

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.

GrW30 Participating Laboratories

Lab Code	Lab Name	Matrix Code	Num Samples
ADEM01	Alabama Department of Environmental Management	GrW	1
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	GrW	1
AFOH01	USAFSAM/OEA	GrW	2
ANTE01	ALS Environmental - Fort Collins, CO	GrW	1
ARGO01	Idaho National Laboratory	GrW	1
ARSL01	ARS International, LLC	GrW	1
ASUK99	NAS Radiochemistry Group	GrW	1
AY1201	B&W Y-12, Analytical Chemistry Organization Laboratory	GrW	1
CHMH01	222-S Laboratory	GrW	1
CRCE99	Centre for Radiation, Chemical and Environmental Hazards	GrW	1
CRPL99	CIEMAT-(Radiation Protection Laboratory)	GrW	1
DEHS01	Department of Environmental Health & Safety	GrW	1
DINL99	Departamento Ingeniería Nuclear y Mecánica de Fluidos	GrW	1
DRMG01	B&W Pantex - D&RMG	GrW	1
ELCS01	Energy Labs - College Station	GrW	1
ELIW01	Energy Laboratories, Inc.	GrW	1
ERCL01	Washington State Public Health Laboratories	GrW	1
ERHD99	Radiation Protection Bureau RSD NMS	GrW	1
FDHE01	Florida Dept of Health Environmental Laboratory	GrW	1
GENE01	GEL Laboratories, LLC	GrW	1
HCAL01	Hazards Control Analytical Lab	GrW	1
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	GrW	1
HPAC99	PHE, CRCE Scotland	GrW	1
ISUP01	ISU - Department of Physics/Health Physics/EAL	GrW	1
JAEC99	Research Laboratories and Information Directorate	GrW	2
KDHE01	Kansas Dept. of Health & Environment	GrW	1
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	GrW	1
LGCL99	LGC Ltd	GrW	1
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	GrW	1
LZCA01	ACZ Laboratories, Inc	GrW	1
MAHP59	Materials Assessment and Health Physics Group	GrW	1
MALA99	Asia Lab (M) Sdn. Bhd.	GrW	1
MART01	Fluor B&W Ports Analytical Laboratory	GrW	1
MART02	United States Enrichment Corporation	GrW	1
MART03	Radioactive Material Analysis Laboratory	GrW	1
MDPH01	MDPH-Radiation Control Program	GrW	1
NARL01	National Air and Radiation Environmental Laboratory	GrW	1
NESI01	B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory	GrW	1
NJDH01	New Jersey Dept. of Health, PHEL, ECLS	GrW	1
NOCS99	National Oceanography Centre, Southampton	GrW	1
NRLL99	Environmental Radioactivity - National Centre for Radiation Science	GrW	1
ODHL01	Ohio Department of Health Laboratory	GrW	1
ORIS01	ORISE/IEAV	GrW	1
OTLI01	Outreach Technologies, Inc.	GrW	1
QUAN01	TestAmerica St. Louis	GrW	1
QUAN03	TestAmerica Laboratories - Richland	GrW	1
RPSC01	Radiation Protection Service	GrW	1
SANC99	RadioAnalysis, South Africa Nuclear Energy Corp.	GrW	1
SEML01	SRS Environmental Monitoring Laboratory	GrW	1
SNRC99	Soreq NRC	GrW	1
SOUT01	Southwest Research Institute	GrW	1
TDHL01	Texas Department of State Health Services Laboratory	GrW	1
TELE02	ATI Environmental, Inc., Midwest Lab	GrW	1
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	GrW	1

TNUT01	St. Louis USACE FUSRAP Laboratory	GrW	1
USED99	National Center for Nuclear Energy, Sciences and Techniques	GrW	1
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	GrW	1
WSHL01	Wisconsin State Laboratory of Hygiene	GrW	1
WVDP01	WVDP Environmental Laboratory	GrW	1
Total		GrW	61

Laboratories Not Reporting GrW30

Lab Code	Lab Name	Matrix Code
CESL01	Lawrence Livermore National Laboratory - EMRL	GrW
CMRC01	Carlsbad Environmental Monitoring and Research Center	GrW
ERLG01	Environmental Radiation Laboratory	GrW
LAEC99	Lebanese Atomic Energy Commission - Environmental Radiation	GrW
RJLG01	RJ Lee Group Center for Laboratory Sciences (CLS)	GrW
TELE01	TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES	GrW
WEST03	Waste Sampling and Characterization Facility, MSA	GrW

Study Reference Values

MAPEP-14-GrW30

Radiological Reference Date: 02/01/2014

Analyte	Ref Value	Ref Unc
Radiological	Units: (Bq/L)	
Gross alpha	0.849	0.013
Gross beta	4.19	0.16

Sample Statistical Summary

MAPEP-14-GrW30

Radiological Reference Date: 02/01/2014

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/L)
Gross alpha	59	57	0.842	0.205	0.849	0.013	0.255 - 1.443
Gross beta	59	58	4.38	0.58	4.19	0.16	2.10 - 6.29

- 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:

- 1) NOT ACCEPTABLE.....RP $<$ 2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15% $<$ RP \leq 30%
- 4) NOT ACCEPTABLE.....RP $>$ 30%

RP = Relative Precision

Study: MAPEP-14-GrW30

Radiological				
Analyte	A	W	RW	N
Gross alpha	57			2
Gross beta	58			1



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

Laboratory Results For MAPEP-14-GrW30
 (ADEM01) Alabama Department of Environmental Management
 Montgomery Laboratory
 Montgomery, AL 36110

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.97	0.849	A		14.3	0.255 - 1.443	0.01	N
Gross beta	6.23	4.19	A		48.7	2.10 - 6.29	0.01	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.85	0.849	A		0.1	0.255 - 1.443	0.21	W
Gross beta	4.09	4.19	A		-2.4	2.10 - 6.29	0.11	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.92	0.849	A		8.4	0.255 - 1.443	0.11	A
Gross beta	4.29	4.19	A		2.4	2.10 - 6.29	0.13	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (ANTE01) ALS Environmental - Fort Collins, CO
 225 Commerce Drive
 Fort Collins, CO 80524-1416

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.817	0.849	A		-3.8	0.255 - 1.443	0.073	A
Gross beta	4.29	4.19	A		2.4	2.10 - 6.29	0.35	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.59	0.849	A		-30.5	0.255 - 1.443	0.07	A
Gross beta	3.78	4.19	A		-9.8	2.10 - 6.29	0.30	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (ARSL01) ARS International, LLC
 2609 North River Road
 Port Allen, LA 70767

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.753	0.849	A		-11.3	0.255 - 1.443	0.189	W
Gross beta	4.245	4.19	A		1.3	2.10 - 6.29	0.994	W

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (ASUK99) NAS Radiochemistry Group
 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	0.527	0.849	A		-37.9	0.255 - 1.443	0.051	A
Gross beta	4.91	4.19	A		17.2	2.10 - 6.29	0.10	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (AY1201) B&W Y-12, Analytical Chemistry Organization 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	0.799	0.849	A		-5.9	0.255 - 1.443	0.11	A
Gross beta	4.44	4.19	A		6.0	2.10 - 6.29	0.18	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(CHMH01) 222-S Laboratory

P.O. Box 250, MS T6-10

Richland, WA 99352

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.847	0.849	A		-0.2	0.255 - 1.443	0.213	W
Gross beta	4.57	4.19	A		9.1	2.10 - 6.29	0.371	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (CRCE99) Centre for Radiation, Chemical and Environmental Hazards
 Public Health England
 Didcot, OXON OX11 0RQ

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.8	0.849	N		112.0	0.255 - 1.443	0.9	N
Gross beta	5.2	4.19	A		24.1	2.10 - 6.29	1.6	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (CRPL99) CIEMAT-(Radiation Protection Laboratory)
 Avda. Complutense 40 (Ed-7)
 Madrid, Madrid 28040

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.059	0.849	A		24.7	0.255 - 1.443	0.388	N
Gross beta	4.859	4.19	A		16.0	2.10 - 6.29	0.914	W

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	1.07	0.849	A		26.0	0.255 - 1.443	0.18	W
Gross beta	4.47	4.19	A		6.7	2.10 - 6.29	0.22	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (DINL99) Departamento Ingeniería Nuclear y Mecánica de Fluidos
 Alameda de Urquijo s/n
 Bilbao, Vizcaya 48013

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.86	0.849	A		1.3	0.255 - 1.443	0.06	A
Gross beta	4.01	4.19	A		-4.3	2.10 - 6.29	0.12	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (DRMG01) B&W Pantex - D&RMG
 Bldg 12-122
 Amarillo, TX 79120-0020

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	7.85E-01	0.849	A		-7.5	0.255 - 1.443	1.52E-01	W
Gross beta	4.03E+00	4.19	A		-3.8	2.10 - 6.29	1.89E-01	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (ELCS01) Energy Labs - College Station
 415 Graham RD
 College Station, Tx 77845

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.603	0.849	A		-29.0	0.255 - 1.443	0.063	A
Gross beta	3.81	4.19	A		-9.1	2.10 - 6.29	0.14	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.8	0.849	A		-5.8	0.255 - 1.443	0.06	A
Gross beta	4.2	4.19	A		0.2	2.10 - 6.29	0.07	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	1.21	0.849	A		42.5	0.255 - 1.443	.1	A
Gross beta	4.44	4.19	A		6.0	2.10 - 6.29	.15	A

Radiological Reference Date: February 1, 2014

Gross Alpha Flags:

A = Result acceptable, Bias <= +/- 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 <= +/- 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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2%<=RP<=15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP<=30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (ERHD99) Radiation Protection Bureau 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	0.89	0.849	A		4.8	0.255 - 1.443	0.12	A
Gross beta	4.43	4.19	A		5.7	2.10 - 6.29	0.24	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.90	0.849	A		6.0	0.255 - 1.443	0.11	A
Gross beta	4.44	4.19	A		6.0	2.10 - 6.29	0.12	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.955	0.849	A		12.5	0.255 - 1.443	0.102	A
Gross beta	4.67	4.19	A		11.5	2.10 - 6.29	0.399	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (HCAL01) Hazards Control Analytical Lab
 Lawrence Livermore National
 Livermore, CA 94551

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.65	0.849	A		-23.4	0.255 - 1.443	.08	A
Gross beta	4.02	4.19	A		-4.1	2.10 - 6.29	.21	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.746	0.849	A		-12.1	0.255 - 1.443	0.220	W
Gross beta	3.80	4.19	A		-9.3	2.10 - 6.29	0.22	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (HPAC99) PHE, CRCE Scotland
 155 Hardgate Road
 Glasgow, Scotland G514LS

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.361	0.849	A		-57.5	0.255 - 1.443	0.050	A
Gross beta	3.21	4.19	A		-23.4	2.10 - 6.29	0.20	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	1.054	0.849	A		24.1	0.255 - 1.443	0.232	W
Gross beta	4.424	4.19	A		5.6	2.10 - 6.29	0.025	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (JAEC99) Research Laboratories and Information Directorate
 Jordan Atomic Energy Commission
 Amman, Jordan 70 (11934)

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.24	0.849	A		46.1	0.255 - 1.443	0.30	W
Gross beta	5.19	4.19	A		23.9	2.10 - 6.29	0.13	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (KDHE01) Kansas Dept. of Health & Environment
 6810 SE Dwight Street
 Topeka, KS 66620

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.08	0.849	A		27.2	0.255 - 1.443	0.13	A
Gross beta	5.22	4.19	A		24.6	2.10 - 6.29	0.29	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (LAWR01) LAWRENCE BERKELEY NATIONAL LABORATORY
 1 CYCLOTRON RD.
 BERKELEY, CA 94720

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.79	0.849	A		-6.9	0.255 - 1.443	.23	W
Gross beta	4.1	4.19	A		-2.1	2.10 - 6.29	.1	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(LGCL99) LGC Ltd

Queens Road

Teddington, Middlesex TW11 0LY

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.813	0.849	A		-4.2	0.255 - 1.443	0.117	A
Gross beta	4.05	4.19	A		-3.3	2.10 - 6.29	0.33	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (LOCK03) Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory
 INL/Battelle Energy Alliance, LLC
 Idaho Falls, ID 83415-7111

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.55	0.849	A		-35.2	0.255 - 1.443	0.26	N
Gross beta	5.02	4.19	A		19.8	2.10 - 6.29	0.42	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.556	0.849	A		-34.5	0.255 - 1.443	0.162	W
Gross beta	4.79	4.19	A		14.3	2.10 - 6.29	0.28	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (MAHP59) Materials Assessment and Health Physics Group
 Imperial College Reactor Centre
 Ascot, Berkshire SL5 7TE

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.42	0.849	A		-50.5	0.255 - 1.443	0.17	N
Gross beta	4.82	4.19	A		15.0	2.10 - 6.29	0.23	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(MALA99) Asia Lab (M) Sdn. Bhd.

No. 14, JLN USJ 1/1

Subang Jaya, Selangor 47600

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.18	0.849	N		-78.8	0.255 - 1.443	0.05	W
Gross beta	3.60	4.19	A		-14.1	2.10 - 6.29	0.93	W

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (MART01) Fluor B&W Ports Analytical Laboratory
 Lab COC, Bldg. X-710, Rm 222
 Piketon, OH 45661-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.903	0.849	A		6.4	0.255 - 1.443	0.118	A
Gross beta	4.66	4.19	A		11.2	2.10 - 6.29	0.198	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (MART02) United States Enrichment Corporation
 5600 Hobbs Road
 Kevil, KY 42053

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.7405	0.849	A		-12.8	0.255 - 1.443	0.1105	A
Gross beta	3.9975	4.19	A		-4.6	2.10 - 6.29	0.2363	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (MART03) Radioactive Material Analysis Laboratory
 ORNL
 Oak Ridge, TN 37831-6223

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.92	0.849	A		8.4	0.255 - 1.443	0.2	W
Gross beta	4.3	4.19	A		2.6	2.10 - 6.29	0.3	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (MDPH01) MDPH-Radiation Control Program
 MERL-Room 002
 Jamaica Plain, MA 02130-3597

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.50	0.849	A		-41.1	0.255 - 1.443	0.07	A
Gross beta	5.77	4.19	A		37.7	2.10 - 6.29	0.40	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (NARL01) National Air and Radiation Environmental Laboratory
 540 S. Morris Ave.
 Montgomery, AL 36115-2601

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.09	0.849	A		28.4	0.255 - 1.443	0.198	W
Gross beta	4.61	4.19	A		10.0	2.10 - 6.29	0.276	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(NESI01) B&W Technical Services-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	0.712	0.849	A		-16.1	0.255 - 1.443	0.046	A
Gross beta	3.95	4.19	A		-5.7	2.10 - 6.29	0.08	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	1.240	0.849	A		46.1	0.255 - 1.443	0.035	A
Gross beta	4.92	4.19	A		17.4	2.10 - 6.29	0.12	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (NOCS99) National Oceanography Centre, Southampton
 GAU-Radioanalytical
 Southampton, Hampshire SO14 3ZH

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1	0.849	A		17.8	0.255 - 1.443	1	N
Gross beta	1	4.19	N		-76.1	2.10 - 6.29	0.3	W

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (NRL99) Environmental Radioactivity - National Centre for Radiation Science
 PO Box 25099
 Christchurch, Christchurch 8144

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.884	0.849	A		4.1	0.255 - 1.443	0.029	A
Gross beta	4.15	4.19	A		-1.0	2.10 - 6.29	0.10	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	1.158	0.849	A		36.4	0.255 - 1.443	0.239	W
Gross beta	4.512	4.19	A		7.7	2.10 - 6.29	0.405	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(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	1.010	0.849	A		19.0	0.255 - 1.443	0.052	A
Gross beta	4.642	4.19	A		10.8	2.10 - 6.29	0.069	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(OTLI01) Outreach Technologies, Inc.

311 N. Aspen

Broken Arrow, OK 74012-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.07	0.849	A		26.0	0.255 - 1.443	0.197	W
Gross beta	4.65	4.19	A		11.0	2.10 - 6.29	0.216	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(QUAN01) TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045-1205

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.684	0.849	A		-19.4	0.255 - 1.443	0.0791	A
Gross beta	3.77	4.19	A		-10.0	2.10 - 6.29	0.204	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (QUAN03) TestAmerica Laboratories - Richland
 2800 GEORGE WASHINGTON WAY
 RICHLAND, WA 99354-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.848	0.849	A		-0.1	0.255 - 1.443	0.107	A
Gross beta	4.13	4.19	A		-1.4	2.10 - 6.29	0.275	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(RPSC01) Radiation Protection Service

Ontario Ministry of Labour

Weston, Ontario M9P 3T1

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.75	0.849	A		-11.7	0.255 - 1.443	0.15	W
Gross beta	2.78	4.19	A		-33.7	2.10 - 6.29	0.28	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (SANC99) RadioAnalysis, South Africa Nuclear Energy Corp.
 Sample Receipt Gate 1
 Pretoria, Gauteng 0001

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.824	0.849	A		-2.9	0.255 - 1.443	0.107	A
Gross beta	4.31	4.19	A		2.9	2.10 - 6.29	0.19	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.932	0.849	A		9.8	0.255 - 1.443	0.18	W
Gross beta	4.56	4.19	A		8.8	2.10 - 6.29	0.31	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (SNRC99) Soreq NRC
 Radioactivity Measurement Section
 Yavne, Israel 81800

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.96	0.849	A		13.1	0.255 - 1.443	0.17	W
Gross beta	4.50	4.19	A		7.4	2.10 - 6.29	0.32	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.800	0.849	A		-5.8	0.255 - 1.443	0.0804	A
Gross beta	4.22	4.19	A		0.7	2.10 - 6.29	0.263	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.737	0.849	A		-13.2	0.255 - 1.443	0.049	A
Gross beta	4.030	4.19	A		-3.8	2.10 - 6.29	0.055	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	0.77	0.849	A		-9.3	0.255 - 1.443	0.06	A
Gross beta	4.31	4.19	A		2.9	2.10 - 6.29	0.08	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY
 601 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	0.905	0.849	A		6.6	0.255 - 1.443	0.112	A
Gross beta	3.342	4.19	A		-20.2	2.10 - 6.29	0.204	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (TNUT01) St. Louis USACE FUSRAP Laboratory
 8945 LATTY AVE
 BERKELEY, MO 63134-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.6828	0.849	A		-19.6	0.255 - 1.443	0.2598	N
Gross beta	3.7624	4.19	A		-10.2	2.10 - 6.29	.6239	W

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30

(USED99) National Center for Nuclear Energy, Sciences and Techniques
 CNESTEN BP 1382
 RABAT, RABAT RP 10001

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.43	0.849	A		-49.4	0.255 - 1.443	0.09	W
Gross beta	5.21	4.19	A		24.3	2.10 - 6.29	0.32	A

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	1.13	0.849	A		33.1	0.255 - 1.443	0.263	W
Gross beta	4.11	4.19	A		-1.9	2.10 - 6.29	.751	W

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (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	1.017	0.849	A		19.8	0.255 - 1.443	0.068	A
Gross beta	4.409	4.19	A		5.2	2.10 - 6.29	0.083	N

Radiological Reference Date: February 1, 2014

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:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-14-GrW30
 (WVDP01) WVDP Environmental Laboratory
 10282 Rock Springs Road
 West Valley, NY 14171

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.846	0.849	A		-0.4	0.255 - 1.443	0.1654	W
Gross beta	4.60	4.19	A		9.8	2.10 - 6.29	0.222	A

Radiological Reference Date: February 1, 2014

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).

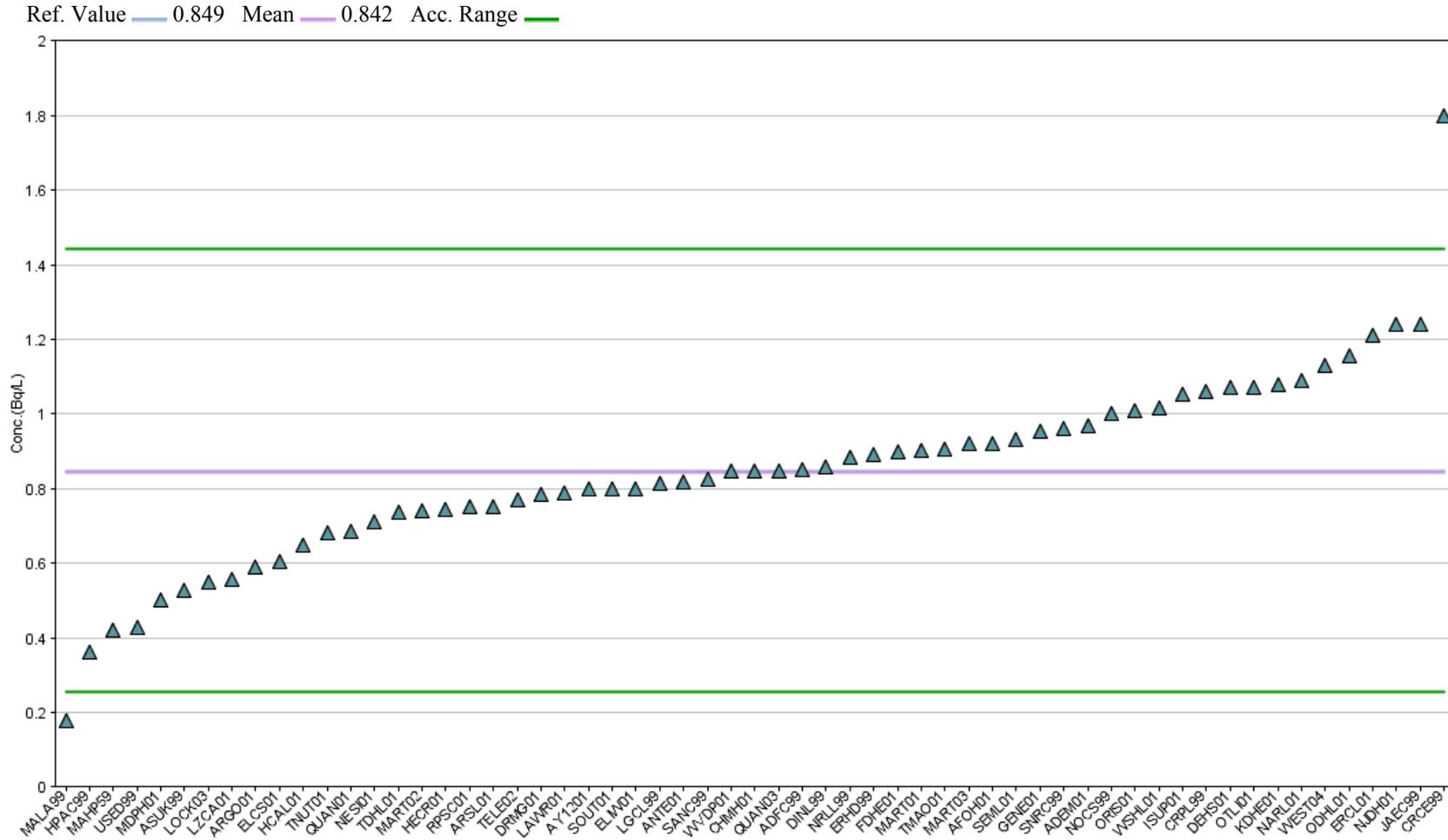
Uncertainty Flags:

- 1) NOT ACCEPTABLE.....RP<2%
- 2) ACCEPTABLE.....2% \leq RP \leq 15%
- 3) ACCEPTABLE WITH WARNING.....15%<RP \leq 30%
- 4) NOT ACCEPTABLE.....RP>30%

RP = Relative Precision

Gross alpha

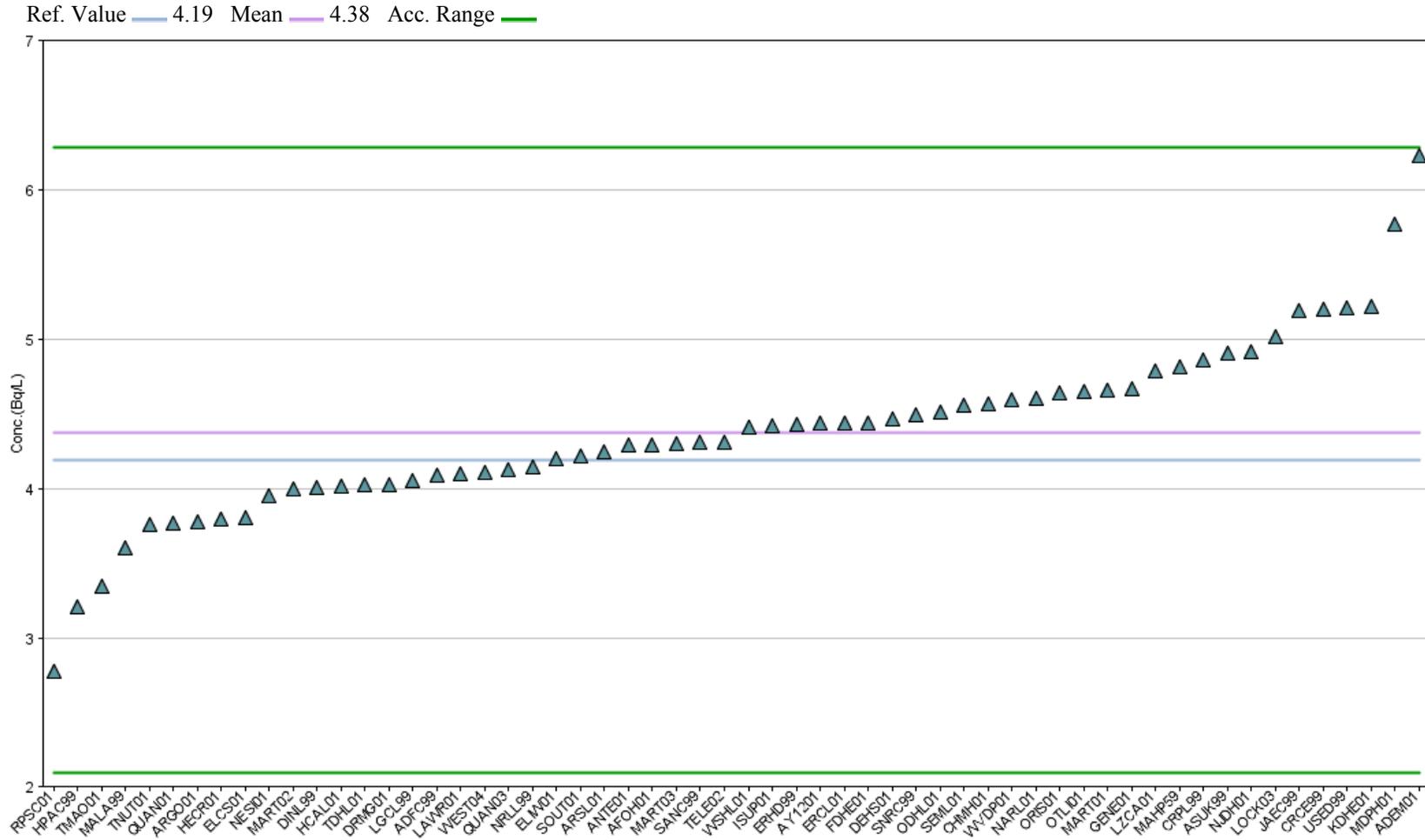
MAPEP-14-GrW30



Note: This chart shows only data points with values between 0.00 and 1.87 (± 5 Standard Deviations)

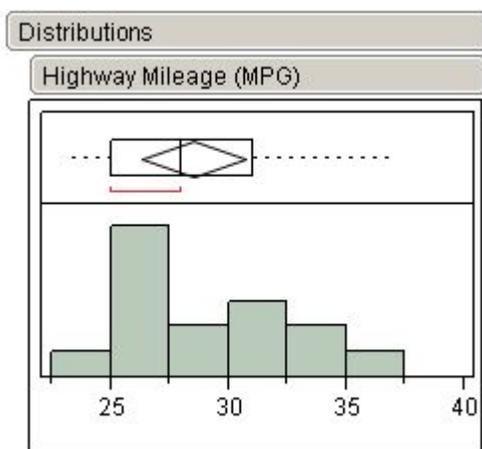
Gross beta

MAPEP-14-GrW30

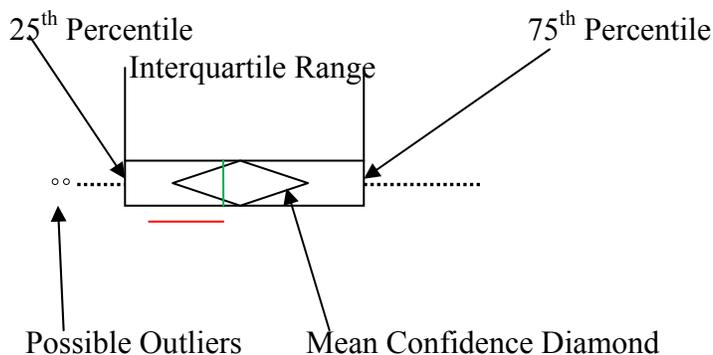


Note: This chart shows only data points with values between 1.49 and 7.26 (± 5 Standard Deviations)

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. The data points (small 'dots') plot the bias (or z-score for organic constituents) of each of the analytes in each of the matrices. The BLACK small vertical line inside the small rectangle at the top of the data distribution graph is the mean of the population of the bias shown for that analyte in the matrix.



Moments	
Mean	28.466667
Std Dev	3.9797104
Std Err Mean	1.0275568
Upper 95% Mean	30.670557
Lower 95% Mean	26.262776
N	15
Sum Wgt	15
Sum	427
Variance	15.838095
Skewness	0.7309964
Kurtosis	-0.165153
CV	13.980247
N Missing	0



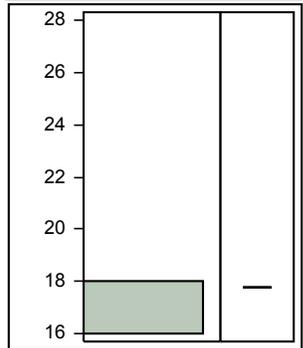
The box plots summarize the distribution of points for each analyte. The ends of the box are the 25th and 75th quantiles. The difference between the quartiles is the interquartile range. The line across the middle of the box identifies the median bias value. Each box has lines, sometimes called whiskers, which extend from each end. The whiskers extend from the ends of the small box to the outermost data point that falls within the distances computed. Any potential outliers are represented as small black dots.

The box plot of the bias data points and the mean visually illustrate the breadth of the distribution and where any potential outliers in the distribution might lie. The moments for the distribution plot are provided below 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.

GrW Distribution by Detection Method

**Distributions Analyte_Detection=Gross
alpha Alpha Spectrometry**

Bias



Quantiles

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

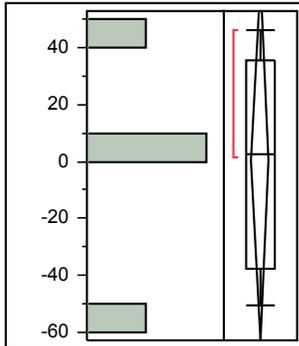
Summary Statistics

Mean	17.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1

GrW Distribution by Detection Method

Distributions Analyte_Detection=Gross alpha
Beta Counting - liquid scintillation counter

Bias



Quantiles

100.0%	maximum	46.1
99.5%		46.1
97.5%		46.1
90.0%		46.1
75.0%	quartile	35.6
50.0%	median	2.7
25.0%	quartile	-37.55
10.0%		-50.5
2.5%		-50.5
0.5%		-50.5
0.0%	minimum	-50.5

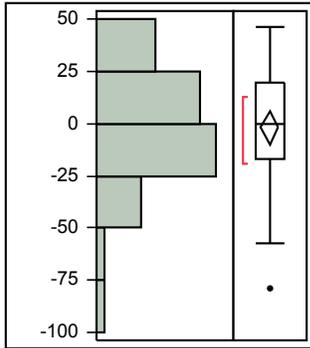
Summary Statistics

Mean	0.25
Std Dev	39.554646
Std Err Mean	19.777323
Upper 95% Mean	63.190268
Lower 95% Mean	-62.69027
N	4

GrW Distribution by Detection Method

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

Bias



Quantiles

100.0%	maximum	46.1
99.5%		46.1
97.5%		45.47
90.0%		29.81
75.0%	quartile	19.2
50.0%	median	-0.3
25.0%	quartile	-16.925
10.0%		-38.86
2.5%		-75.073
0.5%		-78.8
0.0%	minimum	-78.8

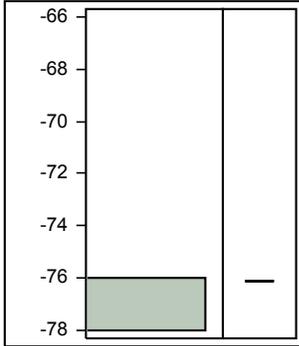
Summary Statistics

Mean	-1.941304
Std Dev	26.724783
Std Err Mean	3.9403543
Upper 95% Mean	5.9949766
Lower 95% Mean	-9.877585
N	46

GrW Distribution by Detection Method

**Distributions Analyte_Detection=Gross
beta Alpha Spectrometry**

Bias



Quantiles

100.0%	maximum	-76.1
99.5%		-76.1
97.5%		-76.1
90.0%		-76.1
75.0%	quartile	-76.1
50.0%	median	-76.1
25.0%	quartile	-76.1
10.0%		-76.1
2.5%		-76.1
0.5%		-76.1
0.0%	minimum	-76.1

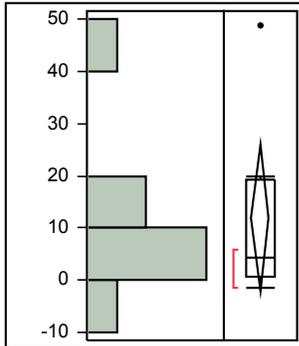
Summary Statistics

Mean	-76.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1

GrW Distribution by Detection Method

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

Bias



Quantiles

100.0%	maximum	48.7
99.5%		48.7
97.5%		48.7
90.0%		48.7
75.0%	quartile	19.15
50.0%	median	4.45
25.0%	quartile	0.85
10.0%		-1.4
2.5%		-1.4
0.5%		-1.4
0.0%	minimum	-1.4

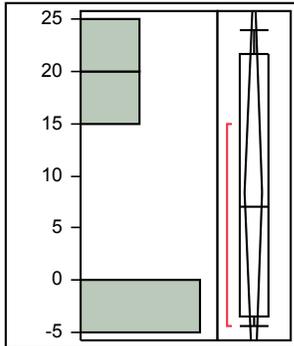
Summary Statistics

Mean	11.9
Std Dev	16.798129
Std Err Mean	5.9390355
Upper 95% Mean	25.943587
Lower 95% Mean	-2.143587
N	8

GrW Distribution by Detection Method

Distributions Analyte_Detection=Gross beta
Beta Counting - liquid scintillation counter

Bias



Quantiles

100.0%	maximum	23.9
99.5%		23.9
97.5%		23.9
90.0%		23.9
75.0%	quartile	21.675
50.0%	median	7
25.0%	quartile	-3.475
10.0%		-4.3
2.5%		-4.3
0.5%		-4.3
0.0%	minimum	-4.3

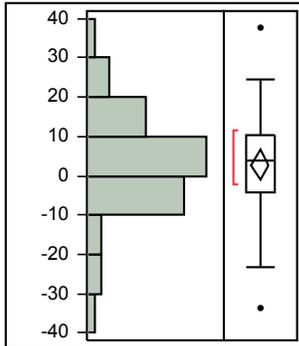
Summary Statistics

Mean	8.4
Std Dev	13.334917
Std Err Mean	6.6674583
Upper 95% Mean	29.618828
Lower 95% Mean	-12.81883
N	4

GrW Distribution by Detection Method

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

Bias



Quantiles

100.0%	maximum	37.7
99.5%		37.7
97.5%		35.4075
90.0%		19.41
75.0%	quartile	10.2
50.0%	median	4.05
25.0%	quartile	-4.225
10.0%		-11.37
2.5%		-31.898
0.5%		-33.7
0.0%	minimum	-33.7

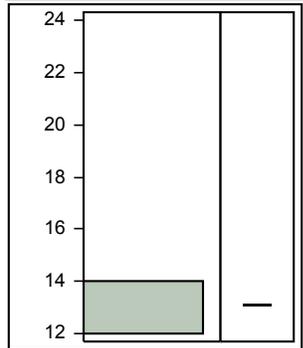
Summary Statistics

Mean	2.823913
Std Dev	13.062111
Std Err Mean	1.9259032
Upper 95% Mean	6.7028813
Lower 95% Mean	-1.055055
N	46

GrW Distribution by Prep Method

**Distributions Analyte_Method=Gross
alpha Coprecipitation, acidified**

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

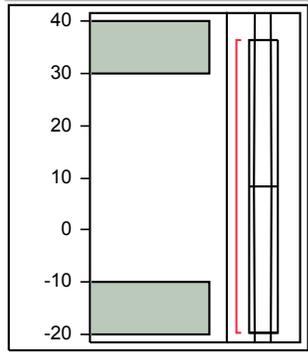
Summary Statistics

Mean	13.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross
alpha Coprecipitation, straight

Bias



Quantiles

100.0%	maximum	36.4
99.5%		36.4
97.5%		36.4
90.0%		36.4
75.0%	quartile	36.4
50.0%	median	8.4
25.0%	quartile	-19.6
10.0%		-19.6
2.5%		-19.6
0.5%		-19.6
0.0%	minimum	-19.6

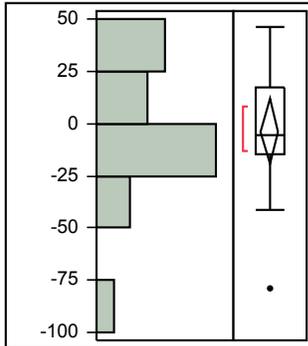
Summary Statistics

Mean	8.4
Std Dev	39.59798
Std Err Mean	28
Upper 95% Mean	364.17373
Lower 95% Mean	-347.3737
N	2

GrW Distribution by Prep Method

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

Bias



Quantiles

100.0%	maximum	46.1
99.5%		46.1
97.5%		46.1
90.0%		35.7
75.0%	quartile	17.2
50.0%	median	-5.8
25.0%	quartile	-14.65
10.0%		-48.64
2.5%		-78.8
0.5%		-78.8
0.0%	minimum	-78.8

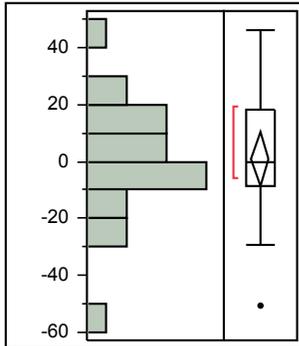
Summary Statistics

Mean	-3.911765
Std Dev	30.08093
Std Err Mean	7.2956972
Upper 95% Mean	11.554422
Lower 95% Mean	-19.37795
N	17

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross
alpha Evaporation, acidified

Bias



Quantiles

100.0%	maximum	46.1
99.5%		46.1
97.5%		46.1
90.0%		25.43
75.0%	quartile	18.1
50.0%	median	-0.15
25.0%	quartile	-8.825
10.0%		-27.32
2.5%		-50.5
0.5%		-50.5
0.0%	minimum	-50.5

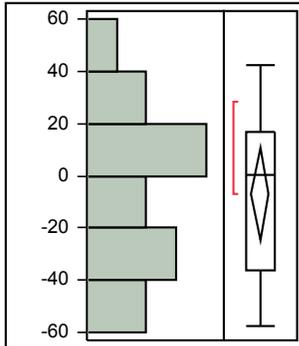
Summary Statistics

Mean	0.9181818
Std Dev	21.116742
Std Err Mean	4.5021045
Upper 95% Mean	10.280821
Lower 95% Mean	-8.444457
N	22

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross
alpha Evaporation, straight

Bias



Quantiles

100.0%	maximum	42.5
99.5%		42.5
97.5%		42.5
90.0%		35.45
75.0%	quartile	16.9
50.0%	median	0.6
25.0%	quartile	-35.875
10.0%		-53.45
2.5%		-57.5
0.5%		-57.5
0.0%	minimum	-57.5

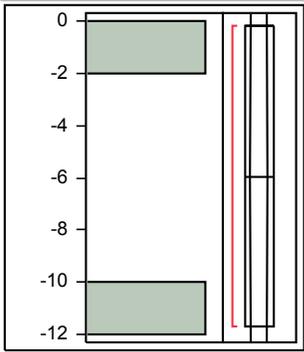
Summary Statistics

Mean	-6.821429
Std Dev	30.709712
Std Err Mean	8.2075158
Upper 95% Mean	10.909831
Lower 95% Mean	-24.55269
N	14

GrW Distribution by Prep Method

**Distributions Analyte_Method=Gross alpha
No preparation - analyzed as received**

Bias



Quantiles

100.0%	maximum	-0.2
99.5%		-0.2
97.5%		-0.2
90.0%		-0.2
75.0%	quartile	-0.2
50.0%	median	-5.95
25.0%	quartile	-11.7
10.0%		-11.7
2.5%		-11.7
0.5%		-11.7
0.0%	minimum	-11.7

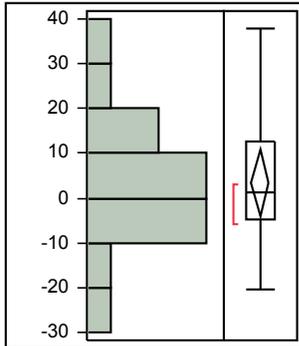
Summary Statistics

Mean	-5.95
Std Dev	8.131728
Std Err Mean	5.75
Upper 95% Mean	67.110677
Lower 95% Mean	-79.01068
N	2

GrW Distribution by Prep Method

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

Bias



Quantiles

100.0%	maximum	37.7
99.5%		37.7
97.5%		37.7
90.0%		27.22
75.0%	quartile	12.65
50.0%	median	1.3
25.0%	quartile	-4.75
10.0%		-15.32
2.5%		-20.2
0.5%		-20.2
0.0%	minimum	-20.2

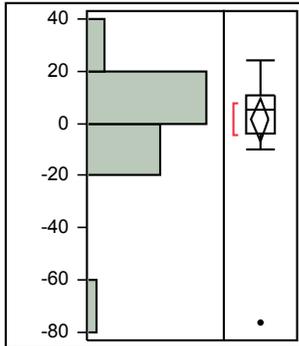
Summary Statistics

Mean	3.4117647
Std Dev	14.19797
Std Err Mean	3.4435135
Upper 95% Mean	10.711687
Lower 95% Mean	-3.888158
N	17

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross
beta Evaporation, acidified

Bias



Quantiles

100.0%	maximum	24.1
99.5%		24.1
97.5%		24.1
90.0%		19.45
75.0%	quartile	10.55
50.0%	median	5.4
25.0%	quartile	-4.025
10.0%		-9.55
2.5%		-76.1
0.5%		-76.1
0.0%	minimum	-76.1

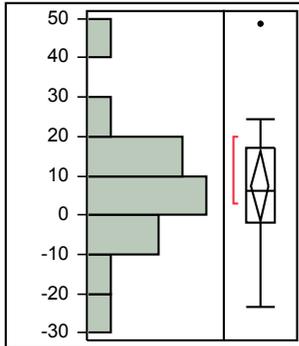
Summary Statistics

Mean	1.3083333
Std Dev	18.819068
Std Err Mean	3.8414262
Upper 95% Mean	9.2549288
Lower 95% Mean	-6.638262
N	24

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross
beta Evaporation, straight

Bias



Quantiles

100.0%	maximum	48.7
99.5%		48.7
97.5%		48.7
90.0%		31.62
75.0%	quartile	16.9
50.0%	median	6
25.0%	quartile	-1.825
10.0%		-14.16
2.5%		-23.4
0.5%		-23.4
0.0%	minimum	-23.4

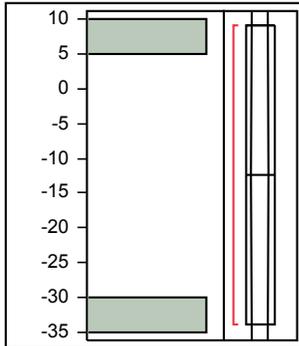
Summary Statistics

Mean	7.3625
Std Dev	16.460048
Std Err Mean	4.1150119
Upper 95% Mean	16.13344
Lower 95% Mean	-1.40844
N	16

GrW Distribution by Prep Method

Distributions Analyte_Method=Gross beta
No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	9.1
99.5%		9.1
97.5%		9.1
90.0%		9.1
75.0%	quartile	9.1
50.0%	median	-12.3
25.0%	quartile	-33.7
10.0%		-33.7
2.5%		-33.7
0.5%		-33.7
0.0%	minimum	-33.7

Summary Statistics

Mean	-12.3
Std Dev	30.26417
Std Err Mean	21.4
Upper 95% Mean	259.61278
Lower 95% Mean	-284.2128
N	2