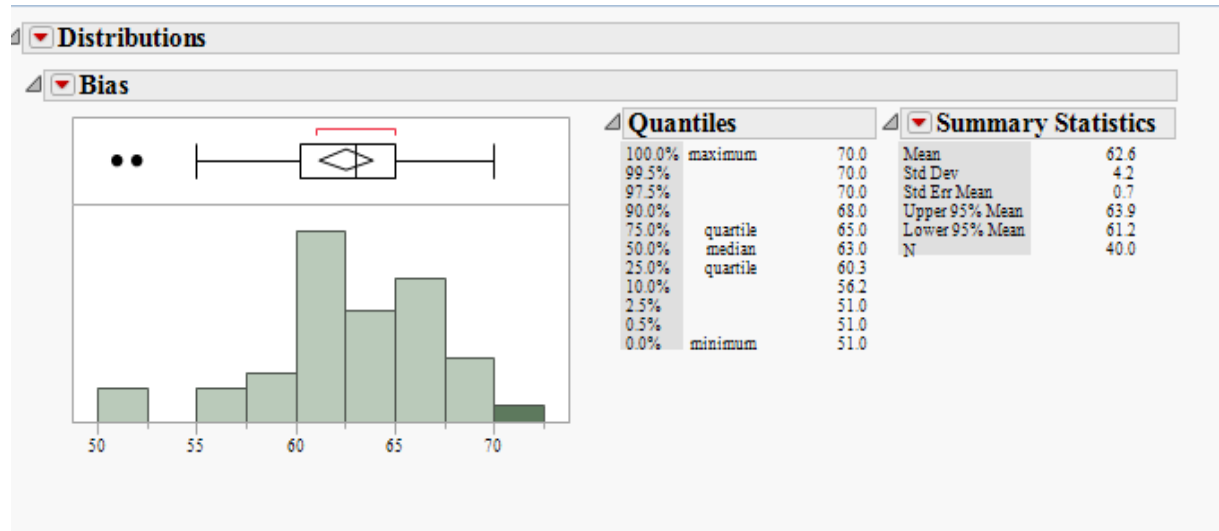
Notes:

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

The chart shows only data points with values between 6.9 and 16.3 (± 5 Standard Deviations).

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

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

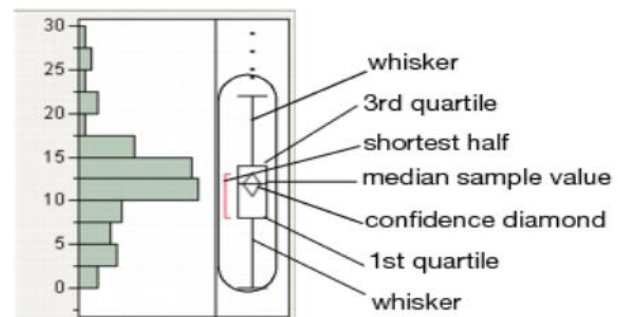


Outlier Box Plot

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

3rd quartile + 1.5*(interquartile range)

1st quartile - 1.5*(interquartile range)

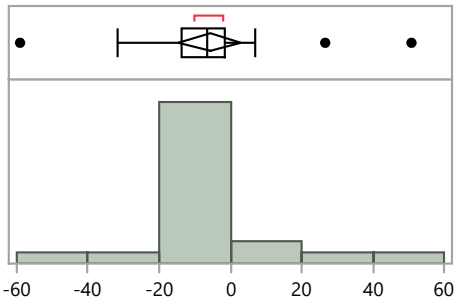


If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

MaW Distribution by Detection Method

Distributions Analyte_Detection=Americium-241 Alpha Spectrometry

Bias



Quantiles

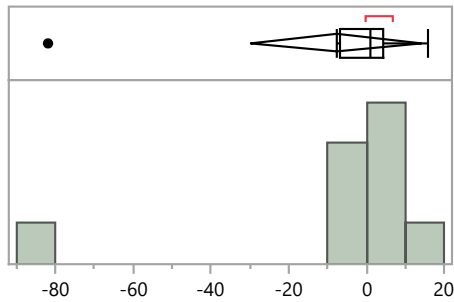
100.0%	maximum	50.8
99.5%		50.8
97.5%		50.8
90.0%		20.7
75.0%	quartile	-1.4
50.0%	median	-6.4
25.0%	quartile	-13.5
10.0%		-27.2
2.5%		-59.0
0.5%		-59.0
0.0%	minimum	-59.0

Summary Statistics

Mean	-5.8
Std Dev	20.1
Std Err Mean	4.3
Upper 95% Mean	3.1
Lower 95% Mean	-14.7
N	22.0

Distributions Analyte_Detection=Americium-241 Gamma Spectrometry

Bias



Quantiles

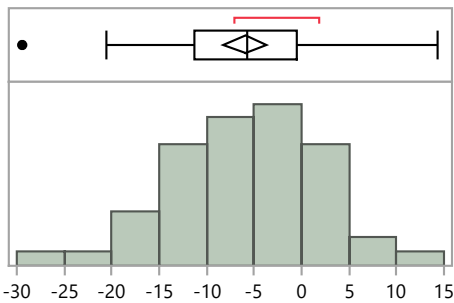
100.0%	maximum	15.9
99.5%		15.9
97.5%		15.9
90.0%		15.9
75.0%	quartile	4.4
50.0%	median	0.9
25.0%	quartile	-7.0
10.0%		-81.9
2.5%		-81.9
0.5%		-81.9
0.0%	minimum	-81.9

Summary Statistics

Mean	-7.7
Std Dev	28.7
Std Err Mean	9.6
Upper 95% Mean	14.3
Lower 95% Mean	-29.8
N	9.0

Distributions Analyte_Detection=Cesium-134 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	14.3
99.5%		14.3
97.5%		12.8
90.0%		3.5
75.0%	quartile	-0.5
50.0%	median	-5.8
25.0%	quartile	-11.3
10.0%		-16.3
2.5%		-27.0
0.5%		-29.4
0.0%	minimum	-29.4

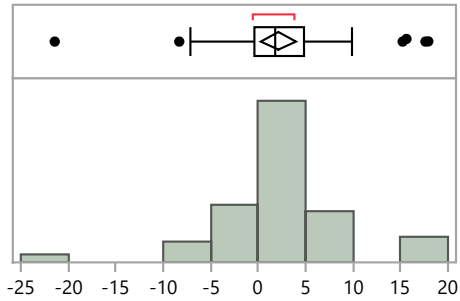
Summary Statistics

Mean	-6.0
Std Dev	8.1
Std Err Mean	1.1
Upper 95% Mean	-3.7
Lower 95% Mean	-8.3
N	50.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Cesium-137 Gamma Spectrometry

Bias



Quantiles

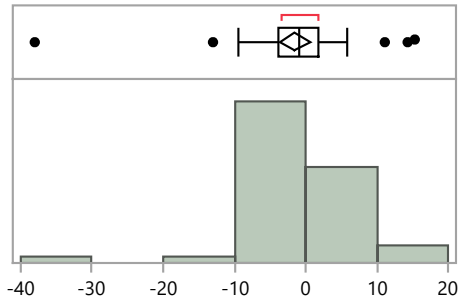
100.0%	maximum	17.9
99.5%		17.9
97.5%		17.8
90.0%		9.6
75.0%	quartile	4.8
50.0%	median	1.8
25.0%	quartile	-0.4
10.0%		-4.7
2.5%		-17.5
0.5%		-21.4
0.0%	minimum	-21.4

Summary Statistics

Mean	2.1
Std Dev	6.6
Std Err Mean	0.9
Upper 95% Mean	4.0
Lower 95% Mean	0.3
N	51.0

Distributions Analyte_Detection=Cobalt-57 Gamma Spectrometry

Bias



Quantiles

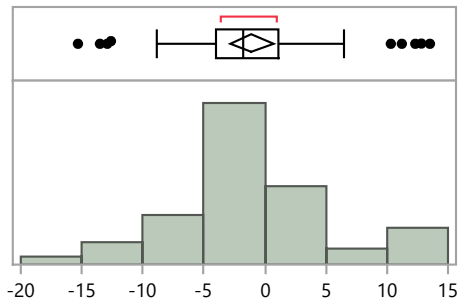
100.0%	maximum	15.3
99.5%		15.3
97.5%		15.0
90.0%		5.1
75.0%	quartile	1.7
50.0%	median	-1.0
25.0%	quartile	-3.9
10.0%		-8.3
2.5%		-30.5
0.5%		-38.0
0.0%	minimum	-38.0

Summary Statistics

Mean	-1.5
Std Dev	7.6
Std Err Mean	1.1
Upper 95% Mean	0.6
Lower 95% Mean	-3.6
N	51.0

Distributions Analyte_Detection=Cobalt-60 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	13.5
99.5%		13.5
97.5%		13.3
90.0%		9.2
75.0%	quartile	1.2
50.0%	median	-1.8
25.0%	quartile	-4.0
10.0%		-8.4
2.5%		-14.7
0.5%		-15.3
0.0%	minimum	-15.3

Summary Statistics

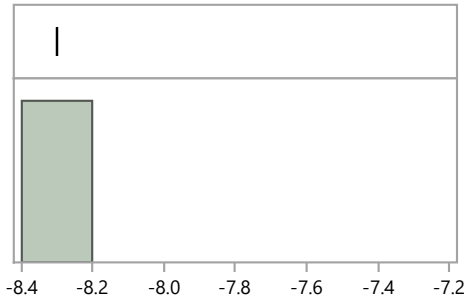
Mean	-1.1
Std Dev	6.2
Std Err Mean	0.9
Upper 95% Mean	0.6
Lower 95% Mean	-2.8
N	52.0

MaW47 Distribution by Detection Method

MaW Distribution by Detection Method

Distributions Analyte_Detection=Hydrogen-3 Alpha Spectrometry

Bias



Quantiles

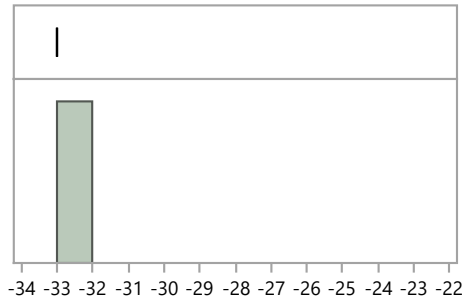
100.0%	maximum	-8.3
99.5%		-8.3
97.5%		-8.3
90.0%		-8.3
75.0%	quartile	-8.3
50.0%	median	-8.3
25.0%	quartile	-8.3
10.0%		-8.3
2.5%		-8.3
0.5%		-8.3
0.0%	minimum	-8.3

Summary Statistics

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

Distributions Analyte_Detection=Hydrogen-3 Gamma Spectrometry

Bias



Quantiles

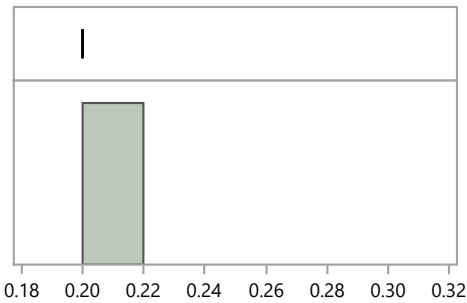
100.0%	maximum	-33.0
99.5%		-33.0
97.5%		-33.0
90.0%		-33.0
75.0%	quartile	-33.0
50.0%	median	-33.0
25.0%	quartile	-33.0
10.0%		-33.0
2.5%		-33.0
0.5%		-33.0
0.0%	minimum	-33.0

Summary Statistics

Mean	-33.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Hydrogen-3 Gas Flow Proportional Counter

Bias



Quantiles

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

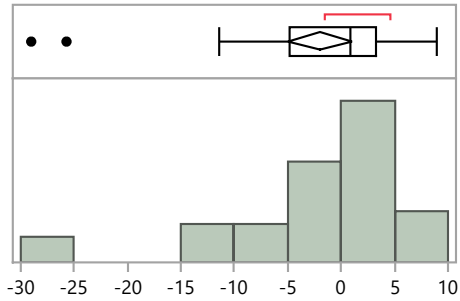
Summary Statistics

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

MaW Distribution by Detection Method

Distributions Analyte_Detection=Hydrogen-3 Liquid Scintillation Counter

Bias



Quantiles

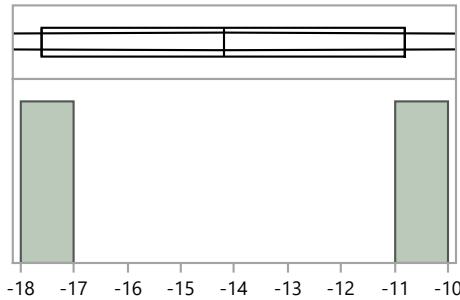
100.0%	maximum	8.9
99.5%		8.9
97.5%		8.9
90.0%		6.1
75.0%	quartile	3.3
50.0%	median	0.8
25.0%	quartile	-4.9
10.0%		-10.9
2.5%		-29.0
0.5%		-29.0
0.0%	minimum	-29.0

Summary Statistics

Mean	-2.0
Std Dev	8.3
Std Err Mean	1.5
Upper 95% Mean	1.0
Lower 95% Mean	-4.9
N	33.0

Distributions Analyte_Detection=Iron-55 Liquid Scintillation Counter

Bias



Quantiles

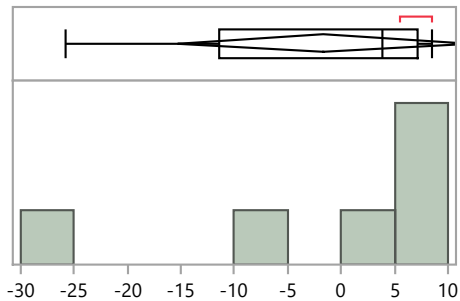
100.0%	maximum	-10.8
99.5%		-10.8
97.5%		-10.8
90.0%		-10.8
75.0%	quartile	-10.8
50.0%	median	-14.2
25.0%	quartile	-17.6
10.0%		-17.6
2.5%		-17.6
0.5%		-17.6
0.0%	minimum	-17.6

Summary Statistics

Mean	-14.2
Std Dev	4.8
Std Err Mean	3.4
Upper 95% Mean	29.0
Lower 95% Mean	-57.4
N	2.0

Distributions Analyte_Detection=Nickel-63 Liquid Scintillation Counter

Bias



Quantiles

100.0%	maximum	8.5
99.5%		8.5
97.5%		8.5
90.0%		8.5
75.0%	quartile	7.1
50.0%	median	3.8
25.0%	quartile	-11.5
10.0%		-25.8
2.5%		-25.8
0.5%		-25.8
0.0%	minimum	-25.8

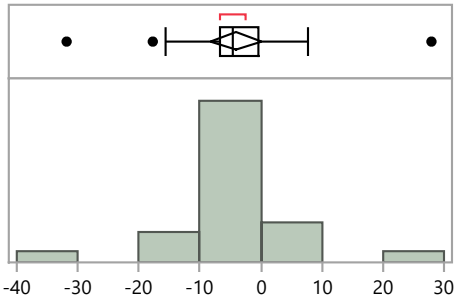
Summary Statistics

Mean	-1.6
Std Dev	13.0
Std Err Mean	5.3
Upper 95% Mean	12.0
Lower 95% Mean	-15.3
N	6.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

Bias



Quantiles

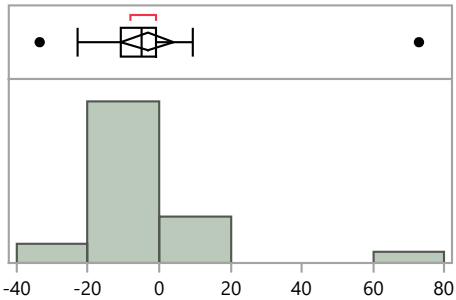
100.0%	maximum	27.9
99.5%		27.9
97.5%		27.9
90.0%		6.9
75.0%	quartile	-0.5
50.0%	median	-4.5
25.0%	quartile	-6.7
10.0%		-16.3
2.5%		-31.8
0.5%		-31.8
0.0%	minimum	-31.8

Summary Statistics

Mean	-4.0
Std Dev	10.2
Std Err Mean	2.0
Upper 95% Mean	0.1
Lower 95% Mean	-8.2
N	26.0

Distributions Analyte_Detection=Plutonium-239/240 Alpha Spectrometry

Bias



Quantiles

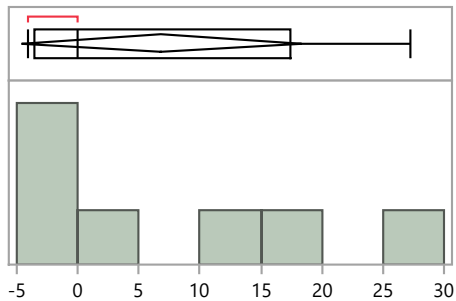
100.0%	maximum	72.9
99.5%		72.9
97.5%		72.9
90.0%		8.0
75.0%	quartile	-0.7
50.0%	median	-5.0
25.0%	quartile	-10.7
10.0%		-17.5
2.5%		-33.5
0.5%		-33.5
0.0%	minimum	-33.5

Summary Statistics

Mean	-3.3
Std Dev	17.9
Std Err Mean	3.5
Upper 95% Mean	3.9
Lower 95% Mean	-10.5
N	26.0

Distributions Analyte_Detection=Radium-226 Alpha Spectrometry

Bias



Quantiles

100.0%	maximum	27.2
99.5%		27.2
97.5%		27.2
90.0%		27.2
75.0%	quartile	17.4
50.0%	median	0.0
25.0%	quartile	-3.5
10.0%		-4.1
2.5%		-4.1
0.5%		-4.1
0.0%	minimum	-4.1

Summary Statistics

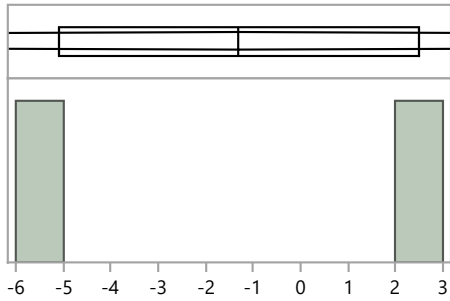
Mean	6.8
Std Dev	12.4
Std Err Mean	4.7
Upper 95% Mean	18.3
Lower 95% Mean	-4.6
N	7.0

MaW47 Distribution by Detection Method

MaW Distribution by Detection Method

Distributions Analyte_Detection=Radium-226 Gamma Spectrometry

Bias



Quantiles

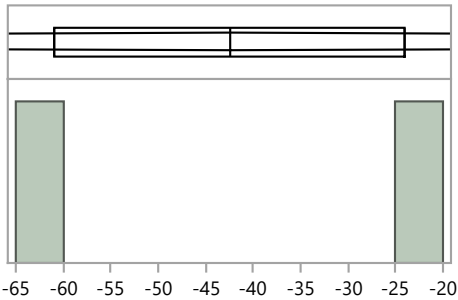
100.0%	maximum	2.5
99.5%		2.5
97.5%		2.5
90.0%		2.5
75.0%	quartile	2.5
50.0%	median	-1.3
25.0%	quartile	-5.1
10.0%		-5.1
2.5%		-5.1
0.5%		-5.1
0.0%	minimum	-5.1

Summary Statistics

Mean	-1.3
Std Dev	5.4
Std Err Mean	3.8
Upper 95% Mean	47.0
Lower 95% Mean	-49.6
N	2.0

Distributions Analyte_Detection=Radium-226 Gas Flow Proportional Counter

Bias



Quantiles

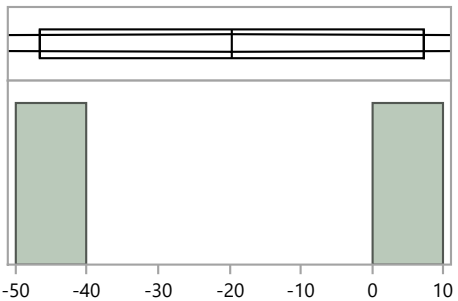
100.0%	maximum	-24.0
99.5%		-24.0
97.5%		-24.0
90.0%		-24.0
75.0%	quartile	-24.0
50.0%	median	-42.5
25.0%	quartile	-60.9
10.0%		-60.9
2.5%		-60.9
0.5%		-60.9
0.0%	minimum	-60.9

Summary Statistics

Mean	-42.5
Std Dev	26.1
Std Err Mean	18.4
Upper 95% Mean	192.0
Lower 95% Mean	-276.9
N	2.0

Distributions Analyte_Detection=Radium-226 Gross Alpha/Beta - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	7.2
99.5%		7.2
97.5%		7.2
90.0%		7.2
75.0%	quartile	7.2
50.0%	median	-19.7
25.0%	quartile	-46.6
10.0%		-46.6
2.5%		-46.6
0.5%		-46.6
0.0%	minimum	-46.6

Summary Statistics

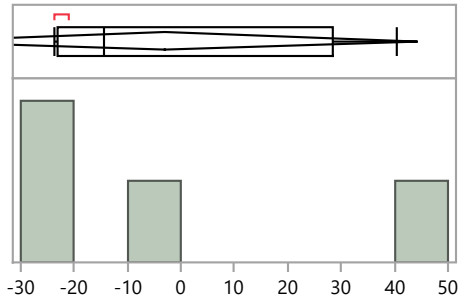
Mean	-19.7
Std Dev	38.0
Std Err Mean	26.9
Upper 95% Mean	322.1
Lower 95% Mean	-361.5
N	2.0

MaW47 Distribution by Detection Method

MaW Distribution by Detection Method

Distributions Analyte_Detection=Radium-226 Other

Bias



Quantiles

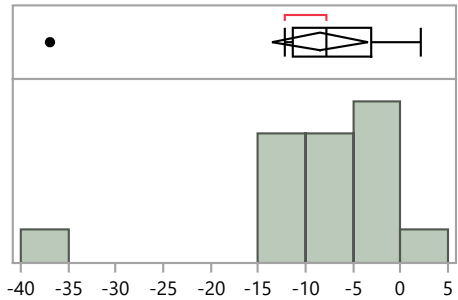
100.0%	maximum	40.3
99.5%		40.3
97.5%		40.3
90.0%		40.3
75.0%	quartile	28.3
50.0%	median	-14.5
25.0%	quartile	-23.1
10.0%		-23.7
2.5%		-23.7
0.5%		-23.7
0.0%	minimum	-23.7

Summary Statistics

Mean	-3.1
Std Dev	29.7
Std Err Mean	14.9
Upper 95% Mean	44.3
Lower 95% Mean	-50.4
N	4.0

Distributions Analyte_Detection=Strontium-90 Gas Flow Proportional Counter

Bias



Quantiles

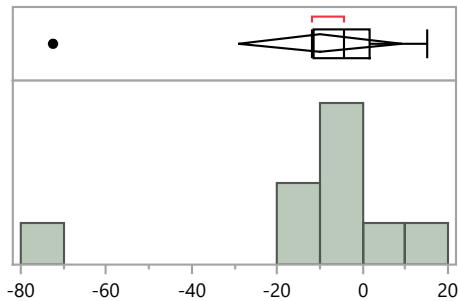
100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		0.4
75.0%	quartile	-3.1
50.0%	median	-7.9
25.0%	quartile	-11.4
10.0%		-22.1
2.5%		-36.9
0.5%		-36.9
0.0%	minimum	-36.9

Summary Statistics

Mean	-8.5
Std Dev	9.0
Std Err Mean	2.3
Upper 95% Mean	-3.5
Lower 95% Mean	-13.5
N	15.0

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

Bias



Quantiles

100.0%	maximum	14.9
99.5%		14.9
97.5%		14.9
90.0%		14.9
75.0%	quartile	1.7
50.0%	median	-4.5
25.0%	quartile	-11.7
10.0%		-72.4
2.5%		-72.4
0.5%		-72.4
0.0%	minimum	-72.4

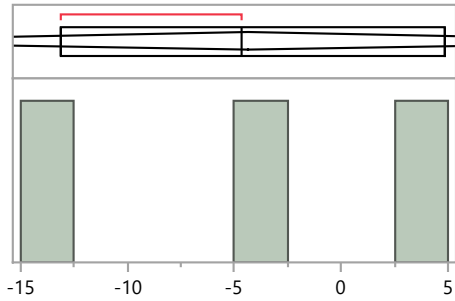
Summary Statistics

Mean	-10.1
Std Dev	24.7
Std Err Mean	8.2
Upper 95% Mean	8.9
Lower 95% Mean	-29.1
N	9.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Strontium-90 Liquid Scintillation Counter

Bias



Quantiles

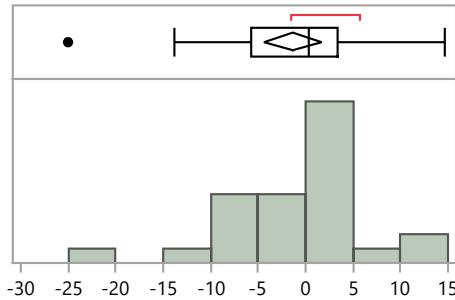
100.0%	maximum	4.8
99.5%		4.8
97.5%		4.8
90.0%		4.8
75.0%	quartile	4.8
50.0%	median	-4.7
25.0%	quartile	-13.1
10.0%		-13.1
2.5%		-13.1
0.5%		-13.1
0.0%	minimum	-13.1

Summary Statistics

Mean	-4.3
Std Dev	9.0
Std Err Mean	5.2
Upper 95% Mean	17.9
Lower 95% Mean	-26.6
N	3.0

Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

Bias



Quantiles

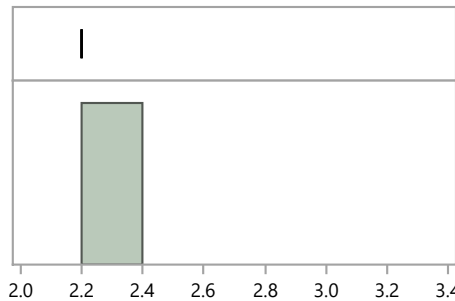
100.0%	maximum	14.6
99.5%		14.6
97.5%		14.6
90.0%		6.9
75.0%	quartile	3.3
50.0%	median	0.4
25.0%	quartile	-5.8
10.0%		-10.0
2.5%		-25.0
0.5%		-25.0
0.0%	minimum	-25.0

Summary Statistics

Mean	-1.3
Std Dev	7.7
Std Err Mean	1.5
Upper 95% Mean	1.7
Lower 95% Mean	-4.4
N	27.0

Distributions Analyte_Detection=Uranium-234 Gas Flow Proportional Counter

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	2.2
25.0%	quartile	2.2
10.0%		2.2
2.5%		2.2
0.5%		2.2
0.0%	minimum	2.2

Summary Statistics

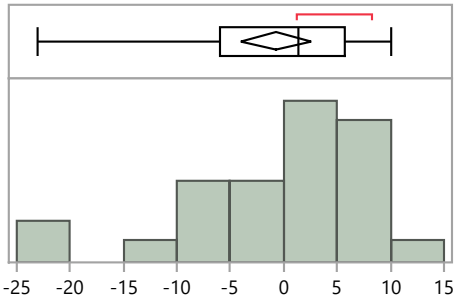
Mean	2.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW47 Distribution by Detection Method

MaW Distribution by Detection Method

Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

Bias



Quantiles

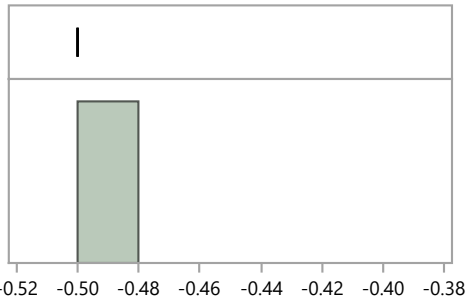
100.0%	maximum	10.1
99.5%		10.1
97.5%		10.1
90.0%		8.4
75.0%	quartile	5.7
50.0%	median	1.3
25.0%	quartile	-6.0
10.0%		-12.7
2.5%		-23.0
0.5%		-23.0
0.0%	minimum	-23.0

Summary Statistics

Mean	-0.8
Std Dev	8.4
Std Err Mean	1.6
Upper 95% Mean	2.6
Lower 95% Mean	-4.1
N	27.0

Distributions Analyte_Detection=Uranium-238 Gamma Spectrometry

Bias



Quantiles

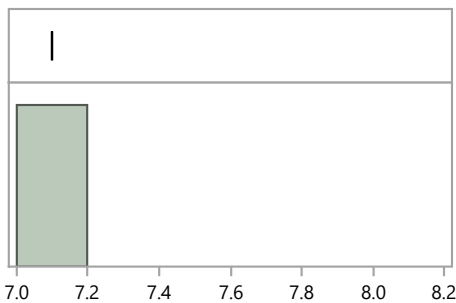
100.0%	maximum	-0.5
99.5%		-0.5
97.5%		-0.5
90.0%		-0.5
75.0%	quartile	-0.5
50.0%	median	-0.5
25.0%	quartile	-0.5
10.0%		-0.5
2.5%		-0.5
0.5%		-0.5
0.0%	minimum	-0.5

Summary Statistics

Mean	-0.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-238 Gas Flow Proportional Counter

Bias



Quantiles

100.0%	maximum	7.1
99.5%		7.1
97.5%		7.1
90.0%		7.1
75.0%	quartile	7.1
50.0%	median	7.1
25.0%	quartile	7.1
10.0%		7.1
2.5%		7.1
0.5%		7.1
0.0%	minimum	7.1

Summary Statistics

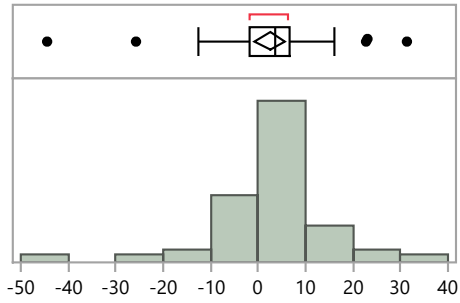
Mean	7.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW47 Distribution by Detection Method

MaW Distribution by Detection Method

Distributions Analyte_Detection=Zinc-65 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	31.3
99.5%		31.3
97.5%		28.8
90.0%		11.4
75.0%	quartile	6.6
50.0%	median	3.5
25.0%	quartile	-1.8
10.0%		-9.0
2.5%		-38.8
0.5%		-44.4
0.0%	minimum	-44.4

Summary Statistics

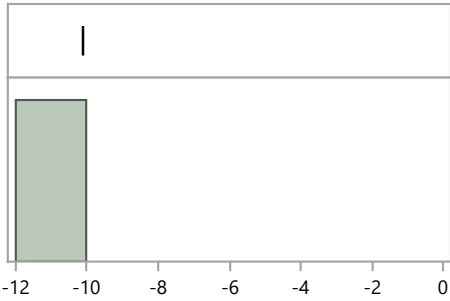
Mean	2.4
Std Dev	11.3
Std Err Mean	1.6
Upper 95% Mean	5.6
Lower 95% Mean	-0.8
N	51.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Americium-241 Acid dissolution with hydrofluoric acid

Bias



Quantiles

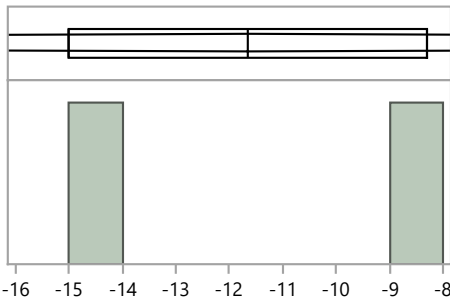
100.0%	maximum	-10.1
99.5%		-10.1
97.5%		-10.1
90.0%		-10.1
75.0%	quartile	-10.1
50.0%	median	-10.1
25.0%	quartile	-10.1
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

Summary Statistics

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

Distributions Analyte_Method=Americium-241 Coprecipitation, acidified

Bias



Quantiles

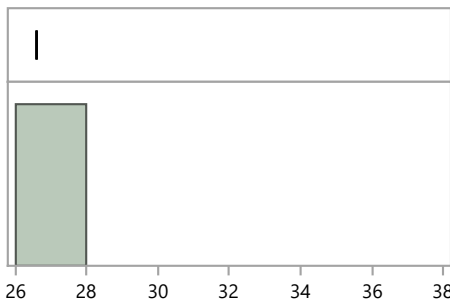
100.0%	maximum	-8.3
99.5%		-8.3
97.5%		-8.3
90.0%		-8.3
75.0%	quartile	-8.3
50.0%	median	-11.7
25.0%	quartile	-15.0
10.0%		-15.0
2.5%		-15.0
0.5%		-15.0
0.0%	minimum	-15.0

Summary Statistics

Mean	-11.7
Std Dev	4.7
Std Err Mean	3.4
Upper 95% Mean	30.9
Lower 95% Mean	-54.2
N	2.0

Distributions Analyte_Method=Americium-241 Coprecipitation, straight

Bias



Quantiles

100.0%	maximum	26.6
99.5%		26.6
97.5%		26.6
90.0%		26.6
75.0%	quartile	26.6
50.0%	median	26.6
25.0%	quartile	26.6
10.0%		26.6
2.5%		26.6
0.5%		26.6
0.0%	minimum	26.6

Summary Statistics

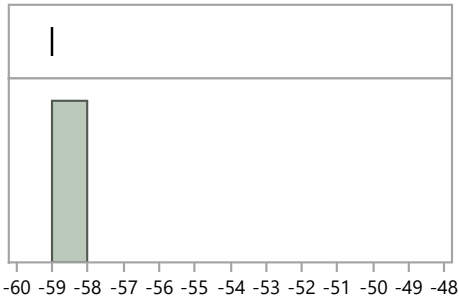
Mean	26.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

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

Bias



Quantiles

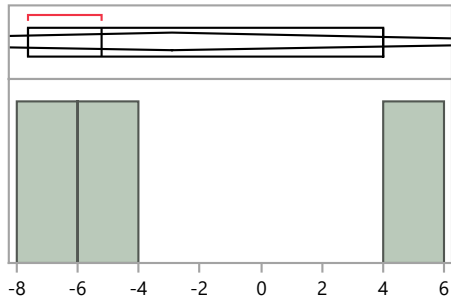
100.0%	maximum	-59.0
99.5%		-59.0
97.5%		-59.0
90.0%		-59.0
75.0%	quartile	-59.0
50.0%	median	-59.0
25.0%	quartile	-59.0
10.0%		-59.0
2.5%		-59.0
0.5%		-59.0
0.0%	minimum	-59.0

Summary Statistics

Mean	-59.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Americium-241 Evaporation, acidified

Bias



Quantiles

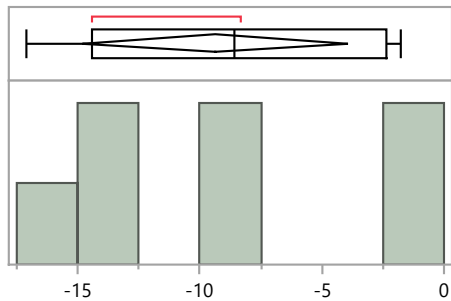
100.0%	maximum	4.0
99.5%		4.0
97.5%		4.0
90.0%		4.0
75.0%	quartile	4.0
50.0%	median	-5.2
25.0%	quartile	-7.6
10.0%		-7.6
2.5%		-7.6
0.5%		-7.6
0.0%	minimum	-7.6

Summary Statistics

Mean	-2.9
Std Dev	6.1
Std Err Mean	3.5
Upper 95% Mean	12.3
Lower 95% Mean	-18.1
N	3.0

Distributions Analyte_Method=Americium-241 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

100.0%	maximum	-1.8
99.5%		-1.8
97.5%		-1.8
90.0%		-1.8
75.0%	quartile	-2.4
50.0%	median	-8.6
25.0%	quartile	-14.4
10.0%		-17.1
2.5%		-17.1
0.5%		-17.1
0.0%	minimum	-17.1

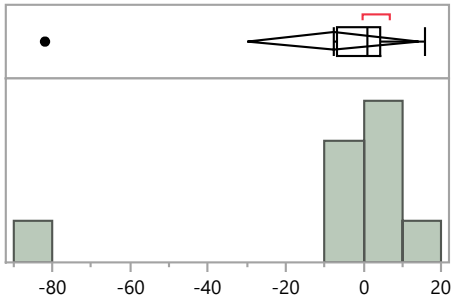
Summary Statistics

Mean	-9.4
Std Dev	5.9
Std Err Mean	2.2
Upper 95% Mean	-4.0
Lower 95% Mean	-14.8
N	7.0

MaW Distribution by Prep Method

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

Bias



Quantiles

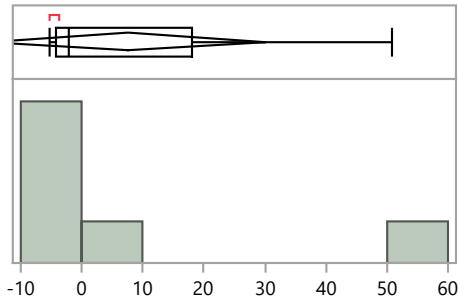
100.0%	maximum	15.9
99.5%		15.9
97.5%		15.9
90.0%		15.9
75.0%	quartile	4.4
50.0%	median	0.9
25.0%	quartile	-7.0
10.0%		-81.9
2.5%		-81.9
0.5%		-81.9
0.0%	minimum	-81.9

Summary Statistics

Mean	-7.7
Std Dev	28.7
Std Err Mean	9.6
Upper 95% Mean	14.3
Lower 95% Mean	-29.8
N	9.0

Distributions Analyte_Method=Americium-241 Other

Bias



Quantiles

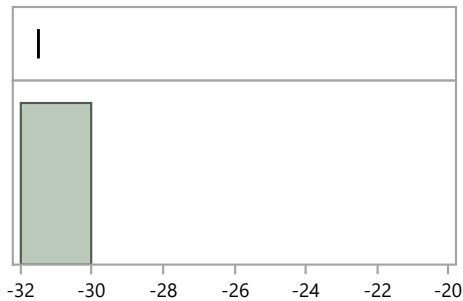
100.0%	maximum	50.8
99.5%		50.8
97.5%		50.8
90.0%		50.8
75.0%	quartile	18.0
50.0%	median	-2.0
25.0%	quartile	-4.1
10.0%		-5.2
2.5%		-5.2
0.5%		-5.2
0.0%	minimum	-5.2

Summary Statistics

Mean	7.5
Std Dev	21.7
Std Err Mean	8.8
Upper 95% Mean	30.2
Lower 95% Mean	-15.3
N	6.0

Distributions Analyte_Method=Americium-241 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	-31.5
99.5%		-31.5
97.5%		-31.5
90.0%		-31.5
75.0%	quartile	-31.5
50.0%	median	-31.5
25.0%	quartile	-31.5
10.0%		-31.5
2.5%		-31.5
0.5%		-31.5
0.0%	minimum	-31.5

Summary Statistics

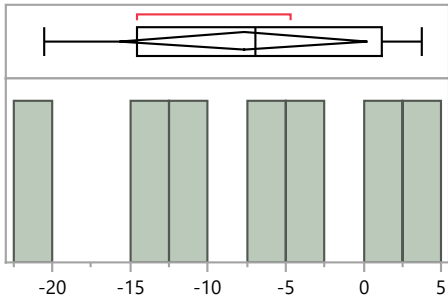
Mean	-31.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Cesium-134 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

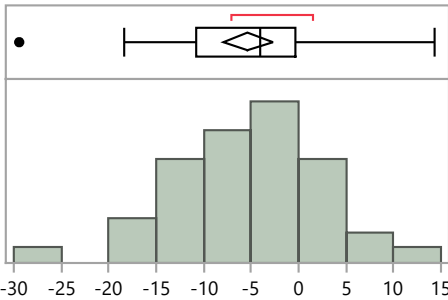
100.0%	maximum	3.7
99.5%		3.7
97.5%		3.7
90.0%		3.7
75.0%	quartile	1.2
50.0%	median	-7.0
25.0%	quartile	-14.6
10.0%		-20.5
2.5%		-20.5
0.5%		-20.5
0.0%	minimum	-20.5

Summary Statistics

Mean	-7.7
Std Dev	8.7
Std Err Mean	3.3
Upper 95% Mean	0.3
Lower 95% Mean	-15.7
N	7.0

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

Bias



Quantiles

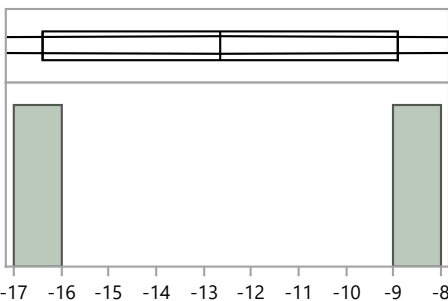
100.0%	maximum	14.3
99.5%		14.3
97.5%		14.0
90.0%		3.7
75.0%	quartile	-0.4
50.0%	median	-4.1
25.0%	quartile	-10.7
10.0%		-15.4
2.5%		-28.9
0.5%		-29.4
0.0%	minimum	-29.4

Summary Statistics

Mean	-5.3
Std Dev	8.1
Std Err Mean	1.3
Upper 95% Mean	-2.8
Lower 95% Mean	-7.9
N	41.0

Distributions Analyte_Method=Cesium-134 Other

Bias



Quantiles

100.0%	maximum	-8.9
99.5%		-8.9
97.5%		-8.9
90.0%		-8.9
75.0%	quartile	-8.9
50.0%	median	-12.7
25.0%	quartile	-16.4
10.0%		-16.4
2.5%		-16.4
0.5%		-16.4
0.0%	minimum	-16.4

Summary Statistics

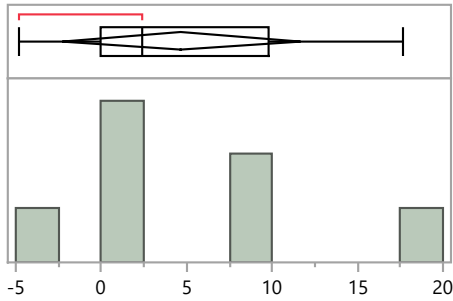
Mean	-12.7
Std Dev	5.3
Std Err Mean	3.7
Upper 95% Mean	35.0
Lower 95% Mean	-60.3
N	2.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

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

Bias



Quantiles

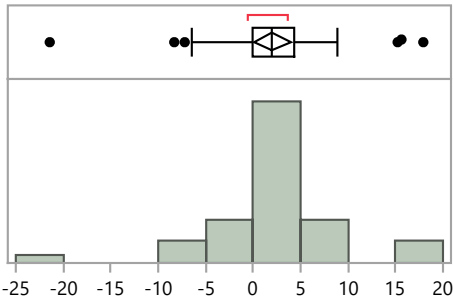
100.0%	maximum	17.6
99.5%		17.6
97.5%		17.6
90.0%		17.6
75.0%	quartile	9.8
50.0%	median	2.4
25.0%	quartile	0.0
10.0%		-4.8
2.5%		-4.8
0.5%		-4.8
0.0%	minimum	-4.8

Summary Statistics

Mean	4.7
Std Dev	7.5
Std Err Mean	2.8
Upper 95% Mean	11.6
Lower 95% Mean	-2.3
N	7.0

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

Bias



Quantiles

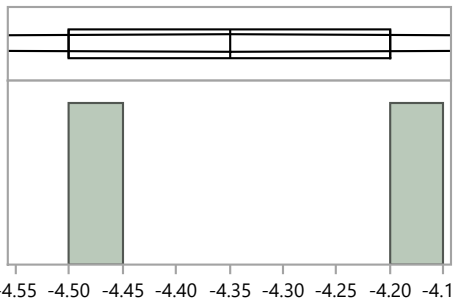
100.0%	maximum	17.9
99.5%		17.9
97.5%		17.7
90.0%		8.4
75.0%	quartile	4.4
50.0%	median	1.9
25.0%	quartile	-0.1
10.0%		-5.7
2.5%		-20.4
0.5%		-21.4
0.0%	minimum	-21.4

Summary Statistics

Mean	2.0
Std Dev	6.4
Std Err Mean	1.0
Upper 95% Mean	4.0
Lower 95% Mean	0.0
N	42.0

Distributions Analyte_Method=Cesium-137 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	-4.4
25.0%	quartile	-4.5
10.0%		-4.5
2.5%		-4.5
0.5%		-4.5
0.0%	minimum	-4.5

Summary Statistics

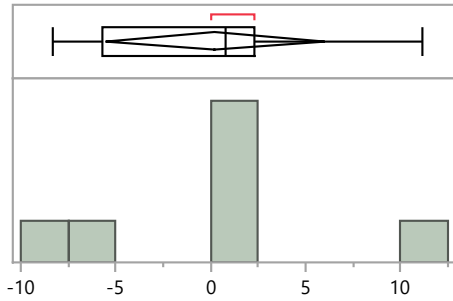
Mean	-4.4
Std Dev	0.2
Std Err Mean	0.1
Upper 95% Mean	-2.4
Lower 95% Mean	-6.3
N	2.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

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

Bias



Quantiles

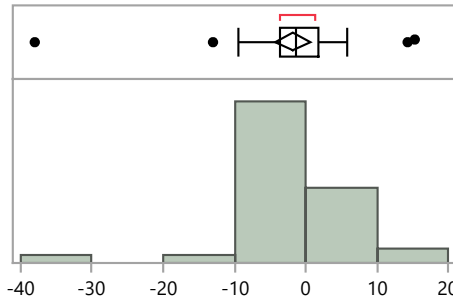
100.0%	maximum	11.1
99.5%		11.1
97.5%		11.1
90.0%		11.1
75.0%	quartile	2.3
50.0%	median	0.8
25.0%	quartile	-5.7
10.0%		-8.3
2.5%		-8.3
0.5%		-8.3
0.0%	minimum	-8.3

Summary Statistics

Mean	0.2
Std Dev	6.2
Std Err Mean	2.3
Upper 95% Mean	6.0
Lower 95% Mean	-5.5
N	7.0

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

Bias



Quantiles

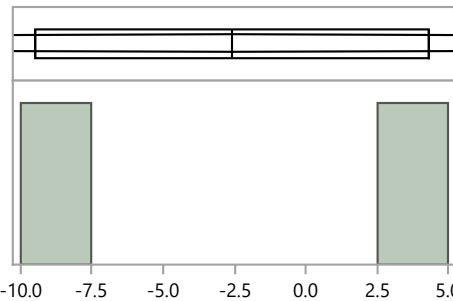
100.0%	maximum	15.3
99.5%		15.3
97.5%		15.2
90.0%		5.0
75.0%	quartile	1.7
50.0%	median	-1.4
25.0%	quartile	-3.6
10.0%		-8.1
2.5%		-36.1
0.5%		-38.0
0.0%	minimum	-38.0

Summary Statistics

Mean	-1.7
Std Dev	7.8
Std Err Mean	1.2
Upper 95% Mean	0.7
Lower 95% Mean	-4.2
N	42.0

Distributions Analyte_Method=Cobalt-57 Other

Bias



Quantiles

100.0%	maximum	4.3
99.5%		4.3
97.5%		4.3
90.0%		4.3
75.0%	quartile	4.3
50.0%	median	-2.6
25.0%	quartile	-9.5
10.0%		-9.5
2.5%		-9.5
0.5%		-9.5
0.0%	minimum	-9.5

Summary Statistics

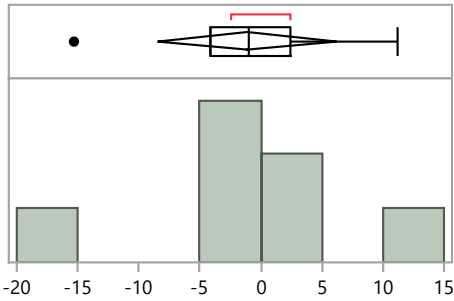
Mean	-2.6
Std Dev	9.8
Std Err Mean	6.9
Upper 95% Mean	85.1
Lower 95% Mean	-90.3
N	2.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

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

Bias



Quantiles

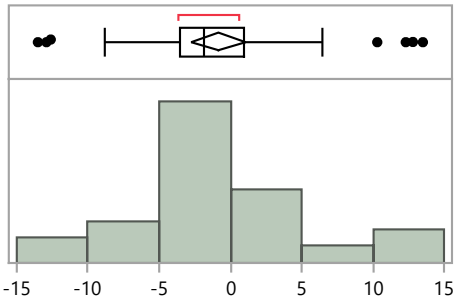
100.0%	maximum	11.2
99.5%		11.2
97.5%		11.2
90.0%		11.2
75.0%	quartile	2.4
50.0%	median	-1.0
25.0%	quartile	-4.1
10.0%		-15.3
2.5%		-15.3
0.5%		-15.3
0.0%	minimum	-15.3

Summary Statistics

Mean	-1.1
Std Dev	8.0
Std Err Mean	3.0
Upper 95% Mean	6.2
Lower 95% Mean	-8.5
N	7.0

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

Bias



Quantiles

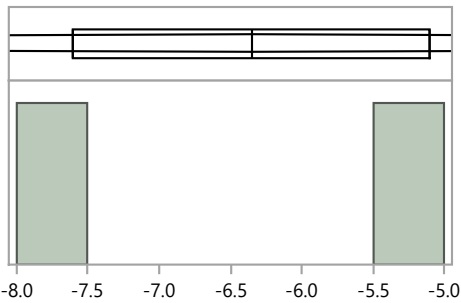
100.0%	maximum	13.5
99.5%		13.5
97.5%		13.4
90.0%		8.8
75.0%	quartile	1.0
50.0%	median	-1.8
25.0%	quartile	-3.5
10.0%		-7.9
2.5%		-13.4
0.5%		-13.5
0.0%	minimum	-13.5

Summary Statistics

Mean	-0.8
Std Dev	6.1
Std Err Mean	0.9
Upper 95% Mean	1.0
Lower 95% Mean	-2.7
N	43.0

Distributions Analyte_Method=Cobalt-60 Other

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	-6.4
25.0%	quartile	-7.6
10.0%		-7.6
2.5%		-7.6
0.5%		-7.6
0.0%	minimum	-7.6

Summary Statistics

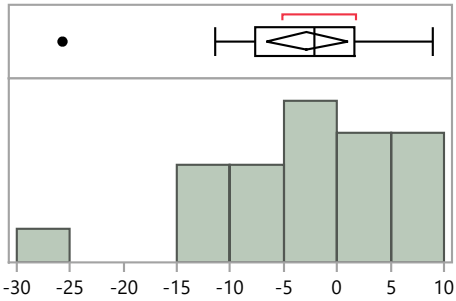
Mean	-6.4
Std Dev	1.8
Std Err Mean	1.3
Upper 95% Mean	9.5
Lower 95% Mean	-22.2
N	2.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Hydrogen-3 Distillation

Bias



Quantiles

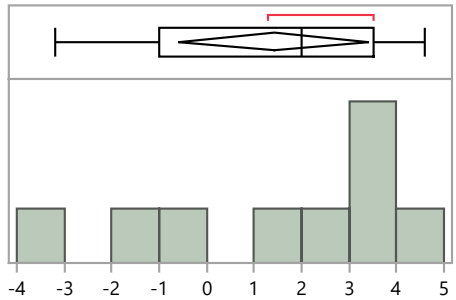
100.0%	maximum	8.9
99.5%		8.9
97.5%		8.9
90.0%		8.6
75.0%	quartile	1.6
50.0%	median	-2.2
25.0%	quartile	-7.7
10.0%		-11.3
2.5%		-25.7
0.5%		-25.7
0.0%	minimum	-25.7

Summary Statistics

Mean	-2.9
Std Dev	8.1
Std Err Mean	1.8
Upper 95% Mean	0.9
Lower 95% Mean	-6.7
N	20.0

Distributions Analyte_Method=Hydrogen-3 EPA 906, Tritium, 600/4/80-032

Bias



Quantiles

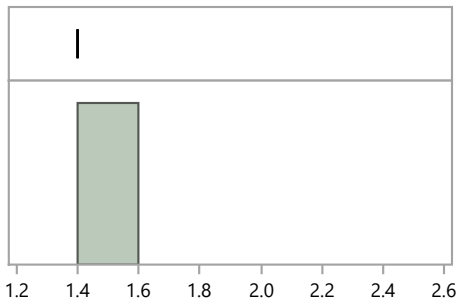
100.0%	maximum	4.6
99.5%		4.6
97.5%		4.6
90.0%		4.6
75.0%	quartile	3.5
50.0%	median	2.0
25.0%	quartile	-1.0
10.0%		-3.2
2.5%		-3.2
0.5%		-3.2
0.0%	minimum	-3.2

Summary Statistics

Mean	1.4
Std Dev	2.6
Std Err Mean	0.9
Upper 95% Mean	3.4
Lower 95% Mean	-0.6
N	9.0

Distributions Analyte_Method=Hydrogen-3 Evaporation, straight

Bias



Quantiles

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

Summary Statistics

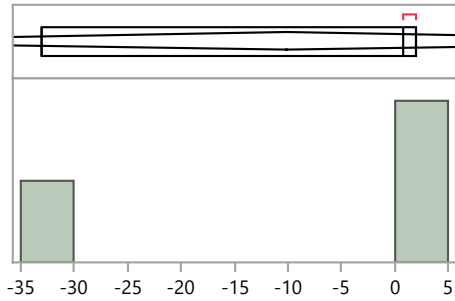
Mean	1.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Hydrogen-3 No preparation - analyzed as received

Bias



Quantiles

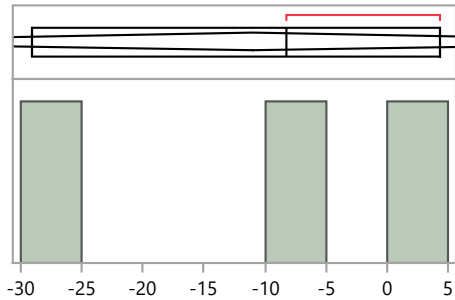
100.0%	maximum	2.0
99.5%		2.0
97.5%		2.0
90.0%		2.0
75.0%	quartile	2.0
50.0%	median	0.8
25.0%	quartile	-33.0
10.0%		-33.0
2.5%		-33.0
0.5%		-33.0
0.0%	minimum	-33.0

Summary Statistics

Mean	-10.1
Std Dev	19.9
Std Err Mean	11.5
Upper 95% Mean	39.3
Lower 95% Mean	-59.4
N	3.0

Distributions Analyte_Method=Hydrogen-3 Other

Bias



Quantiles

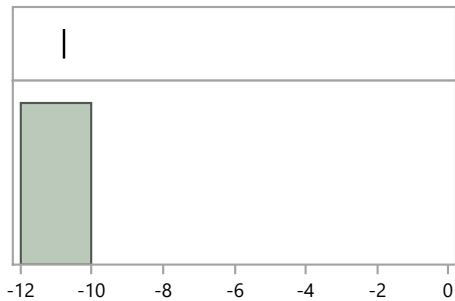
100.0%	maximum	4.3
99.5%		4.3
97.5%		4.3
90.0%		4.3
75.0%	quartile	4.3
50.0%	median	-8.3
25.0%	quartile	-29.0
10.0%		-29.0
2.5%		-29.0
0.5%		-29.0
0.0%	minimum	-29.0

Summary Statistics

Mean	-11.0
Std Dev	16.8
Std Err Mean	9.7
Upper 95% Mean	30.8
Lower 95% Mean	-52.8
N	3.0

Distributions Analyte_Method=Iron-55 Acid dissolution with hydrofluoric acid

Bias



Quantiles

100.0%	maximum	-10.8
99.5%		-10.8
97.5%		-10.8
90.0%		-10.8
75.0%	quartile	-10.8
50.0%	median	-10.8
25.0%	quartile	-10.8
10.0%		-10.8
2.5%		-10.8
0.5%		-10.8
0.0%	minimum	-10.8

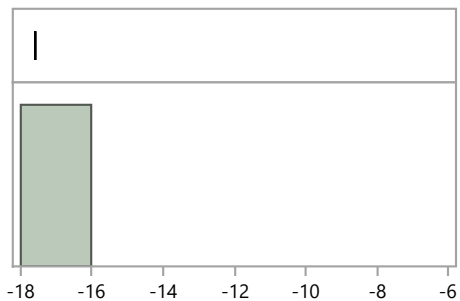
Summary Statistics

Mean	-10.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Iron-55 Coprecipitation, straight

Bias



Quantiles

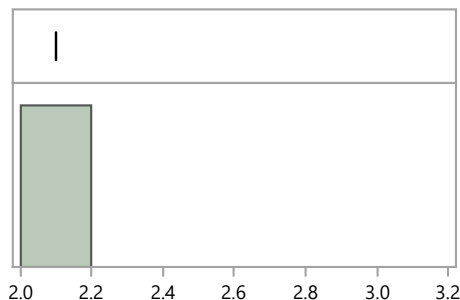
100.0%	maximum	-17.6
99.5%		-17.6
97.5%		-17.6
90.0%		-17.6
75.0%	quartile	-17.6
50.0%	median	-17.6
25.0%	quartile	-17.6
10.0%		-17.6
2.5%		-17.6
0.5%		-17.6
0.0%	minimum	-17.6

Summary Statistics

Mean	-17.6
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

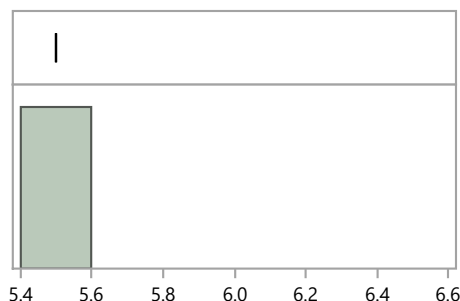
100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		2.1
75.0%	quartile	2.1
50.0%	median	2.1
25.0%	quartile	2.1
10.0%		2.1
2.5%		2.1
0.5%		2.1
0.0%	minimum	2.1

Summary Statistics

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

Distributions Analyte_Method=Nickel-63 Coprecipitation, acidified

Bias



Quantiles

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

Summary Statistics

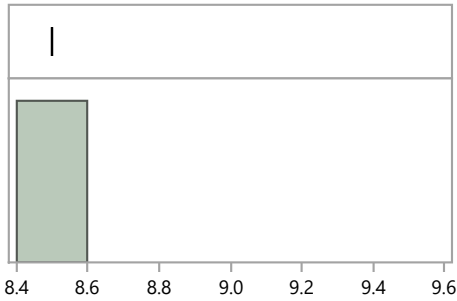
Mean	5.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Nickel-63 Coprecipitation, straight

Bias



Quantiles

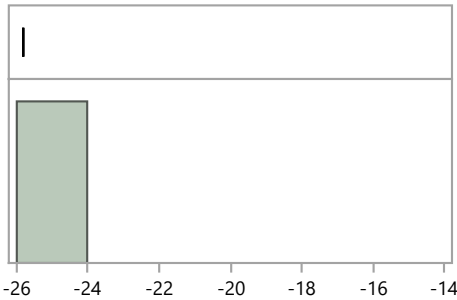
100.0%	maximum	8.5
99.5%		8.5
97.5%		8.5
90.0%		8.5
75.0%	quartile	8.5
50.0%	median	8.5
25.0%	quartile	8.5
10.0%		8.5
2.5%		8.5
0.5%		8.5
0.0%	minimum	8.5

Summary Statistics

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

Distributions Analyte_Method=Nickel-63 Evaporation, acidified

Bias



Quantiles

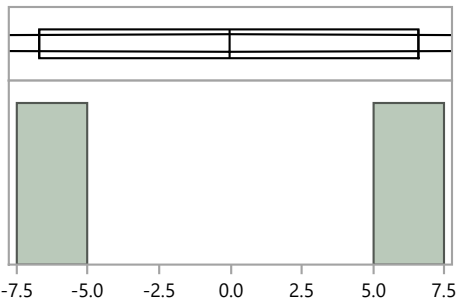
100.0%	maximum	-25.8
99.5%		-25.8
97.5%		-25.8
90.0%		-25.8
75.0%	quartile	-25.8
50.0%	median	-25.8
25.0%	quartile	-25.8
10.0%		-25.8
2.5%		-25.8
0.5%		-25.8
0.0%	minimum	-25.8

Summary Statistics

Mean	-25.8
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	6.6
99.5%		6.6
97.5%		6.6
90.0%		6.6
75.0%	quartile	6.6
50.0%	median	-0.1
25.0%	quartile	-6.7
10.0%		-6.7
2.5%		-6.7
0.5%		-6.7
0.0%	minimum	-6.7

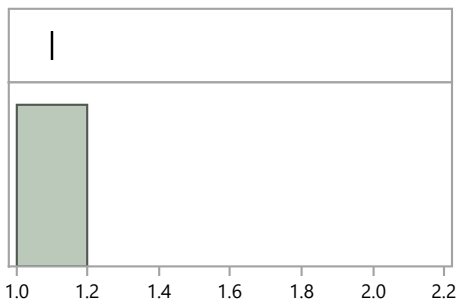
Summary Statistics

Mean	-0.1
Std Dev	9.4
Std Err Mean	6.7
Upper 95% Mean	84.4
Lower 95% Mean	-84.5
N	2.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Acid dissolution with hydrofluoric acid

Bias



Quantiles

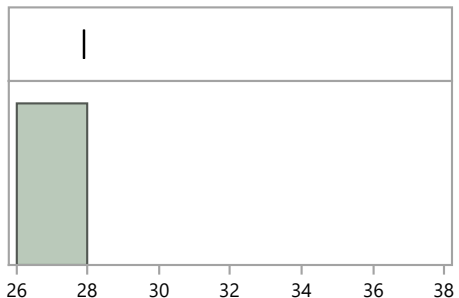
100.0%	maximum	1.1
99.5%		1.1
97.5%		1.1
90.0%		1.1
75.0%	quartile	1.1
50.0%	median	1.1
25.0%	quartile	1.1
10.0%		1.1
2.5%		1.1
0.5%		1.1
0.0%	minimum	1.1

Summary Statistics

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

Distributions Analyte_Method=Plutonium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

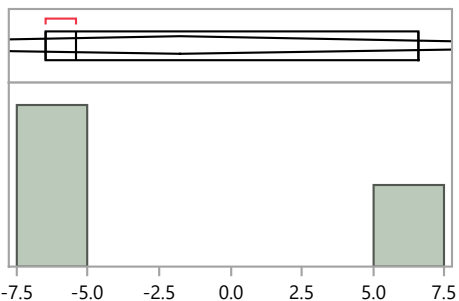
100.0%	maximum	27.9
99.5%		27.9
97.5%		27.9
90.0%		27.9
75.0%	quartile	27.9
50.0%	median	27.9
25.0%	quartile	27.9
10.0%		27.9
2.5%		27.9
0.5%		27.9
0.0%	minimum	27.9

Summary Statistics

Mean	27.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Coprecipitation, acidified

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	-5.4
25.0%	quartile	-6.5
10.0%		-6.5
2.5%		-6.5
0.5%		-6.5
0.0%	minimum	-6.5

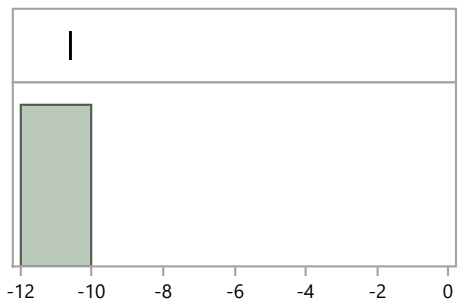
Summary Statistics

Mean	-1.8
Std Dev	7.3
Std Err Mean	4.2
Upper 95% Mean	16.3
Lower 95% Mean	-19.8
N	3.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Coprecipitation, straight

Bias



Quantiles

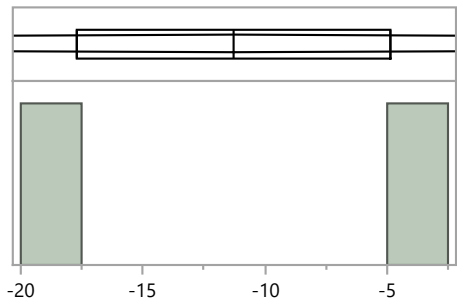
100.0%	maximum	-10.6
99.5%		-10.6
97.5%		-10.6
90.0%		-10.6
75.0%	quartile	-10.6
50.0%	median	-10.6
25.0%	quartile	-10.6
10.0%		-10.6
2.5%		-10.6
0.5%		-10.6
0.0%	minimum	-10.6

Summary Statistics

Mean	-10.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

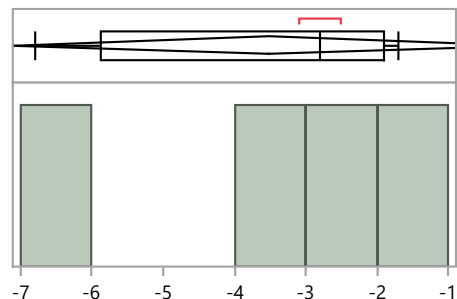
100.0%	maximum	-4.9
99.5%		-4.9
97.5%		-4.9
90.0%		-4.9
75.0%	quartile	-4.9
50.0%	median	-11.3
25.0%	quartile	-17.7
10.0%		-17.7
2.5%		-17.7
0.5%		-17.7
0.0%	minimum	-17.7

Summary Statistics

Mean	-11.3
Std Dev	9.1
Std Err Mean	6.4
Upper 95% Mean	70.0
Lower 95% Mean	-92.6
N	2.0

Distributions Analyte_Method=Plutonium-238 Evaporation, acidified

Bias



Quantiles

100.0%	maximum	-1.7
99.5%		-1.7
97.5%		-1.7
90.0%		-1.7
75.0%	quartile	-1.9
50.0%	median	-2.8
25.0%	quartile	-5.9
10.0%		-6.8
2.5%		-6.8
0.5%		-6.8
0.0%	minimum	-6.8

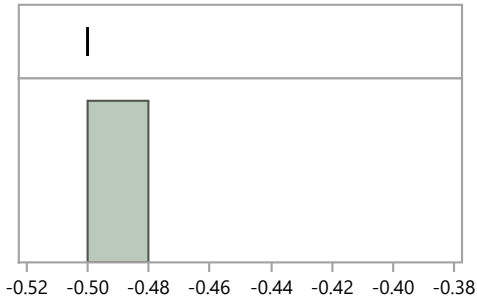
Summary Statistics

Mean	-3.5
Std Dev	2.3
Std Err Mean	1.1
Upper 95% Mean	0.1
Lower 95% Mean	-7.1
N	4.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Evaporation, straight

Bias



Quantiles

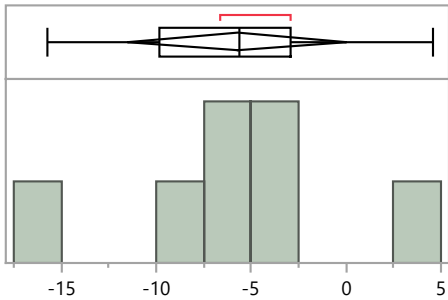
100.0%	maximum	-0.5
99.5%		-0.5
97.5%		-0.5
90.0%		-0.5
75.0%	quartile	-0.5
50.0%	median	-0.5
25.0%	quartile	-0.5
10.0%		-0.5
2.5%		-0.5
0.5%		-0.5
0.0%	minimum	-0.5

Summary Statistics

Mean	-0.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

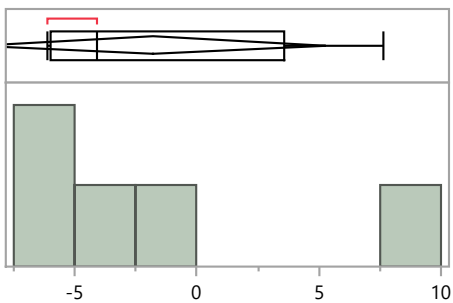
100.0%	maximum	4.6
99.5%		4.6
97.5%		4.6
90.0%		4.6
75.0%	quartile	-2.9
50.0%	median	-5.6
25.0%	quartile	-9.8
10.0%		-15.7
2.5%		-15.7
0.5%		-15.7
0.0%	minimum	-15.7

Summary Statistics

Mean	-5.7
Std Dev	6.2
Std Err Mean	2.4
Upper 95% Mean	0.0
Lower 95% Mean	-11.5
N	7.0

Distributions Analyte_Method=Plutonium-238 Other

Bias



Quantiles

100.0%	maximum	7.6
99.5%		7.6
97.5%		7.6
90.0%		7.6
75.0%	quartile	3.6
50.0%	median	-4.1
25.0%	quartile	-6.0
10.0%		-6.1
2.5%		-6.1
0.5%		-6.1
0.0%	minimum	-6.1

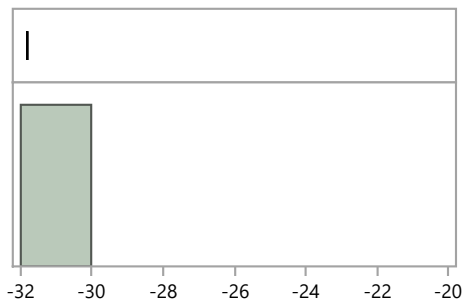
Summary Statistics

Mean	-1.8
Std Dev	5.7
Std Err Mean	2.6
Upper 95% Mean	5.3
Lower 95% Mean	-8.9
N	5.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Total dissolution by fusion

Bias



Quantiles

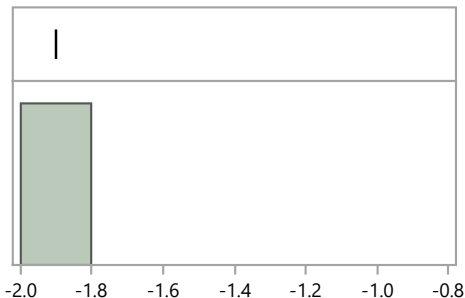
100.0%	maximum	-31.8
99.5%		-31.8
97.5%		-31.8
90.0%		-31.8
75.0%	quartile	-31.8
50.0%	median	-31.8
25.0%	quartile	-31.8
10.0%		-31.8
2.5%		-31.8
0.5%		-31.8
0.0%	minimum	-31.8

Summary Statistics

Mean	-31.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

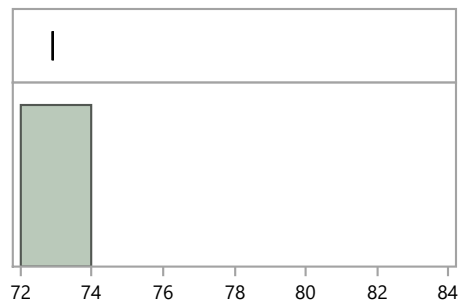
100.0%	maximum	-1.9
99.5%		-1.9
97.5%		-1.9
90.0%		-1.9
75.0%	quartile	-1.9
50.0%	median	-1.9
25.0%	quartile	-1.9
10.0%		-1.9
2.5%		-1.9
0.5%		-1.9
0.0%	minimum	-1.9

Summary Statistics

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

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

Bias



Quantiles

100.0%	maximum	72.9
99.5%		72.9
97.5%		72.9
90.0%		72.9
75.0%	quartile	72.9
50.0%	median	72.9
25.0%	quartile	72.9
10.0%		72.9
2.5%		72.9
0.5%		72.9
0.0%	minimum	72.9

Summary Statistics

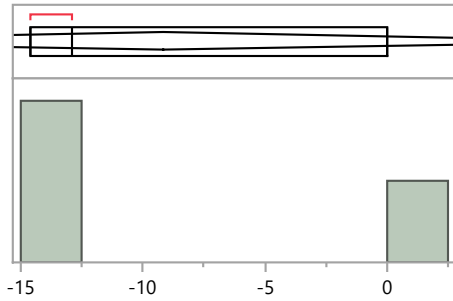
Mean	72.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-239/240 Coprecipitation, acidified

Bias



Quantiles

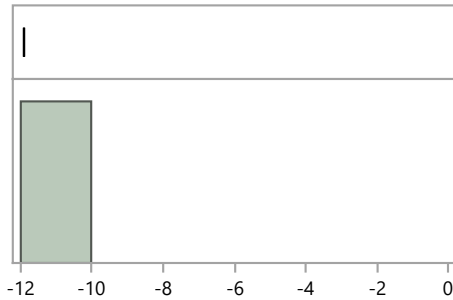
100.0%	maximum	0.0
99.5%		0.0
97.5%		0.0
90.0%		0.0
75.0%	quartile	0.0
50.0%	median	-12.9
25.0%	quartile	-14.6
10.0%		-14.6
2.5%		-14.6
0.5%		-14.6
0.0%	minimum	-14.6

Summary Statistics

Mean	-9.2
Std Dev	8.0
Std Err Mean	4.6
Upper 95% Mean	10.7
Lower 95% Mean	-29.0
N	3.0

Distributions Analyte_Method=Plutonium-239/240 Coprecipitation, straight

Bias



Quantiles

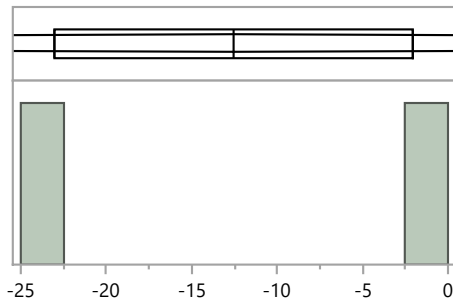
100.0%	maximum	-11.9
99.5%		-11.9
97.5%		-11.9
90.0%		-11.9
75.0%	quartile	-11.9
50.0%	median	-11.9
25.0%	quartile	-11.9
10.0%		-11.9
2.5%		-11.9
0.5%		-11.9
0.0%	minimum	-11.9

Summary Statistics

Mean	-11.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

100.0%	maximum	-2.1
99.5%		-2.1
97.5%		-2.1
90.0%		-2.1
75.0%	quartile	-2.1
50.0%	median	-12.6
25.0%	quartile	-23.0
10.0%		-23.0
2.5%		-23.0
0.5%		-23.0
0.0%	minimum	-23.0

Summary Statistics

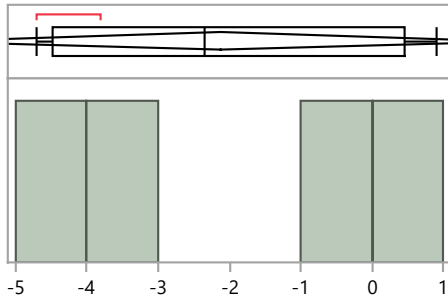
Mean	-12.6
Std Dev	14.8
Std Err Mean	10.5
Upper 95% Mean	120.2
Lower 95% Mean	-145.3
N	2.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-239/240 Evaporation, acidified

Bias



Quantiles

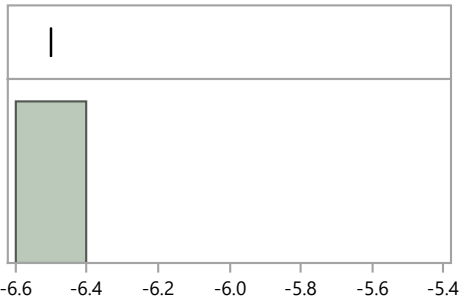
100.0%	maximum	0.9
99.5%		0.9
97.5%		0.9
90.0%		0.9
75.0%	quartile	0.5
50.0%	median	-2.4
25.0%	quartile	-4.5
10.0%		-4.7
2.5%		-4.7
0.5%		-4.7
0.0%	minimum	-4.7

Summary Statistics

Mean	-2.1
Std Dev	2.6
Std Err Mean	1.3
Upper 95% Mean	2.0
Lower 95% Mean	-6.2
N	4.0

Distributions Analyte_Method=Plutonium-239/240 Evaporation, straight

Bias



Quantiles

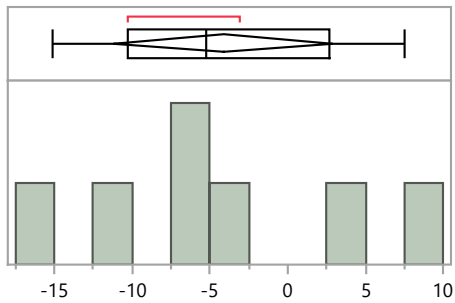
100.0%	maximum	-6.5
99.5%		-6.5
97.5%		-6.5
90.0%		-6.5
75.0%	quartile	-6.5
50.0%	median	-6.5
25.0%	quartile	-6.5
10.0%		-6.5
2.5%		-6.5
0.5%		-6.5
0.0%	minimum	-6.5

Summary Statistics

Mean	-6.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-239/240 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

100.0%	maximum	7.5
99.5%		7.5
97.5%		7.5
90.0%		7.5
75.0%	quartile	2.7
50.0%	median	-5.2
25.0%	quartile	-10.3
10.0%		-15.1
2.5%		-15.1
0.5%		-15.1
0.0%	minimum	-15.1

Summary Statistics

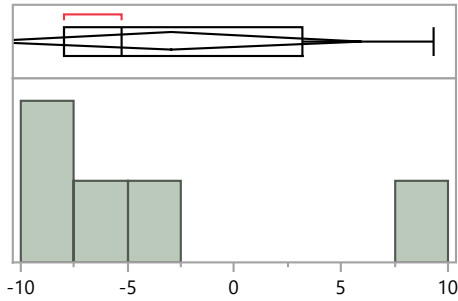
Mean	-4.2
Std Dev	7.6
Std Err Mean	2.9
Upper 95% Mean	2.9
Lower 95% Mean	-11.2
N	7.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-239/240 Other

Bias



Quantiles

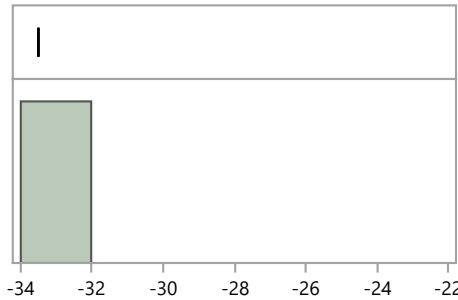
100.0%	maximum	9.3
99.5%		9.3
97.5%		9.3
90.0%		9.3
75.0%	quartile	3.2
50.0%	median	-5.3
25.0%	quartile	-8.0
10.0%		-8.0
2.5%		-8.0
0.5%		-8.0
0.0%	minimum	-8.0

Summary Statistics

Mean	-3.0
Std Dev	7.2
Std Err Mean	3.2
Upper 95% Mean	5.9
Lower 95% Mean	-11.9
N	5.0

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

Bias



Quantiles

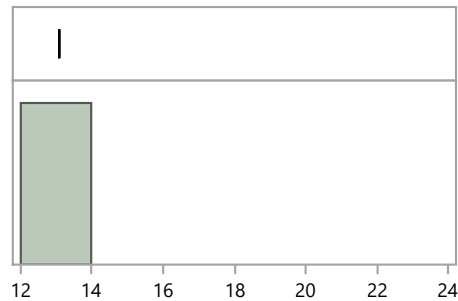
100.0%	maximum	-33.5
99.5%		-33.5
97.5%		-33.5
90.0%		-33.5
75.0%	quartile	-33.5
50.0%	median	-33.5
25.0%	quartile	-33.5
10.0%		-33.5
2.5%		-33.5
0.5%		-33.5
0.0%	minimum	-33.5

Summary Statistics

Mean	-33.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Radium-226 Acid leaching without hydrofluoric acid

Bias



Quantiles

100.0%	maximum	13.1
99.5%		13.1
97.5%		13.1
90.0%		13.1
75.0%	quartile	13.1
50.0%	median	13.1
25.0%	quartile	13.1
10.0%		13.1
2.5%		13.1
0.5%		13.1
0.0%	minimum	13.1

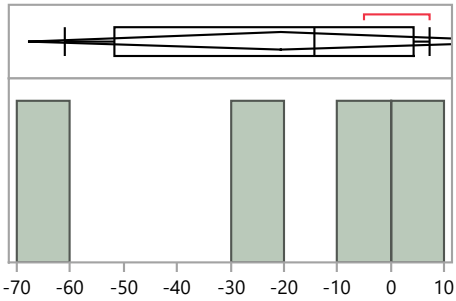
Summary Statistics

Mean	13.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Radium-226 Coprecipitation, acidified

Bias



Quantiles

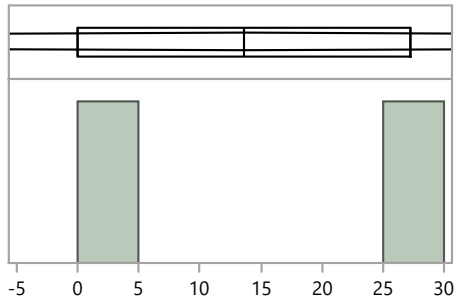
100.0%	maximum	7.2
99.5%		7.2
97.5%		7.2
90.0%		7.2
75.0%	quartile	4.1
50.0%	median	-14.4
25.0%	quartile	-51.6
10.0%		-60.9
2.5%		-60.9
0.5%		-60.9
0.0%	minimum	-60.9

Summary Statistics

Mean	-20.6
Std Dev	29.7
Std Err Mean	14.9
Upper 95% Mean	26.6
Lower 95% Mean	-67.9
N	4.0

Distributions Analyte_Method=Radium-226 Coprecipitation, straight

Bias



Quantiles

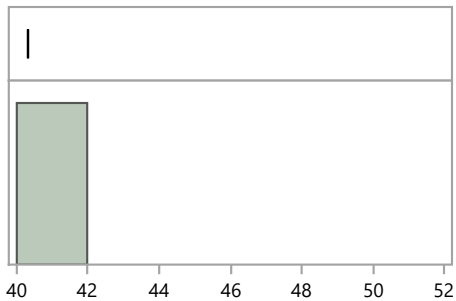
100.0%	maximum	27.2
99.5%		27.2
97.5%		27.2
90.0%		27.2
75.0%	quartile	27.2
50.0%	median	13.6
25.0%	quartile	0.0
10.0%		0.0
2.5%		0.0
0.5%		0.0
0.0%	minimum	0.0

Summary Statistics

Mean	13.6
Std Dev	19.2
Std Err Mean	13.6
Upper 95% Mean	186.4
Lower 95% Mean	-159.2
N	2.0

Distributions Analyte_Method=Radium-226 Evaporation, straight

Bias



Quantiles

100.0%	maximum	40.3
99.5%		40.3
97.5%		40.3
90.0%		40.3
75.0%	quartile	40.3
50.0%	median	40.3
25.0%	quartile	40.3
10.0%		40.3
2.5%		40.3
0.5%		40.3
0.0%	minimum	40.3

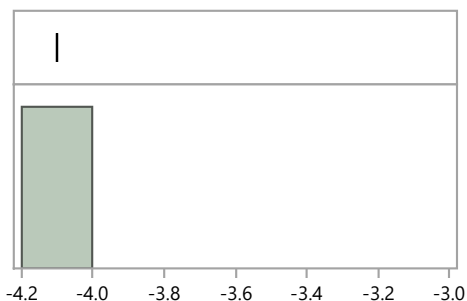
Summary Statistics

Mean	40.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Radium-226 Ion Exchange Chromatography / Ion Chromatography

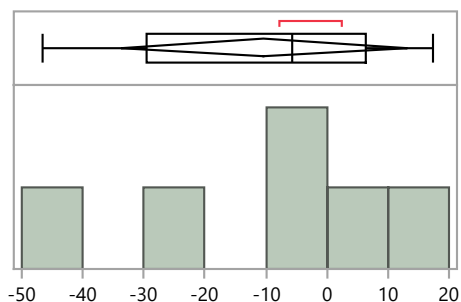
Bias



Quantiles			Summary Statistics	
100.0%	maximum	-4.1	Mean	-4.1
99.5%		-4.1	Std Dev	.
97.5%		-4.1	Std Err Mean	.
90.0%		-4.1	Upper 95% Mean	.
75.0%	quartile	-4.1	Lower 95% Mean	.
50.0%	median	-4.1	N	1.0
25.0%	quartile	-4.1		
10.0%		-4.1		
2.5%		-4.1		
0.5%		-4.1		
0.0%	minimum	-4.1		

Distributions Analyte_Method=Radium-226 Other

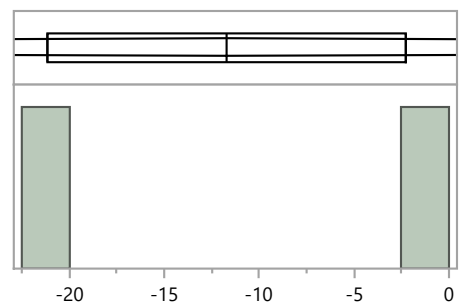
Bias



Quantiles			Summary Statistics	
100.0%	maximum	17.4	Mean	-10.3
99.5%		17.4	Std Dev	22.3
97.5%		17.4	Std Err Mean	9.1
90.0%		17.4	Upper 95% Mean	13.1
75.0%	quartile	6.2	Lower 95% Mean	-33.7
50.0%	median	-5.7	N	6.0
25.0%	quartile	-29.7		
10.0%		-46.6		
2.5%		-46.6		
0.5%		-46.6		
0.0%	minimum	-46.6		

Distributions Analyte_Method=Radium-226 Total dissolution by fusion

Bias



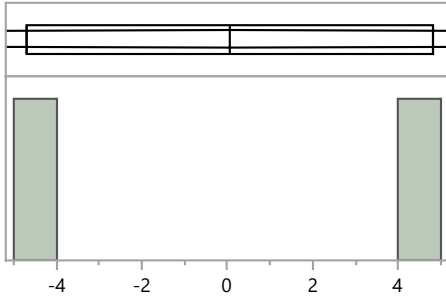
Quantiles			Summary Statistics	
100.0%	maximum	-2.3	Mean	-11.7
99.5%		-2.3	Std Dev	13.3
97.5%		-2.3	Std Err Mean	9.4
90.0%		-2.3	Upper 95% Mean	107.7
75.0%	quartile	-2.3	Lower 95% Mean	-131.1
50.0%	median	-11.7	N	2.0
25.0%	quartile	-21.1		
10.0%		-21.1		
2.5%		-21.1		
0.5%		-21.1		
0.0%	minimum	-21.1		

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Coprecipitation, acidified

Bias



Quantiles

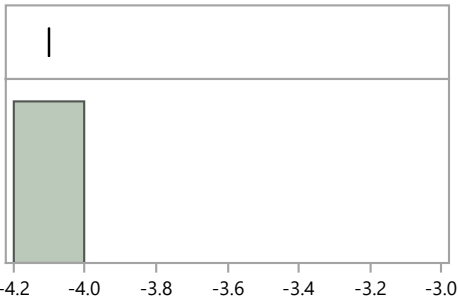
100.0%	maximum	4.8
99.5%		4.8
97.5%		4.8
90.0%		4.8
75.0%	quartile	4.8
50.0%	median	0.0
25.0%	quartile	-4.7
10.0%		-4.7
2.5%		-4.7
0.5%		-4.7
0.0%	minimum	-4.7

Summary Statistics

Mean	0.0
Std Dev	6.7
Std Err Mean	4.8
Upper 95% Mean	60.4
Lower 95% Mean	-60.3
N	2.0

Distributions Analyte_Method=Strontium-90 Coprecipitation, straight

Bias



Quantiles

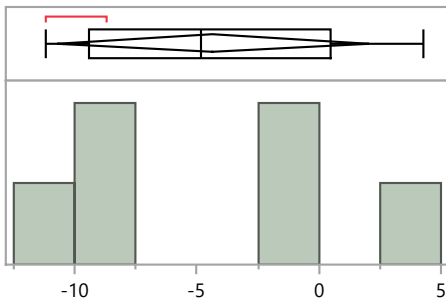
100.0%	maximum	-4.1
99.5%		-4.1
97.5%		-4.1
90.0%		-4.1
75.0%	quartile	-4.1
50.0%	median	-4.1
25.0%	quartile	-4.1
10.0%		-4.1
2.5%		-4.1
0.5%		-4.1
0.0%	minimum	-4.1

Summary Statistics

Mean	-4.1
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	4.3
99.5%		4.3
97.5%		4.3
90.0%		4.3
75.0%	quartile	0.5
50.0%	median	-4.8
25.0%	quartile	-9.4
10.0%		-11.2
2.5%		-11.2
0.5%		-11.2
0.0%	minimum	-11.2

Summary Statistics

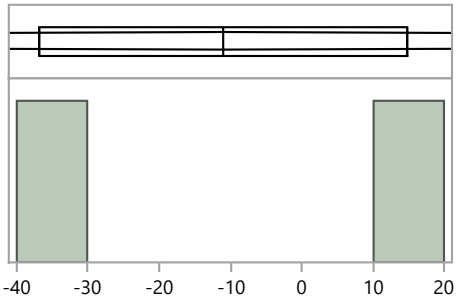
Mean	-4.4
Std Dev	6.1
Std Err Mean	2.5
Upper 95% Mean	2.0
Lower 95% Mean	-10.7
N	6.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Evaporation, acidified

Bias



Quantiles

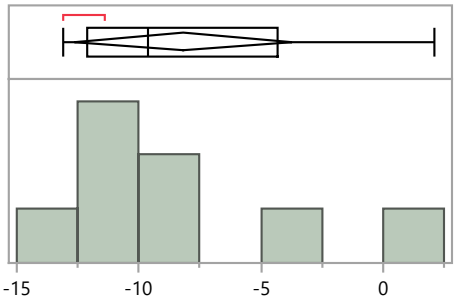
100.0%	maximum	14.9
99.5%		14.9
97.5%		14.9
90.0%		14.9
75.0%	quartile	14.9
50.0%	median	-11.0
25.0%	quartile	-36.9
10.0%		-36.9
2.5%		-36.9
0.5%		-36.9
0.0%	minimum	-36.9

Summary Statistics

Mean	-11.0
Std Dev	36.6
Std Err Mean	25.9
Upper 95% Mean	318.1
Lower 95% Mean	-340.1
N	2.0

Distributions Analyte_Method=Strontium-90 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

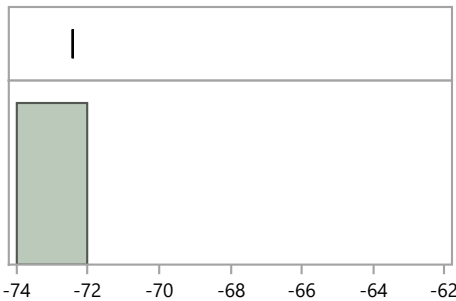
100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		2.1
75.0%	quartile	-4.3
50.0%	median	-9.7
25.0%	quartile	-12.1
10.0%		-13.1
2.5%		-13.1
0.5%		-13.1
0.0%	minimum	-13.1

Summary Statistics

Mean	-8.2
Std Dev	5.3
Std Err Mean	1.9
Upper 95% Mean	-3.7
Lower 95% Mean	-12.6
N	8.0

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

Bias



Quantiles

100.0%	maximum	-72.4
99.5%		-72.4
97.5%		-72.4
90.0%		-72.4
75.0%	quartile	-72.4
50.0%	median	-72.4
25.0%	quartile	-72.4
10.0%		-72.4
2.5%		-72.4
0.5%		-72.4
0.0%	minimum	-72.4

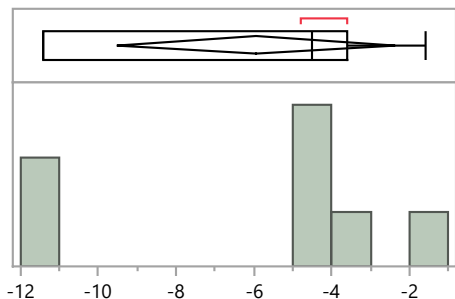
Summary Statistics

Mean	-72.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Other

Bias



Quantiles

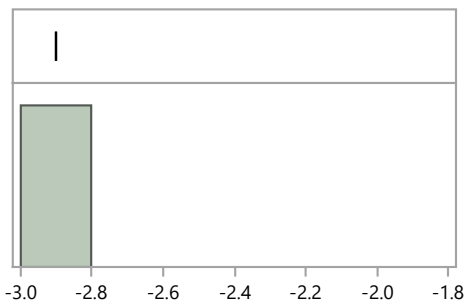
100.0%	maximum	-1.6
99.5%		-1.6
97.5%		-1.6
90.0%		-1.6
75.0%	quartile	-3.6
50.0%	median	-4.5
25.0%	quartile	-11.4
10.0%		-11.4
2.5%		-11.4
0.5%		-11.4
0.0%	minimum	-11.4

Summary Statistics

Mean	-5.9
Std Dev	3.9
Std Err Mean	1.5
Upper 95% Mean	-2.4
Lower 95% Mean	-9.5
N	7.0

Distributions Analyte_Method=Uranium-234 Acid dissolution with hydrofluoric acid

Bias



Quantiles

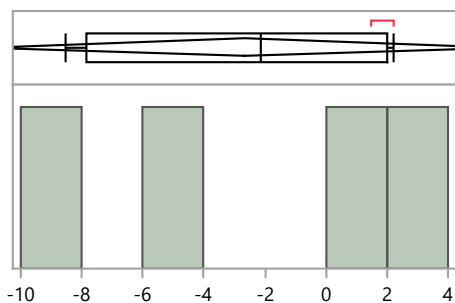
100.0%	maximum	-2.9
99.5%		-2.9
97.5%		-2.9
90.0%		-2.9
75.0%	quartile	-2.9
50.0%	median	-2.9
25.0%	quartile	-2.9
10.0%		-2.9
2.5%		-2.9
0.5%		-2.9
0.0%	minimum	-2.9

Summary Statistics

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

Distributions Analyte_Method=Uranium-234 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	2.2
99.5%		2.2
97.5%		2.2
90.0%		2.2
75.0%	quartile	2.0
50.0%	median	-2.2
25.0%	quartile	-7.8
10.0%		-8.5
2.5%		-8.5
0.5%		-8.5
0.0%	minimum	-8.5

Summary Statistics

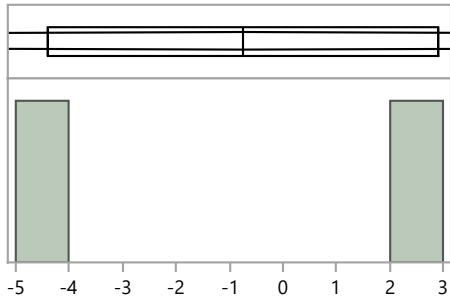
Mean	-2.7
Std Dev	5.3
Std Err Mean	2.7
Upper 95% Mean	5.8
Lower 95% Mean	-11.1
N	4.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Coprecipitation, straight

Bias



Quantiles

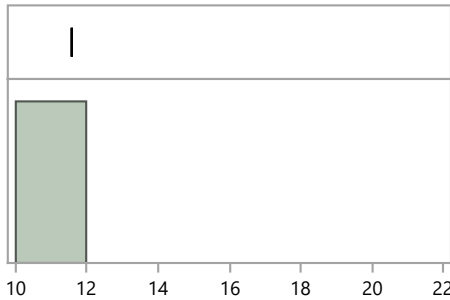
100.0%	maximum	2.9
99.5%		2.9
97.5%		2.9
90.0%		2.9
75.0%	quartile	2.9
50.0%	median	-0.8
25.0%	quartile	-4.4
10.0%		-4.4
2.5%		-4.4
0.5%		-4.4
0.0%	minimum	-4.4

Summary Statistics

Mean	-0.8
Std Dev	5.2
Std Err Mean	3.7
Upper 95% Mean	45.6
Lower 95% Mean	-47.1
N	2.0

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

Bias



Quantiles

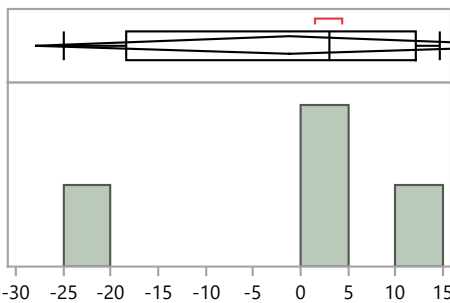
100.0%	maximum	11.6
99.5%		11.6
97.5%		11.6
90.0%		11.6
75.0%	quartile	11.6
50.0%	median	11.6
25.0%	quartile	11.6
10.0%		11.6
2.5%		11.6
0.5%		11.6
0.0%	minimum	11.6

Summary Statistics

Mean	11.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Evaporation, acidified

Bias



Quantiles

100.0%	maximum	14.6
99.5%		14.6
97.5%		14.6
90.0%		14.6
75.0%	quartile	12.1
50.0%	median	3.0
25.0%	quartile	-18.4
10.0%		-25.0
2.5%		-25.0
0.5%		-25.0
0.0%	minimum	-25.0

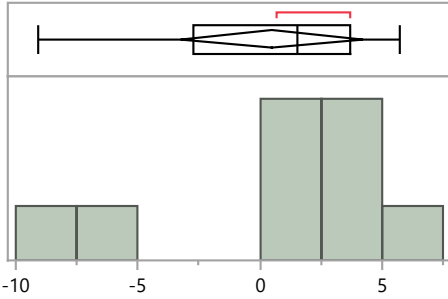
Summary Statistics

Mean	-1.1
Std Dev	16.9
Std Err Mean	8.4
Upper 95% Mean	25.7
Lower 95% Mean	-28.0
N	4.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

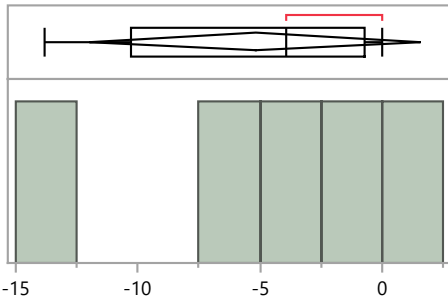
100.0%	maximum	5.7
99.5%		5.7
97.5%		5.7
90.0%		5.7
75.0%	quartile	3.7
50.0%	median	1.5
25.0%	quartile	-2.7
10.0%		-9.1
2.5%		-9.1
0.5%		-9.1
0.0%	minimum	-9.1

Summary Statistics

Mean	0.5
Std Dev	4.9
Std Err Mean	1.6
Upper 95% Mean	4.2
Lower 95% Mean	-3.3
N	9.0

Distributions Analyte_Method=Uranium-234 Other

Bias



Quantiles

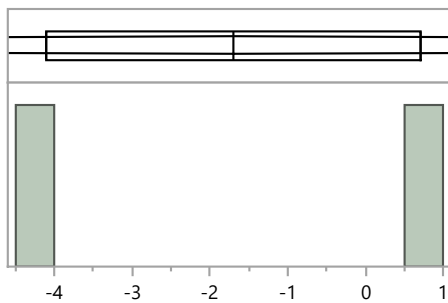
100.0%	maximum	0.0
99.5%		0.0
97.5%		0.0
90.0%		0.0
75.0%	quartile	-0.8
50.0%	median	-3.9
25.0%	quartile	-10.3
10.0%		-13.8
2.5%		-13.8
0.5%		-13.8
0.0%	minimum	-13.8

Summary Statistics

Mean	-5.2
Std Dev	5.5
Std Err Mean	2.4
Upper 95% Mean	1.6
Lower 95% Mean	-12.0
N	5.0

Distributions Analyte_Method=Uranium-234 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	0.7
99.5%		0.7
97.5%		0.7
90.0%		0.7
75.0%	quartile	0.7
50.0%	median	-1.7
25.0%	quartile	-4.1
10.0%		-4.1
2.5%		-4.1
0.5%		-4.1
0.0%	minimum	-4.1

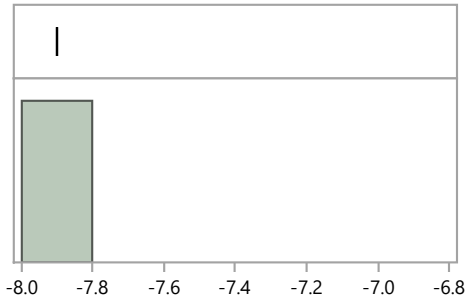
Summary Statistics

Mean	-1.7
Std Dev	3.4
Std Err Mean	2.4
Upper 95% Mean	28.8
Lower 95% Mean	-32.2
N	2.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 Acid dissolution with hydrofluoric acid

Bias



Quantiles

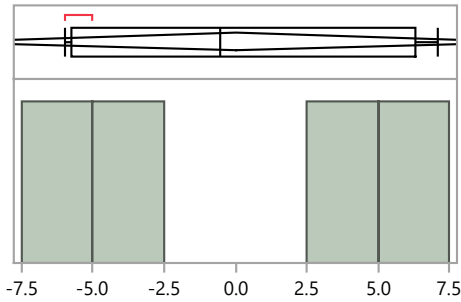
100.0%	maximum	-7.9
99.5%		-7.9
97.5%		-7.9
90.0%		-7.9
75.0%	quartile	-7.9
50.0%	median	-7.9
25.0%	quartile	-7.9
10.0%		-7.9
2.5%		-7.9
0.5%		-7.9
0.0%	minimum	-7.9

Summary Statistics

Mean	-7.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 Coprecipitation, acidified

Bias



Quantiles

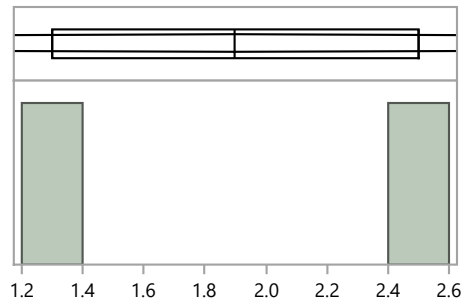
100.0%	maximum	7.1
99.5%		7.1
97.5%		7.1
90.0%		7.1
75.0%	quartile	6.3
50.0%	median	-0.6
25.0%	quartile	-5.8
10.0%		-6.0
2.5%		-6.0
0.5%		-6.0
0.0%	minimum	-6.0

Summary Statistics

Mean	0.0
Std Dev	6.5
Std Err Mean	3.2
Upper 95% Mean	10.3
Lower 95% Mean	-10.3
N	4.0

Distributions Analyte_Method=Uranium-238 Coprecipitation, straight

Bias



Quantiles

100.0%	maximum	2.5
99.5%		2.5
97.5%		2.5
90.0%		2.5
75.0%	quartile	2.5
50.0%	median	1.9
25.0%	quartile	1.3
10.0%		1.3
2.5%		1.3
0.5%		1.3
0.0%	minimum	1.3

Summary Statistics

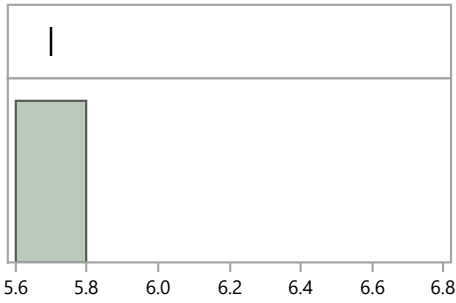
Mean	1.9
Std Dev	0.8
Std Err Mean	0.6
Upper 95% Mean	9.5
Lower 95% Mean	-5.7
N	2.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

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

Bias



Quantiles

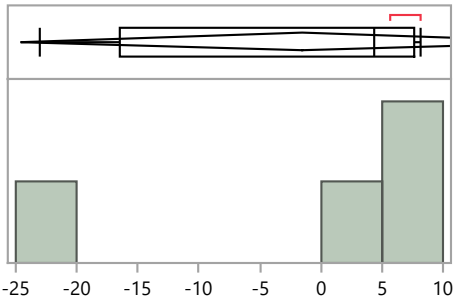
100.0%	maximum	5.7
99.5%		5.7
97.5%		5.7
90.0%		5.7
75.0%	quartile	5.7
50.0%	median	5.7
25.0%	quartile	5.7
10.0%		5.7
2.5%		5.7
0.5%		5.7
0.0%	minimum	5.7

Summary Statistics

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

Distributions Analyte_Method=Uranium-238 Evaporation, acidified

Bias



Quantiles

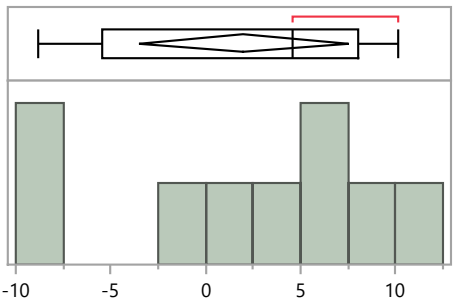
100.0%	maximum	8.2
99.5%		8.2
97.5%		8.2
90.0%		8.2
75.0%	quartile	7.6
50.0%	median	4.4
25.0%	quartile	-16.5
10.0%		-23.0
2.5%		-23.0
0.5%		-23.0
0.0%	minimum	-23.0

Summary Statistics

Mean	-1.5
Std Dev	14.5
Std Err Mean	7.2
Upper 95% Mean	21.5
Lower 95% Mean	-24.6
N	4.0

Distributions Analyte_Method=Uranium-238 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

100.0%	maximum	10.1
99.5%		10.1
97.5%		10.1
90.0%		10.1
75.0%	quartile	8.1
50.0%	median	4.6
25.0%	quartile	-5.5
10.0%		-8.8
2.5%		-8.8
0.5%		-8.8
0.0%	minimum	-8.8

Summary Statistics

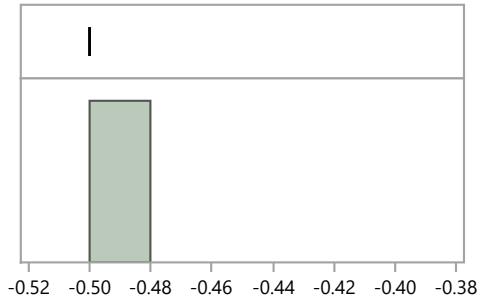
Mean	2.0
Std Dev	7.1
Std Err Mean	2.4
Upper 95% Mean	7.5
Lower 95% Mean	-3.5
N	9.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

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

Bias



Quantiles

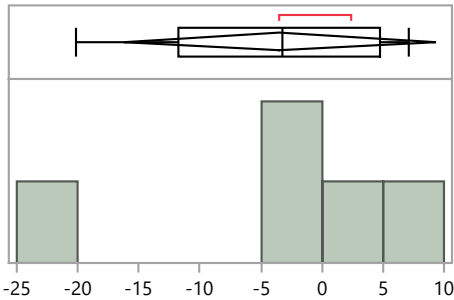
100.0%	maximum	-0.5
99.5%		-0.5
97.5%		-0.5
90.0%		-0.5
75.0%	quartile	-0.5
50.0%	median	-0.5
25.0%	quartile	-0.5
10.0%		-0.5
2.5%		-0.5
0.5%		-0.5
0.0%	minimum	-0.5

Summary Statistics

Mean	-0.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 Other

Bias



Quantiles

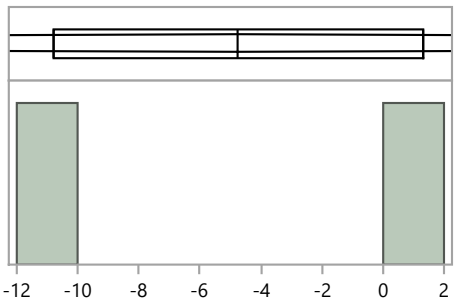
100.0%	maximum	7.1
99.5%		7.1
97.5%		7.1
90.0%		7.1
75.0%	quartile	4.8
50.0%	median	-3.3
25.0%	quartile	-11.8
10.0%		-20.1
2.5%		-20.1
0.5%		-20.1
0.0%	minimum	-20.1

Summary Statistics

Mean	-3.5
Std Dev	10.3
Std Err Mean	4.6
Upper 95% Mean	9.3
Lower 95% Mean	-16.2
N	5.0

Distributions Analyte_Method=Uranium-238 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	1.3
99.5%		1.3
97.5%		1.3
90.0%		1.3
75.0%	quartile	1.3
50.0%	median	-4.8
25.0%	quartile	-10.8
10.0%		-10.8
2.5%		-10.8
0.5%		-10.8
0.0%	minimum	-10.8

Summary Statistics

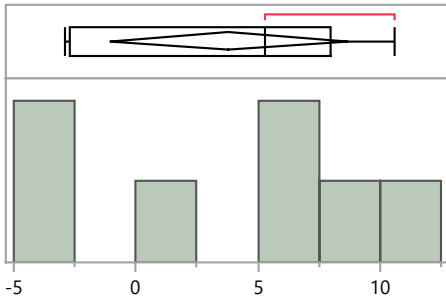
Mean	-4.8
Std Dev	8.6
Std Err Mean	6.1
Upper 95% Mean	72.1
Lower 95% Mean	-81.6
N	2.0

MaW47 Distribution by Preparation Method

MaW Distribution by Prep Method

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

Bias



Quantiles

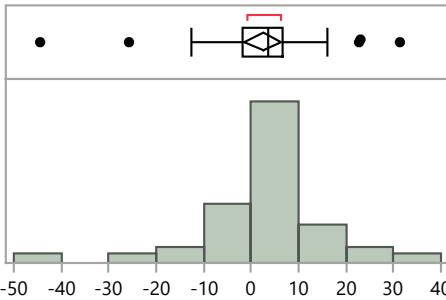
100.0%	maximum	10.6
99.5%		10.6
97.5%		10.6
90.0%		10.6
75.0%	quartile	8.0
50.0%	median	5.3
25.0%	quartile	-2.7
10.0%		-2.9
2.5%		-2.9
0.5%		-2.9
0.0%	minimum	-2.9

Summary Statistics

Mean	3.8
Std Dev	5.2
Std Err Mean	2.0
Upper 95% Mean	8.7
Lower 95% Mean	-1.0
N	7.0

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

Bias



Quantiles

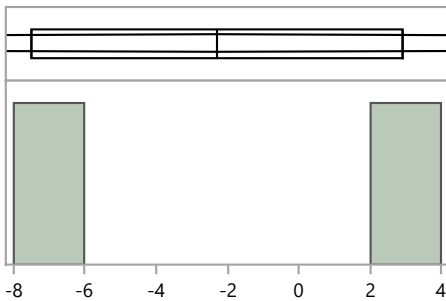
100.0%	maximum	31.3
99.5%		31.3
97.5%		30.7
90.0%		14.6
75.0%	quartile	6.5
50.0%	median	3.5
25.0%	quartile	-1.8
10.0%		-10.2
2.5%		-43.0
0.5%		-44.4
0.0%	minimum	-44.4

Summary Statistics

Mean	2.4
Std Dev	12.2
Std Err Mean	1.9
Upper 95% Mean	6.2
Lower 95% Mean	-1.4
N	42.0

Distributions Analyte_Method=Zinc-65 Other

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	-2.3
25.0%	quartile	-7.5
10.0%		-7.5
2.5%		-7.5
0.5%		-7.5
0.0%	minimum	-7.5

Summary Statistics

Mean	-2.3
Std Dev	7.4
Std Err Mean	5.2
Upper 95% Mean	63.8
Lower 95% Mean	-68.4
N	2.0