

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.

GrF29 Participating Laboratories

Lab Code	Lab Name	Matrix Code	Num Samples
ADEM01	Alabama Department of Environmental Management	GrF	1
AFOH01	USAFSAM/OEA	GrF	2
ANTE01	ALS Environmental - Fort Collins, CO	GrF	1
AREV01	AREVA - CMC	GrF	1
ARGO01	Idaho National Laboratory	GrF	1
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	GrF	1
ARSL01	ARS International, LLC	GrF	1
ASUK99	NAS Radiochemistry Group	GrF	2
AY1201	B&W Y-12, Analytical Chemistry Organization Laboratory	GrF	1
CDHS01	California Department of Public Health	GrF	1
CESL01	Lawrence Livermore National Laboratory - EMRL	GrF	1
CHMH01	222-S Laboratory	GrF	1
CMRC01	Carlsbad Environmental Monitoring and Research Center	GrF	1
DEHS01	Department of Environmental Health & Safety	GrF	1
DINL99	Departamento Ingeniería Nuclear y Mecánica de Fluidos	GrF	1
DPHE01	Colorado Dept. of Public Health & Env. / Laboratory Services Div.	GrF	1
DRMG01	B&W Pantex - D&RMG	GrF	1
ERCL01	Washington State Public Health Laboratories	GrF	1
ERLG01	Environmental Radiation Laboratory	GrF	1
ESDG99	Radiation Laboratory	GrF	1
ESGL99	Environmental Scientifics Group	GrF	1
EULC01	EnergySolutions, LLC	GrF	1
FDHE01	Florida Dept of Health Environmental Laboratory	GrF	1
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	GrF	1
FMEC99	Foods and Water Laboratories Center	GrF	1
GENE01	GEL Laboratories, LLC	GrF	1
GPCL01	Georgia Power Company Environmental Laboratory	GrF	1
HCAL01	Hazards Control Analytical Lab	GrF	1
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	GrF	1
HERR01	Washington Closure Hanford	GrF	1
ISUP01	ISU - Department of Physics/Health Physics/EAL	GrF	1
KDHE01	Kansas Dept. of Health & Environment	GrF	1
KSCF01	Kennedy Space Center, HP Laboratory	GrF	1
LAEC99	Lebanese Atomic Energy Commission - Environmental Radiation	GrF	1
LDRA99	Laboratori de Radiologia Ambiental-Universitat de Barcelona	GrF	1
LGCL99	LGC Ltd	GrF	1
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	GrF	1
MART02	United States Enrichment Corporation	GrF	1
MART03	Radioactive Material Analysis Laboratory	GrF	1
MDPH01	MDPH-Radiation Control Program	GrF	1
MSDH01	Mississippi State Dept of Health	GrF	1
NARL01	National Air and Radiation Environmental Laboratory	GrF	1
NARL02	USEPA - NAREL - MERL	GrF	1
NCNS99	Radioanalytical Laboratory	GrF	1
NESI01	B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory	GrF	1
NJDH01	New Jersey Dept. of Health, PHEL, ECLS	GrF	1
NOCS99	National Oceanography Centre, Southampton	GrF	1
ODHL01	Ohio Department of Health Laboratory	GrF	1
ORIS01	ORISE/IEAV	GrF	1
OTLI01	Outreach Technologies, Inc.	GrF	1
QUAN01	TestAmerica St. Louis	GrF	1
QUAN03	TestAmerica Laboratories - Richland	GrF	1
RMCL99	Royal Scientific Society - Radiation Protection Lab	GrF	1
RPSC01	Radiation Protection Service	GrF	1
RSAL01	RSA Laboratories, Inc.	GrF	1
SANC99	RadioAnalysis, South Africa Nuclear Energy Corp.	GrF	1
SEML01	SRS Environmental Monitoring Laboratory	GrF	1
SOUT01	Southwest Research Institute	GrF	1
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	GrF	2
TDHL01	Texas Department of State Health Services Laboratory	GrF	1
TELE01	TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES	GrF	1
TELE02	Environmental, Inc., Midwest Lab	GrF	1
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	GrF	1
TNU01	St. Louis USACE FUSRAP Laboratory	GrF	1
URSL01	UNLV Radioanalytical Services Laboratory	GrF	1
USED99	National Center for Nuclear Energy, Sciences and Techniques	GrF	1
WEST03	Waste Sampling and Characterization Facility, MSA	GrF	1
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	GrF	1
WIPP01	WIPP Laboratories	GrF	1
WSHL01	Wisconsin State Laboratory of Hygiene	GrF	1
WVDP01	WVDP Environmental Laboratory	GrF	1
WVPL01	WVDP Radiation Protection Lab	GrF	1
Total		GrF	75

Laboratories Not Reporting GrF29

Lab Code	Lab Name	Matrix Code
AREV01	AREVA - CMC	GrF
ASUK99	NAS Radiochemistry Group	GrF
DEHS01	Department of Environmental Health & Safety	GrF
DRMG01	B&W Pantex - D&RMG	GrF
HERR01	Washington Closure Hanford	GrF
MSDH01	Mississippi State Dept of Health	GrF
NOCS99	National Oceanography Centre, Southampton	GrF
RMCL99	Royal Scientific Society - Radiation Protection Lab	GrF
RPSC01	Radiation Protection Service	GrF

Study Reference Values

MAPEP-13-GrF29

Radiological Reference Date: 08/01/2013

Analyte	Ref Value	Ref Unc
Radiological		Units: (Bq/sample)
Gross alpha	0.9	0.03
Gross beta	1.63	0.05

Sample Statistical Summary

MAPEP-13-GrF29

Radiological Reference Date: 08/01/2013

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/sample)
Gross alpha	62	43	0.5	0.3	0.9	0.03	0.3 - 1.5
Gross beta	63	60	1.64	0.16	1.63	0.05	0.82 - 2.45

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

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Study: MAPEP-13-GrF29

Radiological

Analyte	A	W	RW	N
Gross alpha	43			19
Gross beta	60			3



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

Laboratory Results For MAPEP-13-GrF29
 (ADEM01) Alabama Department of Environmental Management
 Montgomery Laboratory
 Montgomery, AL 36110

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.36	0.9	A		-60.0	0.3 - 1.5	0.01	L
Gross beta	1.60	1.63	A		-1.8	0.82 - 2.45	0.01	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(AFOH01) USAFSAM/OEA

2510 Fifth Street, Area B

Wright-Patterson AFB, OH 45433-7913

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.84	0.9	A		-6.7	0.3 - 1.5	0.12	
Gross beta	1.588	1.63	A		-2.6	0.82 - 2.45	0.086	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (ANTE01) ALS Environmental - Fort Collins, CO
 225 Commerce Drive
 Fort Collins, CO 80524-1416

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.518	0.9	A		-42.4	0.3 - 1.5	0.091	
Gross beta	1.66	1.63	A		1.8	0.82 - 2.45	0.14	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(ARGO01) Idaho National Laboratory

INL, Materials and Fuels Complex

Idaho Falls, ID 83415

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.7E-01	0.9	N		-81.1	0.3 - 1.5	2.4E-02	
Gross beta	1.6E+00	1.63	A		-1.8	0.82 - 2.45	1.3E-01	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(ARPL01) Analytical Support Operations - Radiochemical Processing Lab

PO Box 999

Richland, WA 99354

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.282	0.9	A		-68.7	0.3 - 1.5	0.012	
Gross beta	1.49	1.63	A		-8.6	0.82 - 2.45	0.05	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(ARSL01) ARS International, LLC

2609 North River Road

Port Allen, LA 70767

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.370	0.9	A		-58.9	0.3 - 1.5	0.047	
Gross beta	1.665	1.63	A		2.1	0.82 - 2.45	0.205	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(AY1201) B&W Y-12, Analytical Chemistry Organization Laboratory

Y12, NSC, Bldg. 9995, Rm 142

Oak Ridge, TN 37831-8189

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.03	0.9	A		14.4	0.3 - 1.5	0.085	
Gross beta	1.80	1.63	A		10.4	0.82 - 2.45	0.10	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (CDHS01) California Department of Public Health
 Drinking Water & Radiation Lab.
 Richmond, CA 94804-6403

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.4038	0.9	A		-55.1	0.3 - 1.5	0.0160	
Gross beta	1.69	1.63	A		3.7	0.82 - 2.45	0.0189	L

Radiological Reference Date: August 1, 2013

Gross Alpha Flags:

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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).

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

Laboratory Results For MAPEP-13-GrF29
 (CESL01) Lawrence Livermore National Laboratory - EMRL
 7000 East Avenue
 Livermore, CA 94551

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.99E-01	0.9	N		-77.9	0.3 - 1.5	1.62E-02	
Gross beta	1.58E+00	1.63	A		-3.1	0.82 - 2.45	7.68E-02	

Radiological Reference Date: August 1, 2013

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).

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Gross Beta Flags:

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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).

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

Laboratory Results For MAPEP-13-GrF29

(CHMH01) 222-S Laboratory

P.O. Box 250, MS T6-10

Richland, WA 99352

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.543	0.9	A		-39.7	0.3 - 1.5	0.0654	
Gross beta	1.50	1.63	A		-8.0	0.82 - 2.45	0.0834	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (CMRC01) Carlsbad Environmental Monitoring and Research Center
 1400 University Dr.
 Carlsbad, NM 88220

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.267	0.9	N		-70.3	0.3 - 1.5	0.007	L
Gross beta	1.440	1.63	A		-11.7	0.82 - 2.45	0.020	L

Radiological Reference Date: August 1, 2013

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:

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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).

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

Laboratory Results For MAPEP-13-GrF29

(DINL99) Departamento Ingeniería Nuclear y Mecánica de Fluidos

Alameda de Urquijo s/n

Bilbao, Vizcaya 48013

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.381	0.9	A		-57.7	0.3 - 1.5	0.0304	
Gross beta	1.68	1.63	A		3.1	0.82 - 2.45	0.043	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

(DPHE01) Colorado Dept. of Public Health & Env. / Laboratory Services Div.

8100 Lowry Blvd
Denver, CO 80230

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.450	0.9	A		-50.0	0.3 - 1.5	0.037	
Gross beta	1.598	1.63	A		-2.0	0.82 - 2.45	0.048	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150th Street
 Shoreline, WA 98155-9701

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.255	0.9	N		-71.7	0.3 - 1.5	.044	
Gross beta	1.62	1.63	A		-0.6	0.82 - 2.45	.07	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (ERLG01) Environmental Radiation Laboratory
 Georgia Institute of Tech.
 Atlanta, GA 30332

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.46	0.9	A		-48.9	0.3 - 1.5	.09	
Gross beta	1.39	1.63	A		-14.7	0.82 - 2.45	.15	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (ESDG99) Radiation Laboratory
 Institute of Graduate Studies & Research, Alexandria University
 Alexandria, Shatby 21532

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.2	0.9	A		33.3	0.3 - 1.5	0.01	L
Gross beta	2.1	1.63	A		28.8	0.82 - 2.45	0.02	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (ESGL99) Environmental Scientifics Group
 Unit 12 Moorbrook
 Didcot, Oxfordshire OX11 8QT

Radiological					Units: (Bq/sample)			
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.172	0.9	N		-80.9	0.3 - 1.5	0.029	
Gross beta	1.89	1.63	A		16.0	0.82 - 2.45	0.28	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(EULC01) EnergySolutions, LLC

I-80, Exit 46

Clive, UT 84029

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.2943	0.9	A		-67.3	0.3 - 1.5	.08	H
Gross beta	1.8712	1.63	A		14.8	0.82 - 2.45	.173	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (FDHE01) Florida Dept of Health Environmental Laboratory
 PO Box 680069
 Orlando, FL 32868-0069

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.2	0.9	N		-77.8	0.3 - 1.5	0.01	
Gross beta	1.752	1.63	A		7.5	0.82 - 2.45	0.04	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab
 PO Box 680069
 Orlando, FL 32868-0069

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.46	0.9	A		-48.9	0.3 - 1.5	0.03	
Gross beta	1.62	1.63	A		-0.6	0.82 - 2.45	0.03	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (FMCE99) Foods and Water Laboratories Center
 Ministry of Regional Municipalities and Water Resources
 Muscat, seeb 111

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.47155	0.9	A		-47.6	0.3 - 1.5	0.05	
Gross beta	1.6963	1.63	A		4.1	0.82 - 2.45	0.17	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

(GENE01) GEL Laboratories, LLC

2040 Savage Road

Charleston, SC 29407

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.09E00	0.9	A		21.1	0.3 - 1.5	2.69E-02	L
Gross beta	1.73E00	1.63	A		6.1	0.82 - 2.45	4.39E-02	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (GPCL01) Georgia Power Company Environmental Laboratory
 5131 Maner Road
 Smyrna, GA 30080

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	0.9				0.3 - 1.5		
Gross beta	1.86	1.63	A		14.1	0.82 - 2.45	0.0173	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (HCAL01) Hazards Control Analytical Lab
 Lawrence Livermore National
 Livermore, CA 94551

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.16	0.9	N		-82.2	0.3 - 1.5	.06	H
Gross beta	1.7	1.63	A		4.3	0.82 - 2.45	.18	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

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

Radiological					Units: (Bq/sample)			
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	5.61	0.9	N		523.3	0.3 - 1.5	1.03	
Gross beta	45.8	1.63	N		2709.8	0.82 - 2.45	2.1	

Radiological Reference Date: August 1, 2013

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 \leq 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 \leq 2, i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

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

785 S. 8th Ave, Rm 120

Pocatello, ID 83209-8106

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.52	0.9	A		-42.2	0.3 - 1.5	0.02	
Gross beta	1.32	1.63	A		-19.0	0.82 - 2.45	0.02	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (KDHE01) Kansas Dept. of Health & Environment
 Forbes Bldg. 740
 Topeka, KS 66620

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.43	0.9	A		-52.2	0.3 - 1.5	0.03	
Gross beta	1.56	1.63	A		-4.3	0.82 - 2.45	0.04	L

Radiological Reference Date: August 1, 2013

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).

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (KSCF01) Kennedy Space Center, HP Laboratory
 IHA-023
 Kennedy Space Center, FL 32899

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.2747	0.9	A		-69.5	0.3 - 1.5	1.19	H
Gross beta	1.4510	1.63	A		-11.0	0.82 - 2.45	5.13	H

Radiological Reference Date: August 1, 2013

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).

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

(LAEC99) Lebanese Atomic Energy Commission - Environmental Radiation

National Council for Scientific Research

Beirut, Beirut 1107 2260

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.82	0.9	A		-8.9	0.3 - 1.5	0.01	L
Gross beta	1.62	1.63	A		-0.6	0.82 - 2.45	0.01	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

(LDRA99) Laboratori de Radiologia Ambiental-Universitat de Barcelona

Facultat de Química

Barcelona, Catalunya 08028

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.409	0.9	A		-54.6	0.3 - 1.5	0.010	L
Gross beta	1.469	1.63	A		-9.9	0.82 - 2.45	0.020	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

(LGCL99) LGC Ltd

Queens Road

Teddington, Middlesex TW11 0LY

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.824	0.9	A		-8.4	0.3 - 1.5	0.117	
Gross beta	1.63	1.63	A		0.0	0.82 - 2.45	0.131	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

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

Laboratory Results For MAPEP-13-GrF29

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

INL/Battelle Energy Alliance, LLC

Idaho Falls, ID 83415-7111

Radiological					Units: (Bq/sample)			
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	7.51	0.9	N		734.4	0.3 - 1.5	0.54	
Gross beta	49.0	1.63	N		2906.1	0.82 - 2.45	2.1	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (MART02) United States Enrichment Corporation
 PO Box 1410
 Paducah, KY 42002

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.838	0.9	A		-6.9	0.3 - 1.5	0.088	
Gross beta	1.562	1.63	A		-4.2	0.82 - 2.45	0.052	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (MART03) Radioactive Material Analysis Laboratory
 ORNL
 Oak Ridge, TN 37831-6223

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.604	0.9	A		-32.9	0.3 - 1.5	0.039	
Gross beta	1.88	1.63	A		15.3	0.82 - 2.45	0.07	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (MDPH01) MDPH-Radiation Control Program
 MERL-Room 002
 Jamaica Plain, MA 02130-3597

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.23	0.9	N		-74.4	0.3 - 1.5	0.02	
Gross beta	1.60	1.63	A		-1.8	0.82 - 2.45	0.03	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

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

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.292	0.9	A		-67.6	0.3 - 1.5	0.0337	
Gross beta	1.40	1.63	A		-14.1	0.82 - 2.45	.0781	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

(NARL02) USEPA - NAREL - MERL

540 S Morris Ave

Montgomery, AL 36115

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.361	0.9	A		-59.9	0.3 - 1.5	0.0130	
Gross beta	1.59	1.63	A		-2.5	0.82 - 2.45	0.0190	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (NCNS99) Radioanalytical Laboratory
 National Center for Nuclear Sciences and Technologies
 Thabet Ariana, Ariana 2020

Radiological					Units: (Bq/sample)			
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.142	0.9	N		-84.2	0.3 - 1.5	0.005	
Gross beta	3.016	1.63	N		85.0	0.82 - 2.45	0.030	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(NESI01) B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory

Lynchburg Technology Center

Lynchburg, VA 24504-5447

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.711	0.9	A		-21.0	0.3 - 1.5	0.023	
Gross beta	1.54	1.63	A		-5.5	0.82 - 2.45	0.023	L

Radiological Reference Date: August 1, 2013

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 \leq 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 \leq 2, i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (NJDH01) New Jersey Dept. of Health, PHEL, ECLS
 3 Schwarzkopf Drive
 West Trenton, NJ 08628

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.883	0.9	N		109.2	0.3 - 1.5	0.032	L
Gross beta	1.80	1.63	A		10.4	0.82 - 2.45	0.27	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (ODHL01) Ohio Department of Health Laboratory
 8995 E Main Street
 Reynoldsburg, OH 43068

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.292	0.9	A		-67.6	0.3 - 1.5	0.016	
Gross beta	1.777	1.63	A		9.0	0.82 - 2.45	0.025	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29

(ORIS01) ORISE/IEAV

PO Box 117

Oak Ridge, TN 37831-0117

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.585	0.9	A		-35.0	0.3 - 1.5	0.019	
Gross beta	1.683	1.63	A		3.3	0.82 - 2.45	0.018	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

(OTLI01) Outreach Technologies, Inc.

311 N. Aspen

Broken Arrow, OK 74012-

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.297	0.9	A		-67.0	0.3 - 1.5	0.001	L
Gross beta	1.69	1.63	A		3.7	0.82 - 2.45	0.024	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

(QUAN01) TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045-

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.219	0.9	N		-75.7	0.3 - 1.5	0.0196	
Gross beta	1.82	1.63	A		11.7	0.82 - 2.45	0.098	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (QUAN03) TestAmerica Laboratories - Richland
 2800 GEORGE WASHINGTON WAY
 RICHLAND, WA 99354-

Radiological					Units: (Bq/sample)			
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.242	0.9	N		-73.1	0.3 - 1.5	0.0287	
Gross beta	1.86	1.63	A		14.1	0.82 - 2.45	0.144	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

(RSAL01) RSA Laboratories, Inc.

PO Box 61

Hebron, CT 06248

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.34	0.9	A		-62.2	0.3 - 1.5	0.03	
Gross beta	1.87	1.63	A		14.7	0.82 - 2.45	0.12	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (SANC99) RadioAnalysis, South Africa Nuclear Energy Corp.
 Sample Receipt Gate 1
 Pretoria, Gauteng 0001

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.278	0.9	A		-69.1	0.3 - 1.5	0.023	
Gross beta	1.56	1.63	A		-4.3	0.82 - 2.45	0.05	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (SEML01) SRS Environmental Monitoring Laboratory
 Bldg 735-B
 Aiken, SC 29808

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.534	0.9	A		-40.7	0.3 - 1.5	0.055	
Gross beta	1.75	1.63	A		7.4	0.82 - 2.45	0.059	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (SOUT01) Southwest Research Institute
 6220 Culebra Rd.
 San Antonio, TX 78228-0510

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.196	0.9	N		-78.2	0.3 - 1.5	0.0136	
Gross beta	1.51	1.63	A		-7.4	0.82 - 2.45	0.0904	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

(SRPD01) Sandia National Laboratories, Radiation Protection Sample Diagnostics
 PO Box 5800, MS1103
 Albuquerque, NM 87185-1103

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.080	0.9	A		20.0	0.3 - 1.5	0.045	
Gross beta	1.650	1.63	A		1.2	0.82 - 2.45	0.088	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (TDHL01) Texas Department of State Health Services Laboratory
 1100 W 49th Street
 Austin, TX 78756

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.675	0.9	A		-25.0	0.3 - 1.5	0.023	
Gross beta	1.604	1.63	A		-1.6	0.82 - 2.45	0.026	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29

(TELE01) TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES

2508 Quality Lane

Knoxville, TN 37931-6819

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.872	0.9	A		-3.1	0.3 - 1.5	0.139	
Gross beta	1.57	1.63	A		-3.7	0.82 - 2.45	0.0841	

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (TELE02) Environmental, Inc., Midwest Lab
 700 Landwehr Road
 Northbrook, IL 60062-

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.28	0.9	A		-68.9	0.3 - 1.5	0.04	
Gross beta	1.90	1.63	A		16.6	0.82 - 2.45	0.08	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY
 601 SCARBORO RD
 OAK RIDGE, TN 37830-

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.319	0.9	A		-64.6	0.3 - 1.5	.021	
Gross beta	1.584	1.63	A		-2.8	0.82 - 2.45	.043	L

Radiological Reference Date: August 1, 2013

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).

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

Laboratory Results For MAPEP-13-GrF29
 (TNUT01) St. Louis USACE FUSRAP Laboratory
 8945 LATTY AVE
 BERKELEY, MO 63134-

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.2423	0.9	N		-73.1	0.3 - 1.5	0.0116	
Gross beta	1.6311	1.63	A		0.1	0.82 - 2.45	0.0264	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (URSL01) UNLV Radioanalytical Services Laboratory
 Campus Mail Stop 453037
 Las Vegas, NV 89154-3037

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	4.46E-01	0.9	A		-50.4	0.3 - 1.5	2.12E-02	
Gross beta	1.51E+00	1.63	A		-7.4	0.82 - 2.45	3.73E-02	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

(USED99) National Center for Nuclear Energy, Sciences and Techniques

CNESTEN BP 1382

RABAT, RABAT RP 10001

Radiological					Units: (Bq/sample)			
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.21	0.9	N		-76.7	0.3 - 1.5	0.01	
Gross beta	2.06	1.63	A		26.4	0.82 - 2.45	0.04	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

(WEST03) Waste Sampling and Characterization Facility, MSA

PO Box 650, S3-30

Richland, WA 99352

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.513	0.9	A		-43.0	0.3 - 1.5	.138	H
Gross beta	1.34	1.63	A		-17.8	0.82 - 2.45	.077	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH
 1638 Roseytown Road
 Greensburg, PA 15601

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.647	0.9	A		-28.1	0.3 - 1.5	0.119	
Gross beta	1.656	1.63	A		1.6	0.82 - 2.45	0.298	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29

(WIPP01) WIPP Laboratories

1400 University Drive

Carlsbad, NM 88220

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	2.11E-01	0.9	N		-76.6	0.3 - 1.5	2.34E-02	
Gross beta	1.42E+00	1.63	A		-12.9	0.82 - 2.45	1.46E-01	

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (WSHL01) Wisconsin State Laboratory of Hygiene
 2601 Agriculture Drive
 Madison, WI 53718

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.7450	0.9	A		-17.2	0.3 - 1.5	0.0570	
Gross beta	1.5065	1.63	A		-7.6	0.82 - 2.45	0.0342	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

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

Laboratory Results For MAPEP-13-GrF29
 (WVDP01) WVDP Environmental Laboratory
 10282 Rock Springs Road
 West Valley, NY 14171

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.486	0.9	A		-46.0	0.3 - 1.5	0.0212	
Gross beta	1.60	1.63	A		-1.8	0.82 - 2.45	0.0164	L

Radiological Reference Date: August 1, 2013

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).

Other Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)



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

Laboratory Results For MAPEP-13-GrF29
 (WVPL01) WVDP Radiation Protection Lab
 10282 Rock Springs Rd
 West Valley, NY 14171

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.2022	0.9	N		-77.5	0.3 - 1.5	0.0147	
Gross beta	1.5431	1.63	A		-5.3	0.82 - 2.45	0.0328	L

Radiological Reference Date: August 1, 2013

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).

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Gross Beta Flags:

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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).

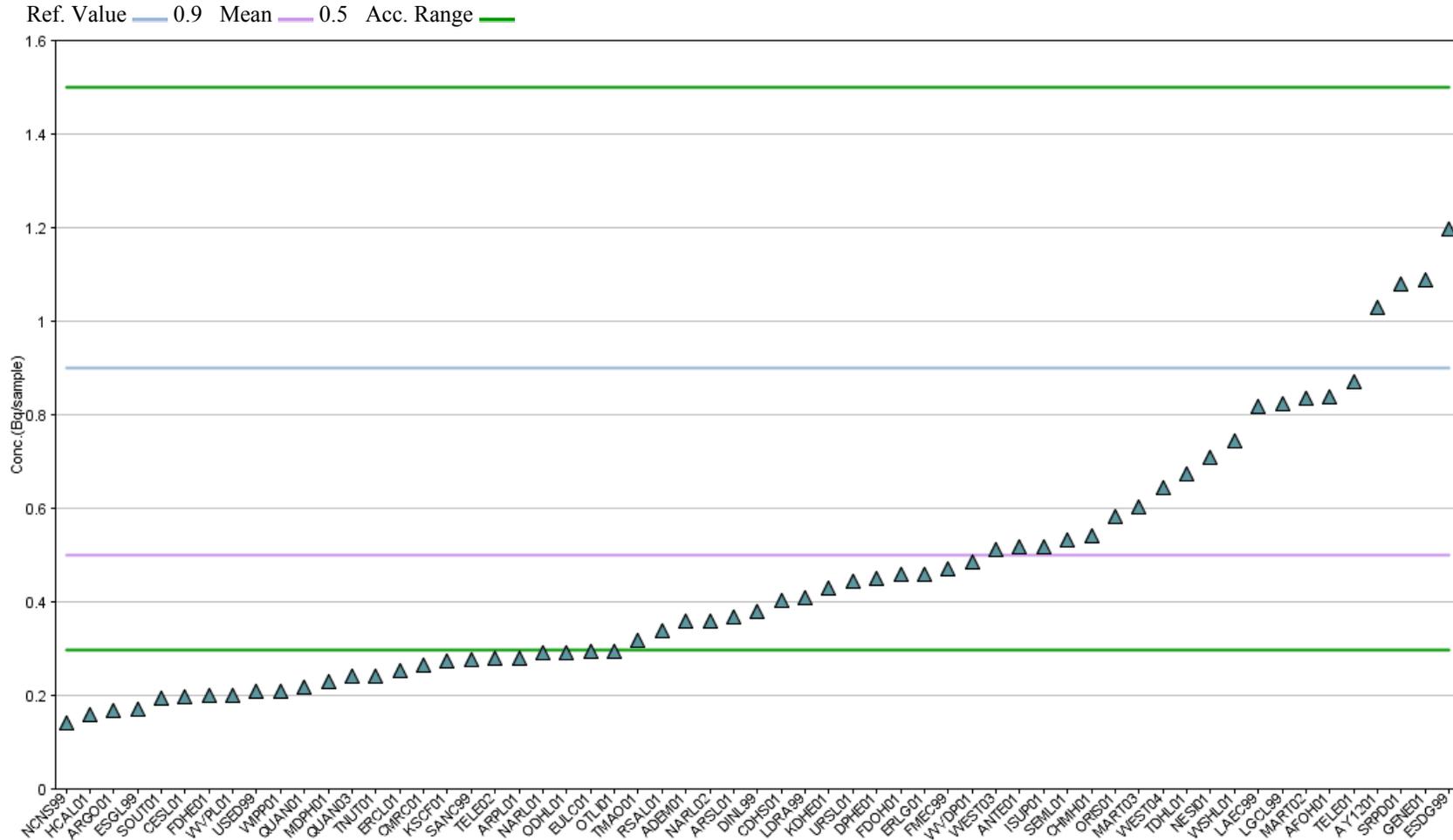
Other Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)

Gross alpha

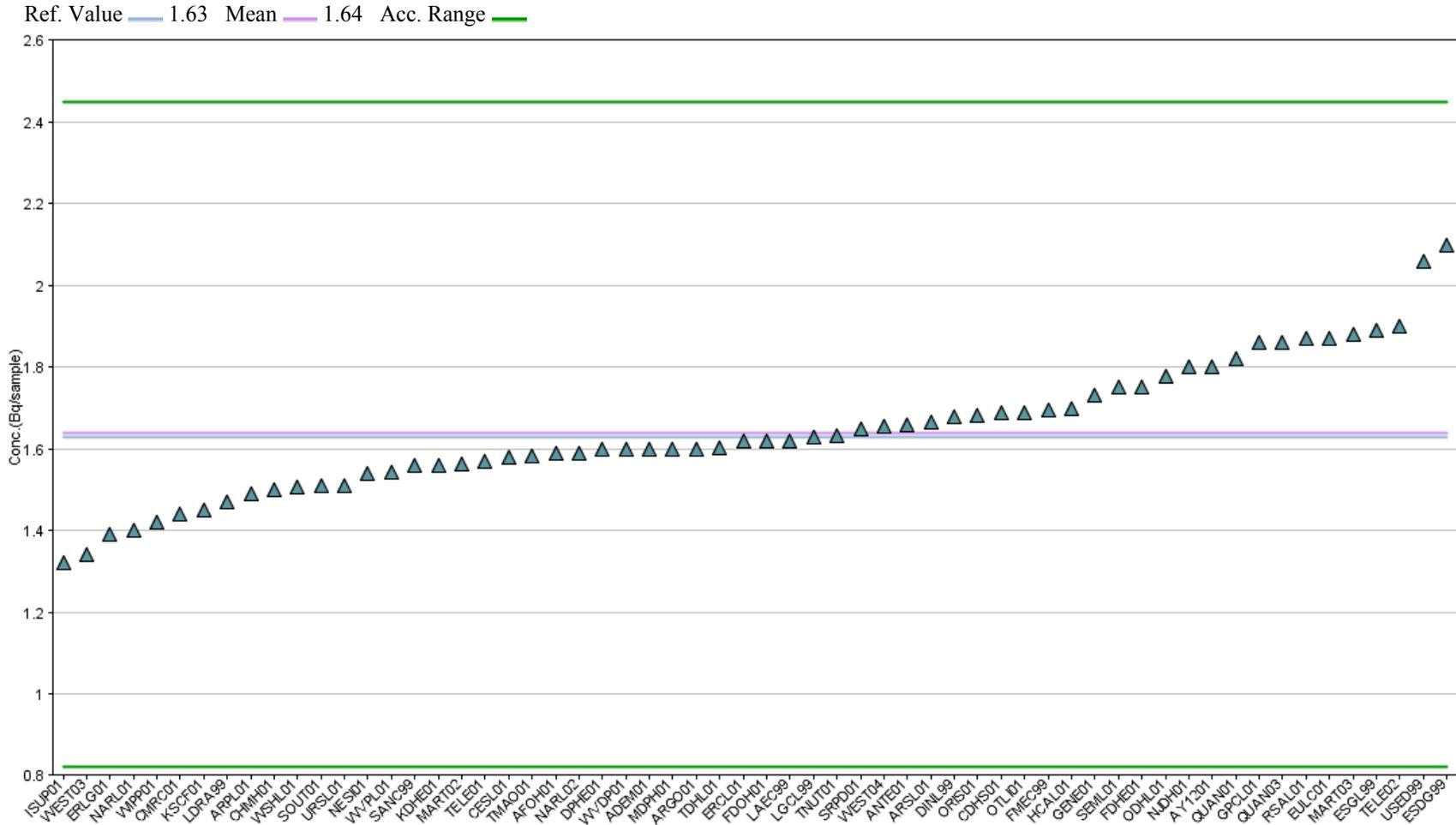
MAPEP-13-GrF29



Note: This chart shows only data points with values between 0.00 and 1.80 (± 5 Standard Deviations)

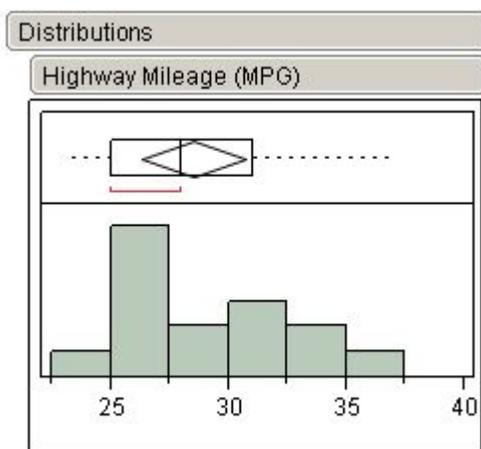
Gross beta

MAPEP-13-GrF29

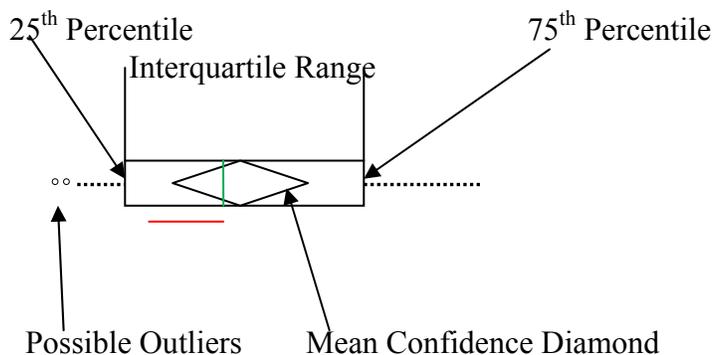


Note: This chart shows only data points with values between 0.83 and 2.46 (± 5 Standard Deviations)

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.

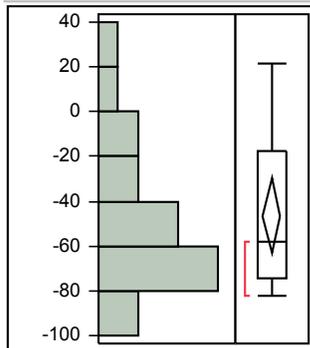
The box plot of the bias data points and the mean visually illustrate the breadth of the distribution and where any potential outliers in the distribution might lie. The moments for the distribution plot are provided below the Bias plot. In some cases, N becomes very small and thus developed statistics may not accurately reflect estimates of the population if N were a significantly larger value.

GrF Distribution by Detection Method

GrF Distribution by Detection Method

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

Bias



Quantiles

100.0%	maximum	21.1
99.5%		21.1
97.5%		21.1
90.0%		15.07
75.0%	quartile	-17.85
50.0%	median	-58.3
25.0%	quartile	-73.975
10.0%		-81.21
2.5%		-82.2
0.5%		-82.2
0.0%	minimum	-82.2

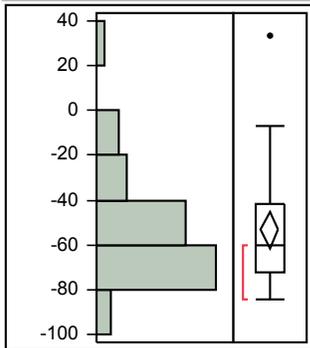
Summary Statistics

Mean	-46.50556
Std Dev	33.516817
Std Err Mean	7.8999895
Upper 95% Mean	-29.83803
Lower 95% Mean	-63.17308
N	18

GrF Distribution by Detection Method

GrF Distribution by Detection Method
Distributions Analyte_Detection=Gross alpha Gross
Alpha/Beta - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	33.3
99.5%		33.3
97.5%		33.3
90.0%		-16.17
75.0%	quartile	-41.825
50.0%	median	-59.95
25.0%	quartile	-72.05
10.0%		-77.81
2.5%		-84.2
0.5%		-84.2
0.0%	minimum	-84.2

Summary Statistics

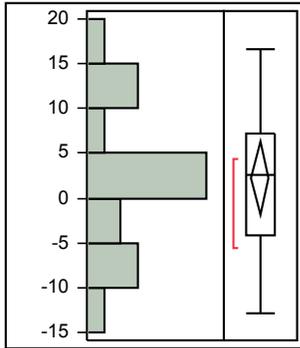
Mean	-53.31316
Std Dev	25.062108
Std Err Mean	4.0656109
Upper 95% Mean	-45.07545
Lower 95% Mean	-61.55087
N	38

GrF Distribution by Detection Method

GrF Distribution by Detection Method

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

Bias



Quantiles

100.0%	maximum	16.6
99.5%		16.6
97.5%		16.6
90.0%		14.89
75.0%	quartile	7.175
50.0%	median	2.6
25.0%	quartile	-4.15
10.0%		-9.03
2.5%		-12.9
0.5%		-12.9
0.0%	minimum	-12.9

Summary Statistics

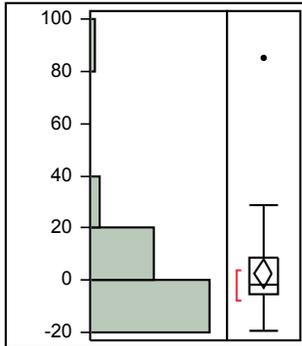
Mean	2.2388889
Std Dev	8.218497
Std Err Mean	1.9371183
Upper 95% Mean	6.3258513
Lower 95% Mean	-1.848074
N	18

GrF Distribution by Detection Method

GrF Distribution by Detection Method

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

Bias



Quantiles

100.0%	maximum	85
99.5%		85
97.5%		83.595
90.0%		15.93
75.0%	quartile	8.625
50.0%	median	-1.8
25.0%	quartile	-5.05
10.0%		-13.86
2.5%		-18.97
0.5%		-19
0.0%	minimum	-19

Summary Statistics

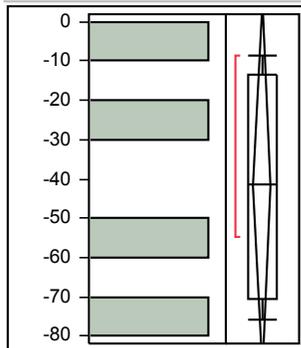
Mean	2.6325
Std Dev	17.178988
Std Err Mean	2.7162365
Upper 95% Mean	8.126607
Lower 95% Mean	-2.861607
N	40

GrF Distribution by Prep Method

GrF Distribution by Prep Method

Distributions Analyte_Method=Gross alpha
Acid leaching without hydrofluoric acid

Bias



Quantiles

100.0%	maximum	-8.4
99.5%		-8.4
97.5%		-8.4
90.0%		-8.4
75.0%	quartile	-13.325
50.0%	median	-41.35
25.0%	quartile	-70.425
10.0%		-75.7
2.5%		-75.7
0.5%		-75.7
0.0%	minimum	-75.7

Summary Statistics

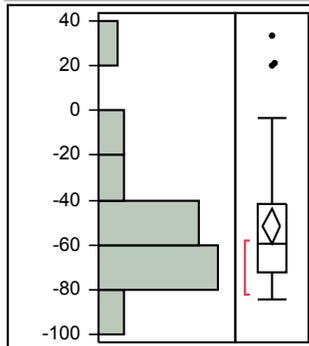
Mean	-41.7
Std Dev	29.531114
Std Err Mean	14.765557
Upper 95% Mean	5.2905916
Lower 95% Mean	-88.69059
N	4

GrF Distribution by Prep Method

GrF Distribution by Prep Method

Distributions Analyte_Method=Gross alpha
No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	33.3
99.5%		33.3
97.5%		29.945
90.0%		-6.72
75.0%	quartile	-41.825
50.0%	median	-59.4
25.0%	quartile	-72.05
10.0%		-78.17
2.5%		-83.65
0.5%		-84.2
0.0%	minimum	-84.2

Summary Statistics

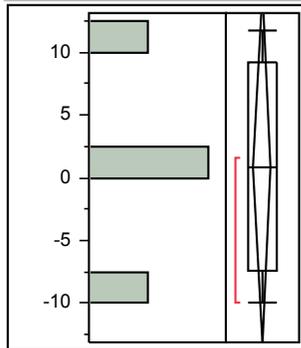
Mean	-51.682
Std Dev	28.230572
Std Err Mean	3.9924057
Upper 95% Mean	-43.65896
Lower 95% Mean	-59.70504
N	50

GrF Distribution by Prep Method

GrF Distribution by Prep Method

Distributions Analyte_Method=Gross beta
Acid leaching without hydrofluoric acid

Bias



Quantiles

100.0%	maximum	11.7
99.5%		11.7
97.5%		11.7
90.0%		11.7
75.0%	quartile	9.175
50.0%	median	0.8
25.0%	quartile	-7.425
10.0%		-9.9
2.5%		-9.9
0.5%		-9.9
0.0%	minimum	-9.9

Summary Statistics

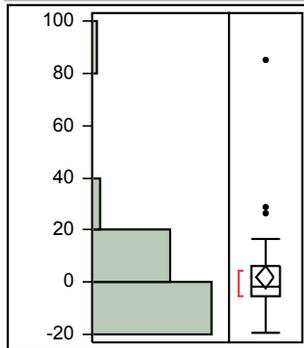
Mean	0.85
Std Dev	8.842511
Std Err Mean	4.4212555
Upper 95% Mean	14.920408
Lower 95% Mean	-13.22041
N	4

GrF Distribution by Prep Method

GrF Distribution by Prep Method

Distributions Analyte_Method=Gross beta
No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	85
99.5%		85
97.5%		68.14
90.0%		15.86
75.0%	quartile	6.1
50.0%	median	-1.8
25.0%	quartile	-5.3
10.0%		-12.66
2.5%		-18.64
0.5%		-19
0.0%	minimum	-19

Summary Statistics

Mean	1.9686275
Std Dev	15.640032
Std Err Mean	2.1900425
Upper 95% Mean	6.3674573
Lower 95% Mean	-2.430202
N	51