

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.

GrW44 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ADEM01	Alabama Department of Environmental Management	GrW
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	GrW
AFOH01	USAFSAM/OEA	GrW
ARGO01	Idaho National Laboratory	GrW
ASUK99	AWE (Aldermaston)	GrW
AY1201	Consolidated Nuclear Security, LLC, ACO Laboratory	GrW
CESL01	Lawrence Livermore National Laboratory - EMRL	GrW
CMRC01	Carlsbad Environmental Monitoring and Research Center	GrW
DEHS01	Department of Environmental Health & Safety	GrW
ELIW01	Energy Laboratories, Inc.	GrW
ERCL01	Washington State Public Health Laboratories	GrW
ERHD99	Radiation Protection Bureau Health Canada RSD NMS	GrW
FDHE01	Florida Dept of Health Environmental Laboratory	GrW
GENE01	GEL Laboratories, LLC	GrW
GPCL01	Georgia Power Company Environmental Laboratory	GrW
HCAL01	Lawrence Livermore National Laboratory	GrW
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	GrW
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	GrW
ISUE01	ISU Environmental Monitoring Laboratory	GrW
ISUP01	ISU - Department of Physics/Health Physics/EAL	GrW
LZCA01	ACZ Laboratories, Inc	GrW
MART03	Radioactive Material Analysis Laboratory	GrW
MNDH01	Minnesota Department of Health, Public Health Lab. Division	GrW
NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	GrW
NJDH01	New Jersey Dept. of Health, PHEL, ECLS	GrW
ODHL01	Ohio Department of Health Laboratory	GrW
ORIS01	ORISE/IEAV	GrW
SEML01	SRS Environmental Monitoring Laboratory	GrW
SOUT01	Southwest Research Institute	GrW
TDHL01	Texas Department of State Health Services Laboratory	GrW
TELE02	ATI Environmental, Inc., Midwest Lab	GrW
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	GrW
TNUT01	St. Louis USACE FUSRAP Laboratory	GrW
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	GrW
WSHL01	Wisconsin State Laboratory of Hygiene	GrW

Laboratories Not Reporting

Lab Code	Lab Name	Matrix Code
ARSL01	ARS Aleut Analytical, LLC	GrW
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	GrW
NARL01	National Analytical Radiation Environmental Laboratory	GrW
RPSC01	Radiation Protection Service	GrW
SMER01	State of Michigan EGLE Radiological Lab	GrW
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	GrW

Study Reference Values

MAPEP-21-GrW44

Radiological Reference Date: 02/01/2021

Analyte	Ref Value	Ref Unc
Radiological		Units: (Bq/L)
Gross alpha	0.87	0.02
Gross beta	2.50	0.07

Sample Statistical Summary

MAPEP-21-GrW44

Radiological Reference Date: 02/01/2021

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (Bq/L)
Gross alpha	35	35	0.82	0.19	0.87	0.02	0.26 - 1.48
Gross beta	35	32	2.68	0.30	2.50	0.07	1.25 - 3.75

- 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".

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

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

Flag Summary Report

MAPEP-21-GrW44

Radiological

Analyte	A	W	RW	N
Gross alpha	35			
Gross beta	32			3



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

Laboratory Results For MAPEP-21-GrW44

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.70152	0.87	A		-19.4	0.26 - 1.48	0.55796	N
Gross beta	7.881	2.50	N		215.2	1.25 - 3.75	0.239834	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

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

Radiation Lab

Abu Dhabi, - -

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.54	0.87	A		-37.9	0.26 - 1.48	0.12	W
Gross beta	2.69	2.50	A		7.6	1.25 - 3.75	0.13	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

(AFOH01) USAFSAM/OEA

2510 Fifth Street, Area B

Wright-Patterson AFB, OH 45433-7913

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.42	0.87	A		63.2	0.26 - 1.48	0.14	A
Gross beta	2.76	2.50	A		10.4	1.25 - 3.75	0.10	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (ARGO01) Idaho National Laboratory
 INL, Materials and Fuels Complex
 Idaho Falls, ID 83415

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.940	0.87	A		8.0	0.26 - 1.48	0.080	A
Gross beta	2.740	2.50	A		9.6	1.25 - 3.75	0.107	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

(ASUK99) AWE (Aldermaston)

A38.1 AWE,

Reading, Berkshire RG7 4PR

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.431	0.87	A		-50.5	0.26 - 1.48	0.044	A
Gross beta	2.786	2.50	A		11.4	1.25 - 3.75	0.078	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (AY1201) Consolidated Nuclear Security, LLC, ACO Laboratory
 Y12, NSC, Bldg. 9995, Rm 142
 Oak Ridge, TN 37831-8189

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.894	0.87	A		2.8	0.26 - 1.48	0.18	W
Gross beta	3.05	2.50	A		22.0	1.25 - 3.75	0.30	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (CESL01) Lawrence Livermore National Laboratory - EMRL
 7000 East Avenue
 Livermore, CA 94551

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	5.04E-01	0.87	A		-42.1	0.26 - 1.48	6.05E-02	A
Gross beta	2.42E+00	2.50	A		-3.2	1.25 - 3.75	9.15E-02	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (CMRC01) Carlsbad Environmental Monitoring and Research Center
 1400 University Dr.
 Carlsbad, NM 88220

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.984	0.87	A		13.1	0.26 - 1.48	0.148	W
Gross beta	2.875	2.50	A		15.0	1.25 - 3.75	0.372	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (DEHS01) Department of Environmental Health & Safety
 North Carolina State Univ.
 Raleigh, NC 27695-8007

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.23	0.87	A		41.4	0.26 - 1.48	0.27	W
Gross beta	3.12	2.50	A		24.8	1.25 - 3.75	0.35	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

(ELIW01) Energy Laboratories, Inc.
 2393 Salt Creek HWY
 Casper, Wy 82601

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.9	0.87	A		3.4	0.26 - 1.48	0.1	A
Gross beta	2.8	2.50	A		12.0	1.25 - 3.75	0.15	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150th Street
 Shoreline, WA 98155-9701

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.981	0.87	A		12.8	0.26 - 1.48	0.072	A
Gross beta	2.85	2.50	A		14.0	1.25 - 3.75	0.07	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (ERHD99) Radiation Protection Bureau Health Canada RSD NMS
 775 Brookfield Road AL6302D1
 Ottawa, Ontario K1A 1C1

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.757	0.87	A		-13.0	0.26 - 1.48	0.152	W
Gross beta	2.736	2.50	A		9.4	1.25 - 3.75	0.653	W

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

(FDHE01) Florida Dept of Health Environmental Laboratory
 PO Box 680069
 Orlando, FL 32868-0069

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.9495	0.87	A		9.1	0.26 - 1.48	0.282	W
Gross beta	2.712	2.50	A		8.5	1.25 - 3.75	0.224	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

(GENE01) GEL Laboratories, LLC

2040 Savage Road

Charleston, SC 29407

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.782	0.87	A		-10.1	0.26 - 1.48	0.0993	A
Gross beta	2.40	2.50	A		-4.0	1.25 - 3.75	0.0215	N

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (GPCL01) Georgia Power Company Environmental Laboratory
 2480 Maner Road
 Atlanta, GA 30339

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.83	0.87	A		-4.6	0.26 - 1.48	0.15	W
Gross beta	3.20	2.50	A		28.0	1.25 - 3.75	0.47	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (HCAL01) Lawrence Livermore National Laboratory
 Analytical Services and Instrumentation Analytical Lab
 Livermore, CA 94550

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.61	0.87	A		-29.9	0.26 - 1.48	0.08	A
Gross beta	2.51	2.50	A		0.4	1.25 - 3.75	0.17	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.839	0.87	A		-3.6	0.26 - 1.48	0.173	W
Gross beta	2.52	2.50	A		0.8	1.25 - 3.75	0.171	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.850	0.87	A		-2.3	0.26 - 1.48	0.055	A
Gross beta	2.565	2.50	A		2.6	1.25 - 3.75	0.068	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (ISUE01) ISU Environmental Monitoring Laboratory
 785 5th 8th Ave Rm B107
 Pocatello, Idaho 83209

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.82	0.87	A		-5.7	0.26 - 1.48	0.04	A
Gross beta	3.28	2.50	A		31.2	1.25 - 3.75	0.04	N

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.66	0.87	A		-24.1	0.26 - 1.48	0.092	A
Gross beta	4.097	2.50	N		63.9	1.25 - 3.75	0.064	N

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.676	0.87	A		-22.3	0.26 - 1.48	.154	W
Gross beta	2.45	2.50	A		-2.0	1.25 - 3.75	.162	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (MART03) Radioactive Material Analysis Laboratory
 ORNL
 Oak Ridge, TN 37830

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.830	0.87	A		-4.6	0.26 - 1.48	0.053	A
Gross beta	2.863	2.50	A		14.5	1.25 - 3.75	0.073	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.90354	0.87	A		3.9	0.26 - 1.48	0.20239	W
Gross beta	1.98431	2.50	A		-20.6	1.25 - 3.75	0.1258	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (NESI01) BWXT-Radioisotope & Analytical Chemistry Laboratory
 Lynchburg Technology Center
 Lynchburg, VA 24504-5447

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.857	0.87	A		-1.5	0.26 - 1.48	0.055	A
Gross beta	2.409	2.50	A		-3.6	1.25 - 3.75	0.063	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (NJDH01) New Jersey Dept. of Health, PHEL, ECLS
 3 Schwarzkopf Drive
 West Trenton, NJ 08628

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.859	0.87	A		-1.3	0.26 - 1.48	0.053	A
Gross beta	2.79	2.50	A		11.6	1.25 - 3.75	0.079	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (ODHL01) Ohio Department of Health Laboratory
 8995 E Main Street
 Reynoldsburg, OH 43068

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.70	0.87	A		-19.5	0.26 - 1.48	0.09	A
Gross beta	2.85	2.50	A		14.0	1.25 - 3.75	0.18	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

(ORIS01) ORISE/IEAV

PO Box 117

Oak Ridge, TN 37831-0117

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.911	0.87	A		4.7	0.26 - 1.48	0.068	A
Gross beta	2.754	2.50	A		10.2	1.25 - 3.75	0.055	N

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (SEML01) SRS Environmental Monitoring Laboratory
 Bldg 735-B
 Aiken, SC 29808

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.852	0.87	A		-2.1	0.26 - 1.48	0.096	A
Gross beta	2.88	2.50	A		15.2	1.25 - 3.75	0.14	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (SOUT01) Southwest Research Institute
 6220 Culebra Rd.
 San Antonio, TX 78228-0510

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.726	0.87	A		-16.6	0.26 - 1.48	0.126	W
Gross beta	1.91	2.50	A		-23.6	1.25 - 3.75	0.166	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.972	0.87	A		11.7	0.26 - 1.48	0.069	A
Gross beta	2.499	2.50	A		0.0	1.25 - 3.75	0.063	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (TELE02) ATI Environmental, Inc., Midwest Lab
 700 Landwehr Road
 Northbrook, IL 60062-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.73	0.87	A		-16.1	0.26 - 1.48	0.06	A
Gross beta	2.38	2.50	A		-4.8	1.25 - 3.75	0.06	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY
 601 A SCARBORO RD
 OAK RIDGE, TN 37830-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.813	0.87	A		-6.6	0.26 - 1.48	0.162	W
Gross beta	2.896	2.50	A		15.8	1.25 - 3.75	0.149	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (TNUT01) St. Louis USACE FUSRAP Laboratory
 112 James S McDonnell Blvd
 HAZELWOOD, MO 63042

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.0069	0.87	A		15.7	0.26 - 1.48	.1041	A
Gross beta	1.2430	2.50	N		-50.3	1.25 - 3.75	.1188	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH
 1638 Roseytown Road
 Greensburg, PA 15601

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.838	0.87	A		-3.7	0.26 - 1.48	0.148	W
Gross beta	2.467	2.50	A		-1.3	1.25 - 3.75	0.146	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-21-GrW44
 (WSHL01) Wisconsin State Laboratory of Hygiene
 2601 Agriculture Drive
 Madison, WI 53718

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.555	0.87	A		-36.2	0.26 - 1.48	0.039	A
Gross beta	2.6011	2.50	A		4.0	1.25 - 3.75	0.062	A

Radiological Reference Date: February 1, 2021

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 70% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2% \leq RP \leq 15%

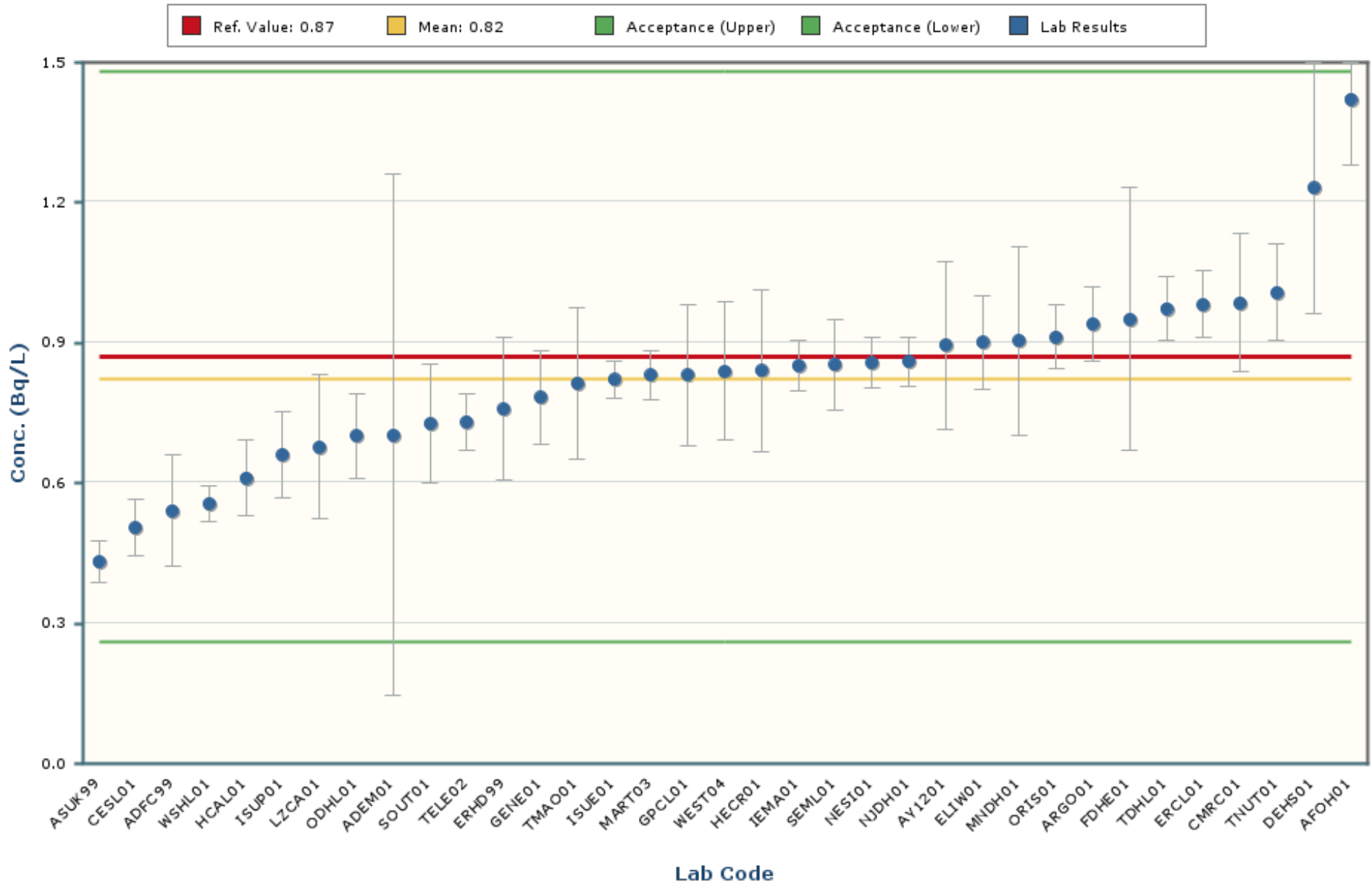
ACCEPTABLE WITH WARNING.....15%<RP \leq 30%

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision

Gross alpha

MAPEP-21-GrW44

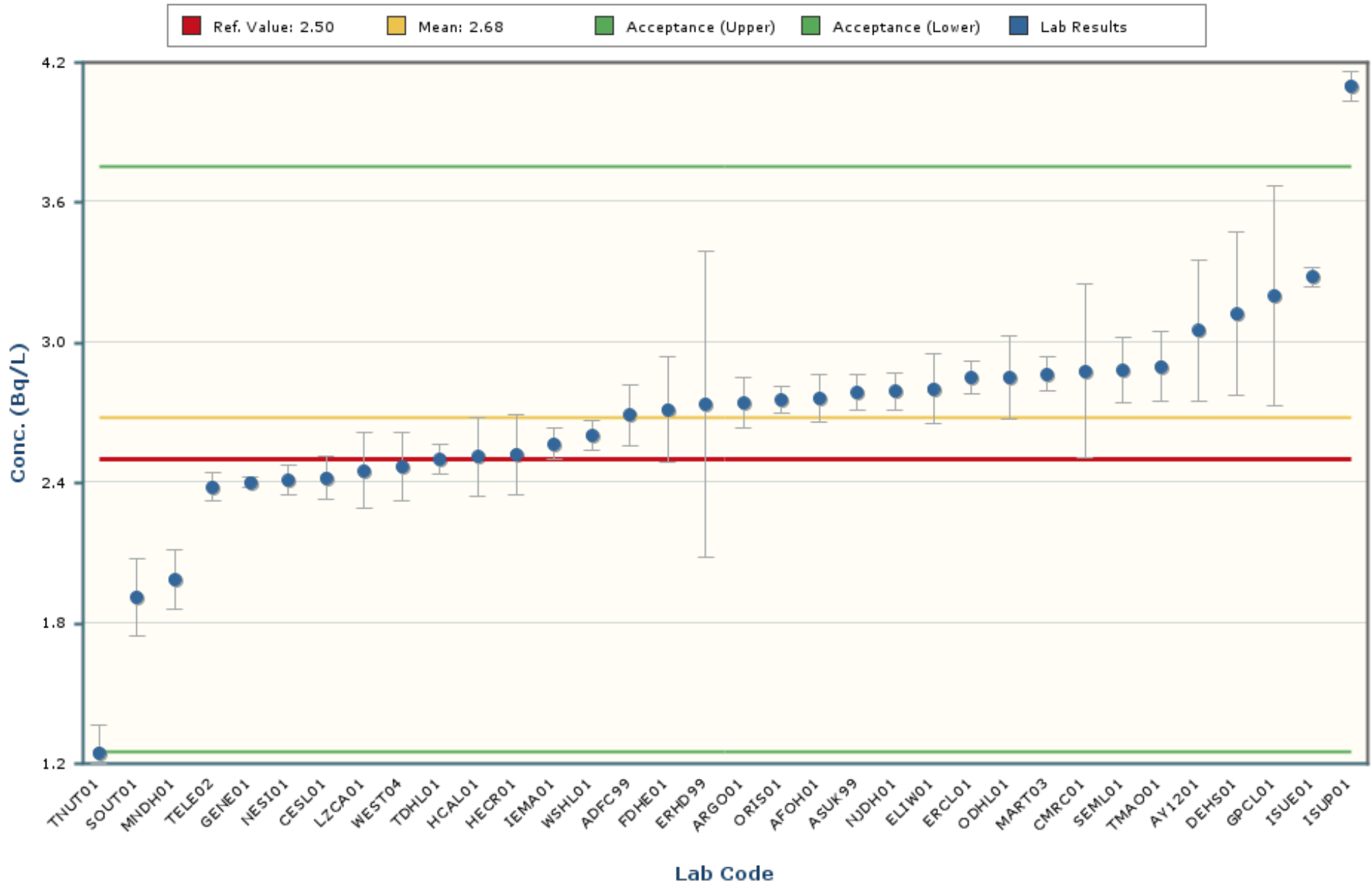


Notes:

The chart shows only data points with values between -0.13 and 1.78 (± 5 Standard Deviations).

Gross beta

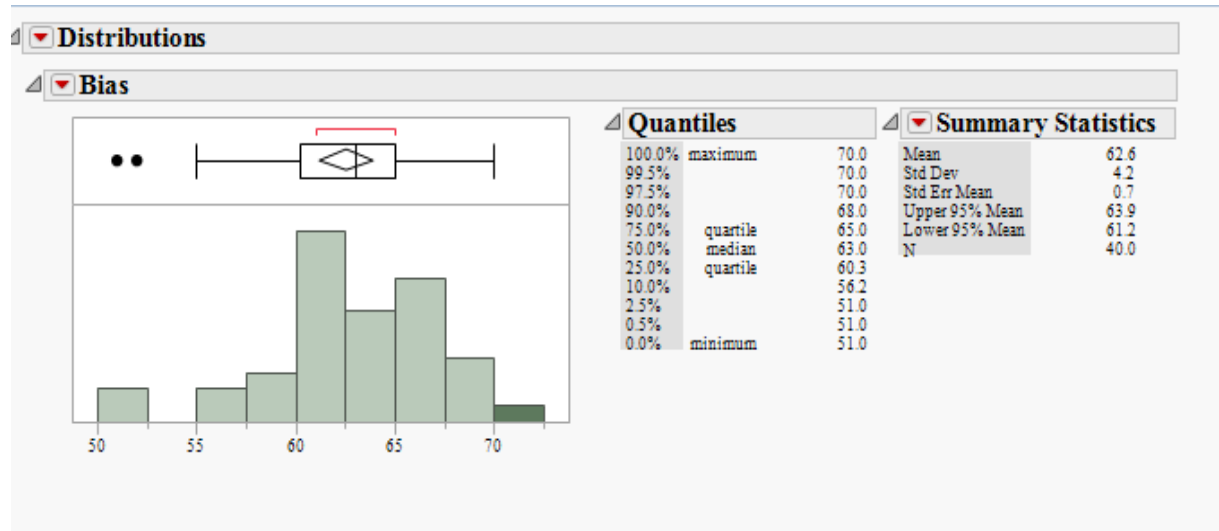
MAPEP-21-GrW44



Notes:

The chart shows only data points with values between 1.17 and 4.19 (± 5 Standard Deviations).

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.

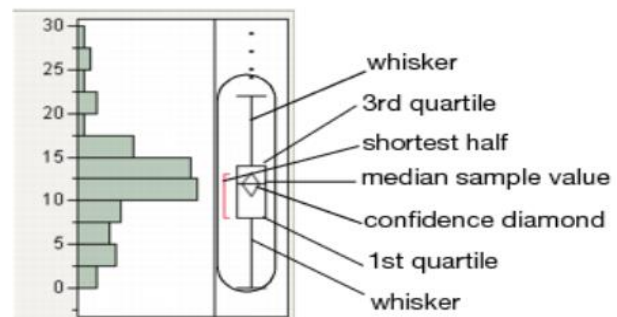


Outlier Box Plot

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)



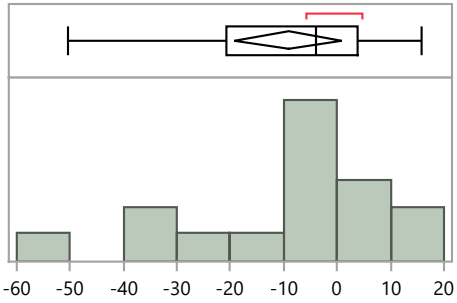
If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

GrW44 Distribution by Detection Method

GrW Distribution by Detection Method

Distributions Analyte_Detection=Gross alpha Gas Flow Proportional Counter

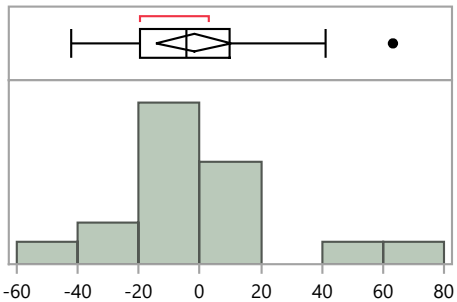
Bias



Quantiles			Summary Statistics	
100.0%	maximum	15.7	Mean	-9.1
99.5%		15.7	Std Dev	18.8
97.5%		15.7	Std Err Mean	4.7
90.0%		13.9	Upper 95% Mean	0.9
75.0%	quartile	3.8	Lower 95% Mean	-19.2
50.0%	median	-4.1	N	16.0
25.0%	quartile	-20.8		
10.0%		-41.7		
2.5%		-50.5		
0.5%		-50.5		
0.0%	minimum	-50.5		

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

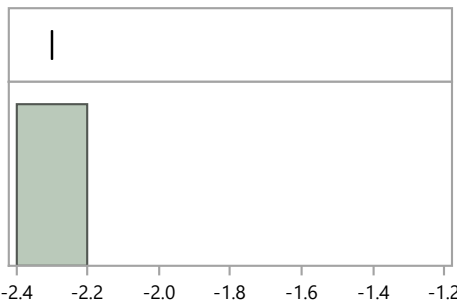
Bias



Quantiles			Summary Statistics	
100.0%	maximum	63.2	Mean	-2.0
99.5%		63.2	Std Dev	25.1
97.5%		63.2	Std Err Mean	5.9
90.0%		43.6	Upper 95% Mean	10.5
75.0%	quartile	9.8	Lower 95% Mean	-14.4
50.0%	median	-4.2	N	18.0
25.0%	quartile	-19.4		
10.0%		-31.1		
2.5%		-42.1		
0.5%		-42.1		
0.0%	minimum	-42.1		

Distributions Analyte_Detection=Gross alpha Liquid Scintillation Counter

Bias



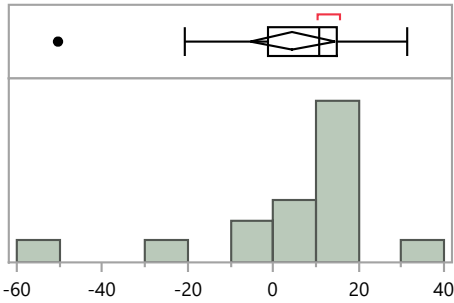
Quantiles			Summary Statistics	
100.0%	maximum	-2.3	Mean	-2.3
99.5%		-2.3	Std Dev	.
97.5%		-2.3	Std Err Mean	.
90.0%		-2.3	Upper 95% Mean	.
75.0%	quartile	-2.3	Lower 95% Mean	.
50.0%	median	-2.3	N	1.0
25.0%	quartile	-2.3		
10.0%		-2.3		
2.5%		-2.3		
0.5%		-2.3		
0.0%	minimum	-2.3		

GrW44 Distribution by Detection Method

GrW Distribution by Detection Method

Distributions Analyte_Detection=Gross beta Gas Flow Proportional Counter

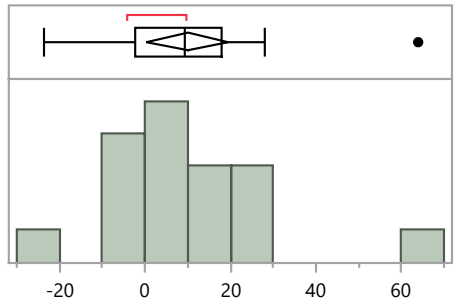
Bias



Quantiles		Summary Statistics		
100.0%	maximum	31.2	Mean	4.5
99.5%		31.2	Std Dev	18.5
97.5%		31.2	Std Err Mean	4.6
90.0%		20.4	Upper 95% Mean	14.3
75.0%	quartile	14.9	Lower 95% Mean	-5.4
50.0%	median	10.8	N	16.0
25.0%	quartile	-1.3		
10.0%		-29.5		
2.5%		-50.3		
0.5%		-50.3		
0.0%	minimum	-50.3		

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

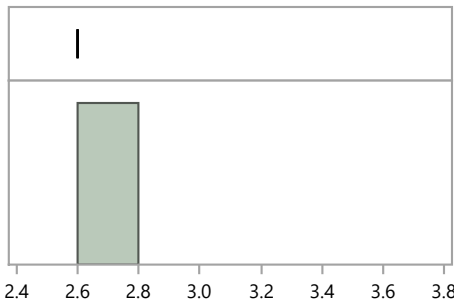
Bias



Quantiles		Summary Statistics		
100.0%	maximum	63.9	Mean	10.0
99.5%		63.9	Std Dev	18.8
97.5%		63.9	Std Err Mean	4.6
90.0%		35.2	Upper 95% Mean	19.6
75.0%	quartile	18.0	Lower 95% Mean	0.3
50.0%	median	9.4	N	17.0
25.0%	quartile	-2.3		
10.0%		-7.9		
2.5%		-23.6		
0.5%		-23.6		
0.0%	minimum	-23.6		

Distributions Analyte_Detection=Gross beta Liquid Scintillation Counter

Bias

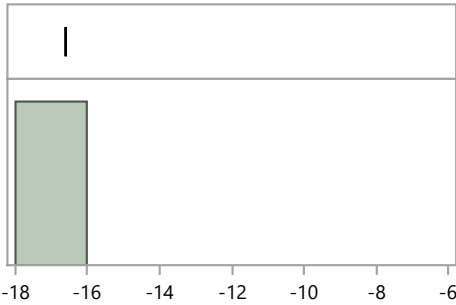


Quantiles		Summary Statistics		
100.0%	maximum	2.6	Mean	2.6
99.5%		2.6	Std Dev	.
97.5%		2.6	Std Err Mean	.
90.0%		2.6	Upper 95% Mean	.
75.0%	quartile	2.6	Lower 95% Mean	.
50.0%	median	2.6	N	1.0
25.0%	quartile	2.6		
10.0%		2.6		
2.5%		2.6		
0.5%		2.6		
0.0%	minimum	2.6		

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross alpha Acid dissolution with hydrofluoric acid

Bias



Quantiles

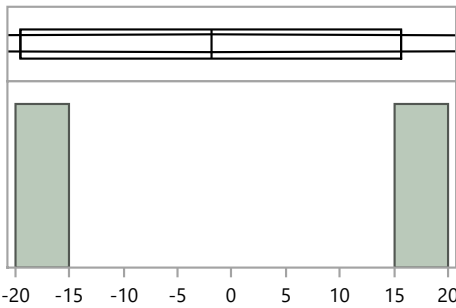
100.0%	maximum	-16.6
99.5%		-16.6
97.5%		-16.6
90.0%		-16.6
75.0%	quartile	-16.6
50.0%	median	-16.6
25.0%	quartile	-16.6
10.0%		-16.6
2.5%		-16.6
0.5%		-16.6
0.0%	minimum	-16.6

Summary Statistics

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

Distributions Analyte_Method=Gross alpha Coprecipitation, straight

Bias



Quantiles

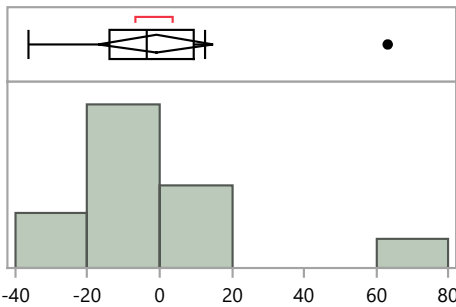
100.0%	maximum	15.7
99.5%		15.7
97.5%		15.7
90.0%		15.7
75.0%	quartile	15.7
50.0%	median	-1.9
25.0%	quartile	-19.5
10.0%		-19.5
2.5%		-19.5
0.5%		-19.5
0.0%	minimum	-19.5

Summary Statistics

Mean	-1.9
Std Dev	24.9
Std Err Mean	17.6
Upper 95% Mean	221.7
Lower 95% Mean	-225.5
N	2.0

Distributions Analyte_Method=Gross alpha EPA 900, Radioactivity, Gross Alpha/Beta Screening, 600/4-80-032

Bias



Quantiles

100.0%	maximum	63.2
99.5%		63.2
97.5%		63.2
90.0%		48.1
75.0%	quartile	9.6
50.0%	median	-3.7
25.0%	quartile	-13.7
10.0%		-34.3
2.5%		-36.2
0.5%		-36.2
0.0%	minimum	-36.2

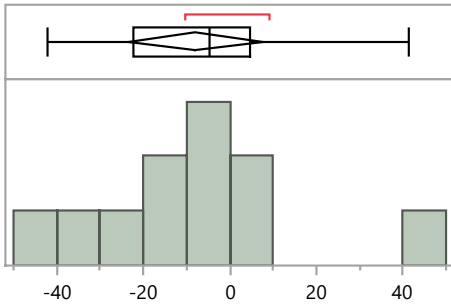
Summary Statistics

Mean	-1.0
Std Dev	25.0
Std Err Mean	7.2
Upper 95% Mean	14.9
Lower 95% Mean	-16.9
N	12.0

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross alpha Evaporation, acidified

Bias



Quantiles

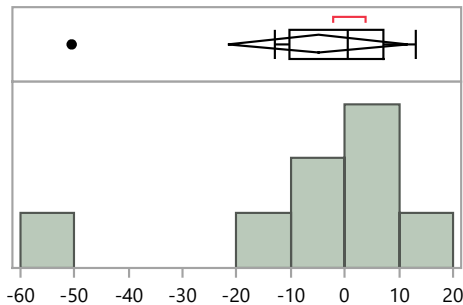
100.0%	maximum	41.4
99.5%		41.4
97.5%		41.4
90.0%		34.9
75.0%	quartile	4.7
50.0%	median	-4.6
25.0%	quartile	-22.3
10.0%		-41.3
2.5%		-42.1
0.5%		-42.1
0.0%	minimum	-42.1

Summary Statistics

Mean	-7.9
Std Dev	23.1
Std Err Mean	7.0
Upper 95% Mean	7.6
Lower 95% Mean	-23.5
N	11.0

Distributions Analyte_Method=Gross alpha Evaporation, straight

Bias



Quantiles

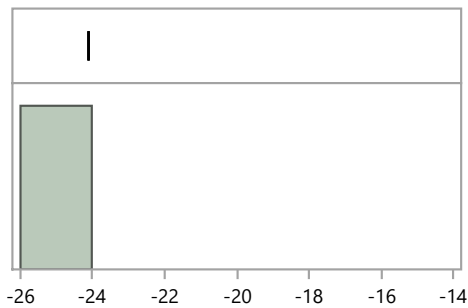
100.0%	maximum	13.1
99.5%		13.1
97.5%		13.1
90.0%		13.1
75.0%	quartile	7.0
50.0%	median	0.3
25.0%	quartile	-10.3
10.0%		-50.5
2.5%		-50.5
0.5%		-50.5
0.0%	minimum	-50.5

Summary Statistics

Mean	-5.0
Std Dev	20.0
Std Err Mean	7.1
Upper 95% Mean	11.7
Lower 95% Mean	-21.7
N	8.0

Distributions Analyte_Method=Gross alpha No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	-24.1
99.5%		-24.1
97.5%		-24.1
90.0%		-24.1
75.0%	quartile	-24.1
50.0%	median	-24.1
25.0%	quartile	-24.1
10.0%		-24.1
2.5%		-24.1
0.5%		-24.1
0.0%	minimum	-24.1

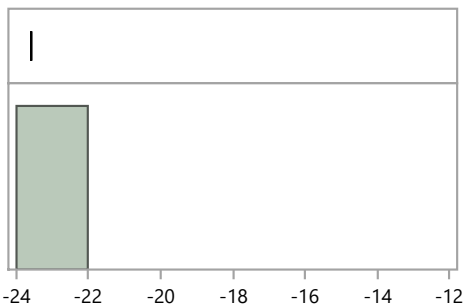
Summary Statistics

Mean	-24.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross beta Acid dissolution with hydrofluoric acid

Bias



Quantiles

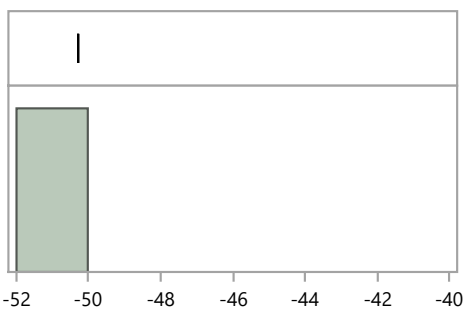
100.0%	maximum	-23.6
99.5%		-23.6
97.5%		-23.6
90.0%		-23.6
75.0%	quartile	-23.6
50.0%	median	-23.6
25.0%	quartile	-23.6
10.0%		-23.6
2.5%		-23.6
0.5%		-23.6
0.0%	minimum	-23.6

Summary Statistics

Mean	-23.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Gross beta Coprecipitation, straight

Bias



Quantiles

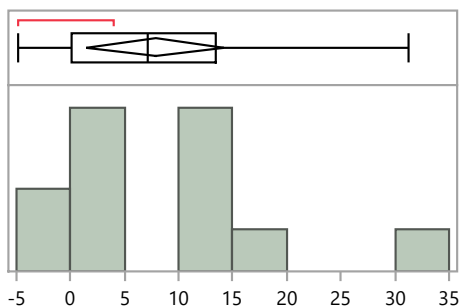
100.0%	maximum	-50.3
99.5%		-50.3
97.5%		-50.3
90.0%		-50.3
75.0%	quartile	-50.3
50.0%	median	-50.3
25.0%	quartile	-50.3
10.0%		-50.3
2.5%		-50.3
0.5%		-50.3
0.0%	minimum	-50.3

Summary Statistics

Mean	-50.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Gross beta EPA 900, Radioactivity, Gross Alpha/Beta Screening, 600/4-80-032

Bias



Quantiles

100.0%	maximum	31.2
99.5%		31.2
97.5%		31.2
90.0%		26.6
75.0%	quartile	13.5
50.0%	median	7.2
25.0%	quartile	0.1
10.0%		-3.8
2.5%		-4.8
0.5%		-4.8
0.0%	minimum	-4.8

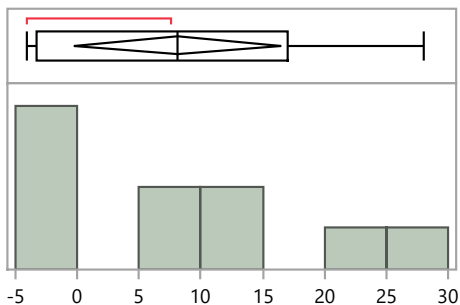
Summary Statistics

Mean	7.8
Std Dev	10.0
Std Err Mean	2.9
Upper 95% Mean	14.2
Lower 95% Mean	1.5
N	12.0

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross beta Evaporation, acidified

Bias



Quantiles

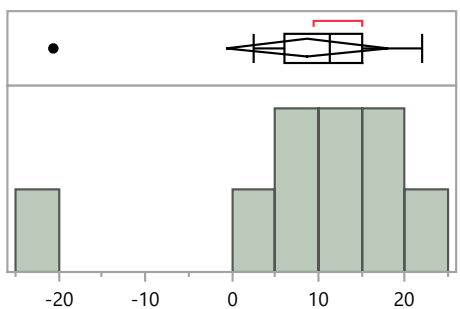
100.0%	maximum	28.0
99.5%		28.0
97.5%		28.0
90.0%		27.7
75.0%	quartile	17.1
50.0%	median	8.1
25.0%	quartile	-3.3
10.0%		-4.0
2.5%		-4.0
0.5%		-4.0
0.0%	minimum	-4.0

Summary Statistics

Mean	8.1
Std Dev	11.7
Std Err Mean	3.7
Upper 95% Mean	16.5
Lower 95% Mean	-0.3
N	10.0

Distributions Analyte_Method=Gross beta Evaporation, straight

Bias



Quantiles

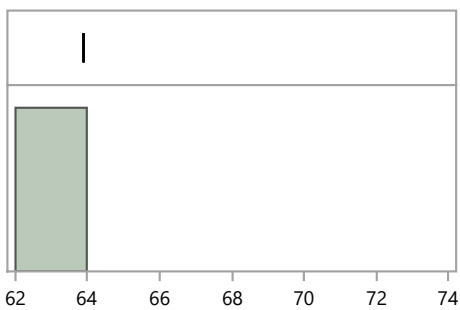
100.0%	maximum	22.0
99.5%		22.0
97.5%		22.0
90.0%		22.0
75.0%	quartile	15.1
50.0%	median	11.4
25.0%	quartile	6.0
10.0%		-20.6
2.5%		-20.6
0.5%		-20.6
0.0%	minimum	-20.6

Summary Statistics

Mean	8.7
Std Dev	12.2
Std Err Mean	4.1
Upper 95% Mean	18.1
Lower 95% Mean	-0.6
N	9.0

Distributions Analyte_Method=Gross beta No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	63.9
99.5%		63.9
97.5%		63.9
90.0%		63.9
75.0%	quartile	63.9
50.0%	median	63.9
25.0%	quartile	63.9
10.0%		63.9
2.5%		63.9
0.5%		63.9
0.0%	minimum	63.9

Summary Statistics

Mean	63.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0