

**Lab Code Lab Name**

ADEM01 Alabama Department of Environmental Management  
AFOH01 USAFSAM/OEHHL  
ANTE01 ALS Group USA, Corp  
ARSL01 American Radiation Services Inc.  
AY1201 B&W Y-12, Analytical Chemistry Organization Laboratory  
CESL01 Lawrence Livermore National Laboratory - EMRL  
CHMH01 222-S Laboratory  
**CHPR01 CHPRC Central Count Room**  
CMRC01 Carlsbad Environmental Monitoring and Research Center  
DEHS01 Department of Environmental Health & Safety  
DPHE01 Colorado Dept. of Public Health & Env. / Laboratory Services Div.  
DRMG01 B&W Pantex - D&RMG  
**EPAL01 U. S. EPA Office of Radiation and Indoor Air**  
ERCL01 Washington State Public Health Laboratories  
ERLG01 Environmental Radiation Laboratory  
ERPD99 Ministry Of Health,Radiation Protection Department Lab  
EULC01 EnergySolutions, LLC  
**FDHE01 Florida Dept of Health Environmental Laboratory**  
**FDOH01 Florida Dept. of Health, Mobile Environmental Radiological Lab**  
FMCE99 Foods and Water Laboratories Center  
GENE01 GEL Laboratories, LLC  
HCAL01 Hazards Control Analytical Lab  
HECR01 SC Dept. Health and Environmental Control Radiological Laboratory  
HERR01 Washington Closure Hanford  
HPAC99 HPA, CRCE Scotland  
ISUP01 ISU - Department of Physics/Health Physics/EAL  
JAEC99 Radiation Measurements Laboratory  
KDHE01 Kansas Dept. of Health & Environment  
KSCF01 Kennedy Space Center, HP Laboratory  
KUFS99 Center for Research in Environmental Radiation  
LAEC99 Lebanese Atomic Energy Commission - Environmental Radiation  
LOCK03 Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory  
MART02 United States Enrichment Corporation  
MART03 Radioactive Material Analysis Laboratory  
MKME01 PIKA International  
**MSCL01 MSC**  
**NARL01 National Air and Radiation Environmental Laboratory**  
NESI01 B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory  
NTSI01 Nuclear Technology Services, Inc.  
**OBGL01 Life Science Laboratories, Inc.**  
ODHL01 Ohio Department of Health Laboratory  
ORIS01 ORISE/IEAV  
OTLI01 Outreach Technologies, Inc.  
QUAN01 TestAmerica St. Louis  
QUAN03 TestAmerica  
**RMCL99 Royal Scientific Society - Radiation Measurements Lab**  
**RPCR01 WRPS RadCon Program Count Room**  
RPSC01 Radiation Protection Service  
RSAL01 RSA Laboratories, Inc.  
SCAL01 Centauri Labs

SEML01 SRS Environmental Monitoring Laboratory  
SOUT01 Southwest Research Institute  
SRPD01 Sandia National Laboratories, Radiation Protection Sample Diagnostics  
TDHL01 Texas Department of State Health Services Laboratory  
TELE01 TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES  
TELE02 Environmental, Inc., Midwest Lab  
TMAO01 EBERLINE SERVICES OAK RIDGE LABORATORY  
TMAR01 Eberline Analytical Corp. Richmond CA Lab  
TNUT01 FUSRAP  
URSL01 UNLV Radioanalytical Services Laboratory  
USED99 National Center for Nuclear Energy, Sciences and Techniques  
WEST03 Waste Sampling and Characterization Facility, MSA/RJLG  
WEST04 PACE ANALYTICAL SERVICES, PITTSBURGH  
WIPP01 WIPP Laboratories  
WSHL01 Wisconsin State Laboratory of Hygiene  
WSTI01 Waste Stream Technology Inc.  
WVDP01 WVDP Environmental Laboratory  
WVPL01 WVDP Radiation Protection Lab

71

9 Laboratories did not return data for this matrix

### GrF22 Radiological Reference Data

<b>Analyte Name</b>	<b>Reference Value</b>	<b>Uncertainty</b>	<b>Rad Reference Date</b>
1 Gross alpha	0.43	0.01	3/1/10 12:00 PM
2 Gross beta	1.29	0.02	3/1/10 12:00 PM

## Sample Statistical Summary

MAPEP-10-GrF22

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/sample)
Gross alpha	57	56	0.245	0.149	0.427	0.005	>0.0 - 0.854
Gross beta	57	51	1.33	0.16	1.29	0.02	0.65 - 1.94

**Note:** (1) T = Total number of laboratories reporting analyte.  
(2) A = Number of laboratories with 'Acceptable' performance.

### Gross Alpha Criteria:

Acceptable Result: Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

### Gross Beta Criteria:

Acceptable Result: 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).

# Performance Flag Summary Report

MAPEP-10-GrF22

Radiological				
Analyte	A	W	RW	N
Gross alpha	56			1
Gross beta	51			6



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

Laboratory Results For MAPEP-10-GrF22  
 (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	0.0023	0.427	A		-99.5	>0.0 - 0.854	0.0001	
Gross beta	0.0152	1.29	N		-98.8	0.65 - 1.94	0.0001	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(AFOH01) USAFSAM/OEHHL

2350 Gillingham Dr

Brooks City-Base, TX 78235-5103

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.543	0.427	A		27.2	>0.0 - 0.854	0.054	
Gross beta	1.315	1.29	A		1.9	0.65 - 1.94	0.055	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(ANTE01) ALS Group USA, Corp  
 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	0.1683	0.427	A		-60.6	>0.0 - 0.854	0.0137	
Gross beta	1.38	1.29	A		7.0	0.65 - 1.94	0.1100	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

Laboratory Results For MAPEP-10-GrF22  
 (ARSL01) American Radiation Services Inc.  
 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	0.537	0.427	A		25.8	>0.0 - 0.854	0.124	H
Gross beta	1.398	1.29	A		8.4	0.65 - 1.94	0.203	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(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	0.263	0.427	A		-38.4	>0.0 - 0.854	0.021	
Gross beta	1.38	1.29	A		7.0	0.65 - 1.94	0.050	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

*Laboratory Results For MAPEP-10-GrF22*

(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	2.51E-01	0.427	A		-41.2	>0.0 - 0.854	5.40E-	L
Gross beta	1.71E+00	1.29	A		32.6	0.65 - 1.94	1.30E-	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

*Laboratory Results For MAPEP-10-GrF22*

(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	.16	0.427	A		-62.5	>0.0 - 0.854	.0206	
Gross beta	1.20	1.29	A		-7.0	0.65 - 1.94	.0434	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

Laboratory Results For MAPEP-10-GrF22  
 (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	.221	0.427	A		-48.2	>0.0 - 0.854	.006	L
Gross beta	1.48	1.29	A		14.7	0.65 - 1.94	.02	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

Laboratory Results For MAPEP-10-GrF22  
 (DEHS01) Department of Environmental Health & Safety  
 North Carolina State Univ.  
 Raleigh, NC 27695-8007

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.54	0.427	A		26.5	>0.0 - 0.854	0.05	
Gross beta	1.25	1.29	A		-3.1	0.65 - 1.94	0.06	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

*Laboratory Results For MAPEP-10-GrF22*

(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	0.41	0.427	A		-4.0	>0.0 - 0.854	0.05	
Gross beta	1.25	1.29	A		-3.1	0.65 - 1.94	0.05	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(DRMG01) B&W Pantex - D&RMG

Bldg 12-122

Amarillo, TX 79120-0020

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	3.14E-01	0.427	A		-26.5	>0.0 - 0.854	1.68E-	
Gross beta	1.24E+00	1.29	A		-3.9	0.65 - 1.94	2.28E-	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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:

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

Laboratory Results For MAPEP-10-GrF22  
 (ERCL01) Washington State Public Health Laboratories  
 1610 N.E. 150 th Srteet  
 Shoreline, WA 98155-9701

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.192	0.427	A		-55.0	>0.0 - 0.854	0.019	
Gross beta	1.31	1.29	A		1.6	0.65 - 1.94	0.03	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (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	0.3	0.427	A		-29.7	>0.0 - 0.854	0.05	
Gross beta	1.1	1.29	A		-14.7	0.65 - 1.94	0.1	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

Laboratory Results For MAPEP-10-GrF22  
 (ERPD99) Ministry Of Health, Radiation Protection Department Lab  
 Al-Awqaf Complex-Tower#12  
 Sharq, Kuwait 656

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.311	0.427	A		-27.2	>0.0 - 0.854	0.032	
Gross beta	0.984	1.29	A		-23.7	0.65 - 1.94	0.089	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).

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

Laboratory Results For MAPEP-10-GrF22

(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	.152	0.427	A		-64.4	>0.0 - 0.854	.001	L
Gross beta	1.289	1.29	A		-0.1	0.65 - 1.94	.01	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty > 2, i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias > +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(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	0.15	0.427	A		-64.9	>0.0 - 0.854	0.01	
Gross beta	1.45	1.29	A		12.4	0.65 - 1.94	0.03	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(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	NR	0.427				>0.0 - 0.854		
Gross beta	NR	1.29				0.65 - 1.94		

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (FMEC99) Foods and Water Laboratories Center  
 Ministry of Regional Municipalities and Water Resources  
 Muscat, B.O.Box. 3094 111

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.4654	0.427	A		9.0	>0.0 - 0.854	.037	
Gross beta	1.2648	1.29	A		-2.0	0.65 - 1.94	.024	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty > 2, i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias > +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(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	0.303	0.427	A		-29.0	>0.0 - 0.854	0.007	L
Gross beta	1.433	1.29	A		11.1	0.65 - 1.94	0.010	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (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	.12	0.427	A		-71.9	>0.0 - 0.854	.03	H
Gross beta	1.37	1.29	A		6.2	0.65 - 1.94	0.14	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(HECR01) SC Dept. Health and Environmental Control Radiological Laboratory  
 2600 Bull St.  
 Columbia, SC 29201

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.245	0.427	A		-42.6	>0.0 - 0.854	0.034	
Gross beta	1.478	1.29	A		14.6	0.65 - 1.94	0.069	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (HERR01) Washington Closure Hanford  
 Radiological Counting Facility  
 Richland, WA 99352

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.21	0.427	A		-50.8	>0.0 - 0.854	0.018	
Gross beta	1.38	1.29	A		7.0	0.65 - 1.94	0.10	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(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	0.24	0.427	A		-43.8	>0.0 - 0.854	0.01	
Gross beta	1.34	1.29	A		3.9	0.65 - 1.94	0.02	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (JAEC99) Radiation Measurements Laboratory  
 Jordan Atomic Energy Commission  
 Amman, Jordan 00962 6

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.0155	0.427	A		-96.4	>0.0 - 0.854	.001	
Gross beta	2.032	1.29	N		57.5	0.65 - 1.94	.016	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (KSCF01) Kennedy Space Center, HP Laboratory  
 IHA-022  
 Kennedy Space Center, FL 32899

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.2411	0.427	A		-43.5	>0.0 - 0.854	0.01	
Gross beta	1.409	1.29	A		9.2	0.65 - 1.94	0.0502	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (KUFS99) Center for Research in Environmental Radiation  
 Kuwait University - Faculty of Science  
 Khaldia, Kuwait 13060

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.1	0.427	A		-76.6	>0.0 - 0.854	0.1	H
Gross beta	0.1	1.29	N		-92.2	0.65 - 1.94	0.1	H

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty > 2, i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias > +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (LOCK03) Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory  
 INL/Battelle Energy Alliance, LLC  
 Scoville, ID 83415-7111

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.30	0.427	A		-29.7	>0.0 - 0.854	0.04	
Gross beta	1.50	1.29	A		16.3	0.65 - 1.94	0.12	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (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	0.623	0.427	A		45.9	>0.0 - 0.854	0.171	H
Gross beta	1.36	1.29	A		5.4	0.65 - 1.94	0.0944	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (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	0.021	0.427	A		-95.1	>0.0 - 0.854	0.013	H
Gross beta	1.18	1.29	A		-8.5	0.65 - 1.94	0.17	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(MKME01) PIKA International

5025 Arnold Ave

McClellan, CA 95652

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.225	0.427	A		-47.3	>0.0 - 0.854	0.045	
Gross beta	1.75	1.29	A		35.7	0.65 - 1.94	0.35	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	0.279	0.427	A		-34.7	>0.0 - 0.854	0.026	
Gross beta	1.288	1.29	A		-0.2	0.65 - 1.94	0.034	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (NTSI01) Nuclear Technology Services, Inc.  
 635 Hembree Parkway  
 Roswell, GA 30076

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.456	0.427	A		6.8	>0.0 - 0.854	0.04	
Gross beta	1.093	1.29	A		-15.3	0.65 - 1.94	0.03	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.30	0.427	A		-29.7	>0.0 - 0.854	0.015	
Gross beta	3.32	1.29	N		157.4	0.65 - 1.94	0.05	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	0.36	0.427	A		-15.7	>0.0 - 0.854	0.01	L
Gross beta	1.25	1.29	A		-3.1	0.65 - 1.94	0.05	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	.416	0.427	A		-2.6	>0.0 - 0.854	.031	
Gross beta	1.00	1.29	A		-22.5	0.65 - 1.94	.045	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	0.1629	0.427	A		-61.9	>0.0 - 0.854	0.0089	
Gross beta	1.492	1.29	A		15.7	0.65 - 1.94	0.0572	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(QUAN03) TestAmerica  
 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	0.191	0.427	A		-55.3	>0.0 - 0.854	0.023	
Gross beta	1.49	1.29	A		15.5	0.65 - 1.94	0.115	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(RPSC01) Radiation Protection Service

Ontario Ministry of Labour

Weston, Ontario M9P 3T1

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.13	0.427	A		-69.6	>0.0 - 0.854	.03	H
Gross beta	1.52	1.29	A		17.8	0.65 - 1.94	.15	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	0.0033	0.427	A		-99.2	>0.0 - 0.854	0.0059	H
Gross beta	0.268	1.29	N		-79.2	0.65 - 1.94	0.0111	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(SCAL01) Centauri Labs  
 1000 Monticello Court  
 Montgomery, AL 36117-

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.1391	0.427	A		-67.4	>0.0 - 0.854	0.0237	
Gross beta	1.5059	1.29	A		16.7	0.65 - 1.94	0.1532	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.138	0.427	A		-67.7	>0.0 - 0.854	0.026	
Gross beta	1.33	1.29	A		3.1	0.65 - 1.94	0.14	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.116	0.427	A		-72.8	>0.0 - 0.854	0.0093	
Gross beta	1.20	1.29	A		-7.0	0.65 - 1.94	0.0707	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	0.583	0.427	A		36.5	>0.0 - 0.854	0.123	H
Gross beta	1.218	1.29	A		-5.6	0.65 - 1.94	0.121	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	0.329	0.427	A		-23.0	>0.0 - 0.854	0.034	
Gross beta	1.42	1.29	A		10.1	0.65 - 1.94	0.06	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22

(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	0.1533	0.427	A		-64.1	>0.0 - 0.854	0.0312	H
Gross beta	1.240	1.29	A		-3.9	0.65 - 1.94	0.0667	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.13	0.427	A		-69.6	>0.0 - 0.854	0.03	H
Gross beta	1.46	1.29	A		13.2	0.65 - 1.94	0.07	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.152	0.427	A		-64.4	>0.0 - 0.854	0.0172	
Gross beta	1.374	1.29	A		6.5	0.65 - 1.94	0.0401	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (TMAR01) Eberline Analytical Corp. Richmond CA Lab  
 2030 Wright Ave  
 Richmond, CA 94804-3849

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.281	0.427	A		-34.2	>0.0 - 0.854	0.040	
Gross beta	1.278	1.29	A		-0.9	0.65 - 1.94	0.183	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(TNUT01) FUSRAP  
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	0.1296	0.427	A		-69.6	>0.0 - 0.854	0.0081	
Gross beta	1.2963	1.29	A		0.5	0.65 - 1.94	0.0221	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.49	0.427	A		14.8	>0.0 - 0.854	0.03	
Gross beta	1.25	1.29	A		-3.1	0.65 - 1.94	0.04	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(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	0.102	0.427	A		-76.1	>0.0 - 0.854	0.018	
Gross beta	1.59	1.29	A		23.3	0.65 - 1.94	0.06	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(WEST03) Waste Sampling and Characterization Facility, MSA/RJLG

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	0.15	0.427	A		-64.9	>0.0 - 0.854	0.009	
Gross beta	1.17	1.29	A		-9.3	0.65 - 1.94	0.04	

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (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	0.1981	0.427	A		-53.6	>0.0 - 0.854	0.0454	H
Gross beta	1.370	1.29	A		6.2	0.65 - 1.94	0.2559	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

*Laboratory Results For MAPEP-10-GrF22*

(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	2.10E-01	0.427	A		-50.8	>0.0 - 0.854	1.03E-	
Gross beta	1.03E+00	1.29	A		-20.2	0.65 - 1.94	2.41E-	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.96	0.427	N		124.8	>0.0 - 0.854	0.14	
Gross beta	3.17	1.29	N		145.7	0.65 - 1.94	0.11	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty > 2, i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias > +/- 100% 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).



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*Laboratory Results For MAPEP-10-GrF22*

(WSTI01) Waste Stream Technology Inc.

302 Grote Ave  
Buffalo, NY 14207

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.163	0.427	A		-61.8	>0.0 - 0.854	.007	
Gross beta	1.28	1.29	A		-0.8	0.65 - 1.94	.017	L

*Radiological Reference Date: March 1, 2010*

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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Laboratory Results For MAPEP-10-GrF22  
 (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	0.189	0.427	A		-55.7	>0.0 - 0.854	0.0062	
Gross beta	1.35	1.29	A		4.7	0.65 - 1.94	0.0158	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty  $> 2$ , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias  $>$  +/- 100% 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).



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

Laboratory Results For MAPEP-10-GrF22  
 (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	0.143	0.427	A		-66.5	>0.0 - 0.854	0.013	
Gross beta	1.272	1.29	A		-1.4	0.65 - 1.94	0.030	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

A = Result acceptable, Bias  $\leq$  +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty > 2, i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias > +/- 100% 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).

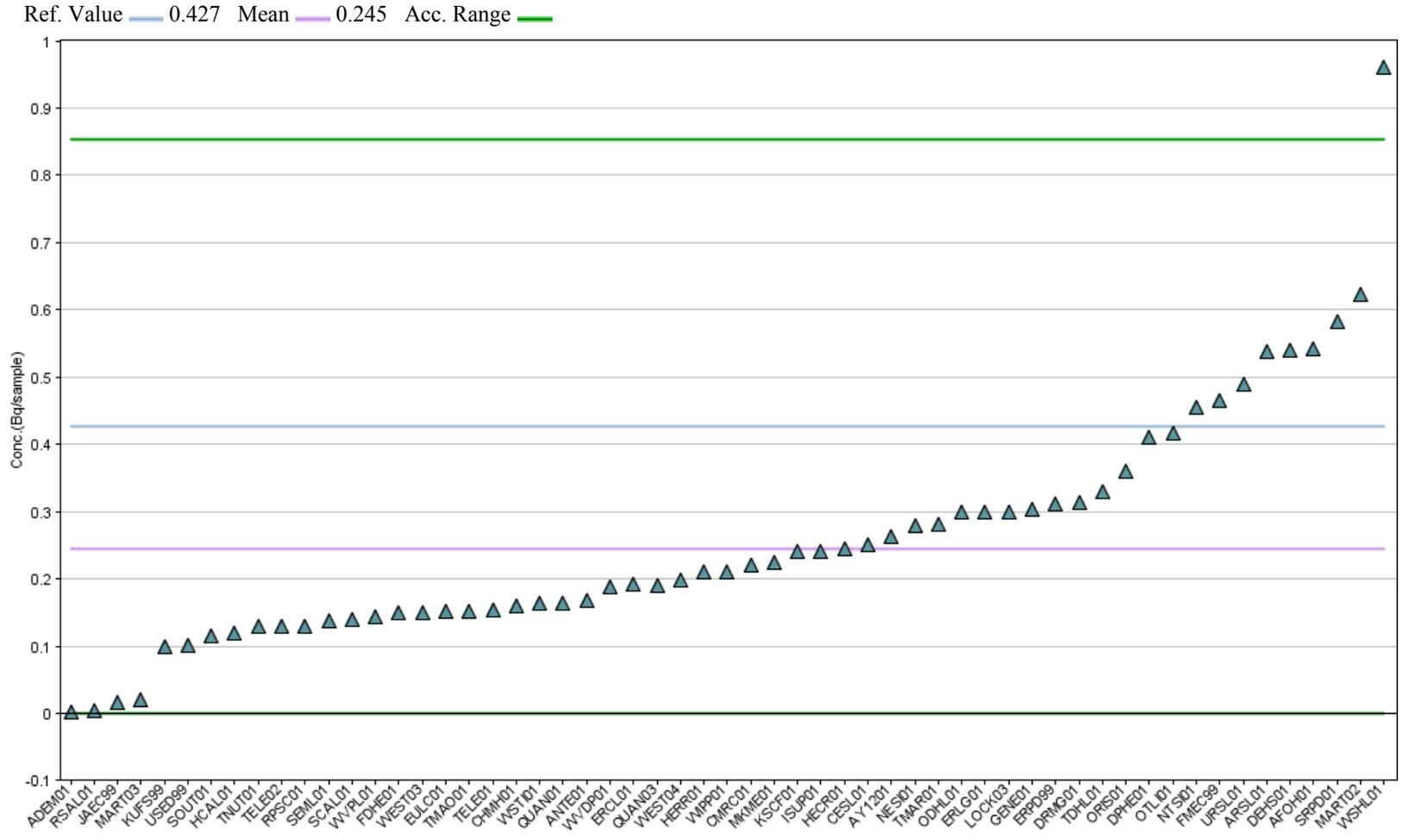
Gross Beta Flags:

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).

# Gross alpha

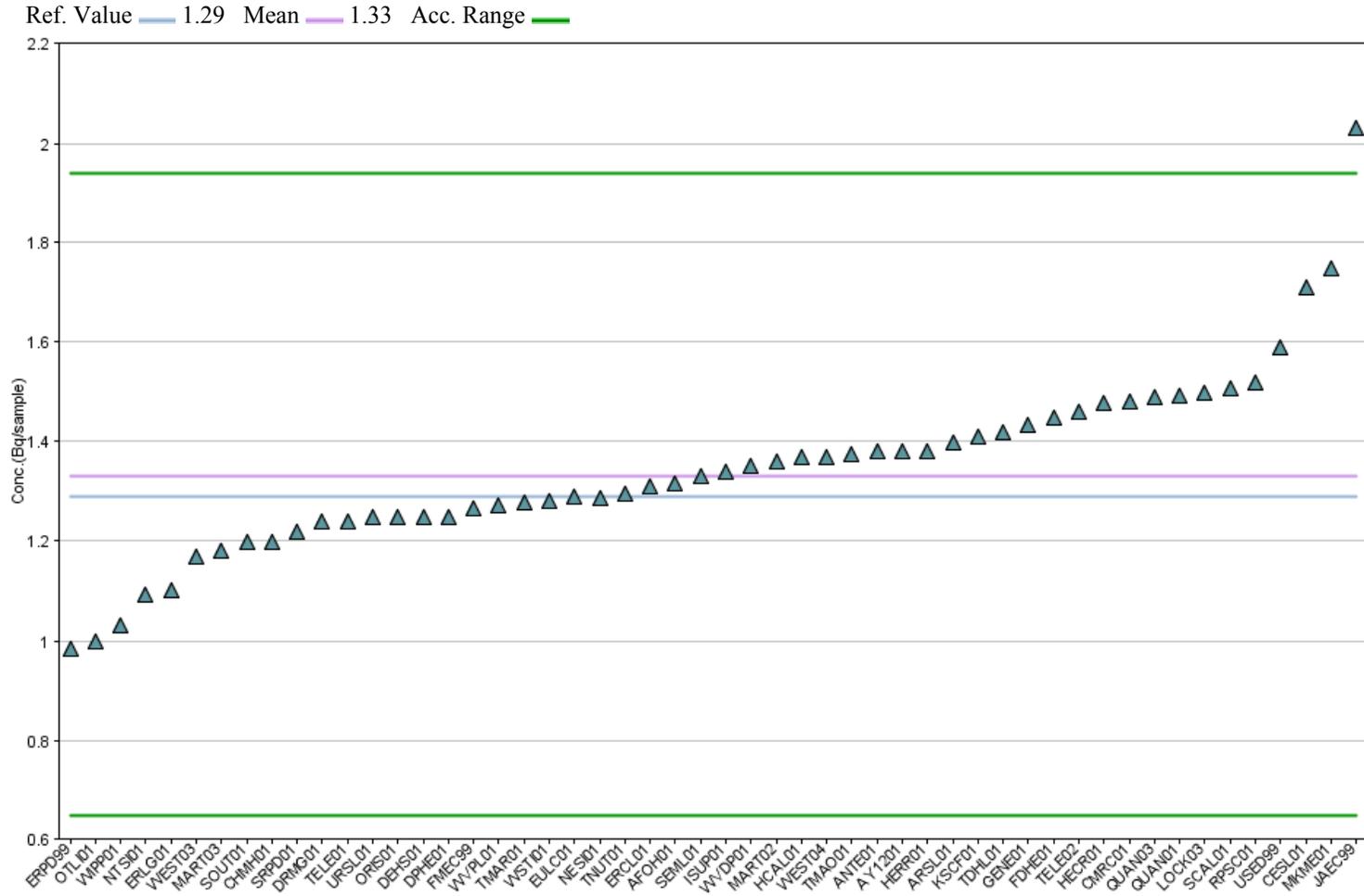
## MAPEP-10-GrF22



Note: This chart shows only data points with values between 0.00 and 0.99 ( $\pm 5$  Standard Deviations)

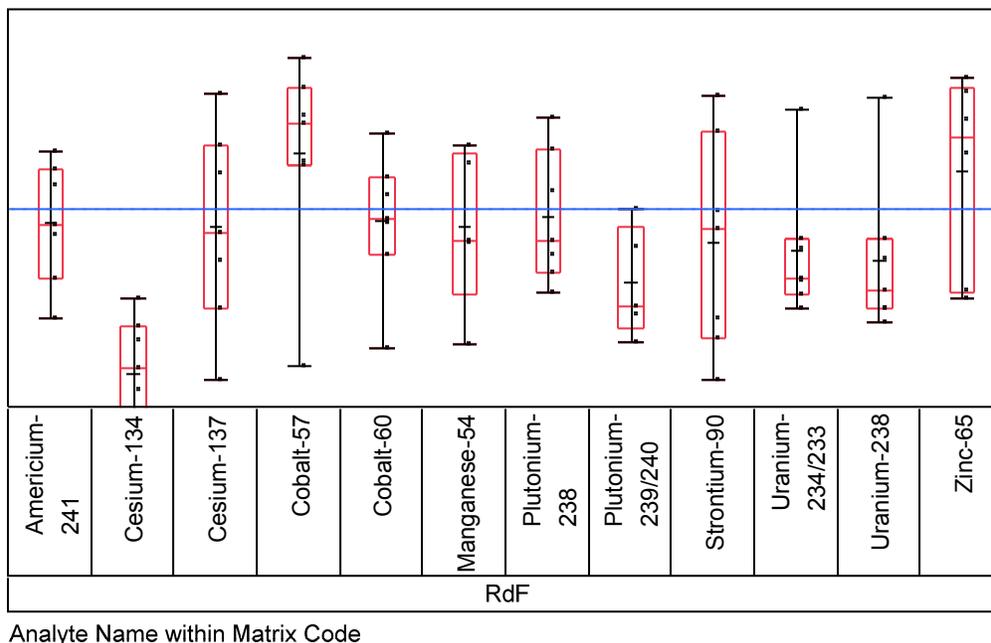
# Gross beta

## MAPEP-10-GrF22



Note: This chart shows only data points with values between 0.53 and 2.13 ( $\pm 5$  Standard Deviations)

The intent of the historical graphs contained within this report is to graphically illustrate how laboratories are historically performing within the MAPEP program. The data points (small 'dots') plot the bias (or z-score for organic constituents) of each of the analytes in each of the matrices for each of the studies for MAPEP since Series 16. The BLACK small horizontal line is the mean of the population of the bias shown for that analyte in the matrix. The red box is a typical "box plot" of the data.



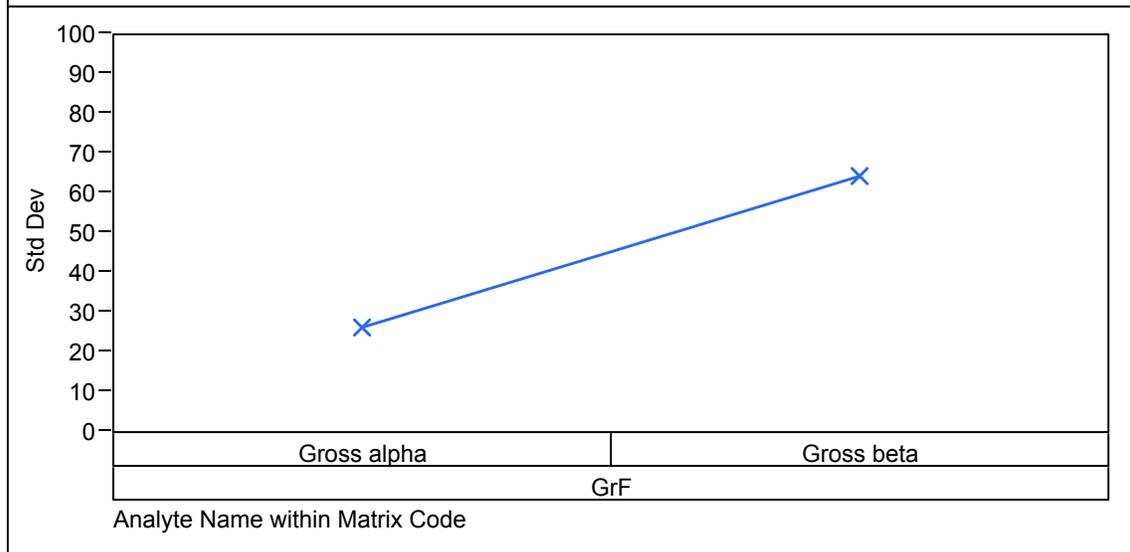
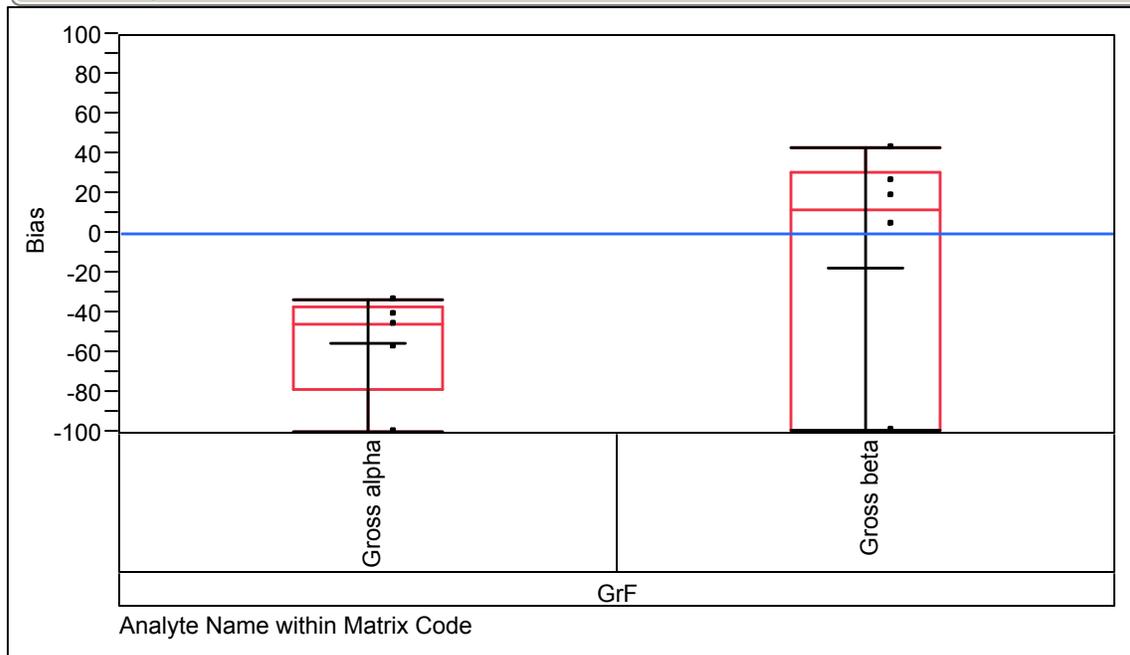
The box plots summarize the distribution of points for each analyte. The ends of the box are the 25th and 75th quantiles. The difference between the quartiles is the interquartile range. The line across the middle of the box identifies the median sample value. Each box has lines, sometimes called whiskers,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

The box plot along with the laboratory bias data points and the mean visually illustrate the breadth of the distribution and where any potential outliers in the distribution might lie. The ideal visual representation would be to have a very small box plot on top of a very small distribution of data thus indicating very good precision. Accuracy would be reflected by having the mean bias very close to zero (i.e. the box plot overlaps zero at some point).

The Standard Deviation plot below the Bias plot is just that, the standard deviation of the % bias shown above. The ideal plot would be to have the standard deviation as small as possible.

## Variability Gauge Lab Code=ADEM01

## Variability Chart for Bias

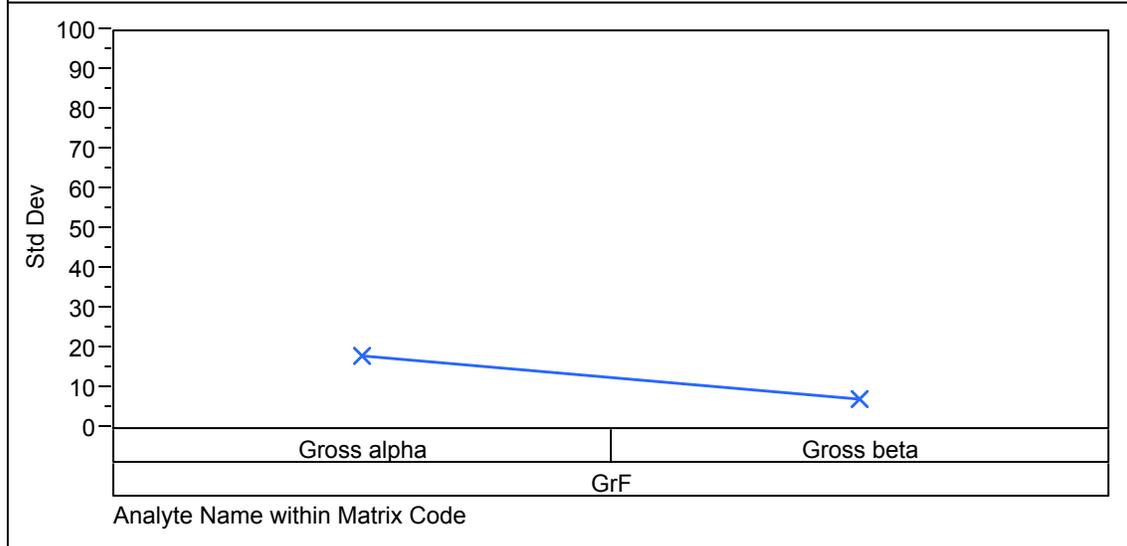
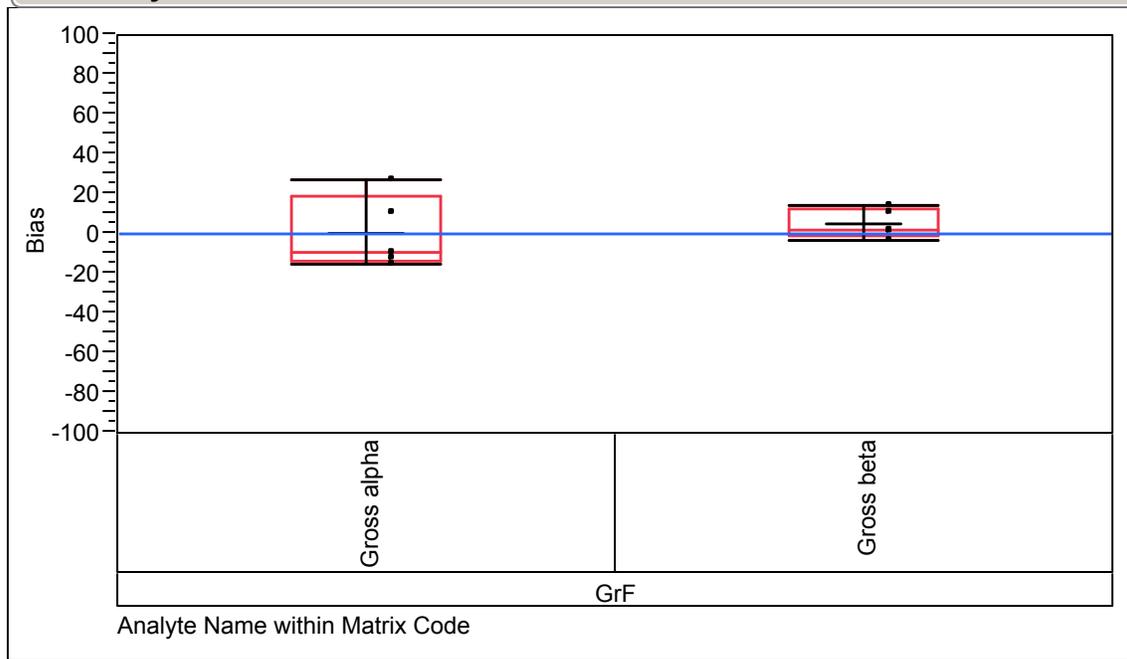


## Variability Gauge Lab Code=AFOH01

## Variability Chart for Bias

## Variability Gauge Lab Code=AFOH01

## Variability Chart for Bias

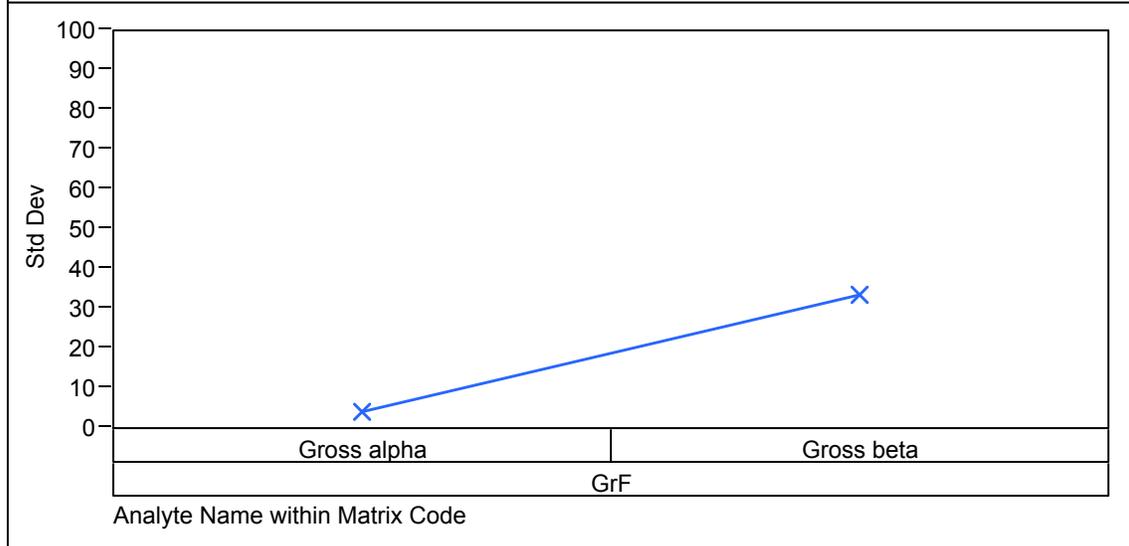
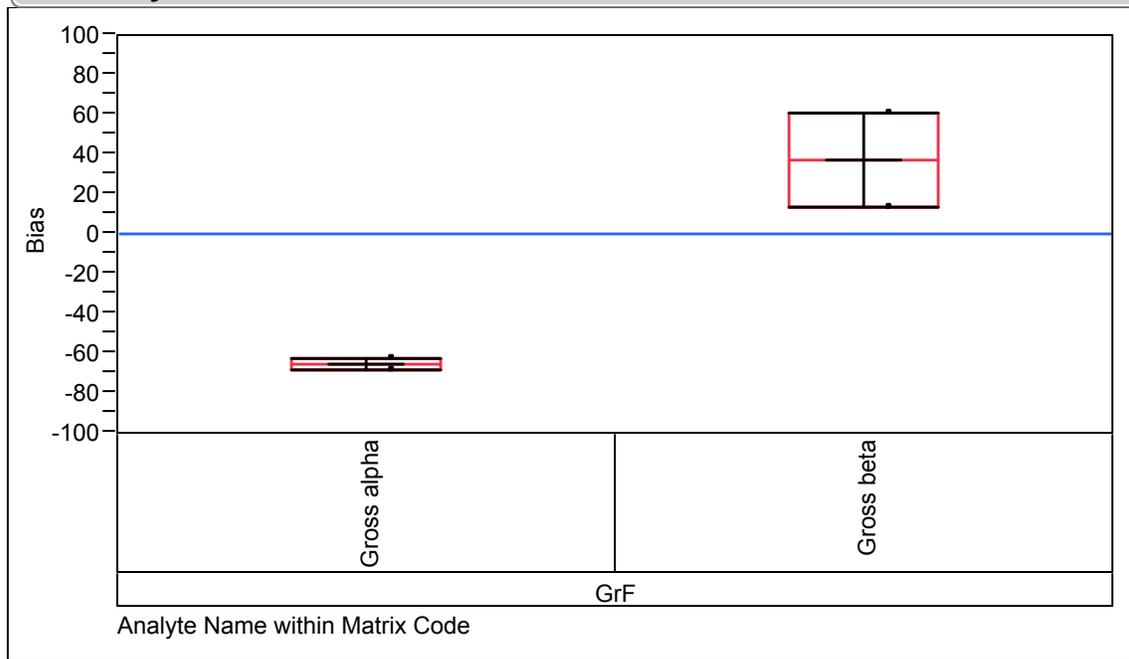


## Variability Gauge Lab Code=ANLA01

## Variability Chart for Bias

## Variability Gauge Lab Code=ANLA01

## Variability Chart for Bias

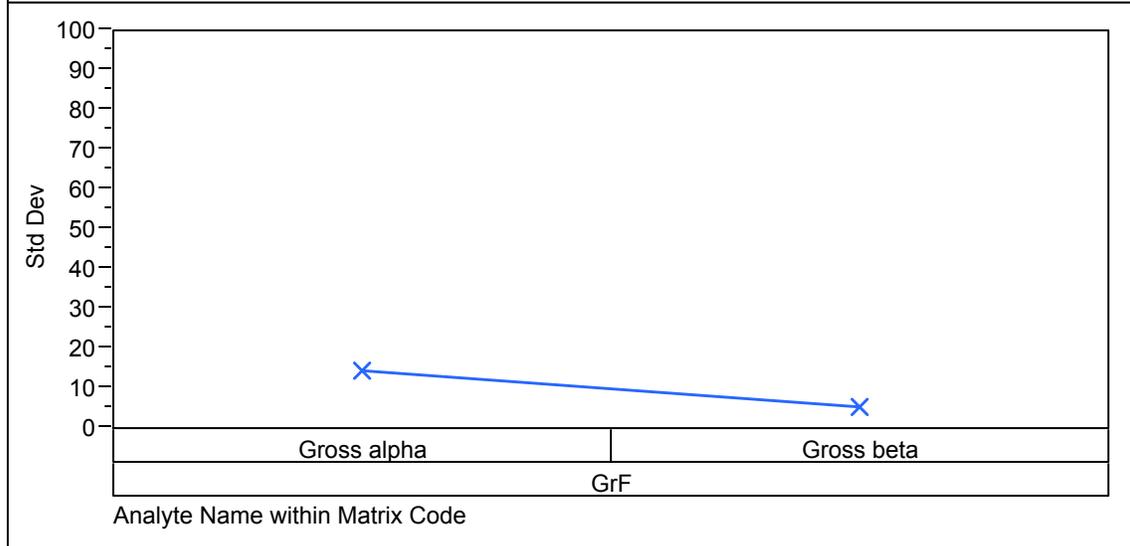
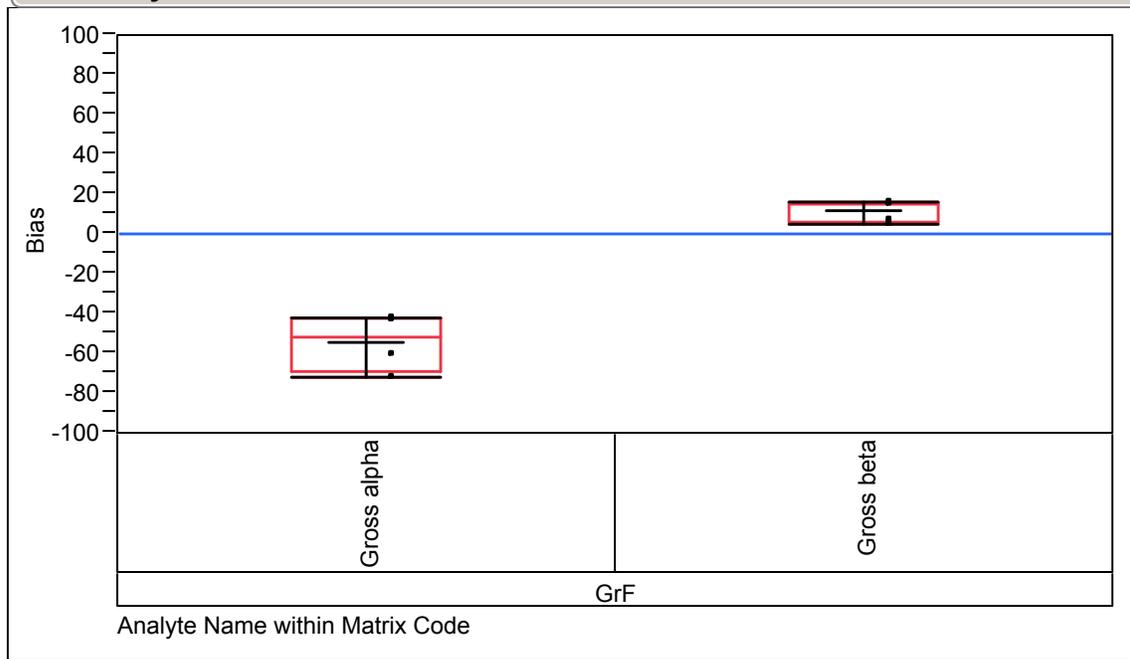


## Variability Gauge Lab Code=ANTE01

## Variability Chart for Bias

## Variability Gauge Lab Code=ANTE01

## Variability Chart for Bias

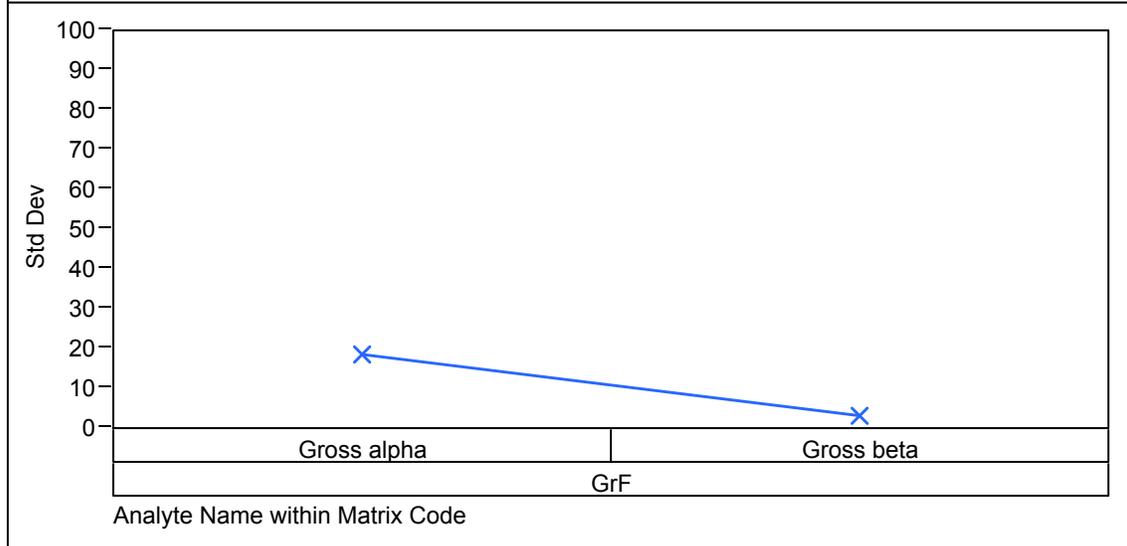
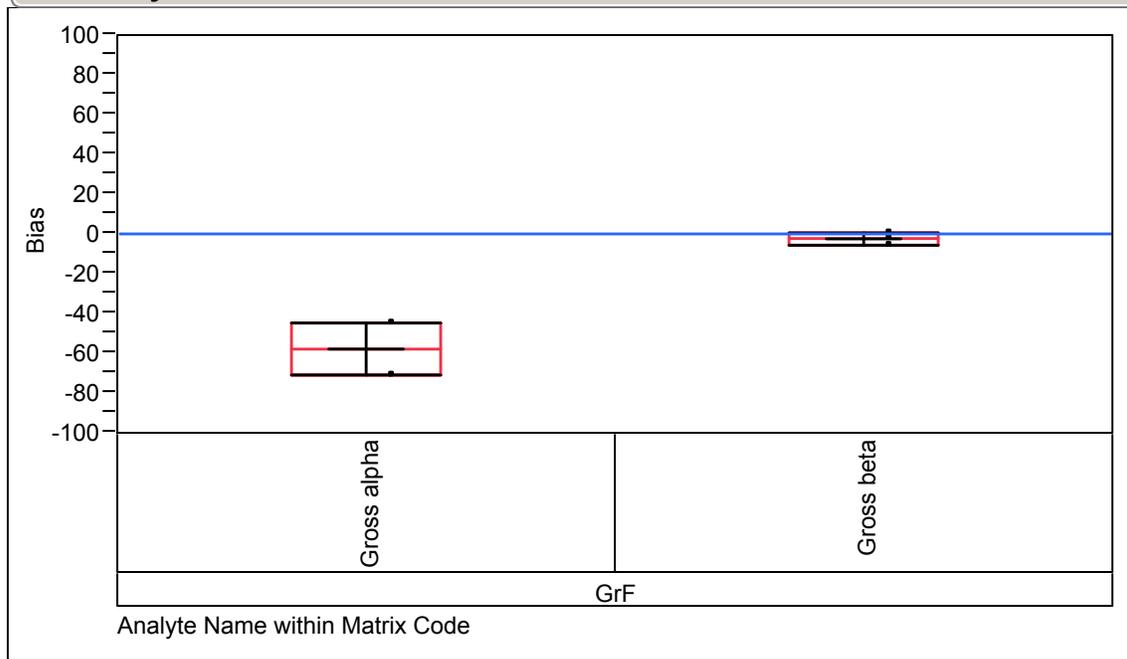


## Variability Gauge Lab Code=ARPL01

## Variability Chart for Bias

## Variability Gauge Lab Code=ARPL01

## Variability Chart for Bias

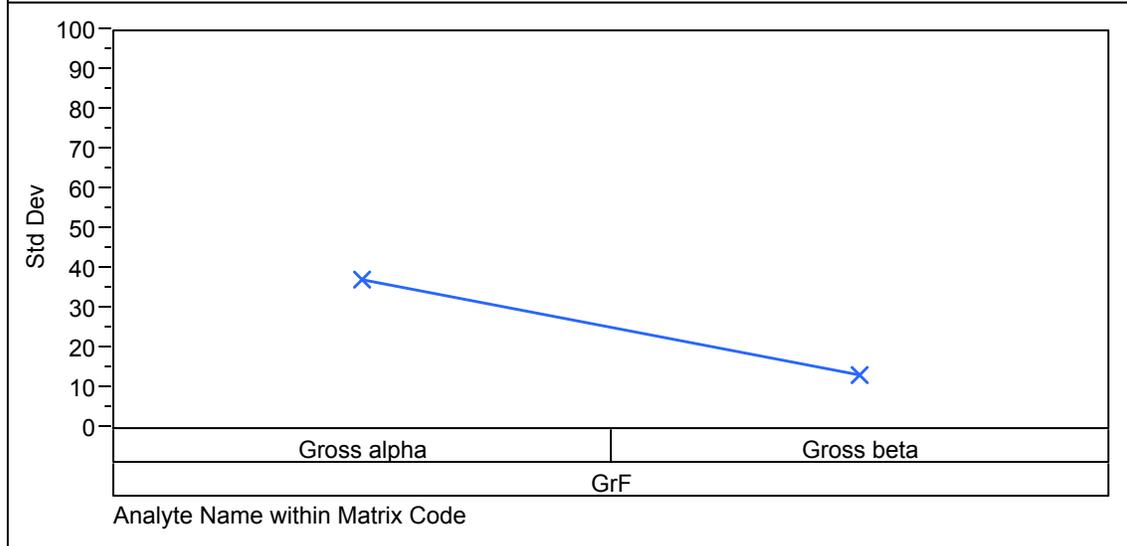
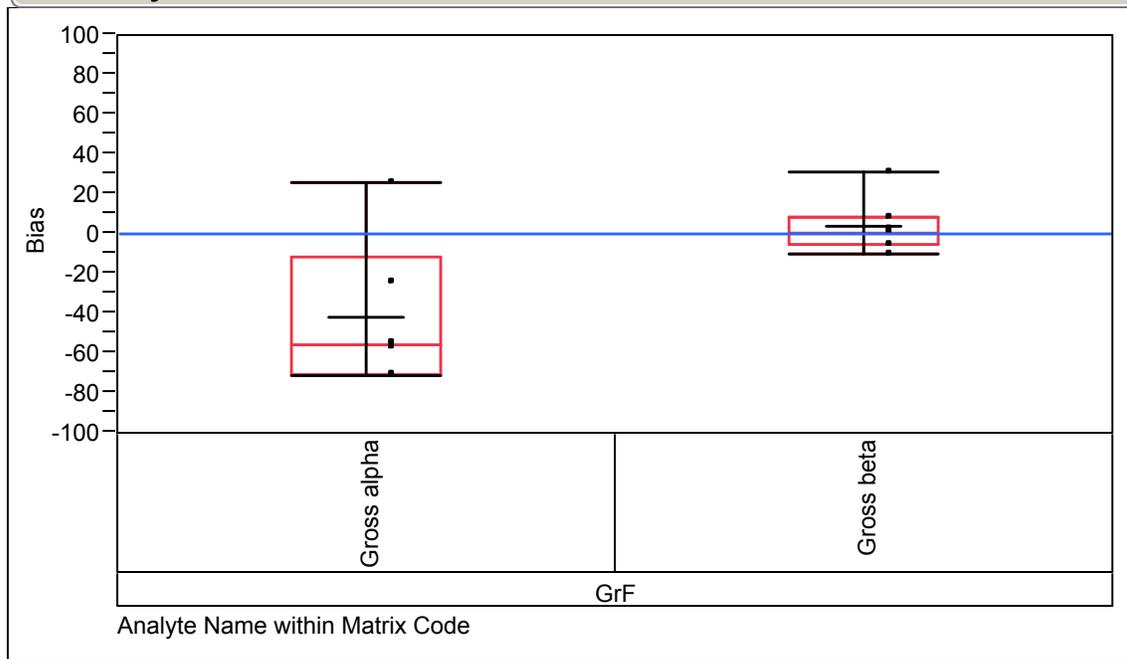


## Variability Gauge Lab Code=ARSL01

## Variability Chart for Bias

## Variability Gauge Lab Code=ARSL01

## Variability Chart for Bias

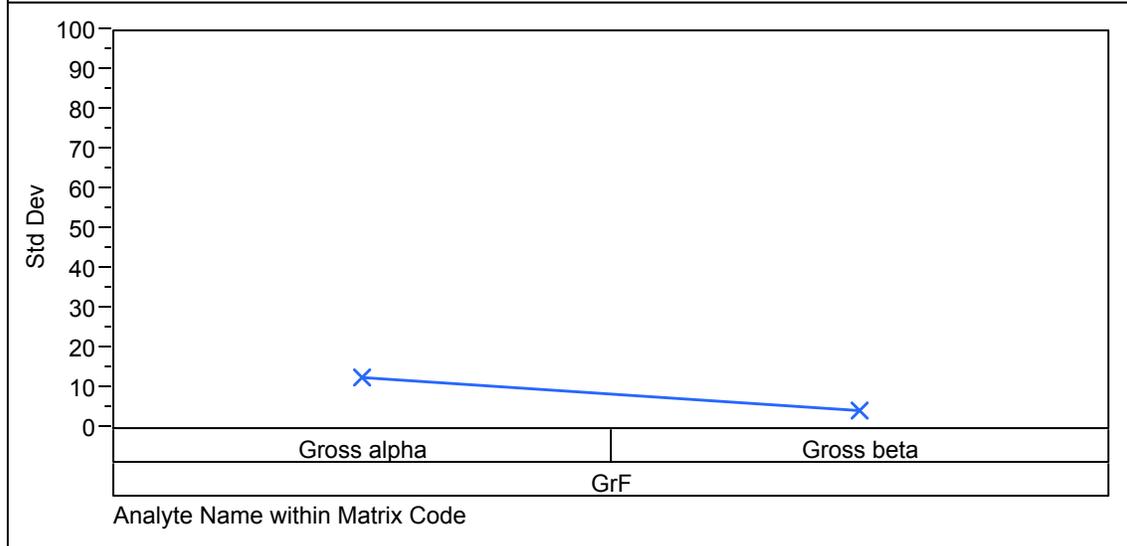
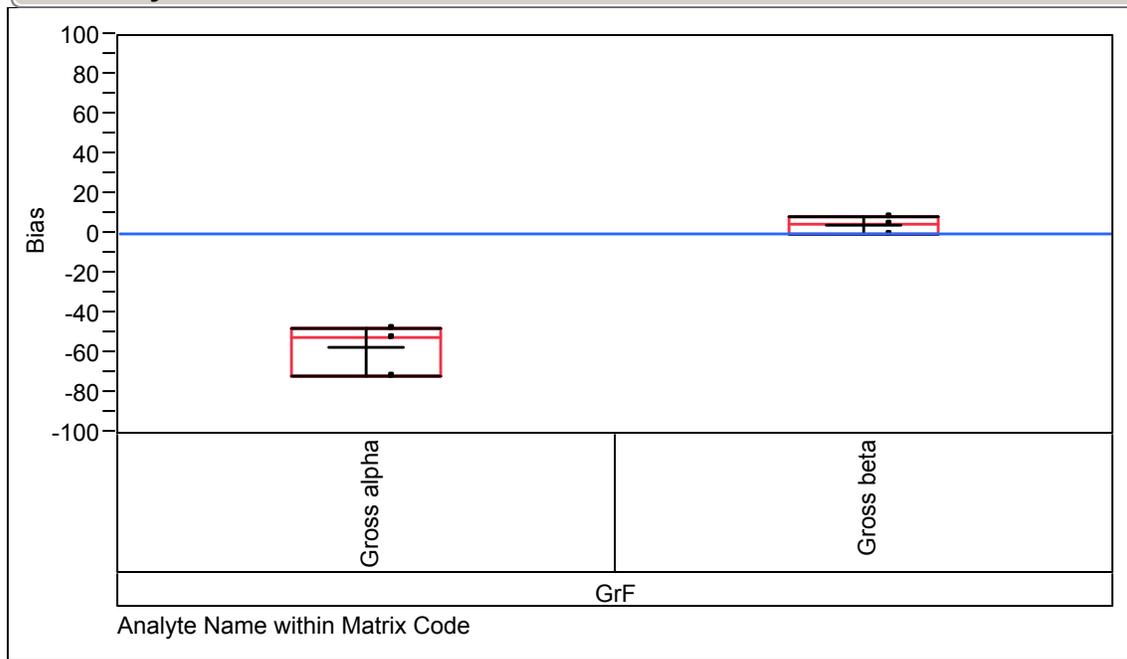


## Variability Gauge Lab Code=ATLI01

## Variability Chart for Bias

## Variability Gauge Lab Code=ATLI01

## Variability Chart for Bias

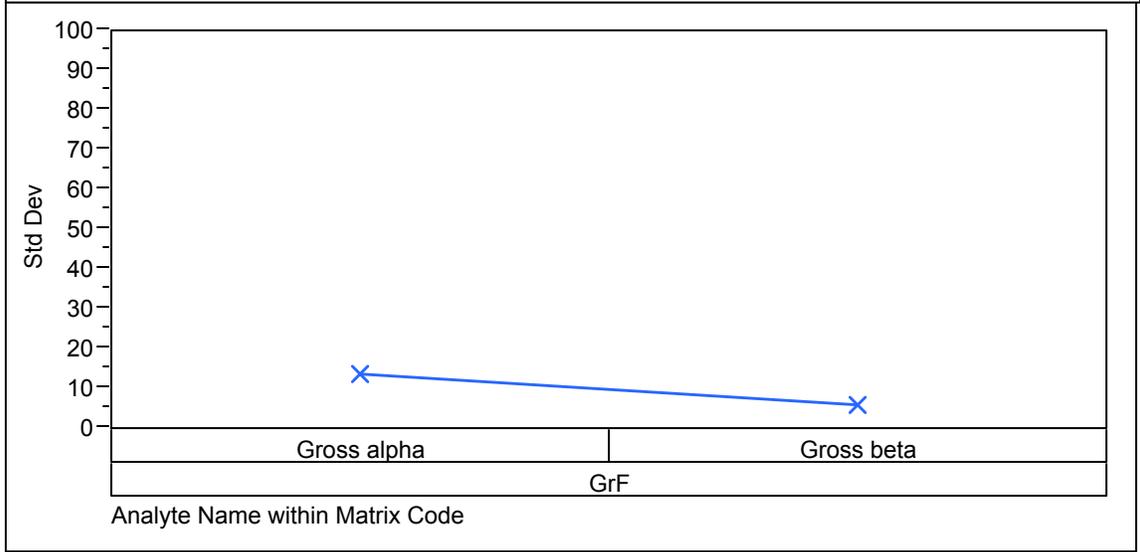
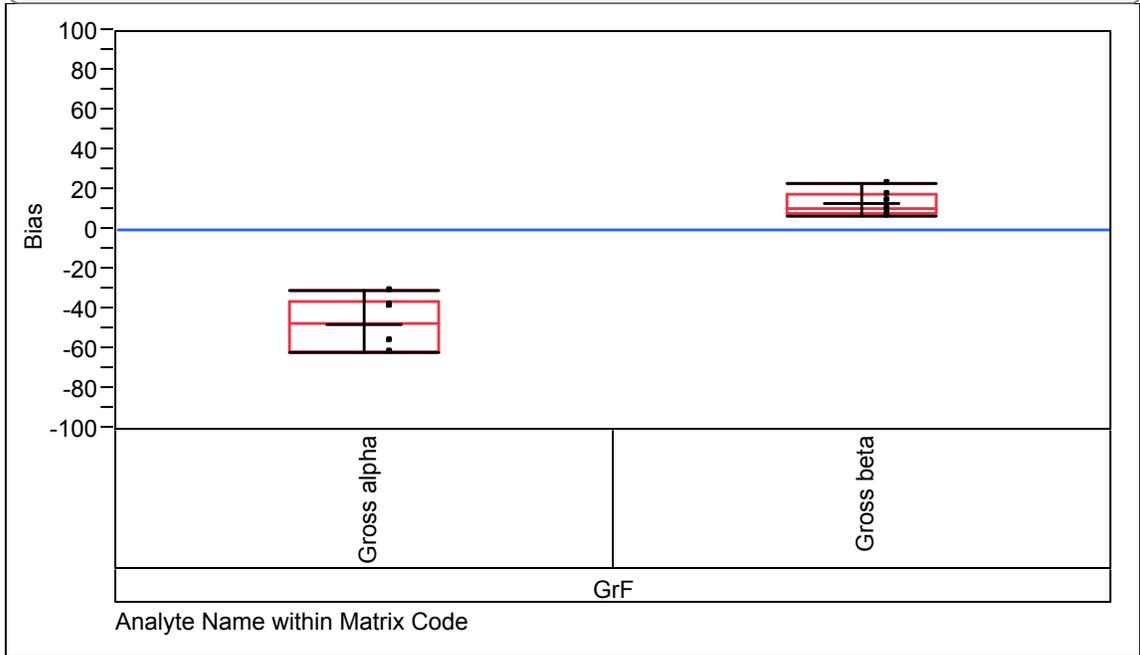


## Variability Gauge Lab Code=AY1201

## Variability Chart for Bias

**Variability Gauge Lab Code=AY1201**

**Variability Chart for Bias**

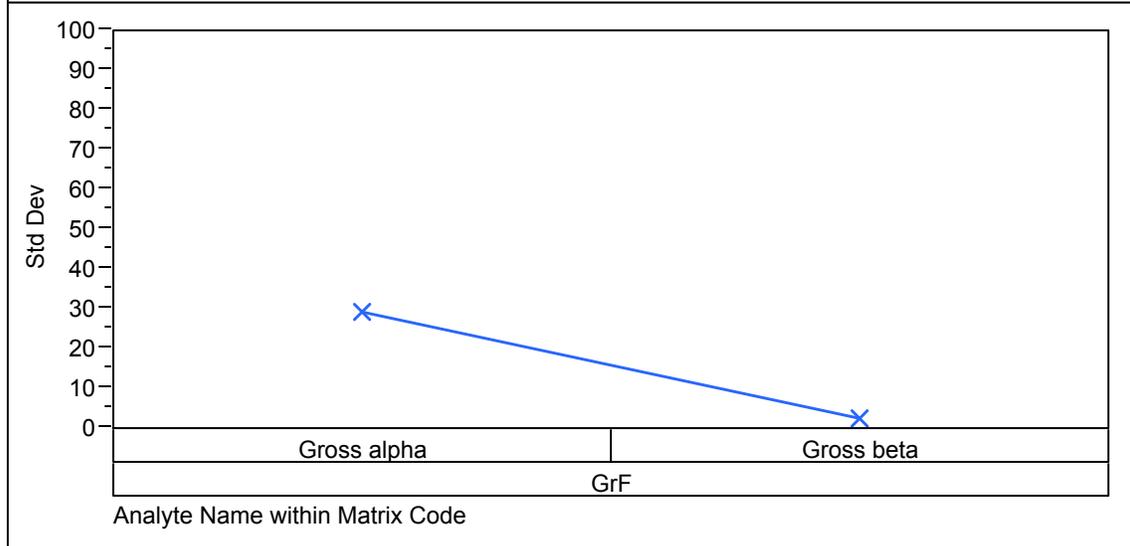
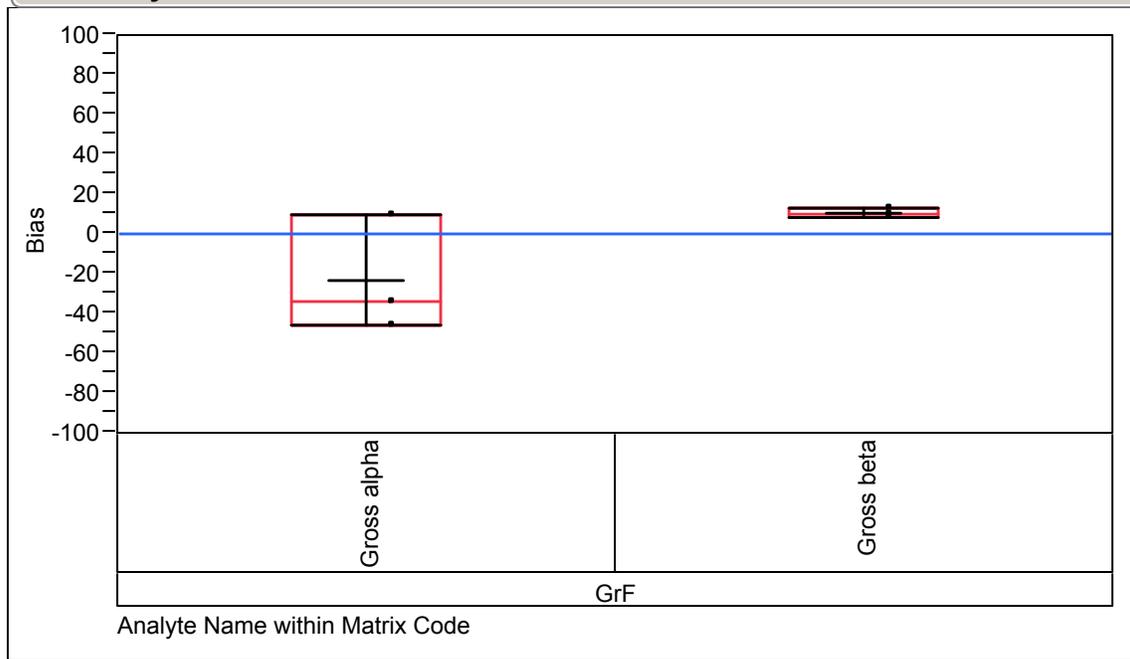


**Variability Gauge Lab Code=CDHS01**

**Variability Chart for Bias**

## Variability Gauge Lab Code=CDHS01

## Variability Chart for Bias

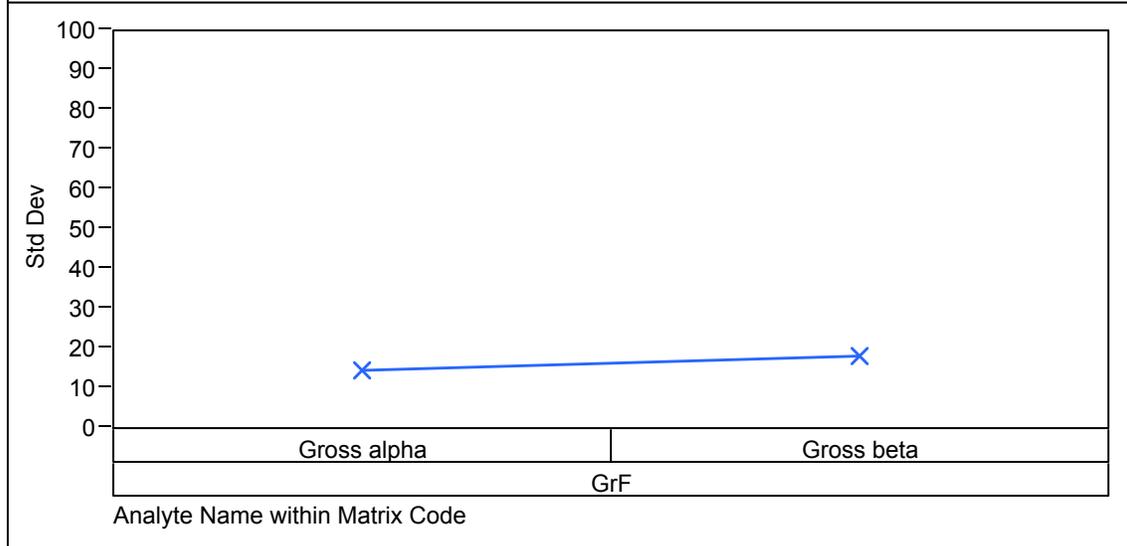
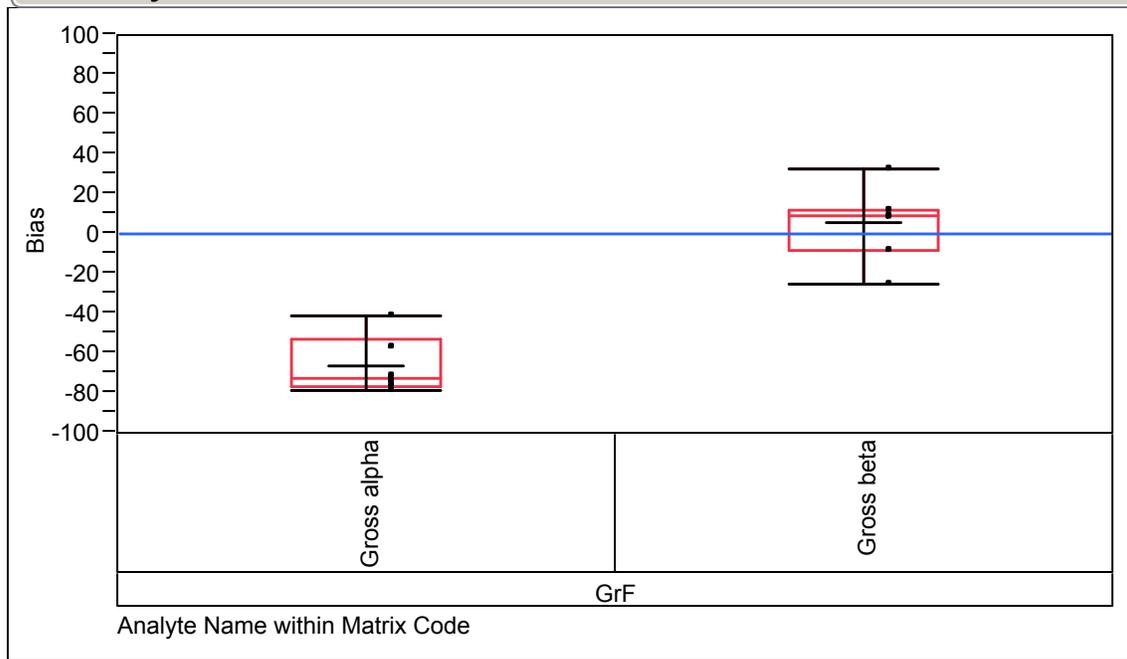


## Variability Gauge Lab Code=CESL01

## Variability Chart for Bias

## Variability Gauge Lab Code=CESL01

## Variability Chart for Bias

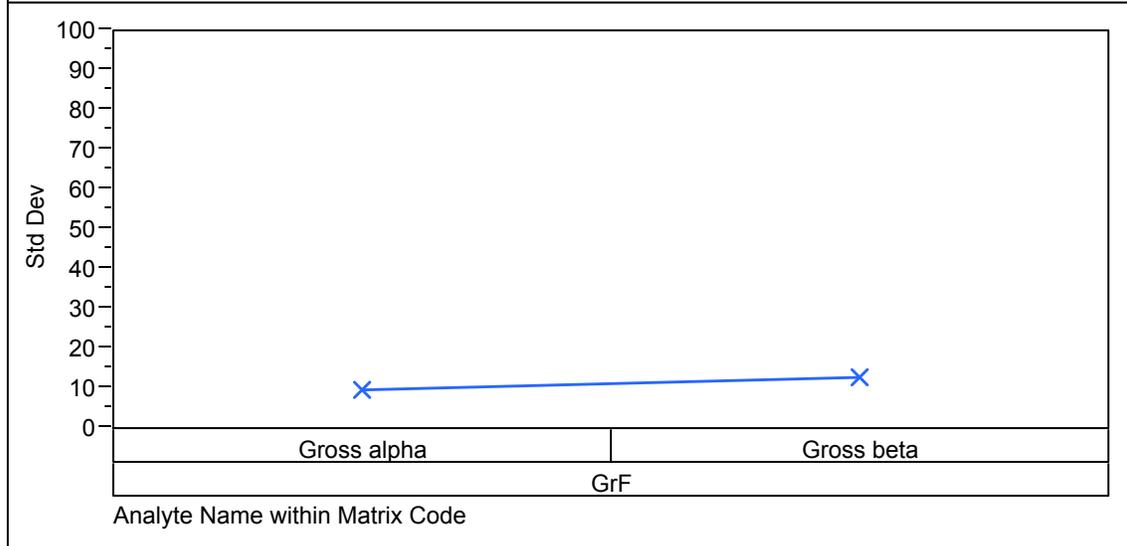
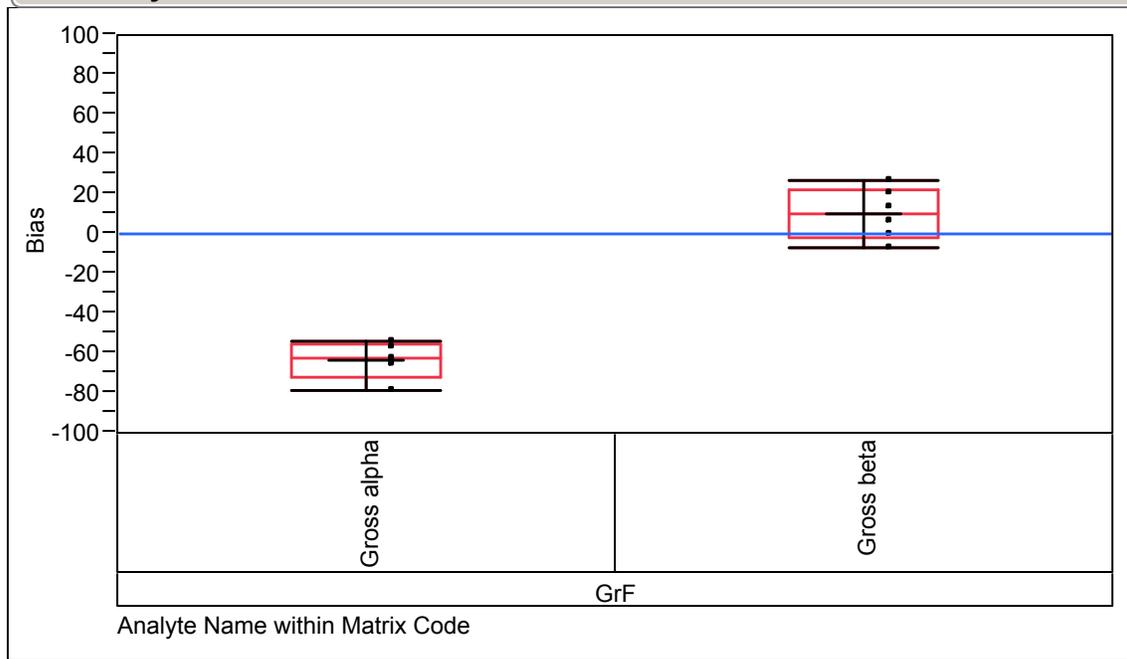


## Variability Gauge Lab Code=CHMH01

## Variability Chart for Bias

## Variability Gauge Lab Code=CHMH01

## Variability Chart for Bias

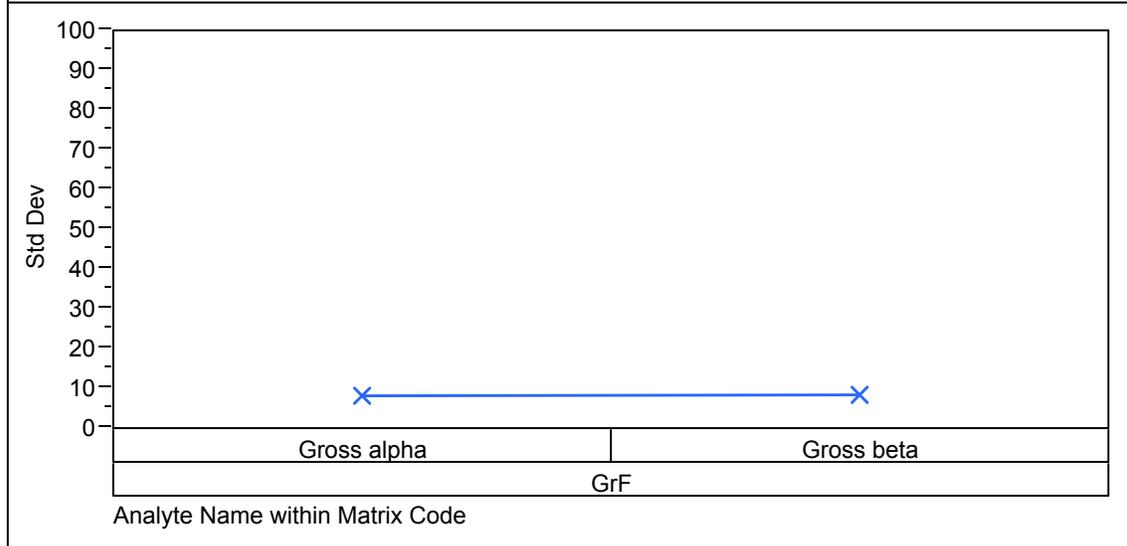
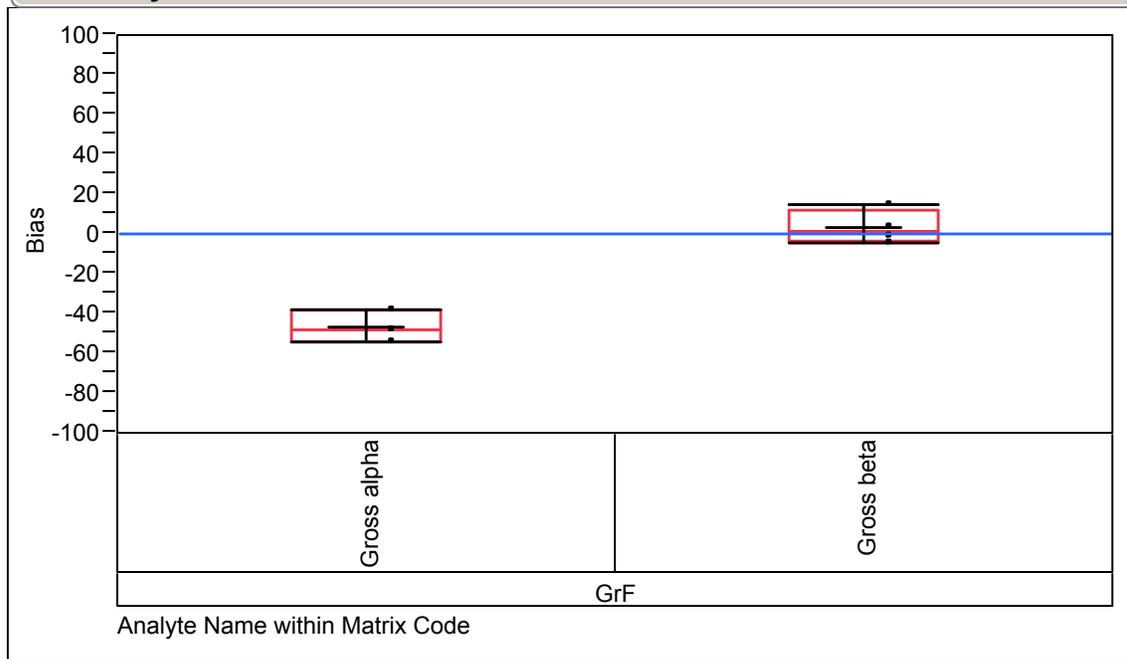


## Variability Gauge Lab Code=CMRC01

## Variability Chart for Bias

## Variability Gauge Lab Code=CMRC01

## Variability Chart for Bias

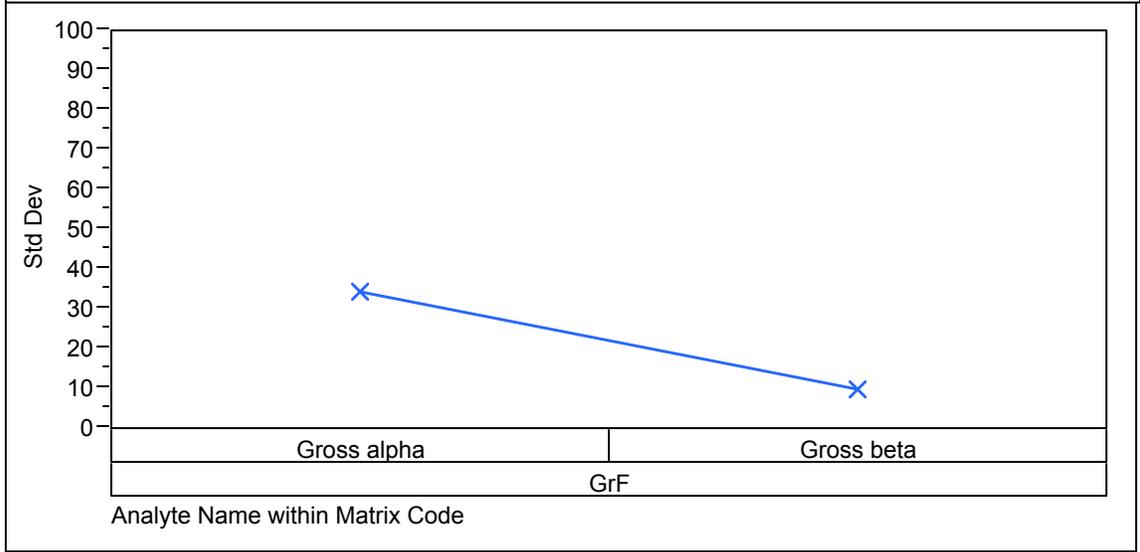
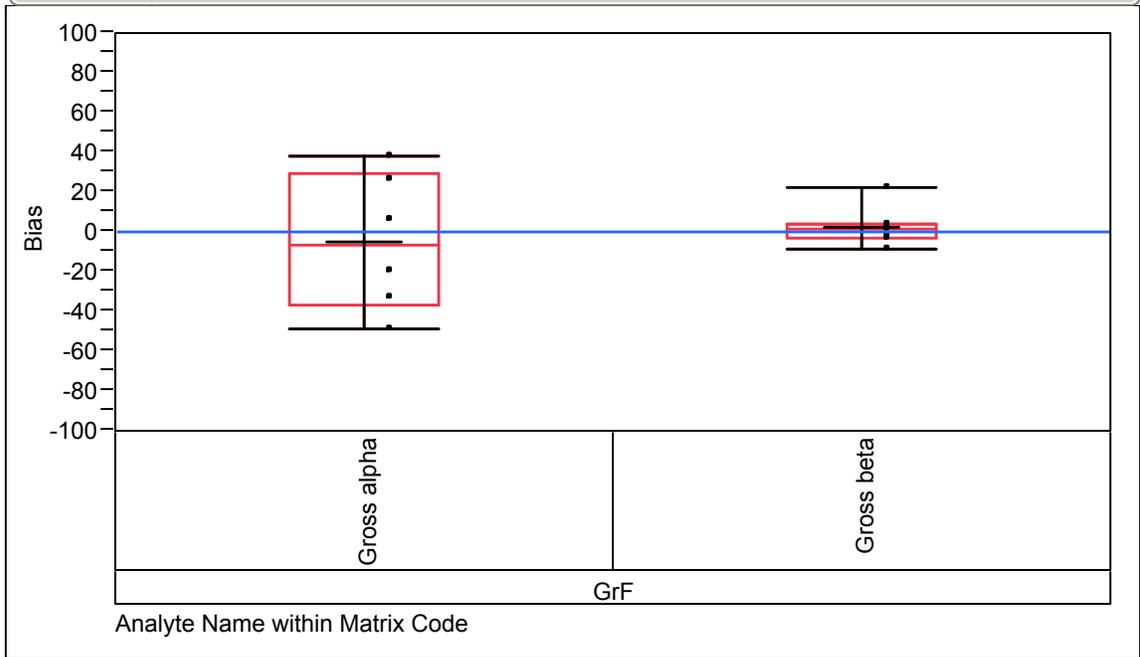


## Variability Gauge Lab Code=DEHS01

## Variability Chart for Bias

**Variability Gauge Lab Code=DEHS01**

**Variability Chart for Bias**

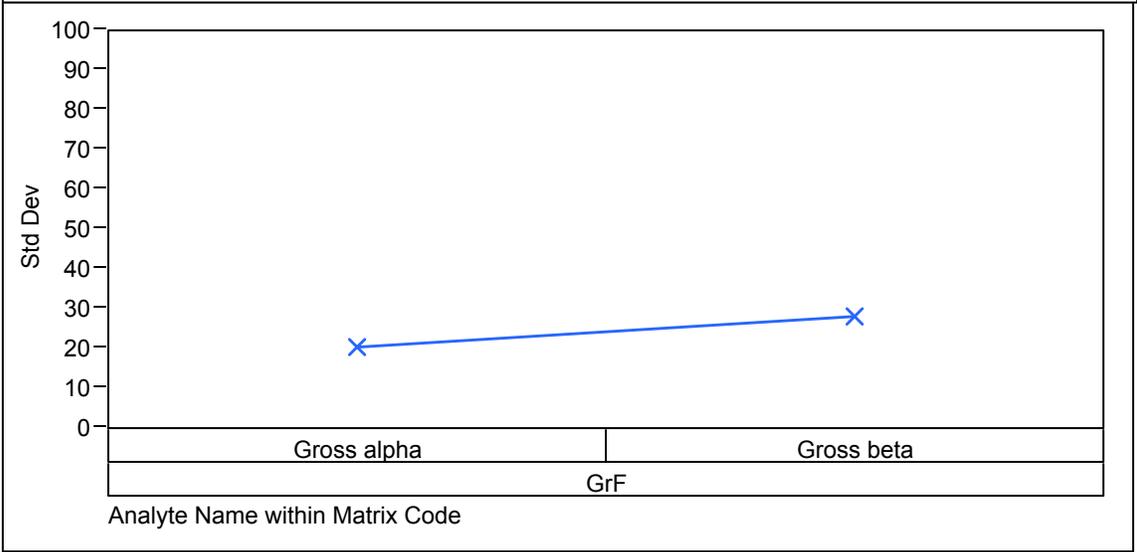
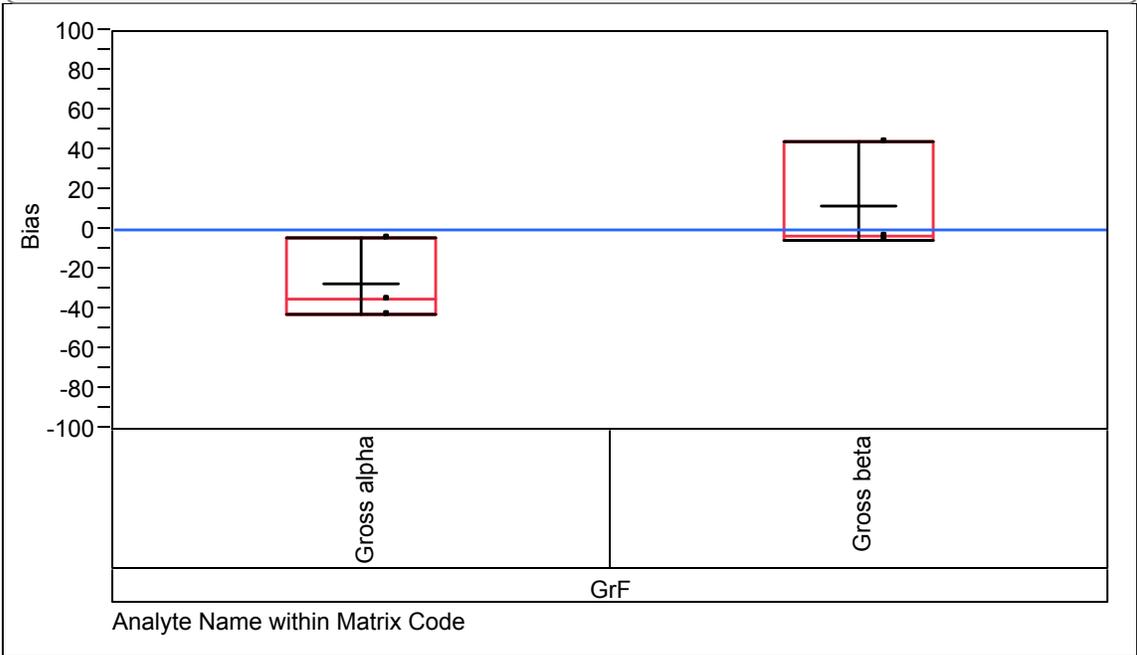


**Variability Gauge Lab Code=DPHE01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=DPHE01**

**Variability Chart for Bias**

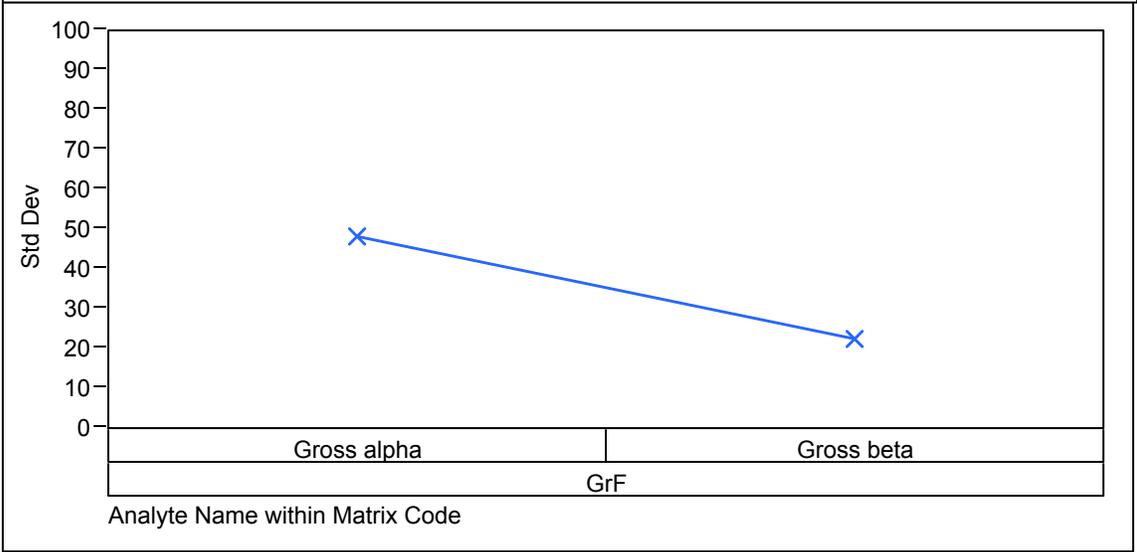
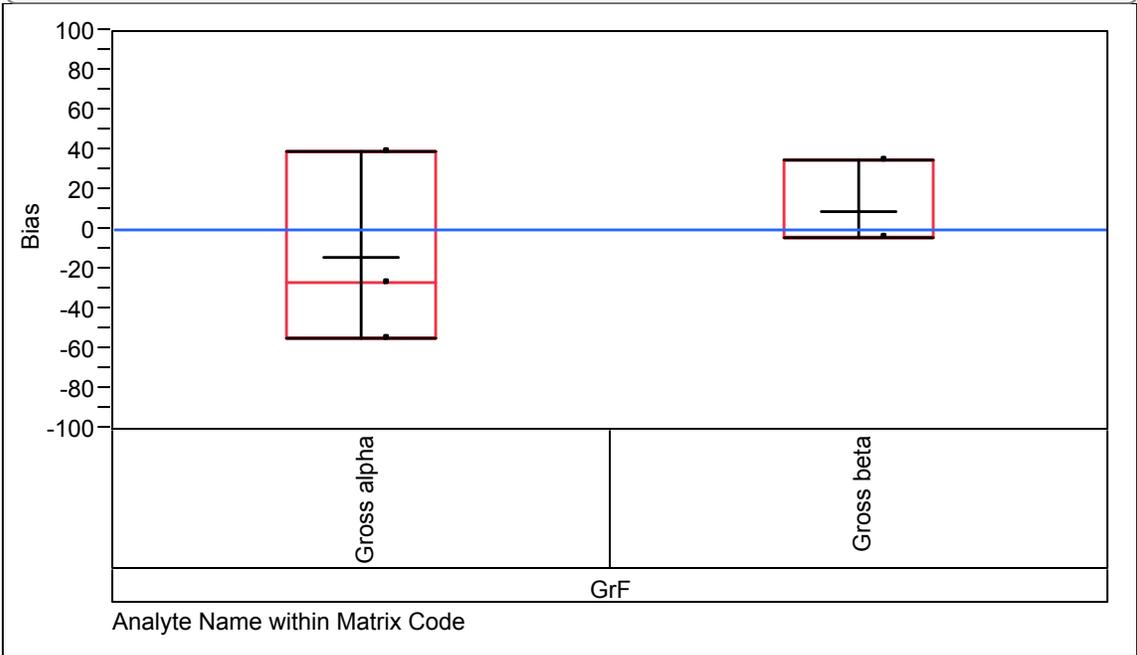


**Variability Gauge Lab Code=DRMG01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=DRMG01**

**Variability Chart for Bias**

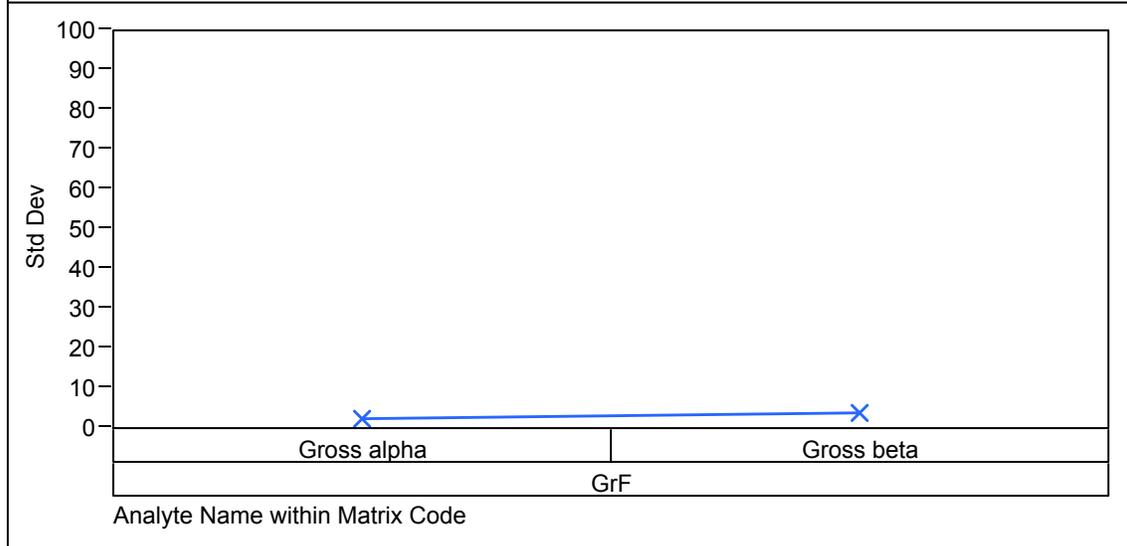
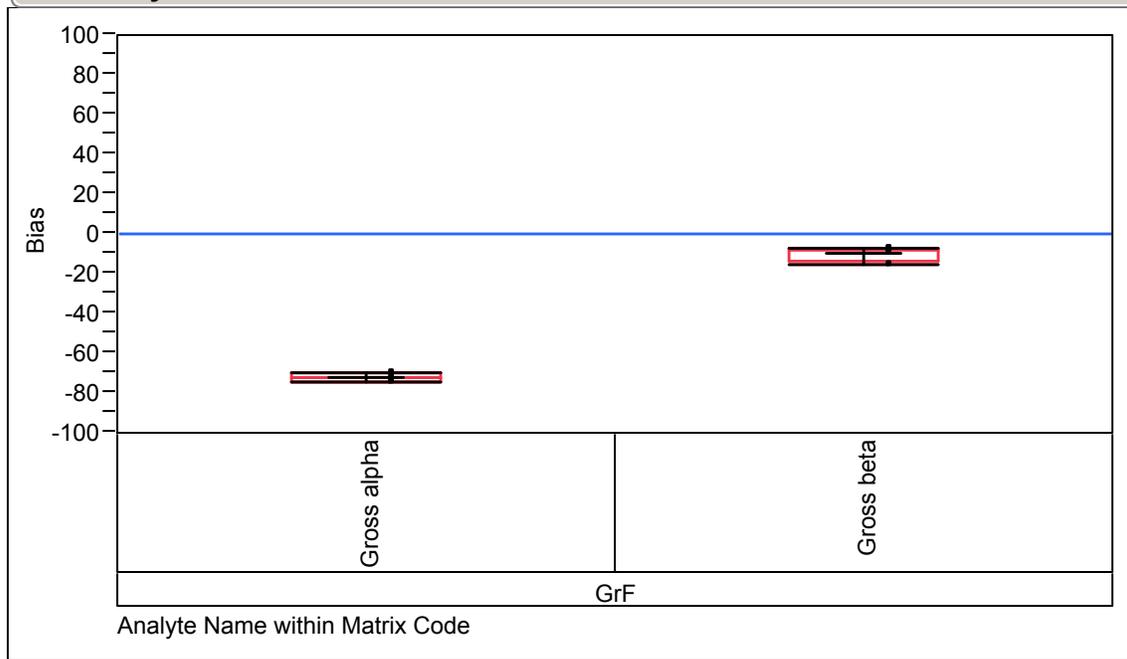


**Variability Gauge Lab Code=ENES01**

**Variability Chart for Bias**

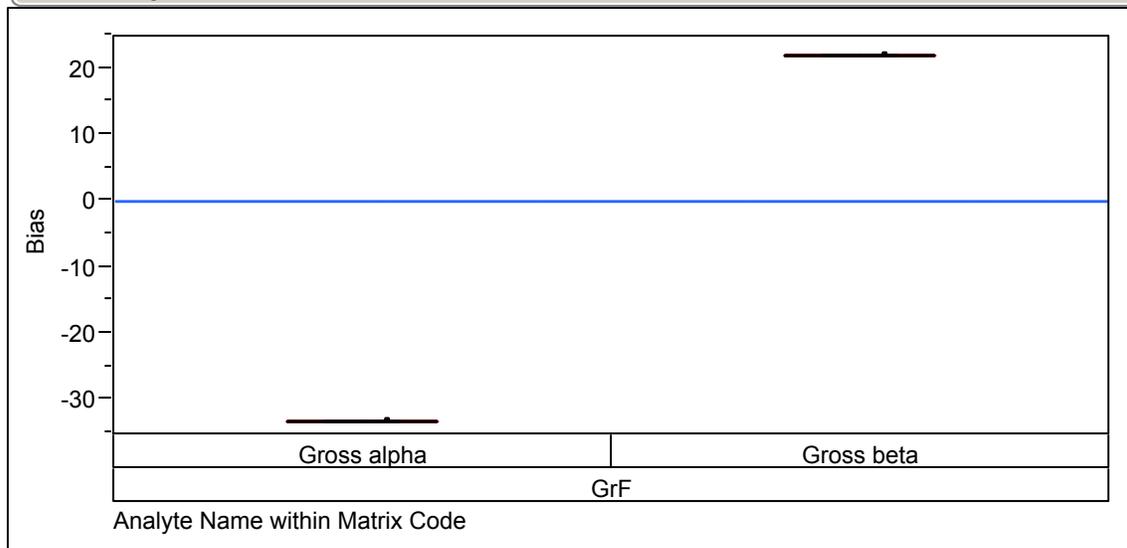
## Variability Gauge Lab Code=ENES01

## Variability Chart for Bias



## Variability Gauge Lab Code=EPAL01

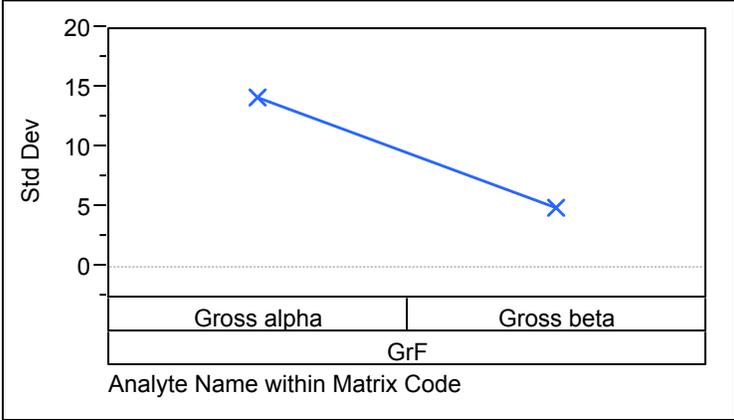
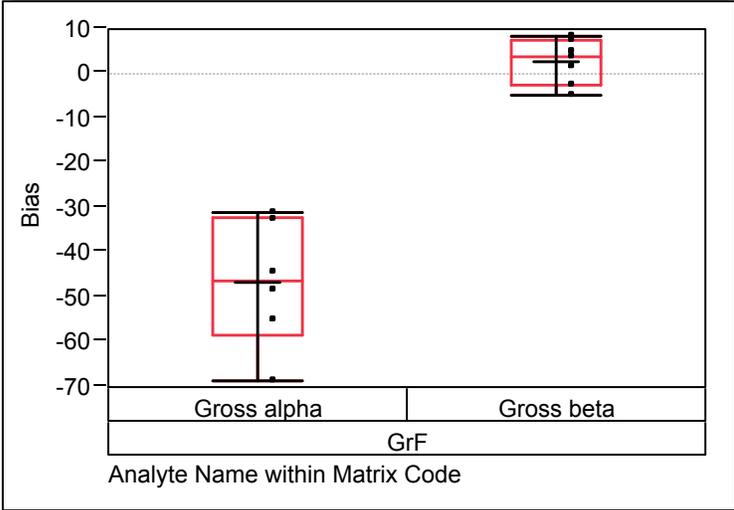
## Variability Chart for Bias



## Variability Gauge Lab Code=ERCL01

**Variability Gauge Lab Code=ERCL01**

**Variability Chart for Bias**

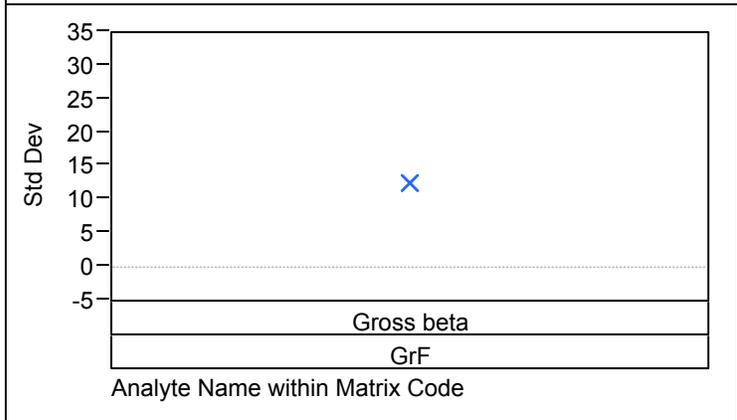
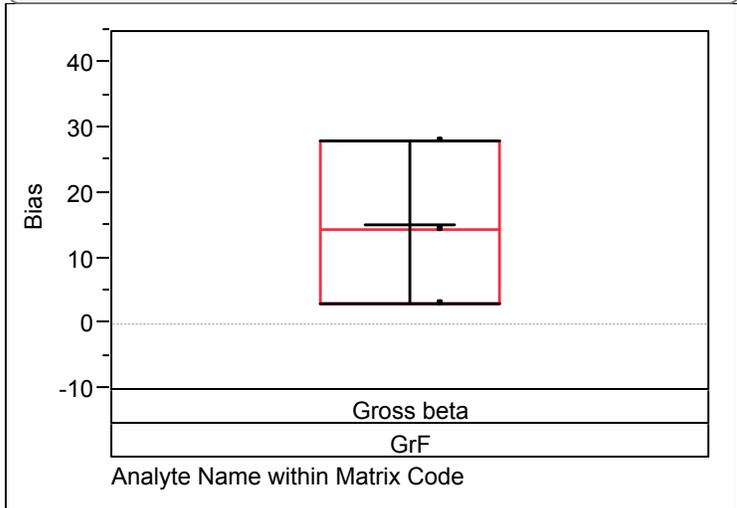


**Variability Gauge Lab Code=ERHD99**

**Variability Chart for Bias**

**Variability Gauge Lab Code=ERHD99**

**Variability Chart for Bias**

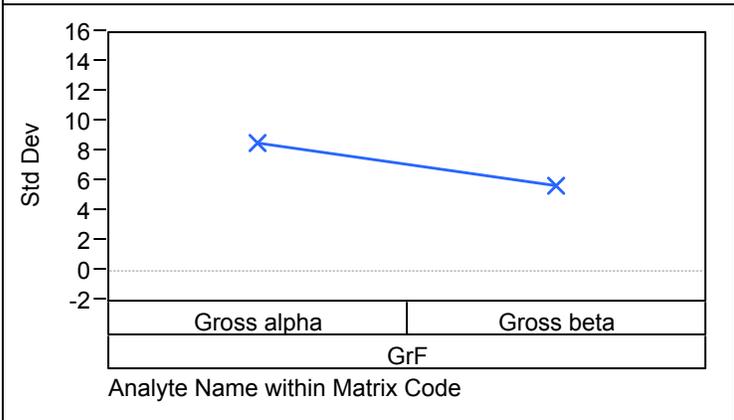
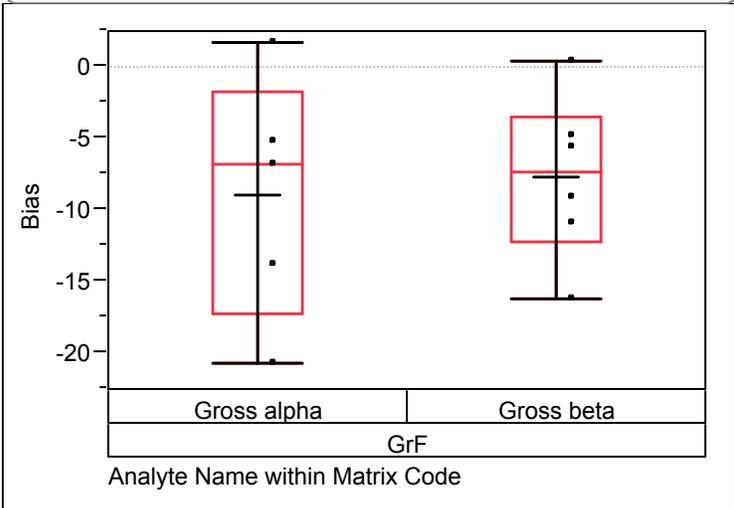


**Variability Gauge Lab Code=ERLG01**

**Variability Chart for Bias**

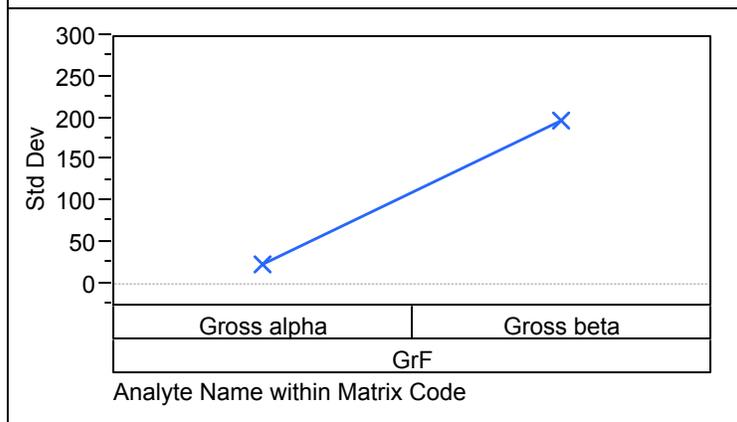
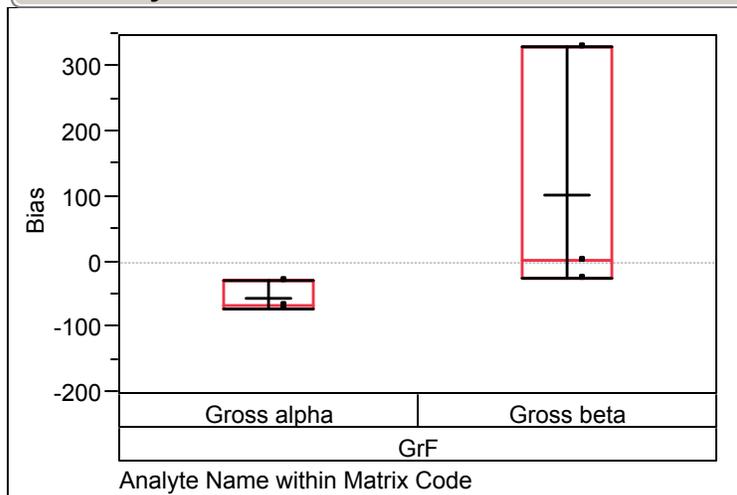
**Variability Gauge Lab Code=ERLG01**

**Variability Chart for Bias**



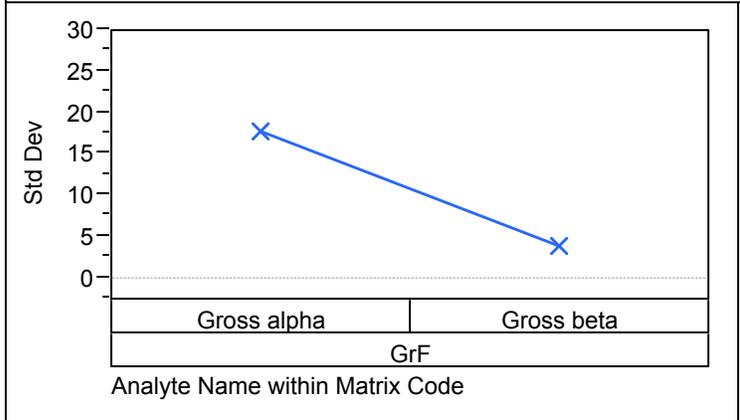
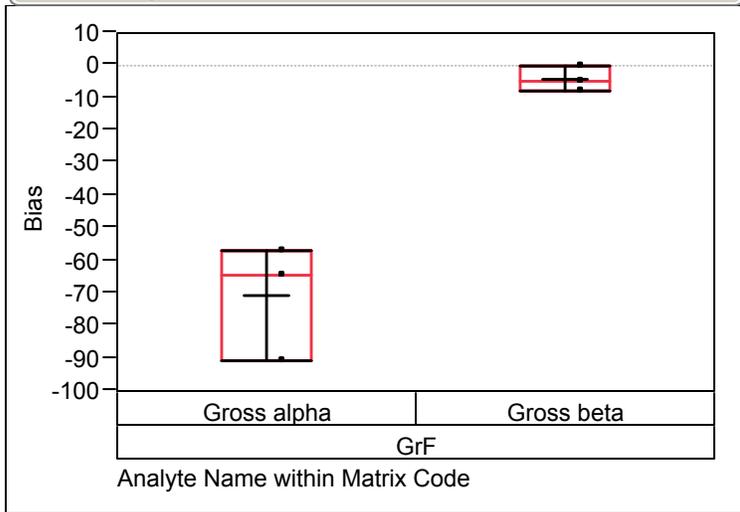
**Variability Gauge Lab Code=ERPD99**

**Variability Chart for Bias**

**Variability Gauge Lab Code=ERPD99****Variability Chart for Bias****Variability Gauge Lab Code=EULC01****Variability Chart for Bias**

**Variability Gauge Lab Code=EULC01**

**Variability Chart for Bias**

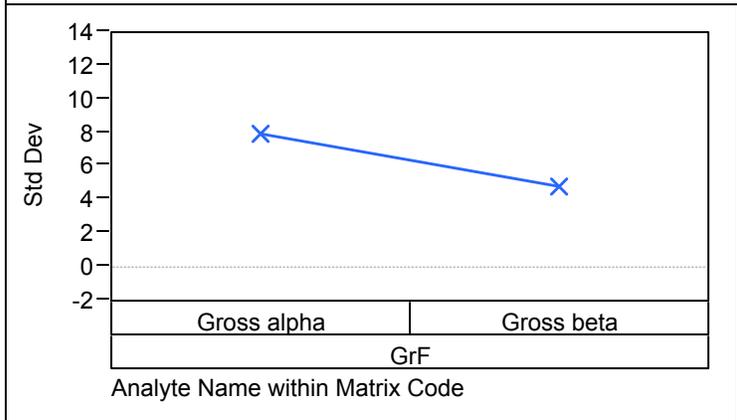
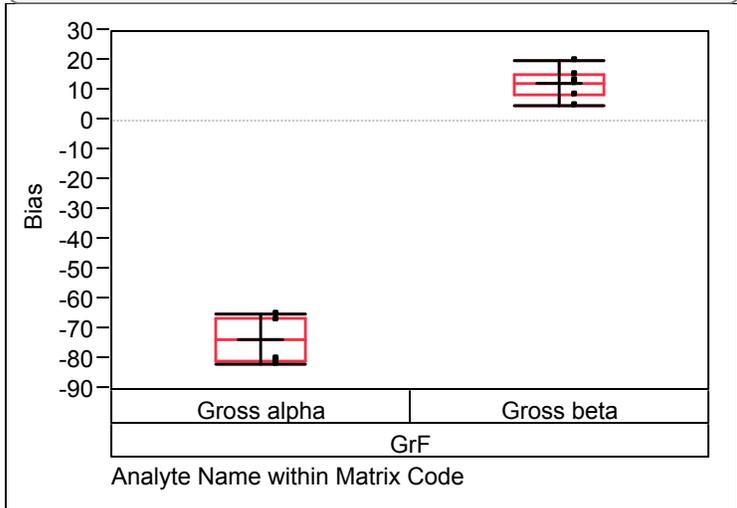


**Variability Gauge Lab Code=FDHE01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=FDHE01**

**Variability Chart for Bias**

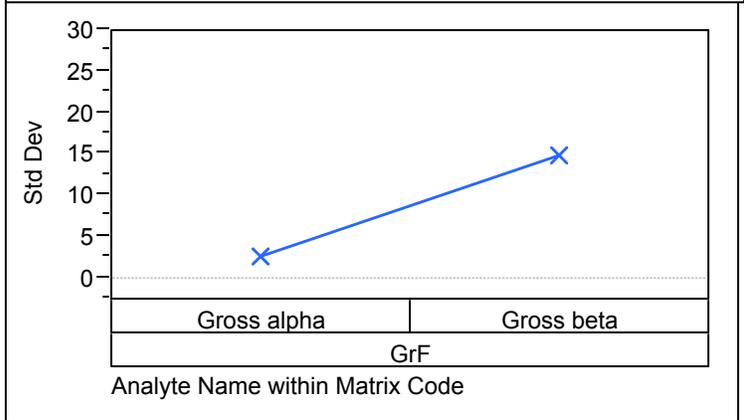
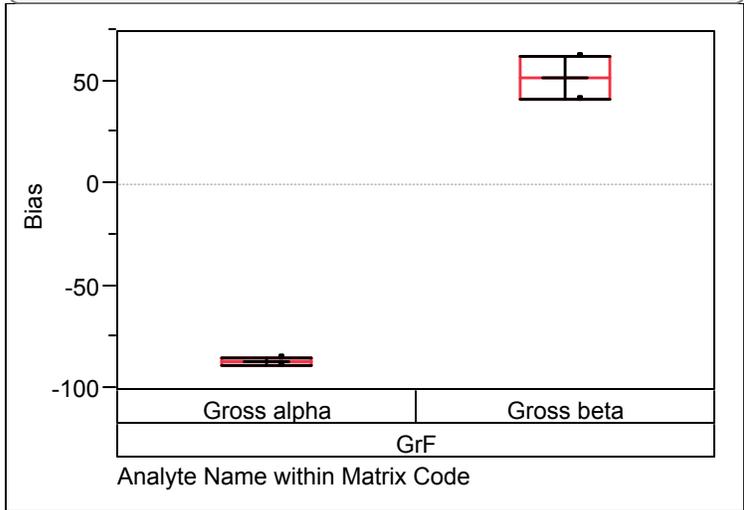


**Variability Gauge Lab Code=FDOH01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=FDOH01**

**Variability Chart for Bias**

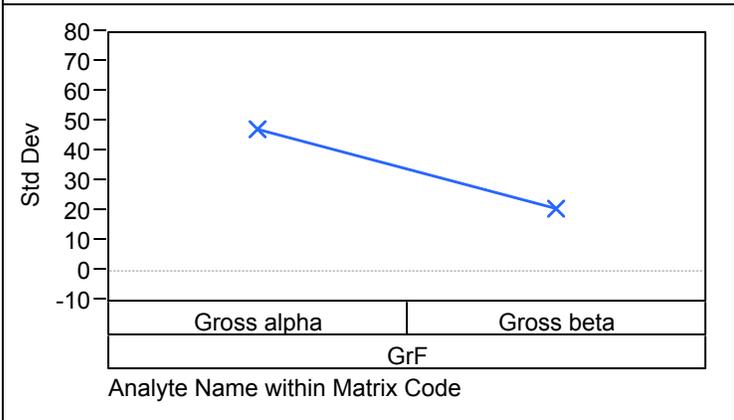
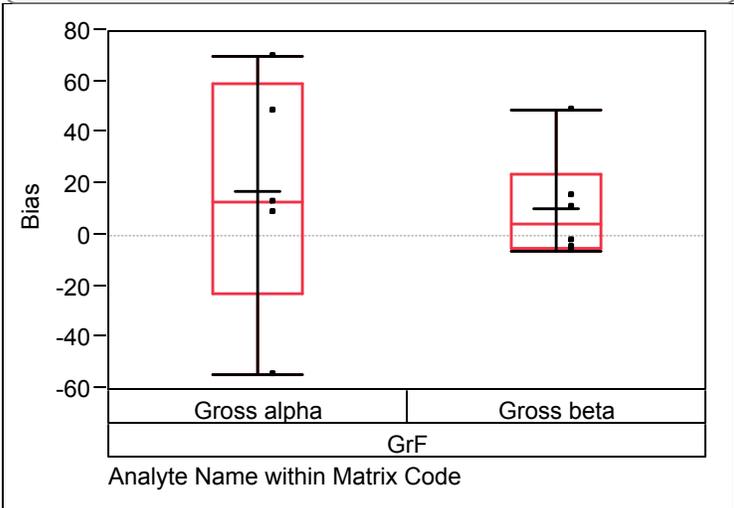


**Variability Gauge Lab Code=FMEC99**

**Variability Chart for Bias**

**Variability Gauge Lab Code=FMEC99**

**Variability Chart for Bias**

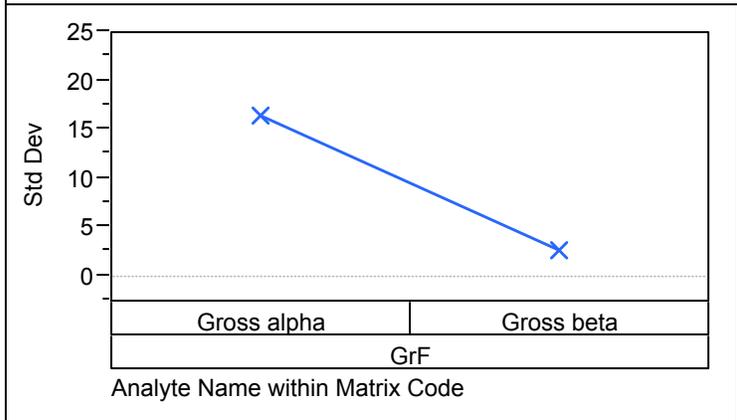
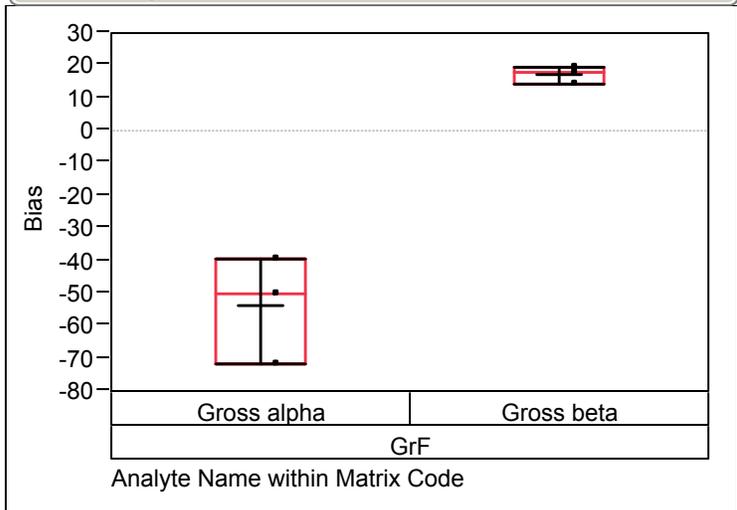


**Variability Gauge Lab Code=FNAL01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=FNAL01**

**Variability Chart for Bias**

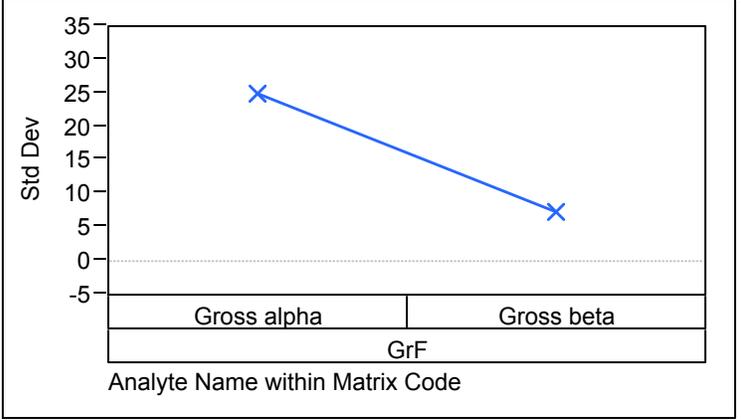
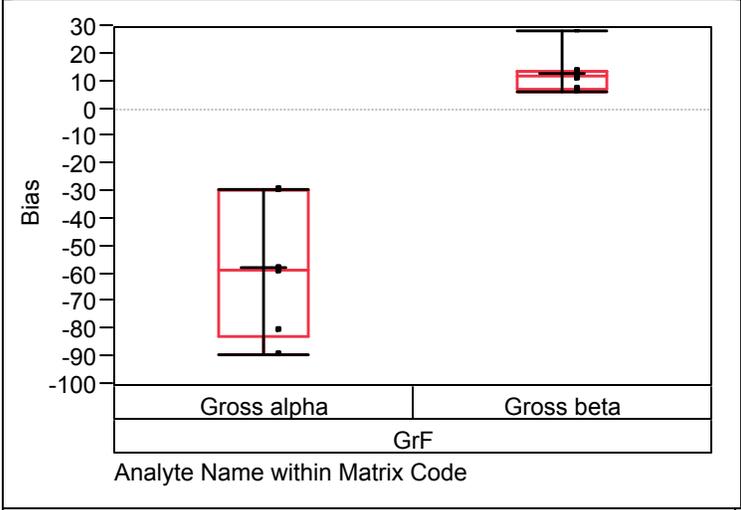


**Variability Gauge Lab Code=GENE01**

**Variability Chart for Bias**

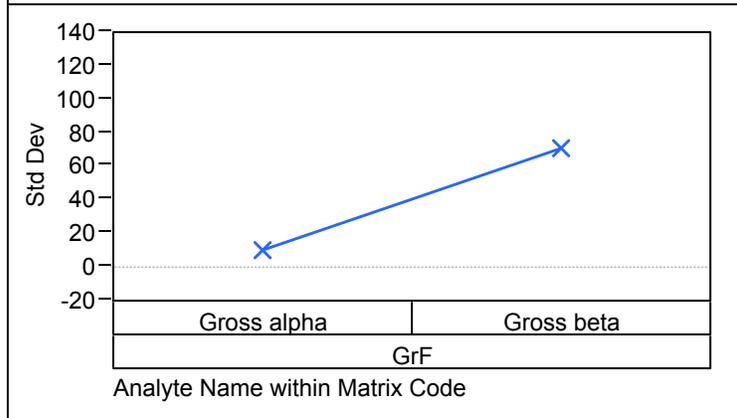
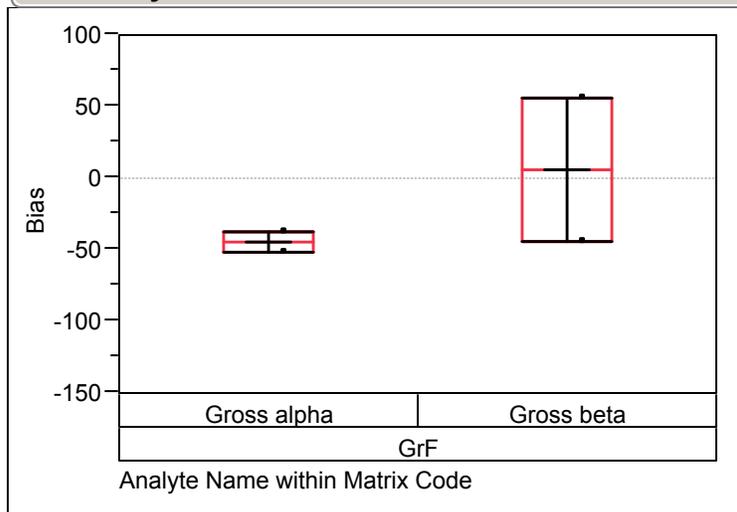
**Variability Gauge Lab Code=GENE01**

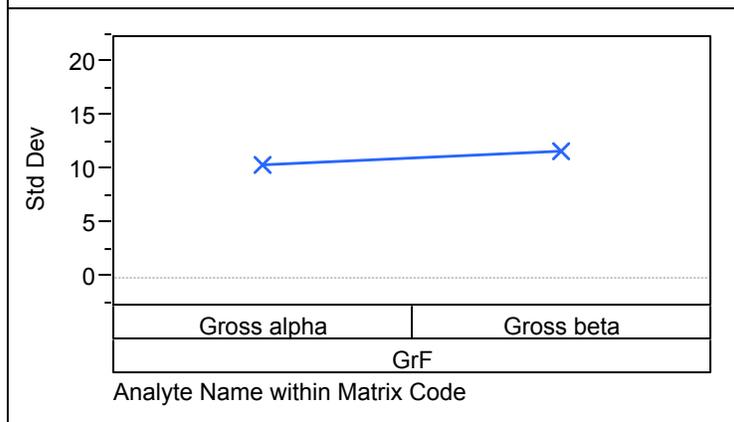
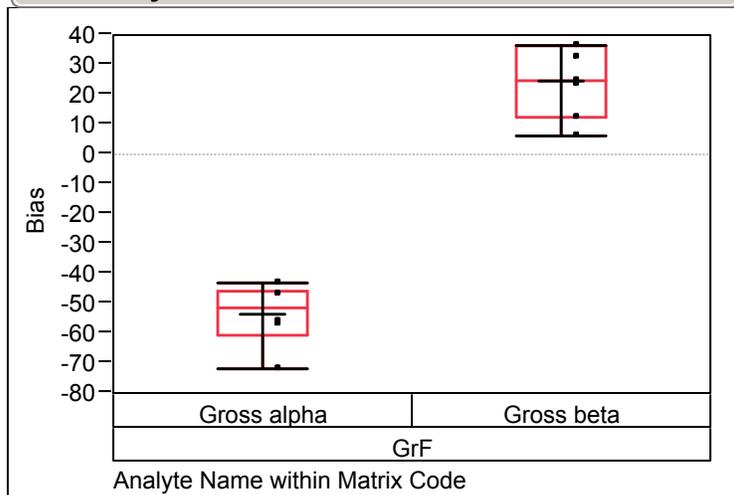
**Variability Chart for Bias**



**Variability Gauge Lab Code=GPLP01**

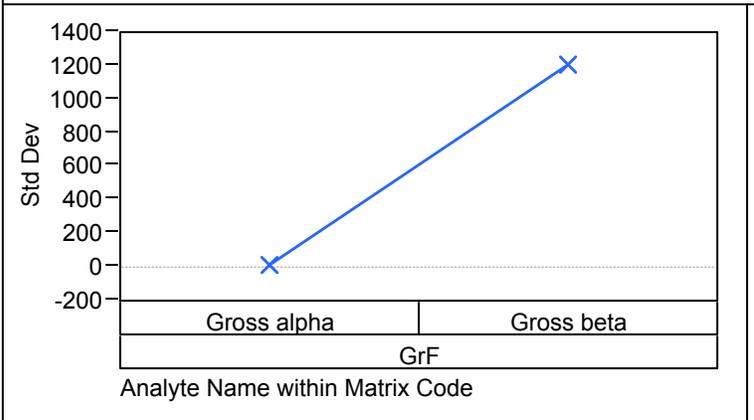
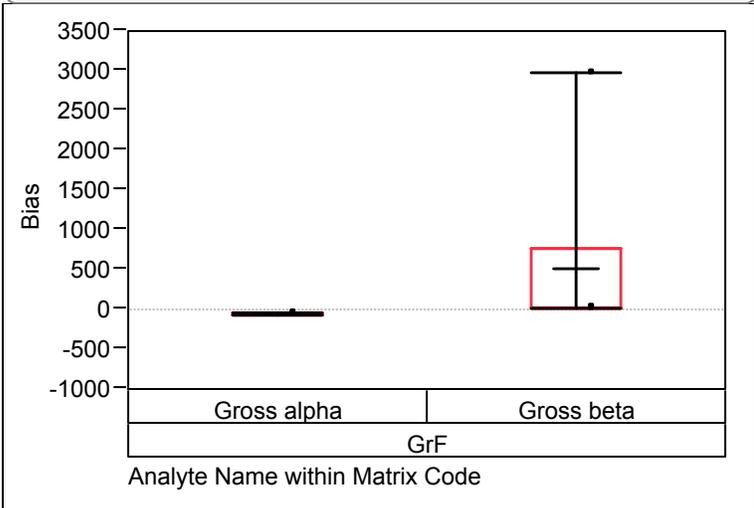
**Variability Chart for Bias**

**Variability Gauge Lab Code=GPLP01****Variability Chart for Bias****Variability Gauge Lab Code=HCAL01****Variability Chart for Bias**

**Variability Gauge Lab Code=HCAL01****Variability Chart for Bias****Variability Gauge Lab Code=HECR01****Variability Chart for Bias**

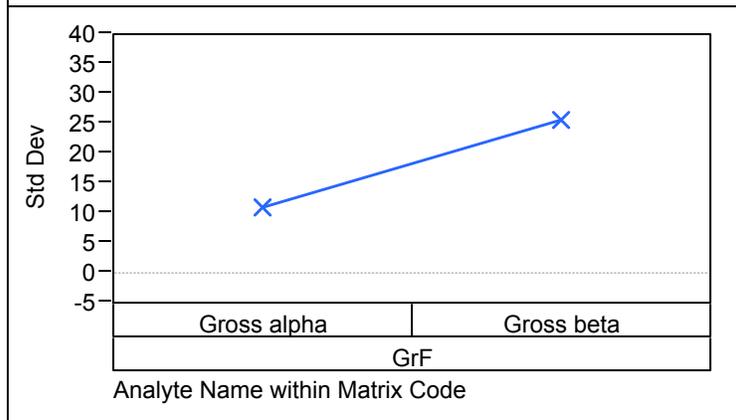
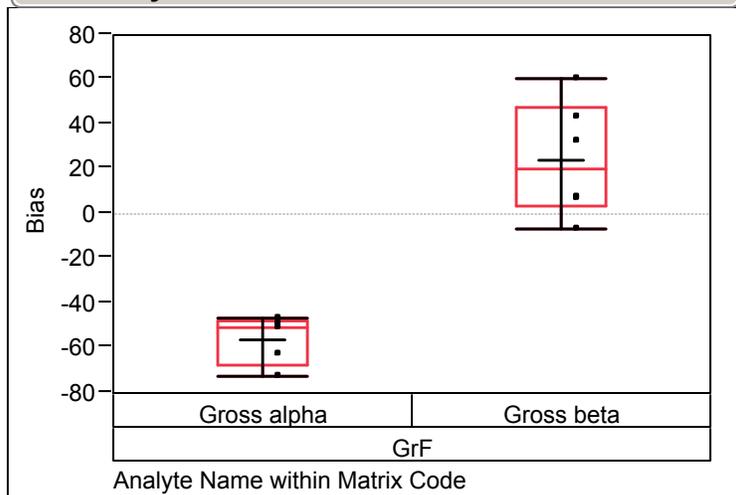
**Variability Gauge Lab Code=HECR01**

**Variability Chart for Bias**



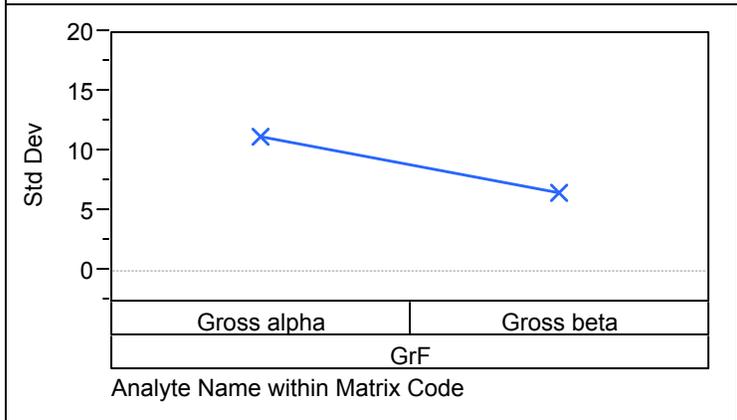
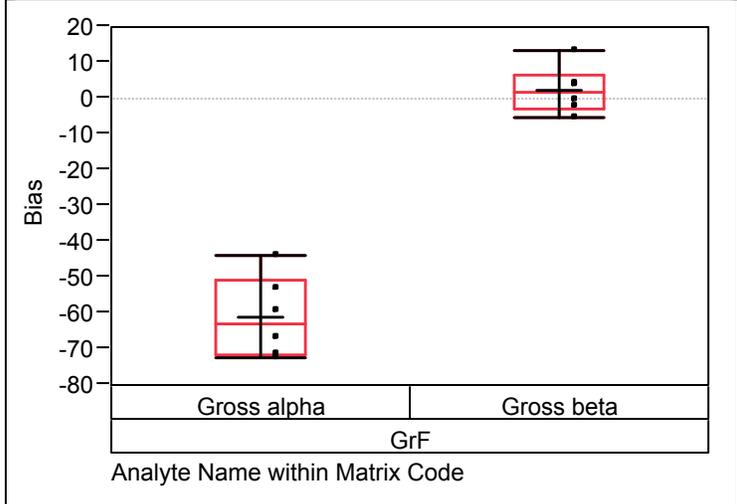
**Variability Gauge Lab Code=HERR01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=HERR01****Variability Chart for Bias****Variability Gauge Lab Code=ISUP01****Variability Chart for Bias**

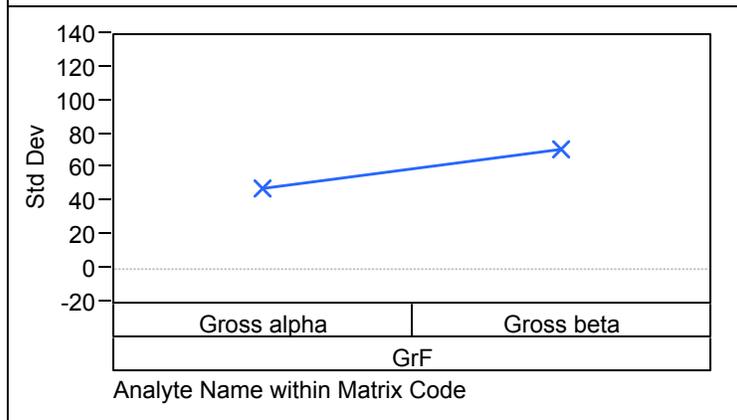
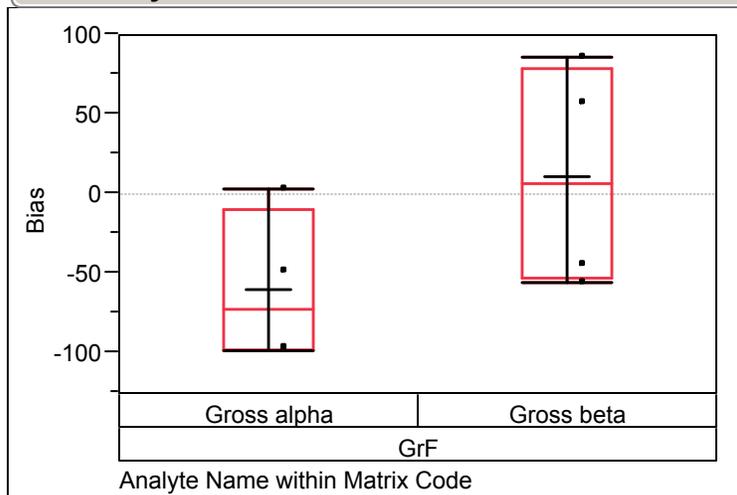
**Variability Gauge Lab Code=ISUP01**

**Variability Chart for Bias**



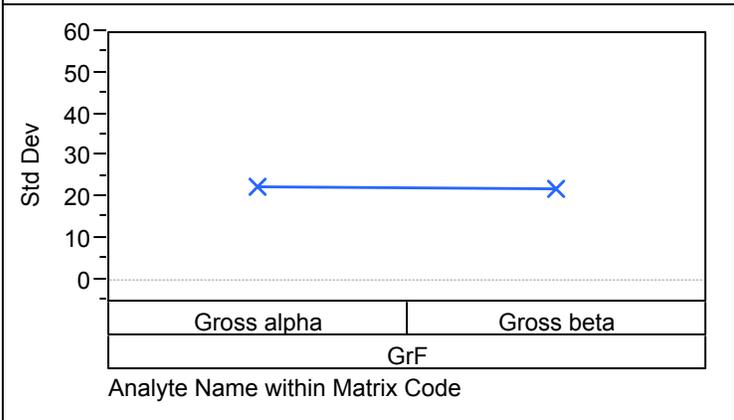
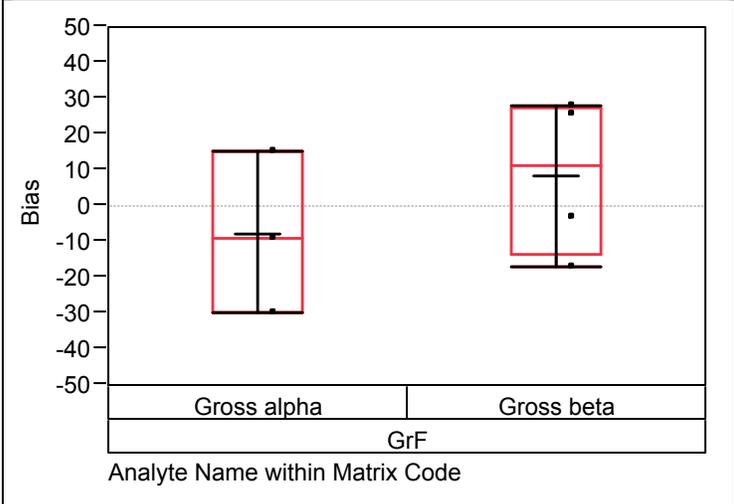
**Variability Gauge Lab Code=JAEC99**

**Variability Chart for Bias**

**Variability Gauge Lab Code=JAEC99****Variability Chart for Bias****Variability Gauge Lab Code=KDHE01****Variability Chart for Bias**

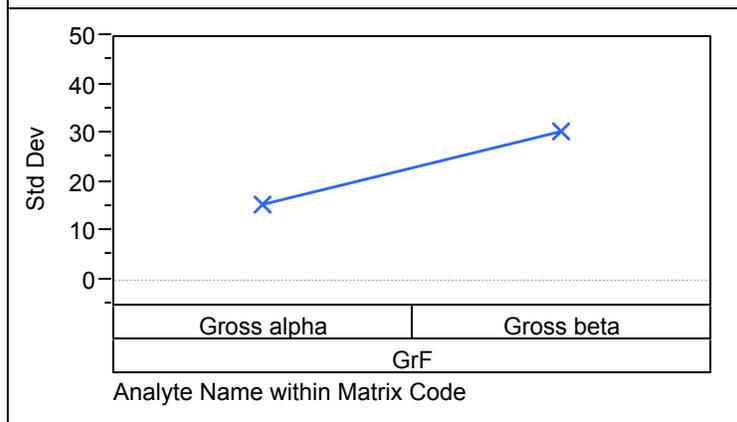
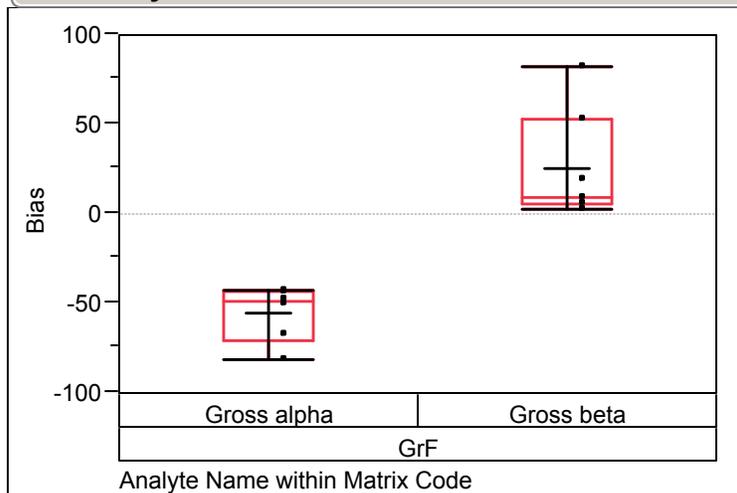
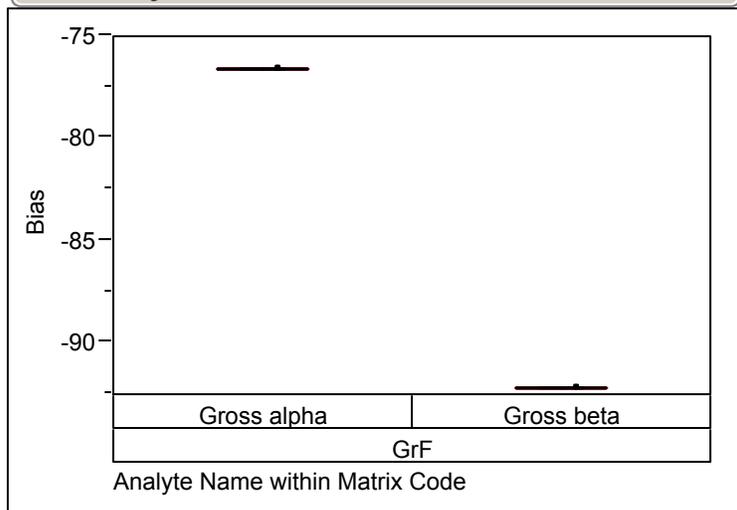
**Variability Gauge Lab Code=KDHE01**

**Variability Chart for Bias**



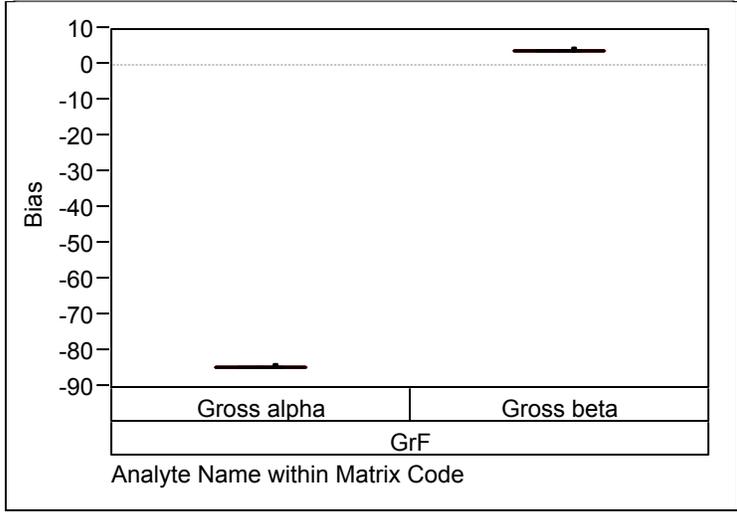
**Variability Gauge Lab Code=KSCF01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=KSCF01****Variability Chart for Bias****Variability Gauge Lab Code=KUFS99****Variability Chart for Bias****Variability Gauge Lab Code=LDRA99****Variability Chart for Bias**

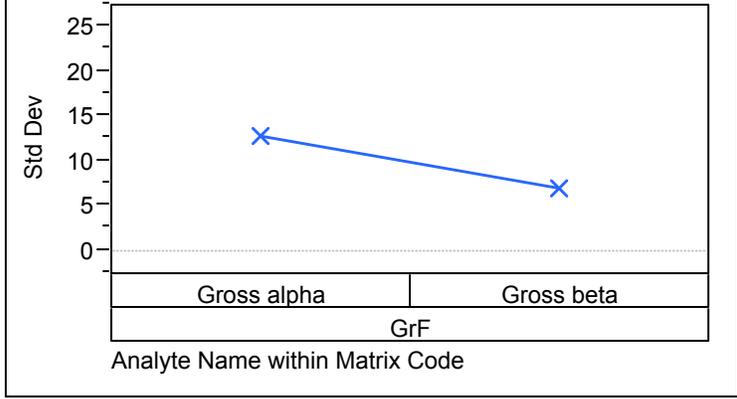
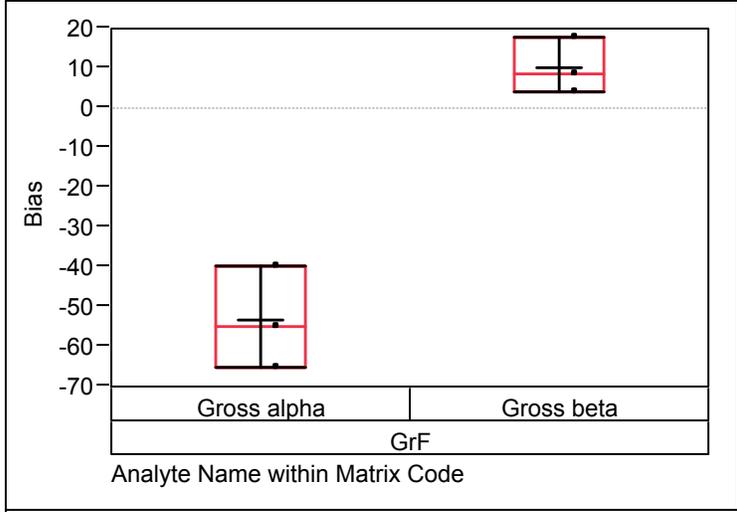
**Variability Gauge Lab Code=LDRA99**

**Variability Chart for Bias**



**Variability Gauge Lab Code=LOCK01**

**Variability Chart for Bias**

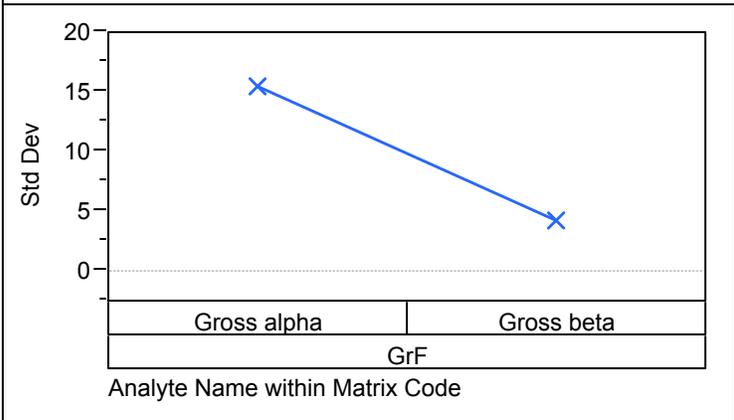
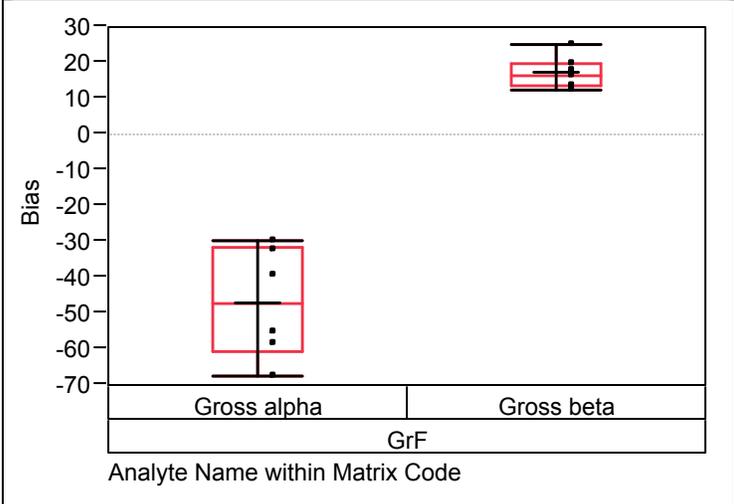


**Variability Gauge Lab Code=LOCK03**

**Variability Chart for Bias**

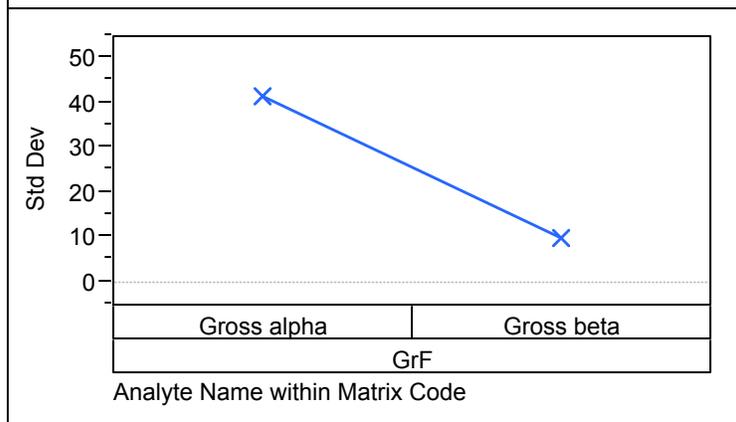
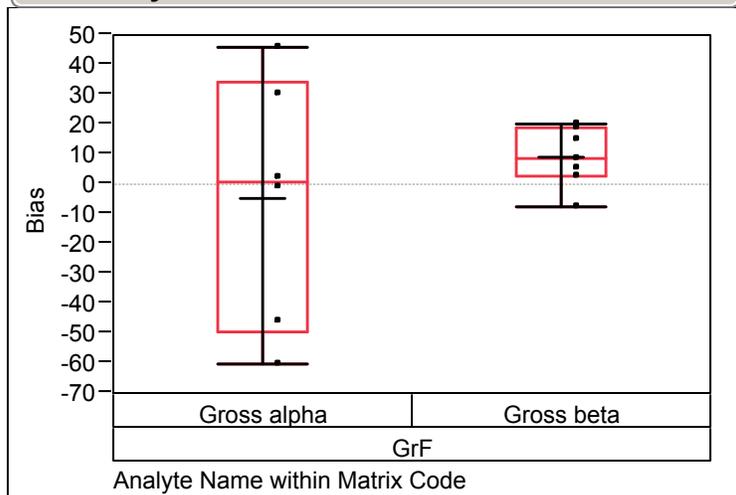
**Variability Gauge Lab Code=LOCK03**

**Variability Chart for Bias**



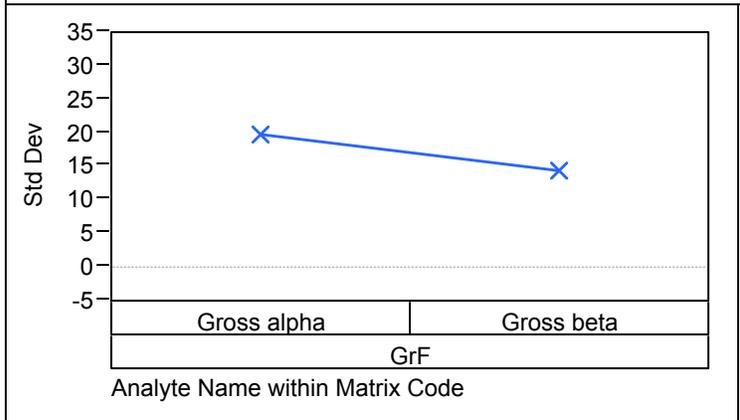
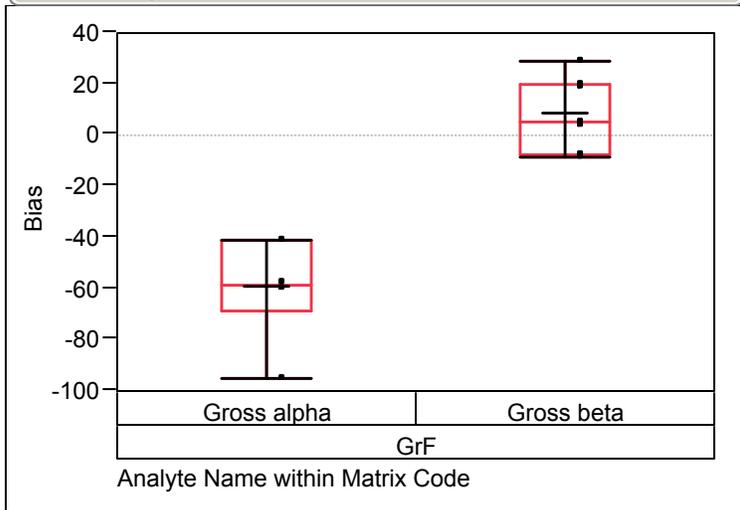
**Variability Gauge Lab Code=MART02**

**Variability Chart for Bias**

**Variability Gauge Lab Code=MART02****Variability Chart for Bias****Variability Gauge Lab Code=MART03****Variability Chart for Bias**

**Variability Gauge Lab Code=MART03**

**Variability Chart for Bias**

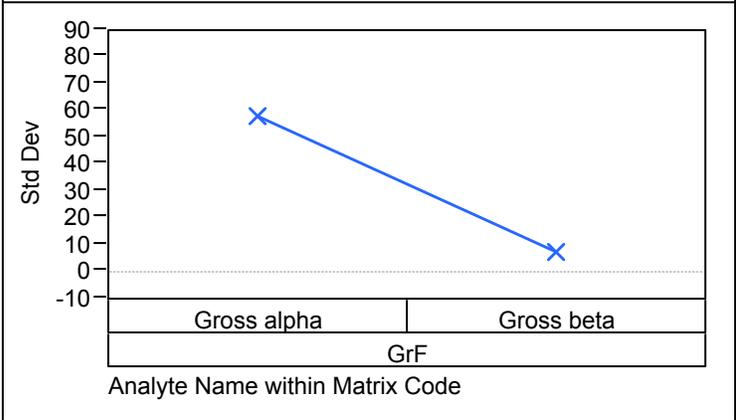
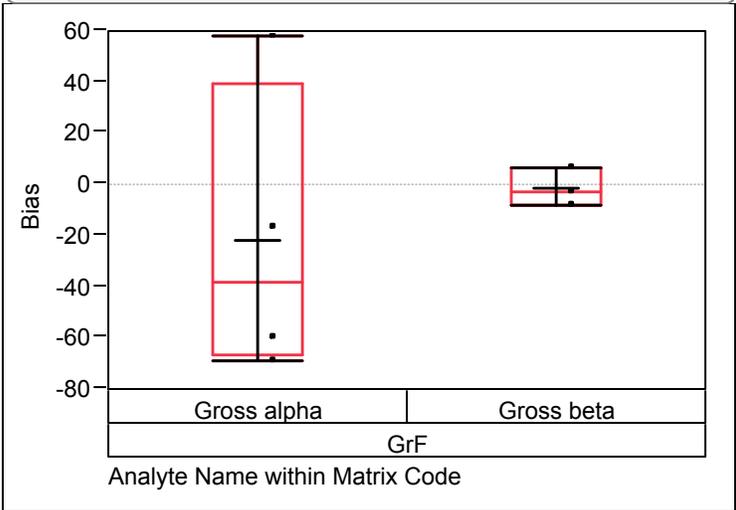


**Variability Gauge Lab Code=MDPH01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=MDPH01**

**Variability Chart for Bias**

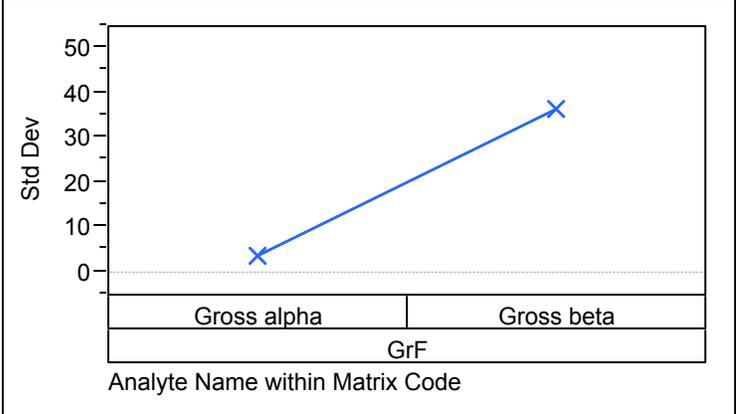
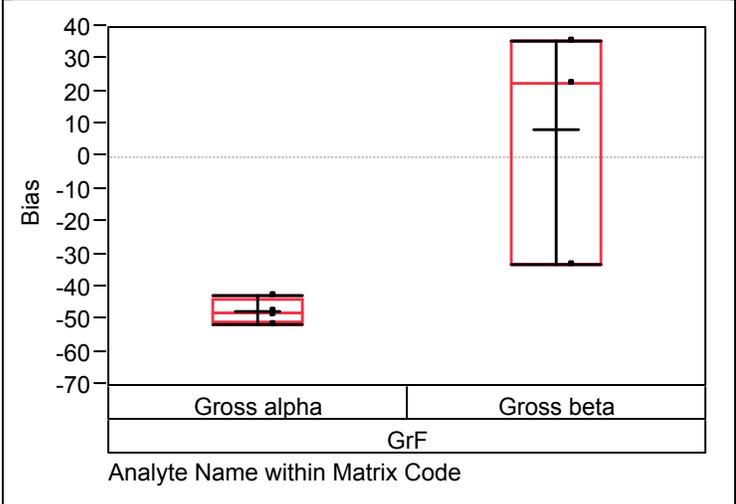


**Variability Gauge Lab Code=MKME01**

**Variability Chart for Bias**

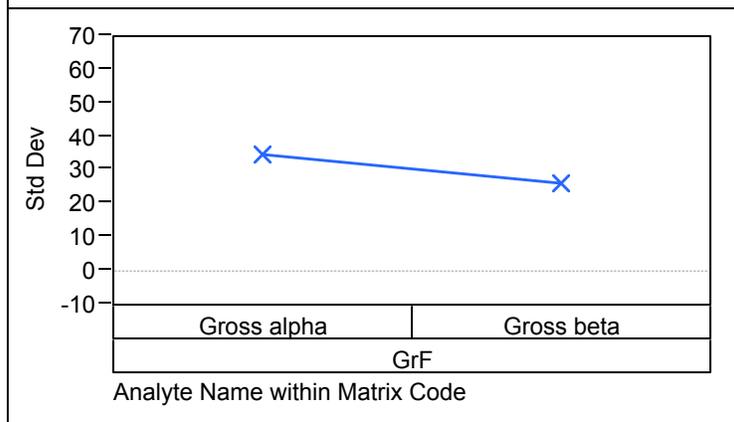
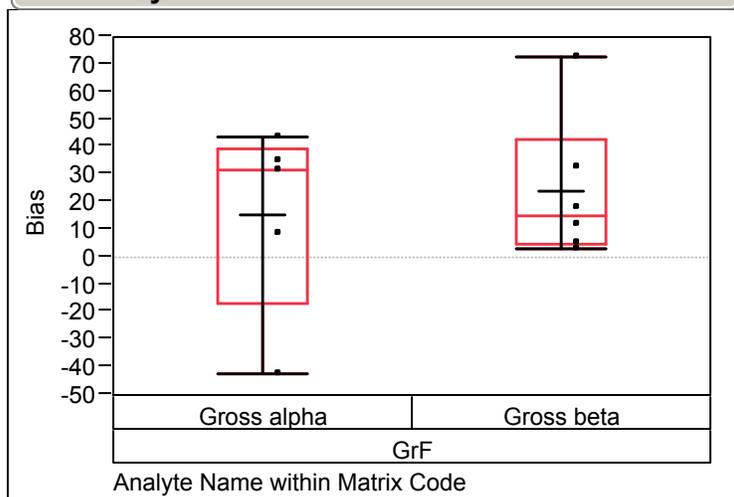
**Variability Gauge Lab Code=MKME01**

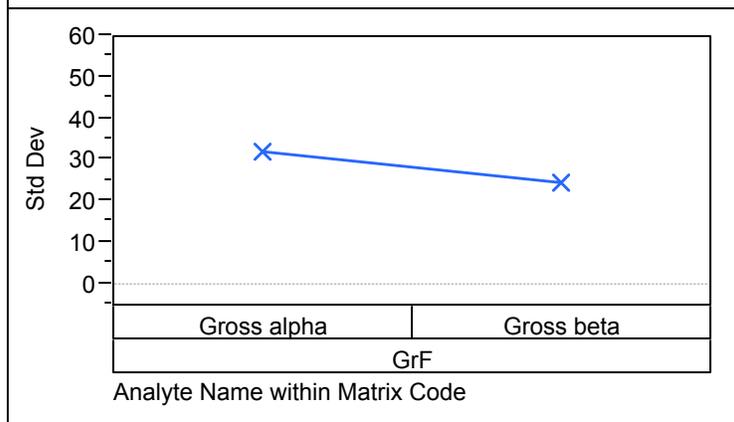
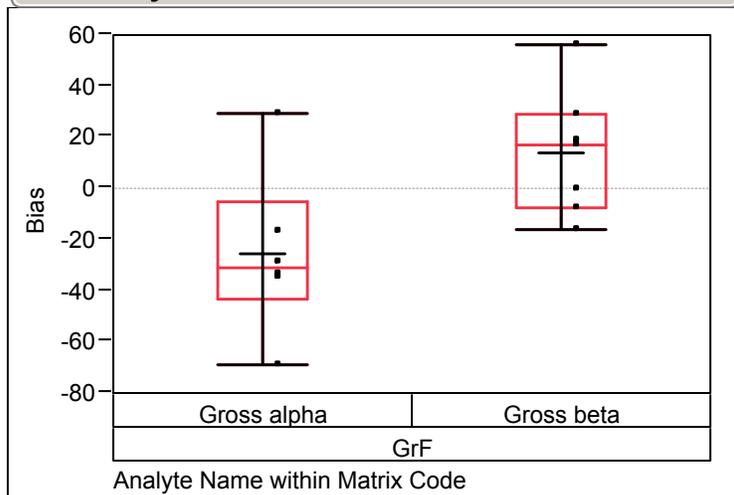
**Variability Chart for Bias**

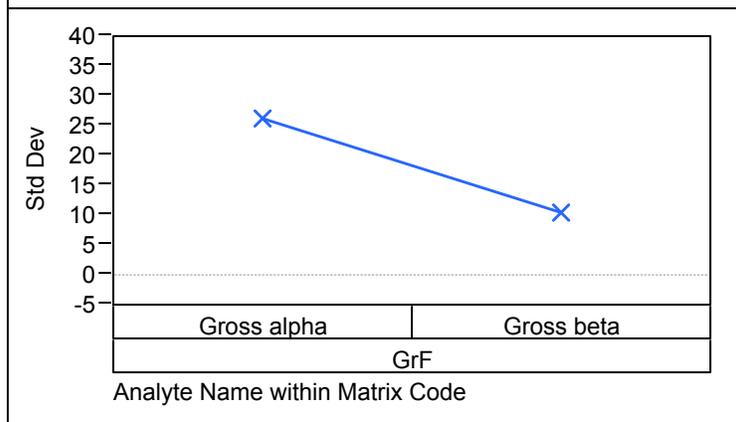
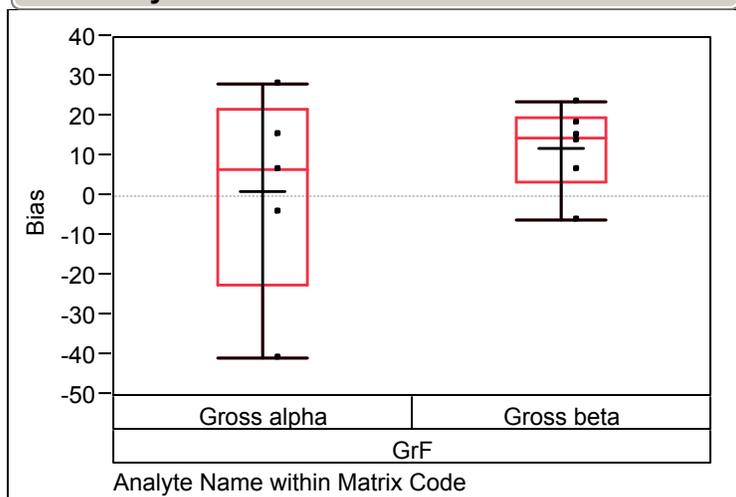


**Variability Gauge Lab Code=NARL01**

**Variability Chart for Bias**

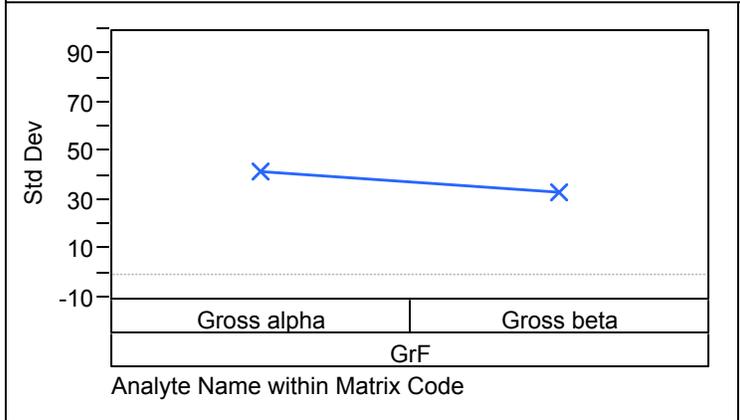
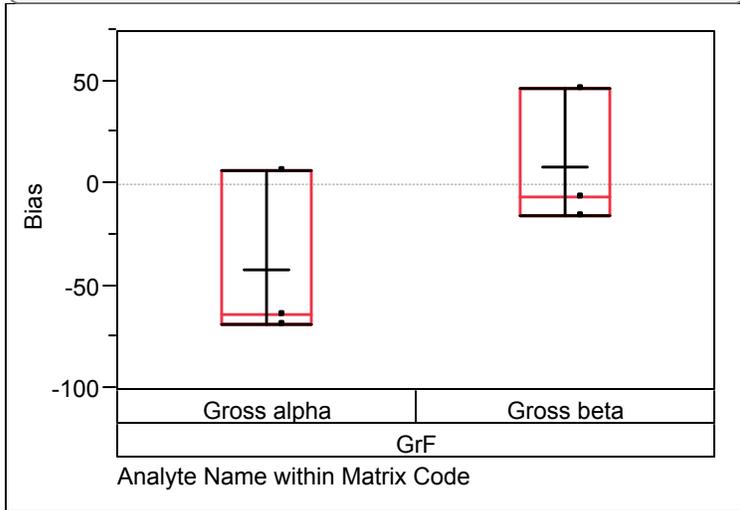
**Variability Gauge Lab Code=NARL01****Variability Chart for Bias****Variability Gauge Lab Code=NESI01****Variability Chart for Bias**

**Variability Gauge Lab Code=NESI01****Variability Chart for Bias****Variability Gauge Lab Code=NJDH01****Variability Chart for Bias**

**Variability Gauge Lab Code=NJDH01****Variability Chart for Bias****Variability Gauge Lab Code=NTSI01****Variability Chart for Bias**

**Variability Gauge Lab Code=NTSI01**

**Variability Chart for Bias**

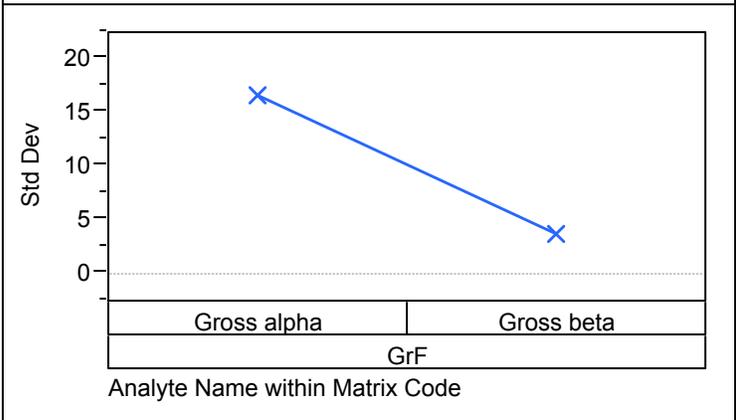
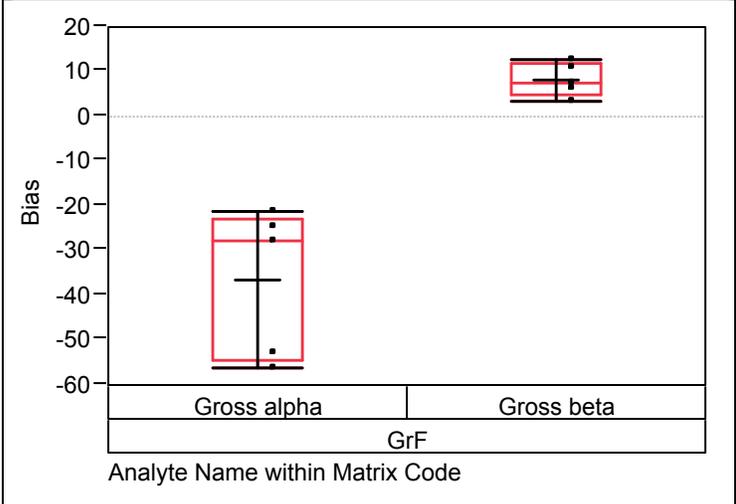


**Variability Gauge Lab Code=OBGL01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=OBGL01**

**Variability Chart for Bias**

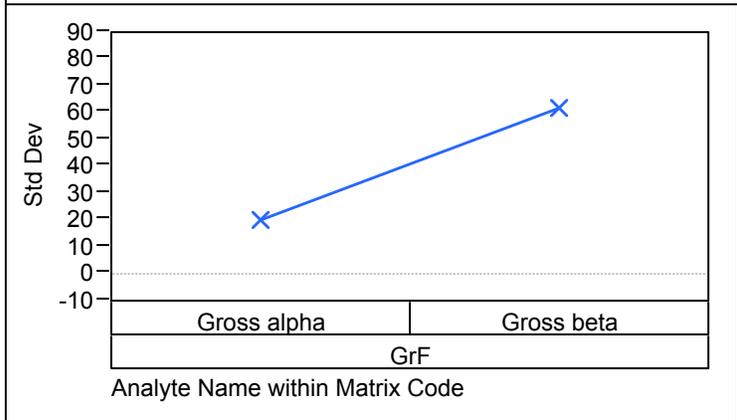
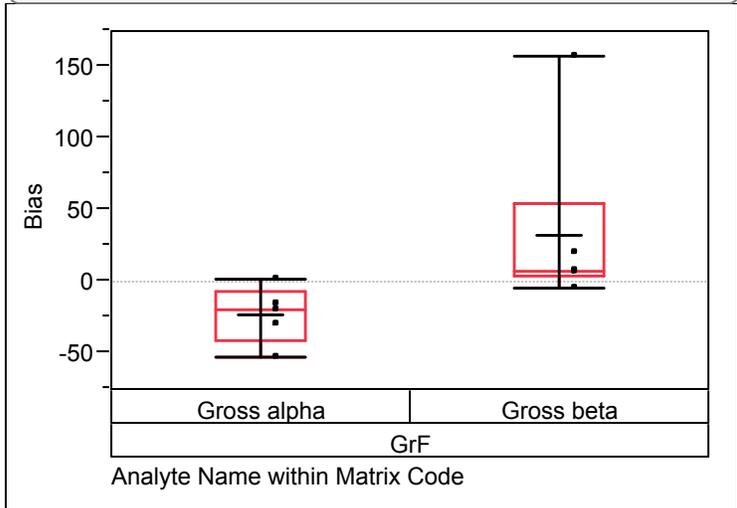


**Variability Gauge Lab Code=ODHL01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=ODHL01**

**Variability Chart for Bias**

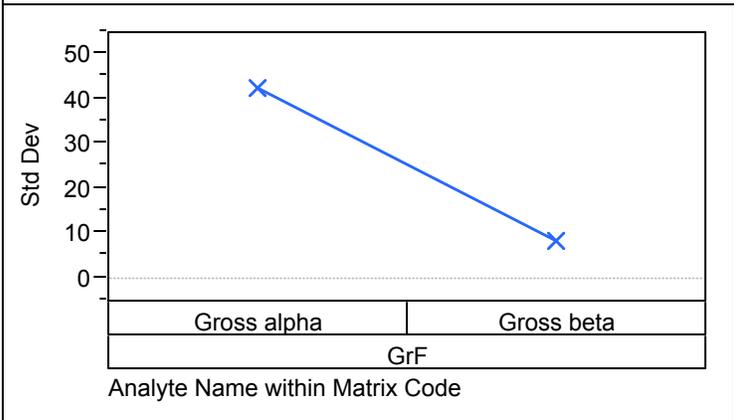
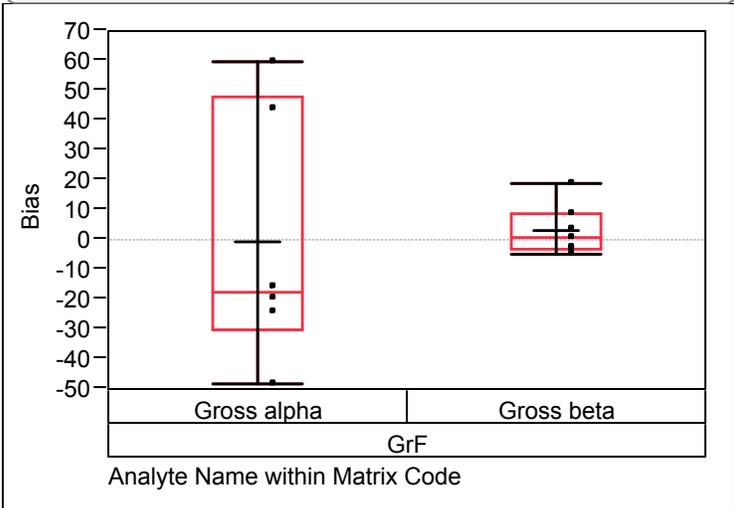


**Variability Gauge Lab Code=ORIS01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=ORIS01**

**Variability Chart for Bias**

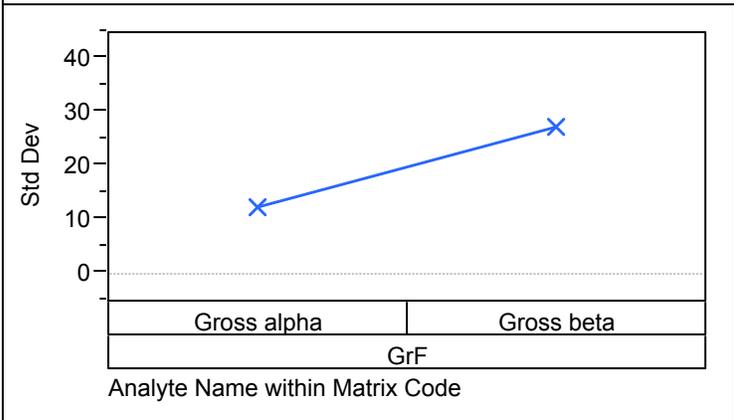
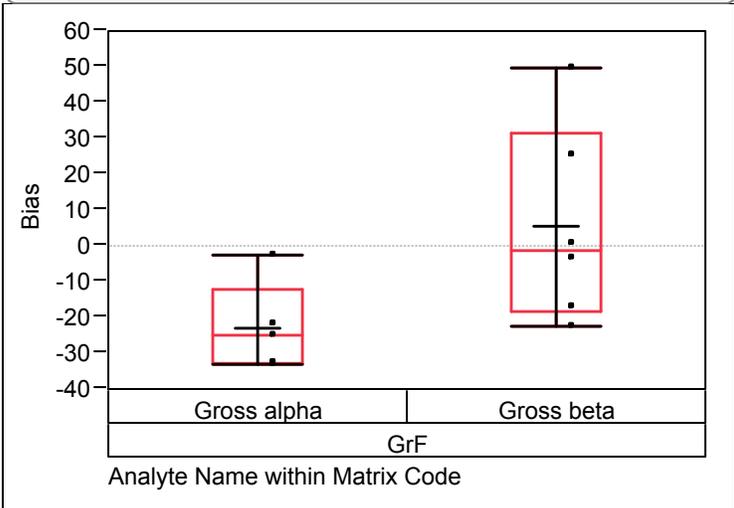


**Variability Gauge Lab Code=OTLI01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=OTLI01**

**Variability Chart for Bias**

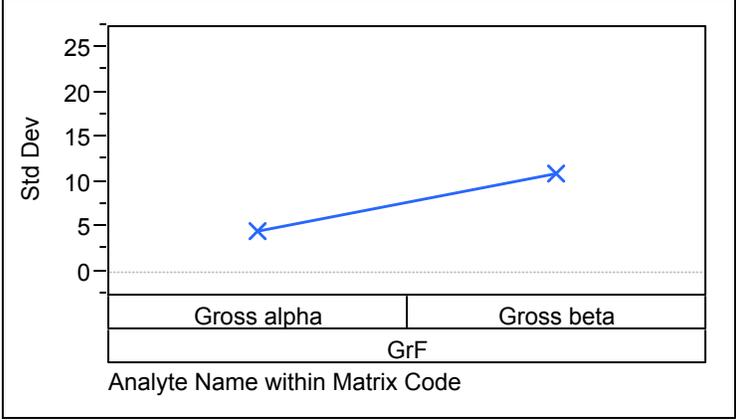
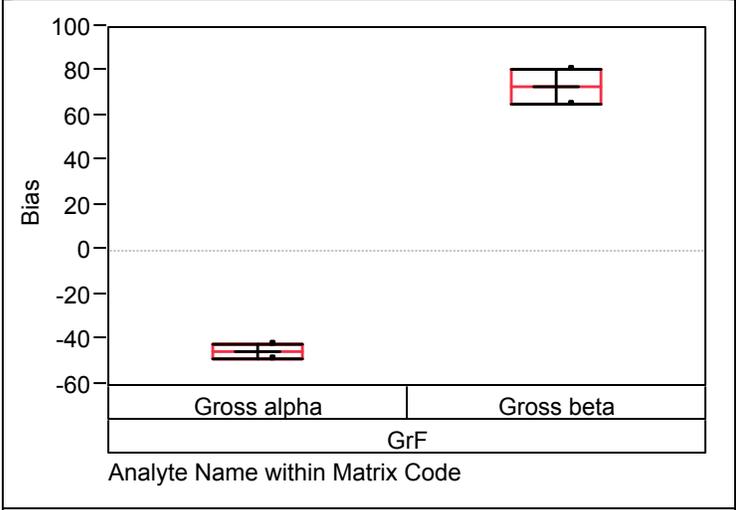


**Variability Gauge Lab Code=PBRF01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=PBRF01**

**Variability Chart for Bias**

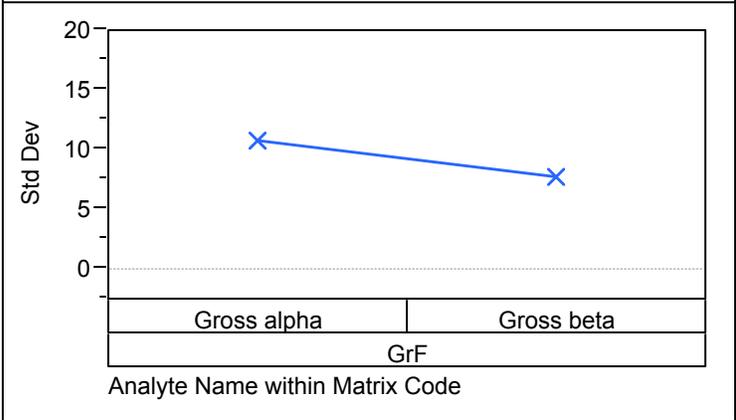
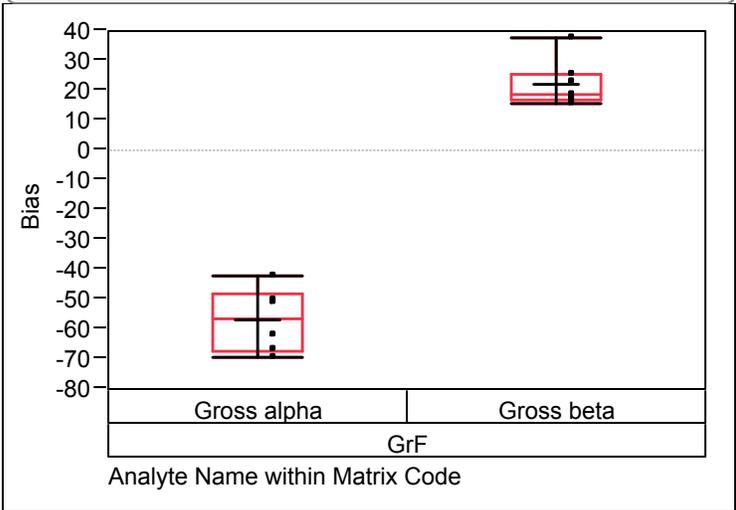


**Variability Gauge Lab Code=QUAN01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=QUAN01**

**Variability Chart for Bias**

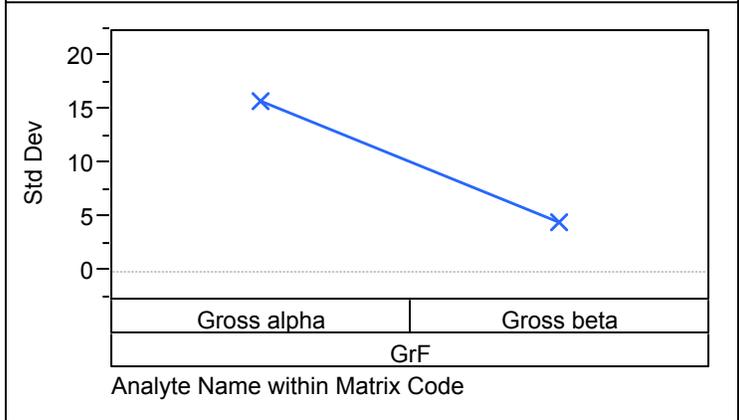
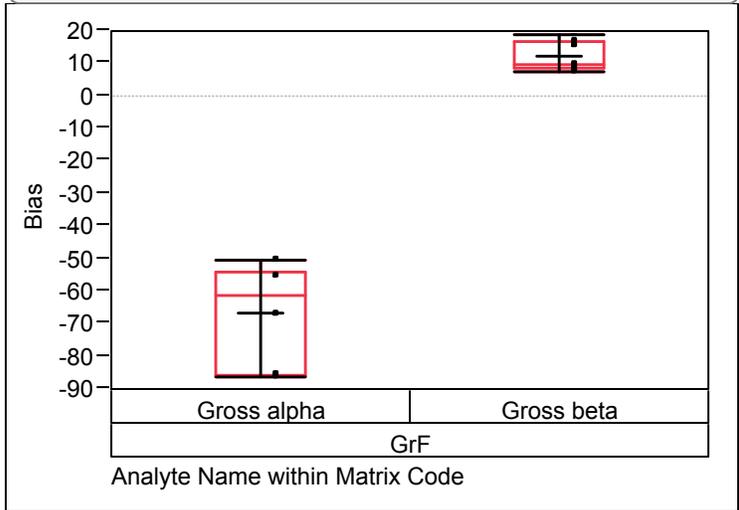


**Variability Gauge Lab Code=QUAN03**

**Variability Chart for Bias**

**Variability Gauge Lab Code=QUAN03**

**Variability Chart for Bias**

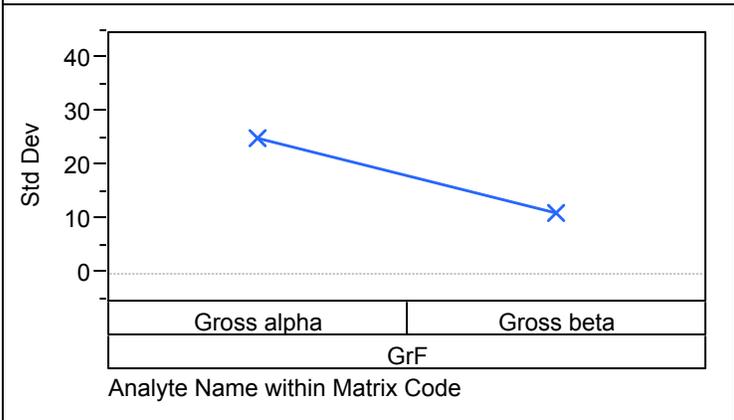
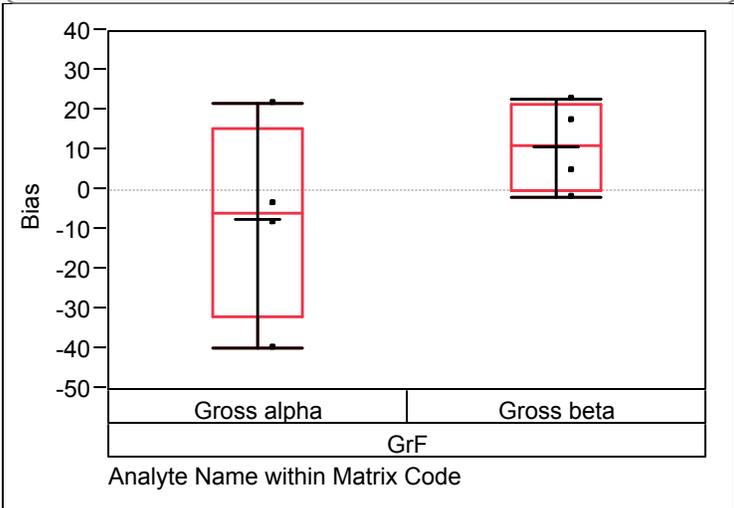


**Variability Gauge Lab Code=RMCL99**

**Variability Chart for Bias**

**Variability Gauge Lab Code=RMCL99**

**Variability Chart for Bias**

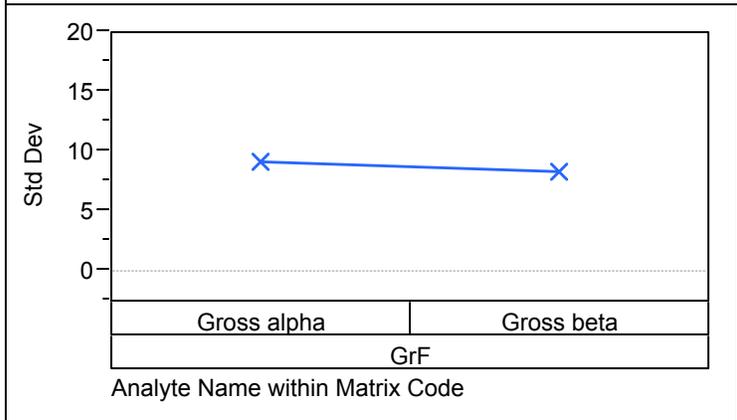
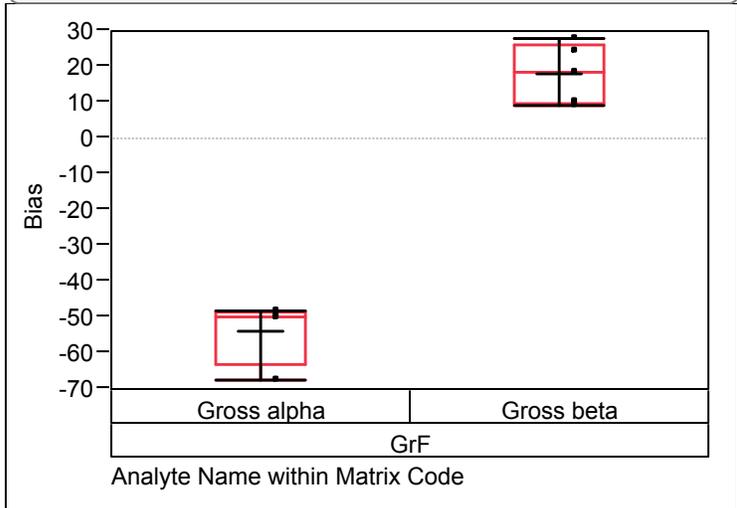


**Variability Gauge Lab Code=RPCR01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=RPCR01**

**Variability Chart for Bias**

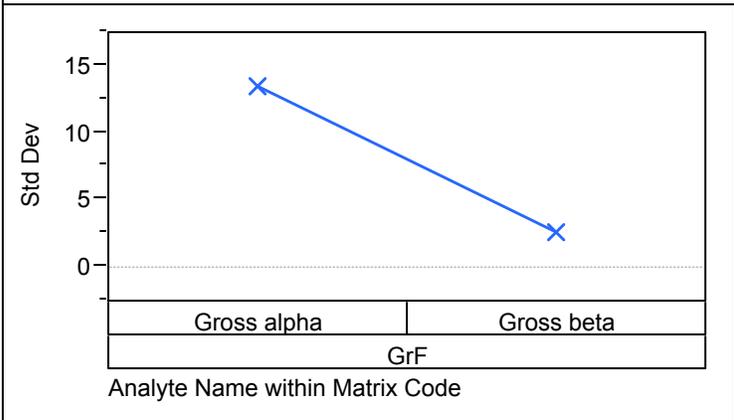
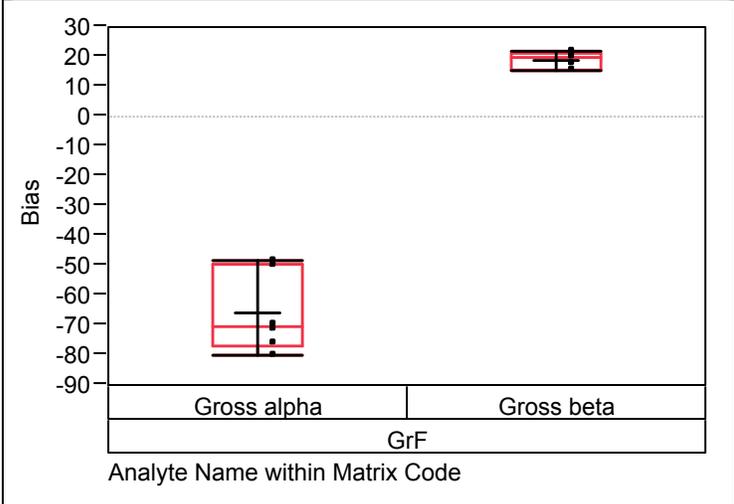


**Variability Gauge Lab Code=RPSC01**

**Variability Chart for Bias**

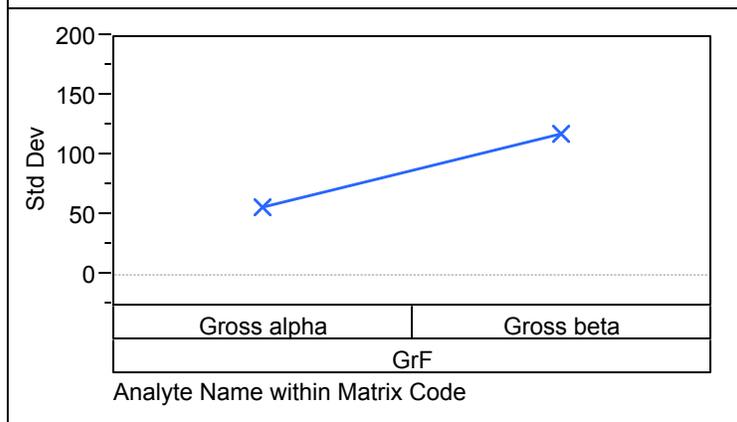
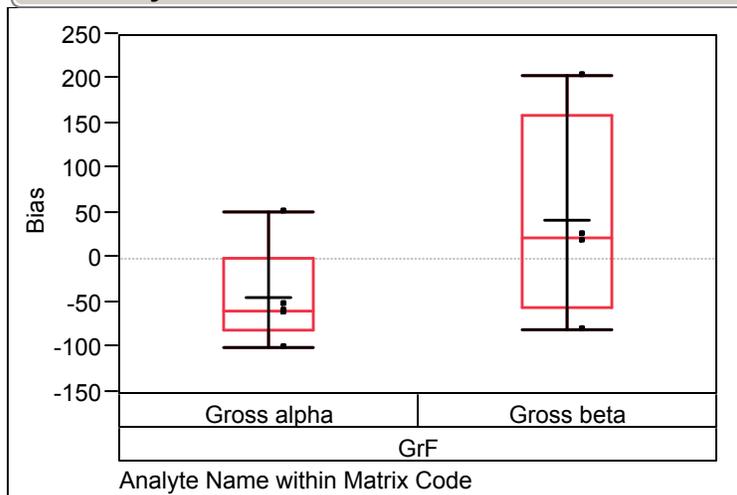
**Variability Gauge Lab Code=RPSC01**

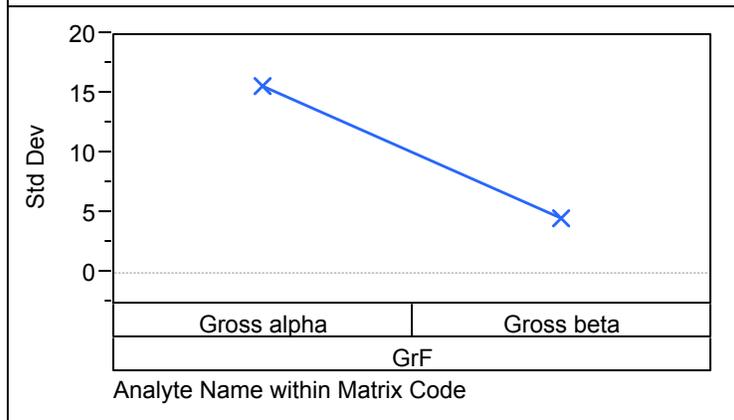
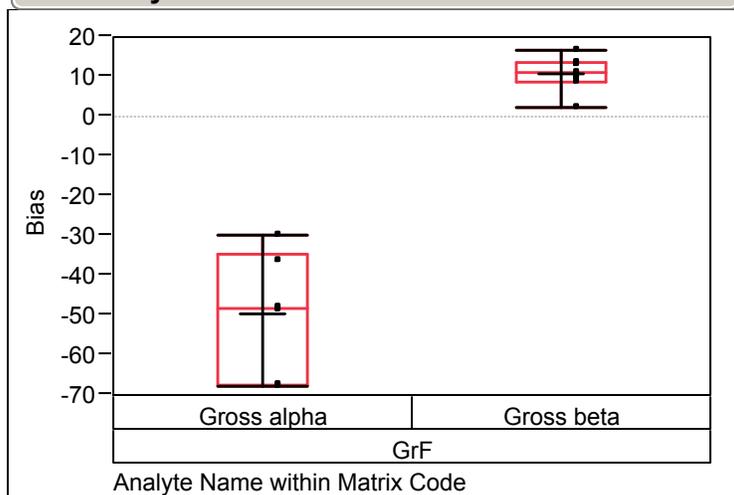
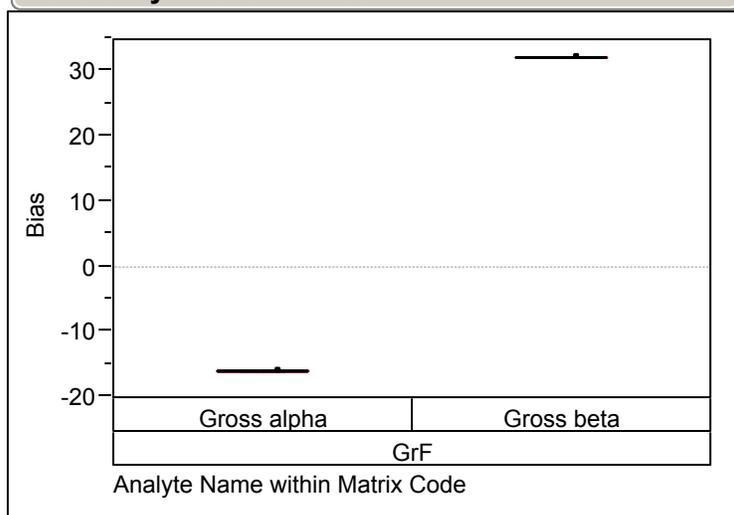
**Variability Chart for Bias**

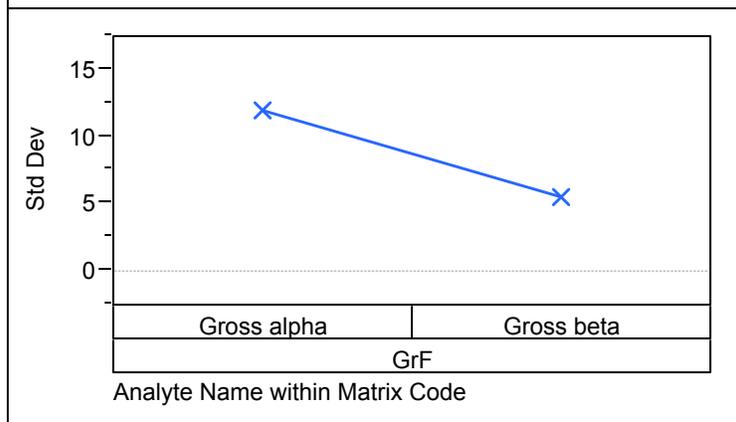
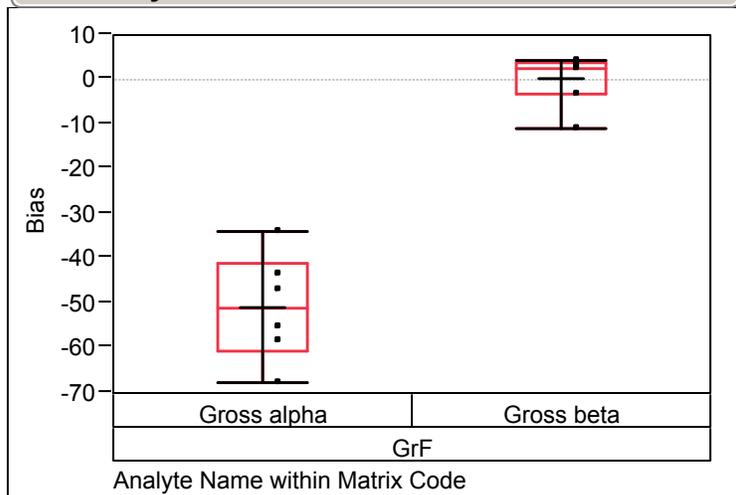


**Variability Gauge Lab Code=RSAL01**

**Variability Chart for Bias**

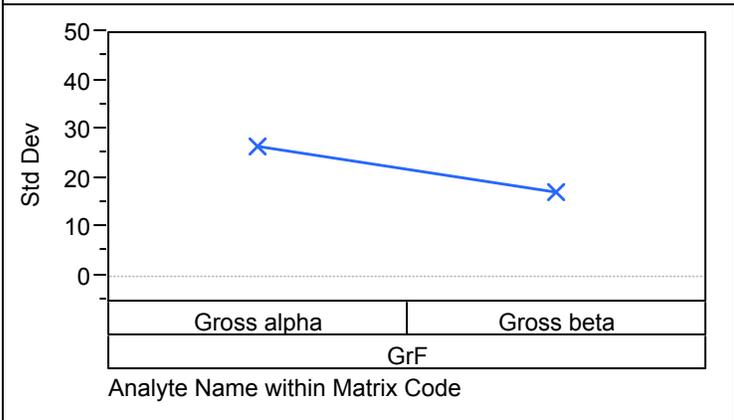
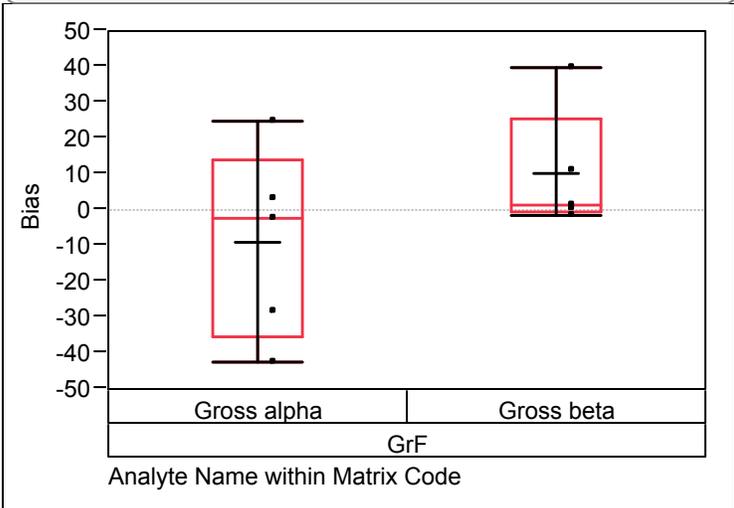
**Variability Gauge Lab Code=RSAL01****Variability Chart for Bias****Variability Gauge Lab Code=SCAL01****Variability Chart for Bias**

**Variability Gauge Lab Code=SCAL01****Variability Chart for Bias****Variability Gauge Lab Code=SECR01****Variability Chart for Bias****Variability Gauge Lab Code=SEML01****Variability Chart for Bias**

**Variability Gauge Lab Code=SEML01****Variability Chart for Bias****Variability Gauge Lab Code=SLDL01****Variability Chart for Bias**

**Variability Gauge Lab Code=SLDL01**

**Variability Chart for Bias**

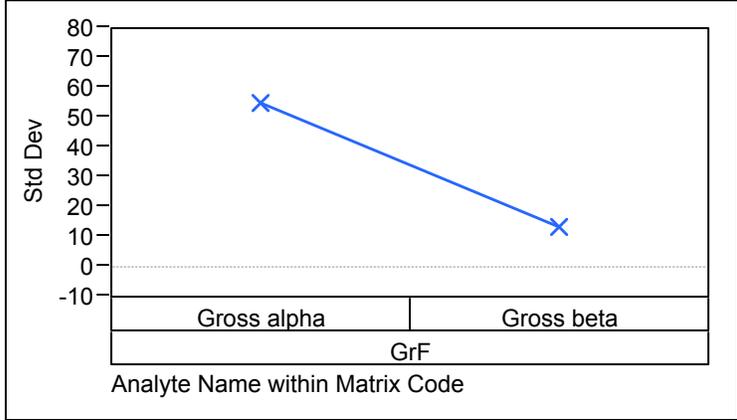
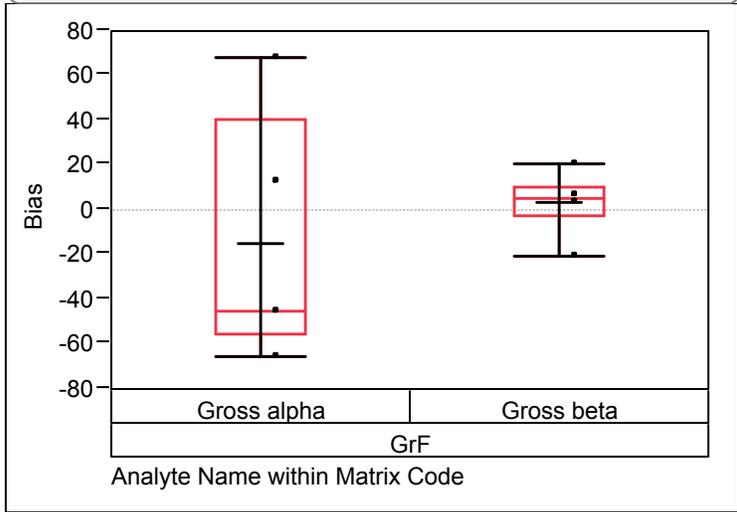


**Variability Gauge Lab Code=SOUT01**

**Variability Chart for Bias**

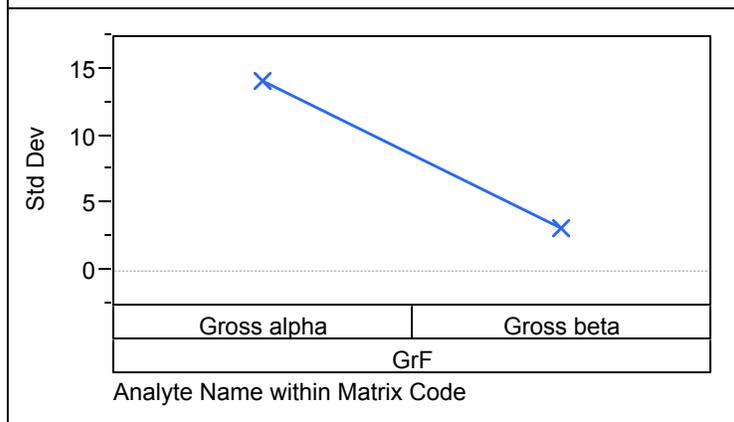
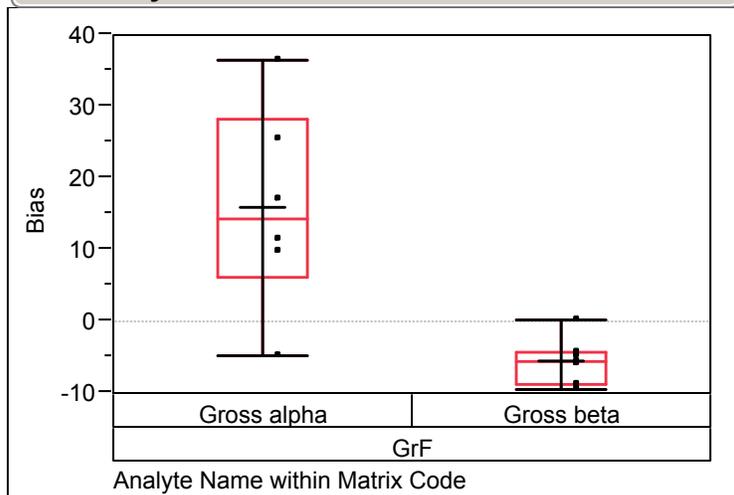
**Variability Gauge Lab Code=SOUT01**

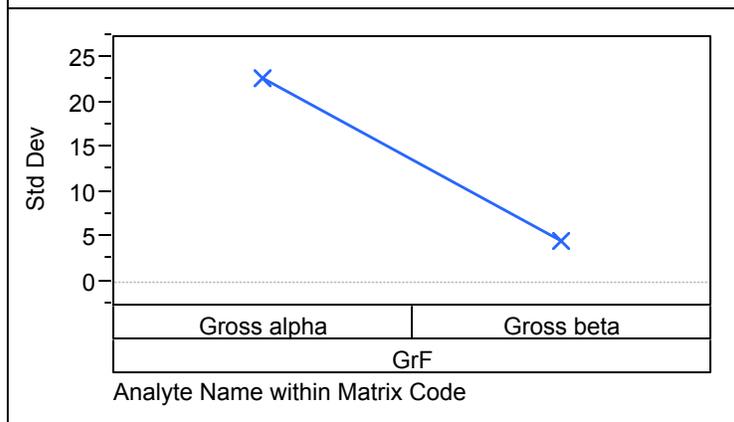
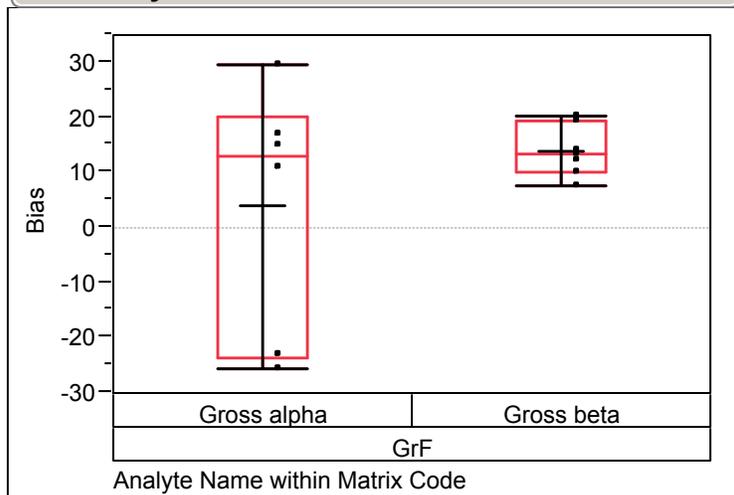
**Variability Chart for Bias**

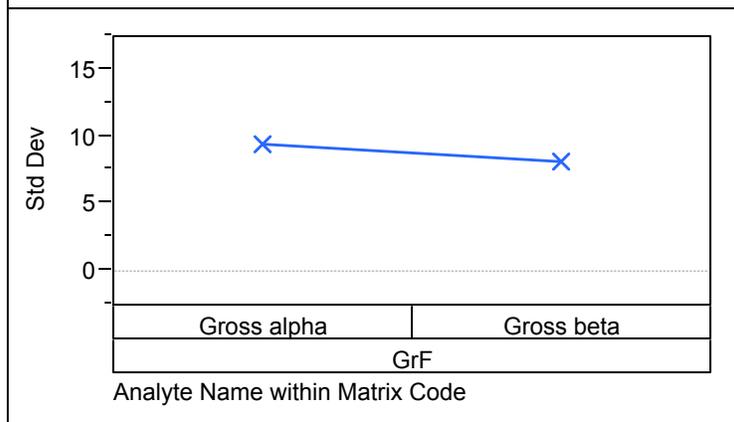
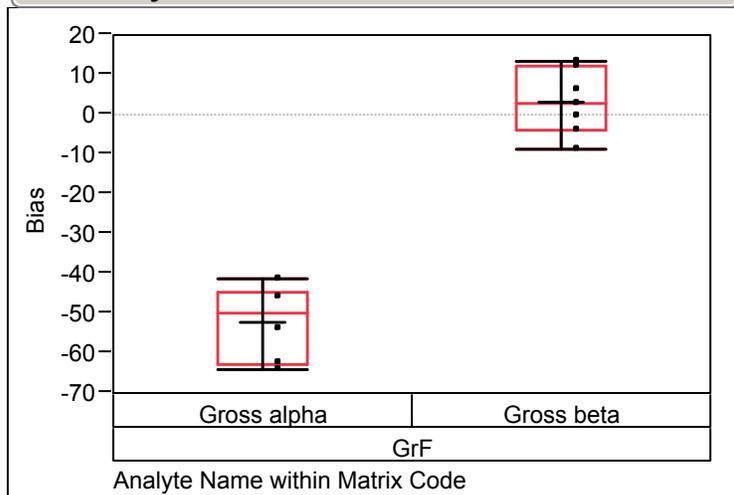


**Variability Gauge Lab Code=SRPD01**

**Variability Chart for Bias**

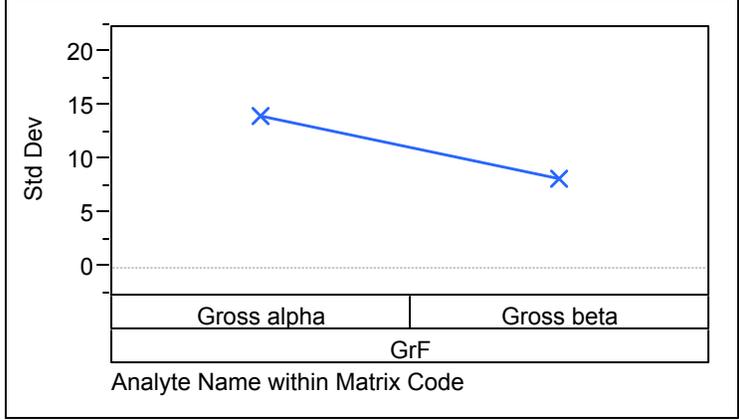
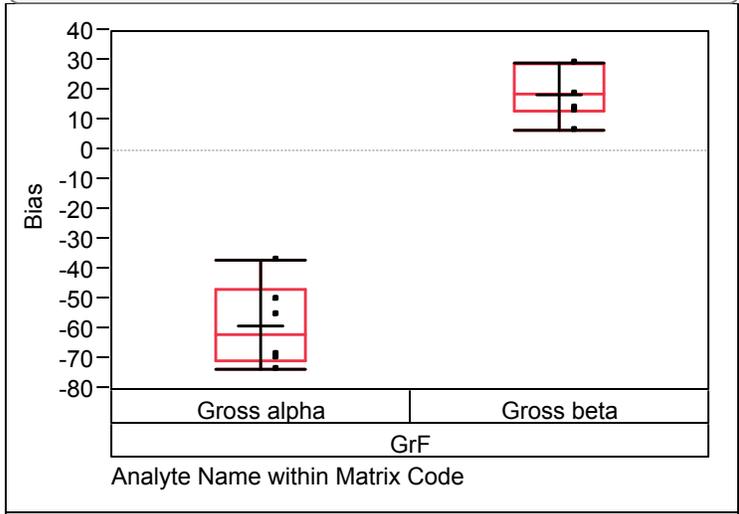
**Variability Gauge Lab Code=SRPD01****Variability Chart for Bias****Variability Gauge Lab Code=TDHL01****Variability Chart for Bias**

**Variability Gauge Lab Code=TDHL01****Variability Chart for Bias****Variability Gauge Lab Code=TELE01****Variability Chart for Bias**

**Variability Gauge Lab Code=TELE01****Variability Chart for Bias****Variability Gauge Lab Code=TELE02****Variability Chart for Bias**

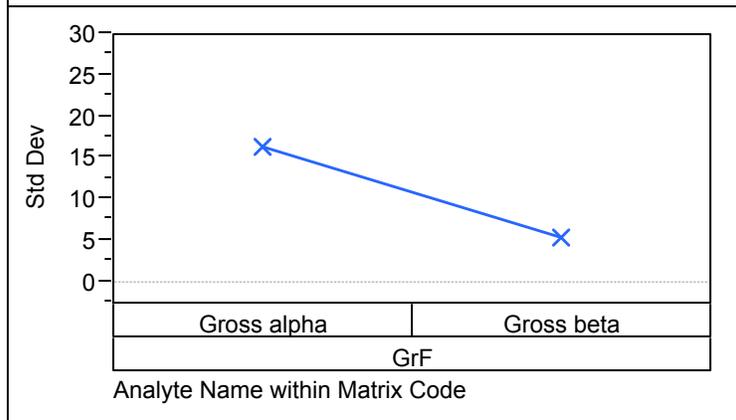
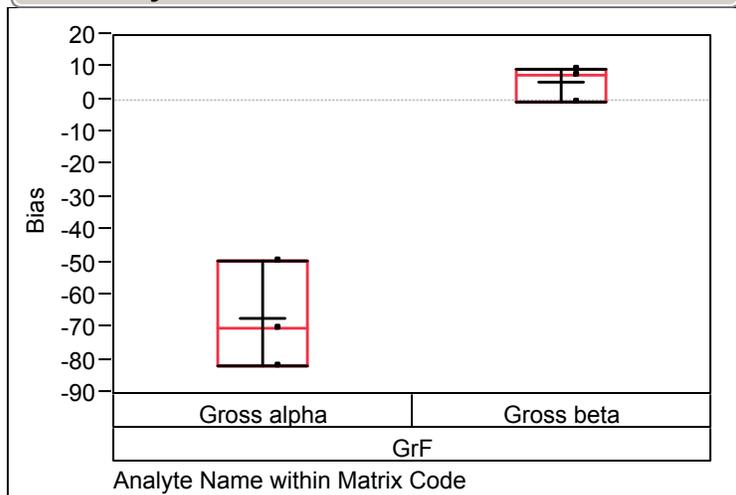
**Variability Gauge Lab Code=TELE02**

**Variability Chart for Bias**



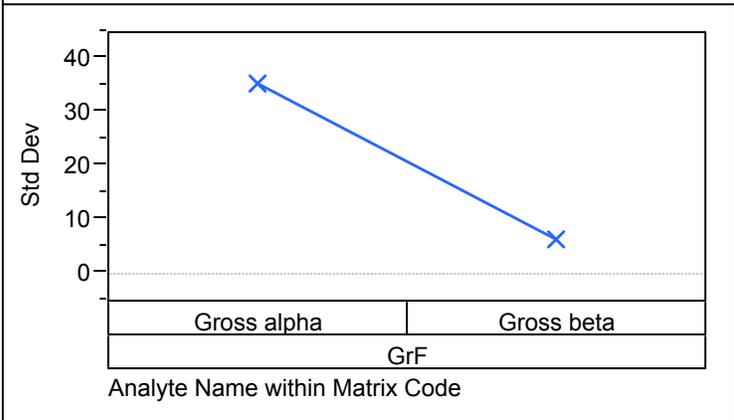
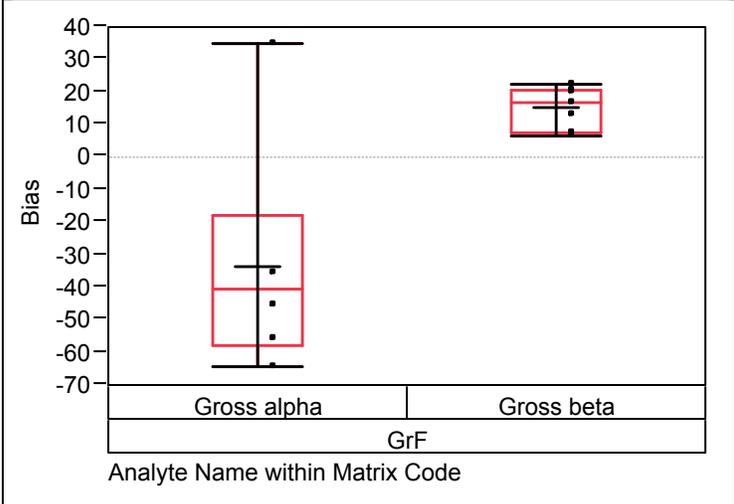
**Variability Gauge Lab Code=TMAE01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=TMAE01****Variability Chart for Bias****Variability Gauge Lab Code=TMAO01****Variability Chart for Bias**

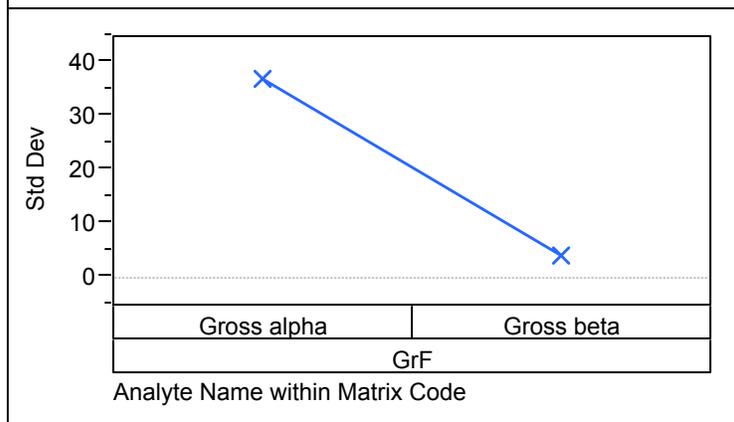
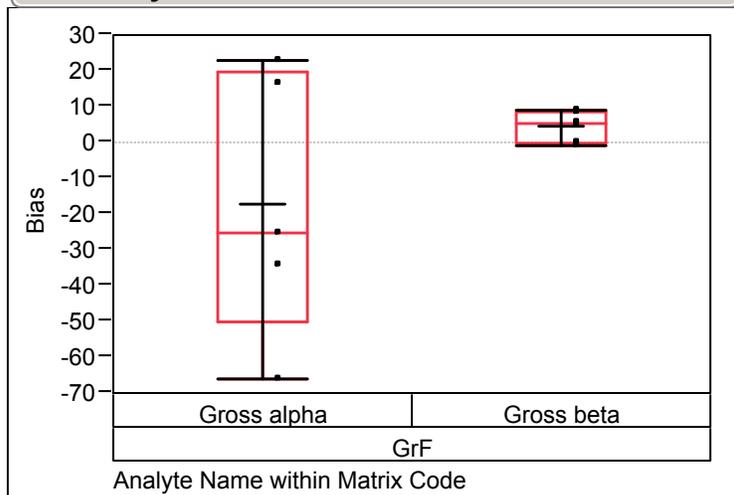
**Variability Gauge Lab Code=TMAO01**

**Variability Chart for Bias**



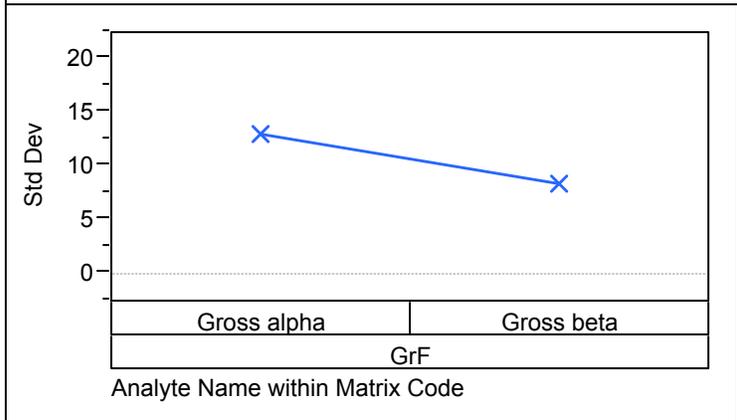
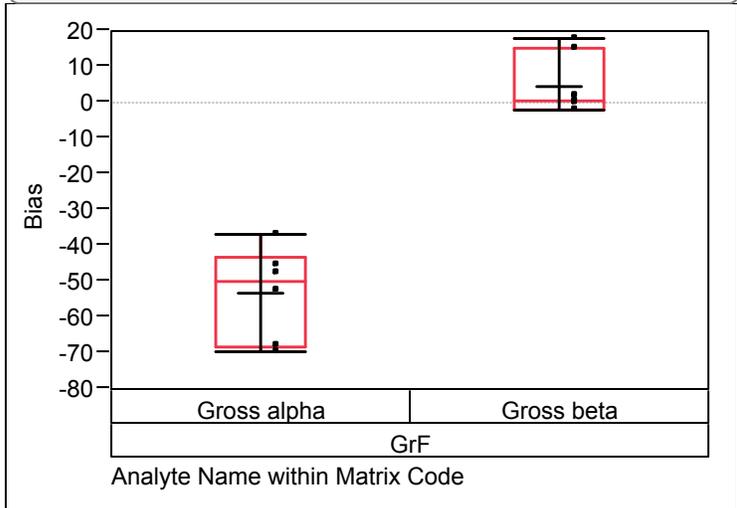
**Variability Gauge Lab Code=TMAR01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=TMAR01****Variability Chart for Bias****Variability Gauge Lab Code=TNUT01****Variability Chart for Bias**

**Variability Gauge Lab Code=TNUT01**

**Variability Chart for Bias**

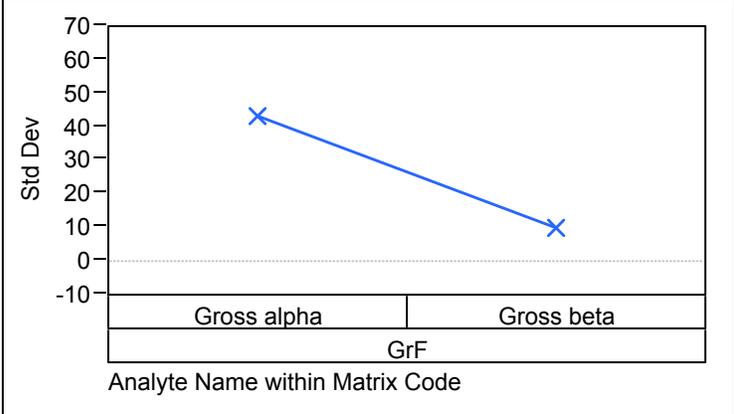
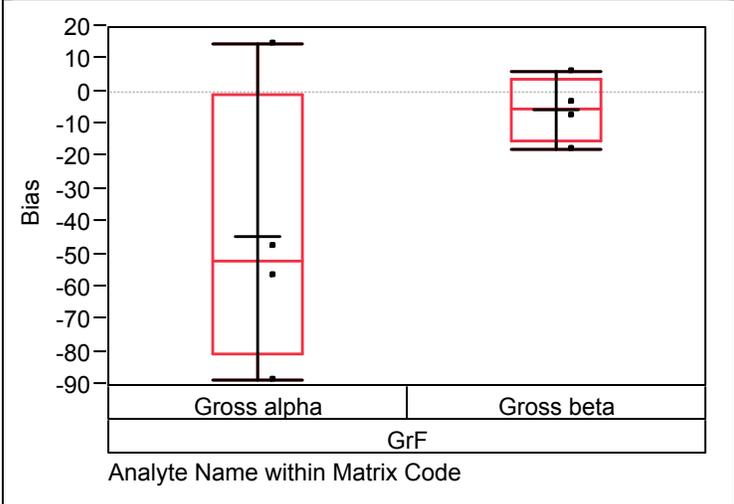


**Variability Gauge Lab Code=URSL01**

**Variability Chart for Bias**

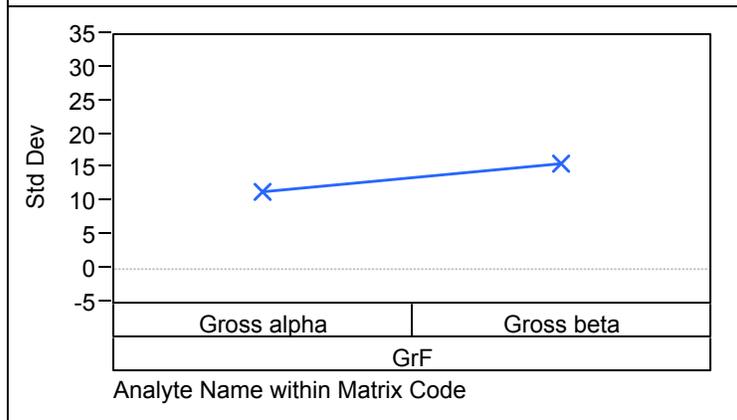
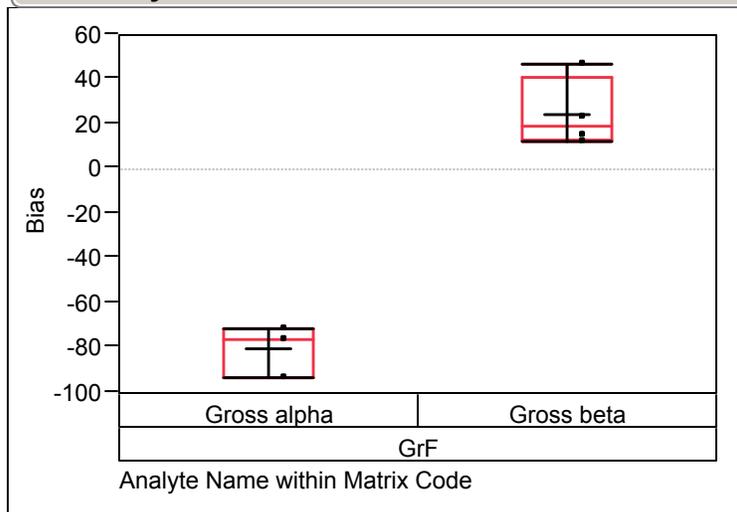
**Variability Gauge Lab Code=URSL01**

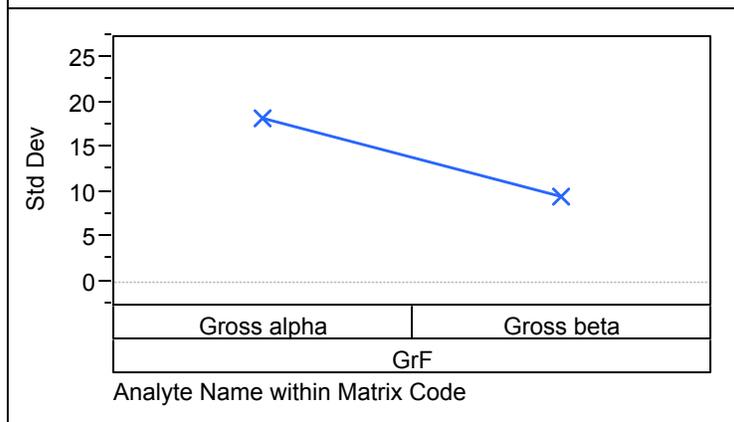
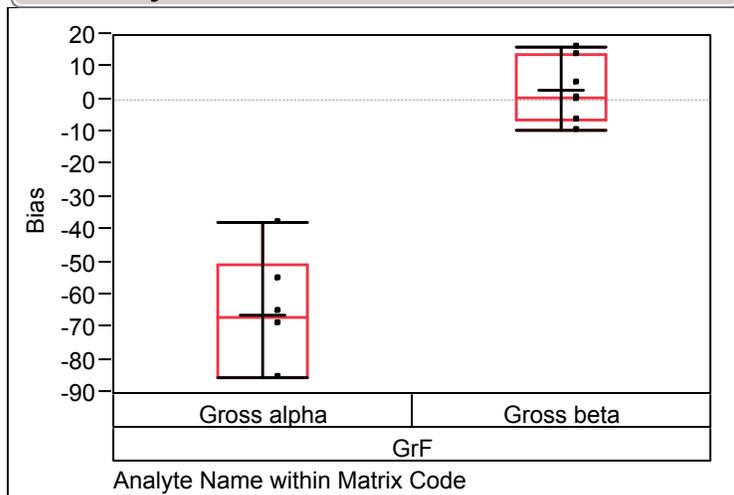
**Variability Chart for Bias**



**Variability Gauge Lab Code=USED99**

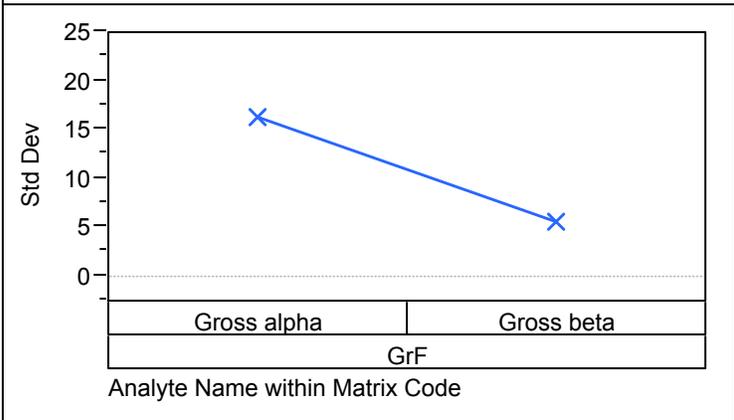
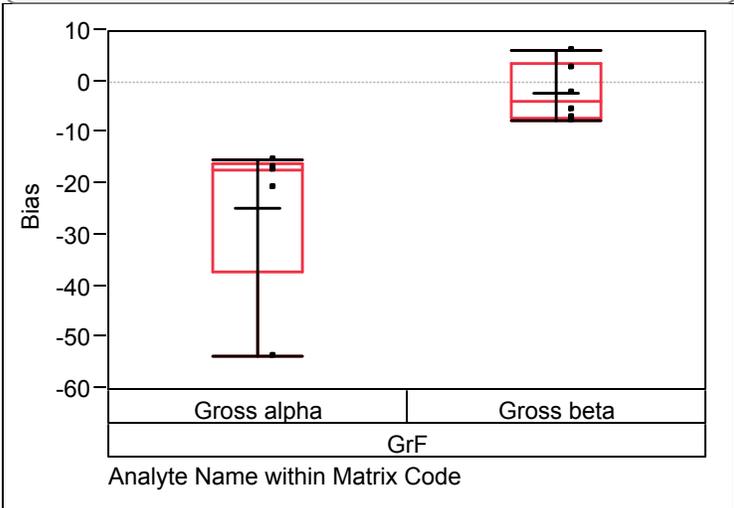
**Variability Chart for Bias**

**Variability Gauge Lab Code=USED99****Variability Chart for Bias****Variability Gauge Lab Code=WEST03****Variability Chart for Bias**

**Variability Gauge Lab Code=WEST03****Variability Chart for Bias****Variability Gauge Lab Code=WEST04****Variability Chart for Bias**

**Variability Gauge Lab Code=WEST04**

**Variability Chart for Bias**

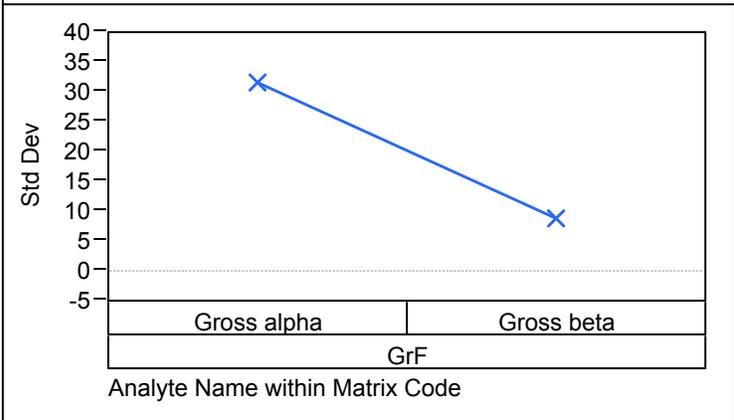
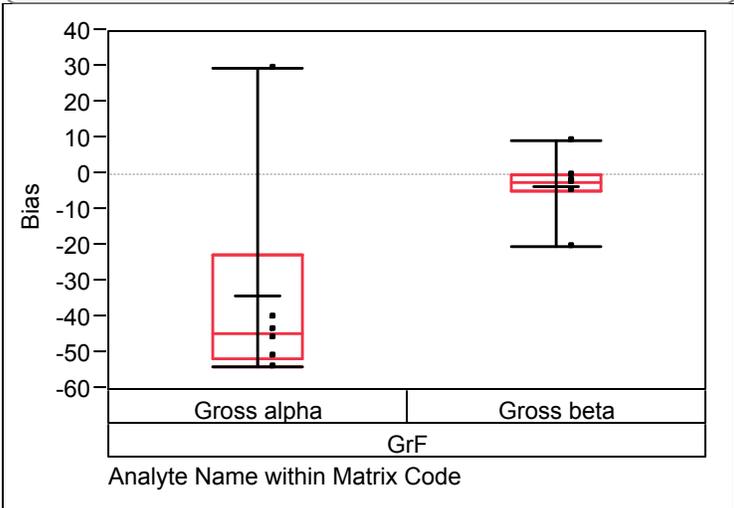


**Variability Gauge Lab Code=WIPP01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=WIPP01**

**Variability Chart for Bias**

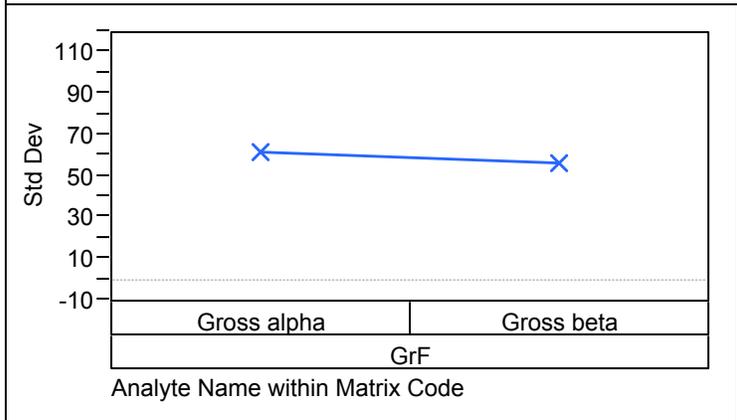
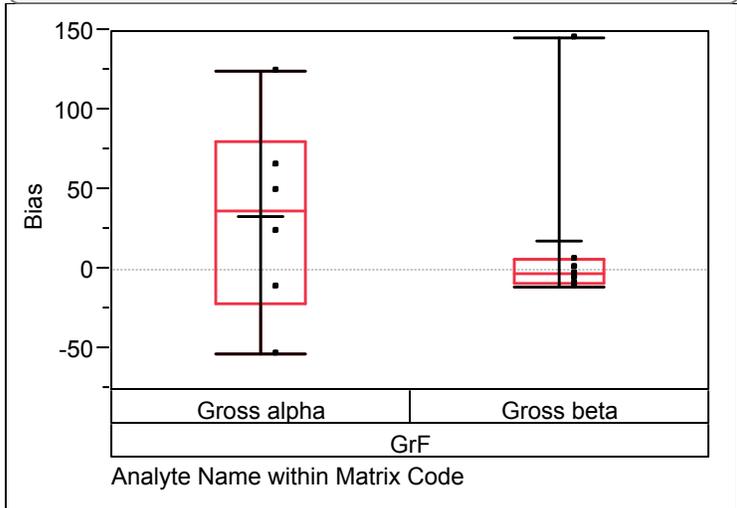


**Variability Gauge Lab Code=WSHL01**

**Variability Chart for Bias**

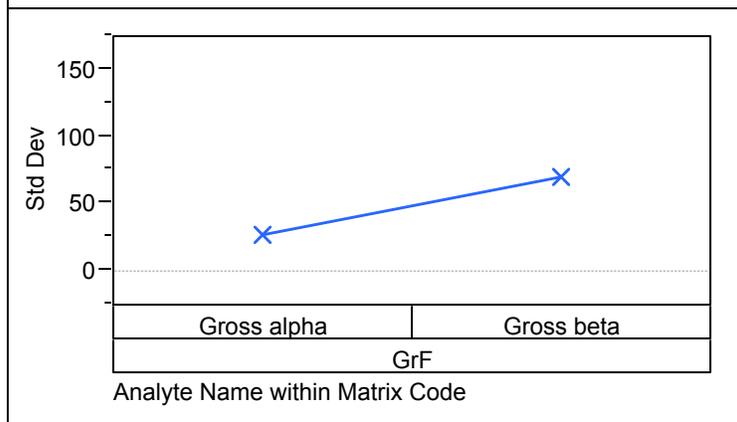
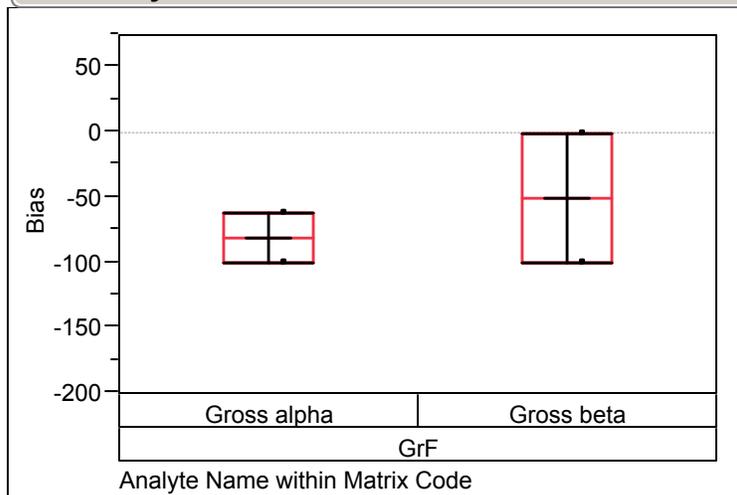
**Variability Gauge Lab Code=WSHL01**

**Variability Chart for Bias**



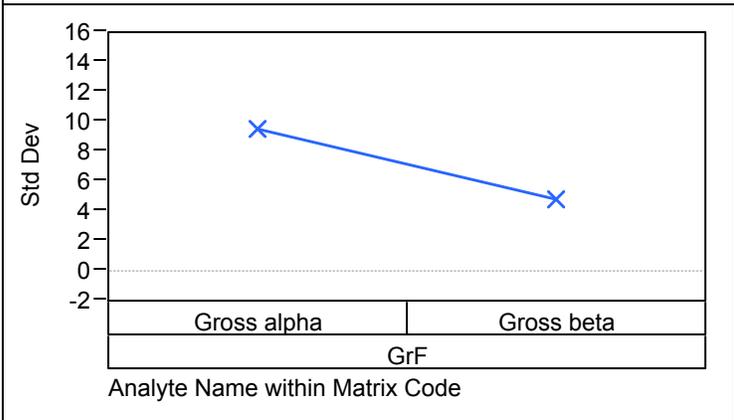
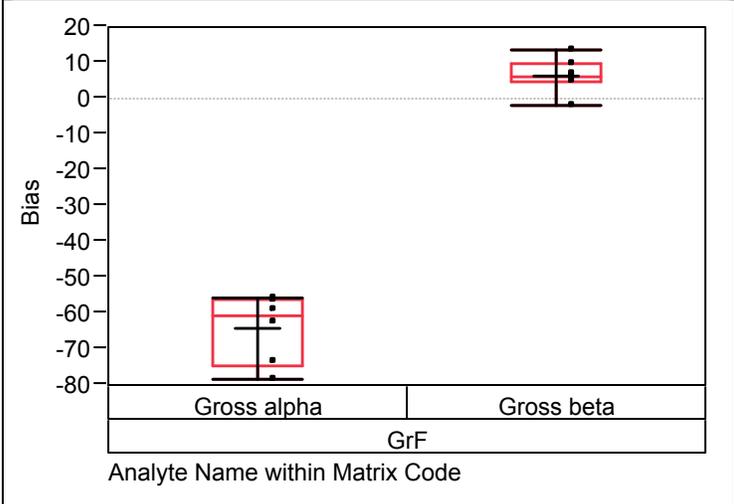
**Variability Gauge Lab Code=WSTI01**

**Variability Chart for Bias**

**Variability Gauge Lab Code=WSTI01****Variability Chart for Bias****Variability Gauge Lab Code=WVDP01****Variability Chart for Bias**

**Variability Gauge Lab Code=WVDP01**

**Variability Chart for Bias**



**Variability Gauge Lab Code=WVPL01**

**Variability Chart for Bias**

Variability Gauge Lab Code=WVPL01

Variability Chart for Bias

